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The Role of Media in Risk Management Processes—Analysis of the News Coverage of the Forest Fires in Spain

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Abstract: This paper focuses on the analysis of information on environmental catastrophes published in the digital editions of different national and regional newspapers, from a theoretical perspective that situates them as possible amplifiers of the social perception of risk or generators of alarm among the population in situations of risk or catastrophe. Within this framework, the general objective of the research was to find out to what extent the analysed media (a) transmit *specialized, accurate, truthful and contrasted information* that moves away from the characteristics of sensationalist news; (b) are *useful sources of information* for the public in the face of the possibility that they may act as generators of confusion and biased perceptions; and (c) show “*communication gaps*” in their news in relation to two cases of forest fires in Spain: the fires in Galicia in 2017 and those in Gran Canaria in 2019. The results obtained highlight the need for the media to make an effort to transmit truthful and useful communication for citizens in situations of crisis or catastrophe.

Keywords: forest fires; communication; media; truthful information; catastrophes



Citation: Rodríguez-Teijeiro, Ariadna, and Laura Román-Masedo. 2023. The Role of Media in Risk Management Processes—Analysis of the News Coverage of the Forest Fires in Spain. *Social Sciences* 12: 688. <https://doi.org/10.3390/socsci12120688>

Academic Editors: Ana Fernández Zubieta, Belén Casas-Mas and Concha Pérez Curiel

Received: 6 October 2023

Revised: 25 November 2023

Accepted: 10 December 2023

Published: 15 December 2023



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1. Introduction

Faced with the seriousness of the socio-economic, political and ecological damage that natural disasters cause every year, the international community strives to design action frameworks for disaster risk reduction (DRR). This has been done by the UN since 1989, through the approval of actions such as the International Framework for Action of the Decade for Natural Disaster Reduction, the Yokohama Strategy, the 1994 Action Plan, the International Strategy for Disaster Reduction, the Hyogo Framework for Action, and the current Sendai Framework.

In academia, scholars of disaster risk reduction and risk governance, such as [White et al. \(2001\)](#), have highlighted the paradox that losses from natural hazards have steadily increased despite the existence of a growing body of research on environmental risks. This paradox is attributed to the existence of gaps between science, policy and practice, resulting in a growing body of knowledge on natural hazards and disaster mitigation that is not matched by the way in which the results of this research are incorporated into DRR policies and programmes ([Weichselgartner and Obersteiner 2002](#)). In response, several authors argue that decision-makers use only a fraction of existing information and knowledge when designing policies to reduce disaster risk, and that scientists and researchers do not take into account the full complexity of the needs and priorities of potential recipients of risk management and prevention policies and plans ([Weichselgartner and Kaspersen 2010](#); [Weichselgartner and Pigeon 2015](#)).

In this context, this paper focuses on the role played by the media in risk governance and risk management processes. Media coverage of crises or catastrophes can determine public knowledge and potentially influence management decisions, which is why it is relevant to analyse the scope and content of media coverage of these critical situations. Indeed, “studies have shown that, for many people, the media is a primary source of

information on many public policy issues, including those related to the environment, climate change, and natural disasters (Barnes et al. 2008; Hansen 2011; Zhao et al. 2011)” (in Sachdeva and McCaffrey 2022, p. 1089). Regarding specific coverage of wildfires, Jacobson et al. (2001) and Nilsson and Enander (2020) point out that the media, through their content and narratives, can determine public perceptions of fire risk. Likewise, various studies suggest that the media do not promote a scientific vision or treatment of forest fires—what we propose as “specialized information”—and that they often focus on their negative aspects (Ingalsbee 2017). Such treatment involves the creation of barriers that can hinder efforts to manage this type of event.

This is why an approach to and understanding of the way in which the media cover forest fires provides very relevant information for managers and those responsible for fire control policies. That is, “if public understanding of wildfires is shaped by the media’s framing of these issues, then it would also be prudent for policymakers and managers to be aware of how wildfire-related issues are portrayed as wildfires in the media” (Sachdeva and McCaffrey 2022, p. 1090).

Other previous research on the role of the media in situations of natural disasters suggests that “the representation of such environmental dangers in the media is a mechanism that can, even inadvertently, reinforce historical and contemporary social inequalities through its discursive construction of the event and the actors involved” (Walker et al. 2020, p. 128). The important role of media coverage in forming people’s awareness of climate change and its influence on public engagement with the issue is also highlighted (Areia et al. 2019).

In this line of analysis, there are several functions that media (extensible to social networks) can fulfil in risk governance (Alexander 2014):

1. listening, giving a voice to people who normally do not have one and enabling broad and democratic participation in public debate (Crawford 2009);
2. monitoring, which can be carried out with the aim of improving reactions to events and learning from what people are thinking while trying to prevent the spread of false information (Bird et al. 2012);
3. integrating two-way communication processes, as the issuing of a request for collaboration can elicit a positive response based on participation (Crowe 2012; Jennex 2012; Sykes and Travis 2012; Yates and Paquette 2011);
4. collaboration through open-source and open-access disaster management applications and systems that serve as good examples of the use of media and social networks to create and disseminate methods and good practices;
5. cohesion, since, as Taylor et al. (2012) point out, sharing information makes people affected by a disaster feel more supported and optimistic about the future;
6. material aid, resulting from the ability to make an effective appeal to assist those affected (Lobb et al. 2012; Gao et al. 2011); and
7. researching social reactions to stress, risk and disasters through the analysis of media communication (Murthy 2013).

Therefore, it is key to pay attention to the possible roles “played by the media, such as its educational and awareness-raising function (. . .) when informing the public” (Conde Crespo 2019, p. 5). Specifically, and in relation to phenomena of a critical or catastrophic nature, the requirements of credibility, clarity, coherence, appropriateness and viability in the message must be met (Aznar 2005), thus offering “in its public service mission, useful information for citizens” (Pereiro et al. 2018, p. 197). In this sense, some authors clearly support self-regulation in the field of social communication (Aznar and Serrano-Moreno 2017; Real Rodríguez 2018; Morales 2023).

Specifically, our work focuses on the analysis of information on environmental disasters published in the digital editions of different national and regional newspapers, from the theoretical perspective that places them as possible amplifiers of the social perception of risk or generators of alarm among the population in situations of risk or disaster (Pidgeon et al. 2003). Within this framework, the general objective of the research is to

verify the extent to which the analysed media carry out adequate communication and to what extent:

- (a) they *transmit specialized, accurate, truthful and contrasted information* that is far from the characteristics of sensationalist journalism.
- (b) they are *useful sources of information* for citizens as opposed to the possibility that they may act as generators of confusion and biased perceptions.
- (c) there are "*communication gaps*" (da Silva et al. 2019) between scientific information and media communication in relation to the risk situations arising from both cases of fires.

As a starting point, it is worth differentiating the typology in which information can be framed according to López (2020):

- (a) *A specialized journalism* in which information is situated as a response of self-identification of the media before an increasingly demanding, prepared and educated audience (Fernández del Moral and Esteve 1993) which has to interpret, evaluate and explain very precise and complex news content. Specifically, the following features can be distinguished that define it and differentiate it from the so-called current affairs or generalist journalism (Quesada 2010): (1) it stands out for its rigour through the contrast with other sources, rigorous and in-depth reporting and the selection of content (as opposed to generalist information characterised by immediacy, exclusives, etc.); (2) it is based on the idea that it is a form of journalism that is based on the use of the media as a source of information, and that it is not only a form of journalism but also a means of communication; (3) it is based on documentation and personal interviews (as opposed to statements and press conferences, which are the focus of generalist journalism); and (4) it emphasises the context, i.e., what, how and why the event occurs, approaching a public service task (while generalist journalism aims to produce mass information).
- (b) *Environmental journalism*, which forms part of specialised journalism as a specific category of journalism and which could be associated with scientific journalism, although Quesada (1998, p. 23) states that "it is increasingly distinguished from the latter as a distinct area because not everything scientific can be considered environmental, nor is everything related to the environment strictly scientific". For his part, Fernández Sánchez (1995) defines it as "the speciality that deals with current affairs related to nature and the environment and especially those aspects that have to do with its degradation" (in Parratt Fernández 2014, p. 340), and Fernández Sánchez (1995) describes it as the journalistic exercise that attends to the information derived from the interaction of the individual with his environment. Finally, Sanmartí establishes three characteristics that define environmental journalism: (1) Its scientific basis: it causes the journalist to understand, first and foremost, what he or she wishes to communicate to his or her audience. (2) Its proximity to the concerns of modern society and people: it is a journalism in which complicity is established with the citizen, a journalism of constant appeal to the activities and behaviour of people, which invites to action, to the modification of behaviour. (3) Its multidisciplinary character: environmental issues are not separated from the rest of the world around us" (in Odriozola 2008, p. 28).
- (c) *Sensationalist journalism*, as a journalistic practice, consists of (1) creating the news without a basis of reality; or (2) altering the information to increase the audience or to try to favour some concrete or particular interest. In this sense, both sensationalist and yellow journalism imply a violation of the professional ethics of the reporter¹ "when he highlights details, especially if they are morbid or related to the intimacy of those who are the protagonists of the news, as opposed to what should be a reliable transmission of the events that took place" (Brito Galindo 2008, p. 237).

2. Materials and Methods

As we have been arguing, the media play a decisive role as a source of useful information, as opposed to the possibility that they may act as generators of confusion and biased

perceptions. Thus, specialised information that is far removed from the characteristics of sensationalism should contribute to establishing better communication with society in crisis situations. That is why the transmission of accurate, truthful, contrasted and useful information for citizens is one of the main challenges for the media in disaster and emergency situations.

Within the framework of the MITIGACT project², funded by the Spanish Ministry of Science, Innovation and Universities, research has been carried out to analyse the information transmitted by several national and regional media in relation to two catastrophic events: (a) the forest fires that took place in Galicia on 15 and 16 October 2017; and (b) the fires in Gran Canaria from 10 to 26 August 2019. The choice of both Spanish regions is related to the magnitude of the fires that took place on these dates, as explained below.

2.1. Fires in Galicia (2017)

Spain and Portugal are among the European countries with the highest incidence of forest fires. In the Spanish territory, “the case of Galicia stands out because occupying the 6% of the national surface between 1991 and 2009, represents on average around 45% of the fires in Spain and 23% of the affected surface, according to data provided by Nature Databank (2010) and the regional government of Galicia (2011)” (Barreal et al. 2012, p. 12). Indeed, during 2017, Galicia was the Autonomous Community most affected by forest fires in Spain in terms of the number of hectares burned (178,233 ha), doubling the figure recorded in October 2016 (86,000 ha) (according to data from the Ministry of Agriculture and Fisheries, Food and Environment—(MAPAMA 2017)). According to data from the Civio Foundation, based on the General Statistics on Forest Fires produced by the Ministry of Agriculture, 93% of the municipalities where most fires occur are in northwestern Spain, and 72% in Galicia.

The high temperatures recorded in the summer of 2017, coupled with low rainfall, caused a significant drought (Beramendi and Acosta 2017). This climate encouraged fires, so that the number of fires that occurred was much higher than in 2016, with a total of 1200 fires in the whole year (Montero 2017). Moreover, in 2017, fires ceased to be a symptom only of the summer and began to be deseasonalised (González 2017b). According to the report prepared by the association *Atrifoga*, in 2017, the factors for the deseasonalisation of fires increased due to the high temperatures in December (with many days reaching 20 degrees Celsius), added to other meteorological conditions such as dryness due to the low level of humidity in the plant biomass due to the lack of rainfall and frosts. Finally, the high forest fuel and the winds caused by Hurricane Ophelia also contributed to create the perfect fire, unpredictable and virulent.

On 15 and 16 October, the critical event that caused serious losses for Galicia took place, especially for the rural area (González 2017a), in which several outbreaks were active at the same time. Many of these outbreaks started in the early hours of the morning, making it extremely difficult for the firefighting forces to act. A total of 49,000 hectares of forest were burnt and caused the deaths of four people, as well as around twenty injured and a hundred people who needed medical assistance for anxiety, eye irritation and respiratory problems due to intoxication (González 2017a). According to the classification of fires by the Ministry for Ecological Transition and Demographic Challenge (n.d.), based on the extent and surface area of land affected, the case study far exceeds the hectares that qualify it as a *major fire*³, accounting for the enormous dimension of the event. Indeed, some experts declared that new fires were occurring (which they called *superfires*), that they were a global problem, and that they would get worse as climate change intensified.

Galicia has the two ecosystems most sensitive to fires. Firstly, an immense rural space that is depopulated and ageing: “the depopulation of rural areas leads to an accelerated process of land abandonment, which is invaded by spontaneous vegetation with a high degree of combustibility” (Sánchez Oliver and Badía 2017, p. 19). Indeed, the demographic crisis in Galicia and the abandonment of the countryside explain a large part of the fires that have occurred. According to González (2017b), “throughout the northwest, traditional

land uses (...) that acted as natural firebreaks have been abandoned. Vegetation has been invading these spaces, while highly flammable exotic species have been planted". Secondly, there is a peri-urban space with single-family homes between the city and the countryside where the risk to human lives and the destruction of property is very high.

Furthermore, according to the Guardia Civil⁴, most of the fires were intentional, basing their hypothesis on several circumstances: (1) that the fires started in five different areas at the same time; (2) that they occurred in areas that were very difficult to access and at night, preventing the work of aerial resources; and (3) that in one of the affected areas, a flare was found attached to helium balloons, which could have been used to start the fires (Pan and Pita 2017).

Thus, both meteorological and human factors can explain the fires that affected protected natural areas, forests and housing areas, leaving in their wake serious losses and consequences in the Galician territory (González 2017a): more than 49,000 hectares burned throughout Galicia, with losses of more than EUR 16.5 million between forests, houses, residences, buildings and agricultural machinery. Such a high incidence of forest fires in the Atlantic area, increasingly numerous and throughout the year, reinforces the need to analyse the information generated and transmitted by the media from the perspective of emergency communication.

2.2. Fires in Gran Canaria (2019)

Between 10 August and 26 September 2019, the island of Gran Canaria recorded four large forest fires: the Artenara, Valleseco, Cazadores and Las Lagunetas fires, affecting the Tamadaba Nature Reserve. The two most important fires—the Artenara and Valleseco fires—devastated a total of 9636.40 hectares, which represents 13.4% of the total number of hectares burnt in the country during 2019 (according to data from the Copernicus project⁵). Again, they were classified as large fires according to the fire classification of the Ministry for Ecological Transition and Demographic Challenge (n.d.).

In addition, the fire affected a total of 91 buildings, up to 10,000 people were evacuated from their homes in eight municipalities of Gran Canaria, and more than 1000 personnel from different units and specialists from other islands and the Spanish mainland, as well as helicopters and aircraft, were mobilised. According to data from the Department of Architecture and Housing of the Cabildo⁶ of Gran Canaria, the damage was estimated at EUR 1.8 million, and the event reached level 2 of the Special Plan for Civil Protection and Emergency Response to Forest Fires in the Autonomous Community of the Canary Islands (INFOCA).

There is no doubt that such catastrophic phenomena “produce great social alarm and arouse considerable interest among the population, both for the destruction of environmental heritage and for the consequences caused on the population and their material goods” (Molina and Sánchez in López 2020, p. 4) and occupy a preferential place in the media agenda. However, they seem to be at a certain disadvantage in terms of the quality of their news coverage “compared to that of political, sports or economic news, due to factors such as the tendency towards catastrophism, the superficial treatment of the news, the difficulty of the technical language or the lack of accessibility of the sources” (Rodríguez-Cruz 2012, p. 136).

In this context, starting from an approach that situates the news as discourse (Van Dijk 1990) and analysing the news from the interpretative frameworks they contain (Goffman 2006), we analysed the journalistic units published in four regional/local newspapers: *La Voz de Galicia* and *Faro de Vigo* (in the case of the fires in Galicia), *La Provincia* and *Canarias 7* (in the case of the fires in Gran Canaria), and, in two national newspapers, *El País* and *El Mundo*. The selection criteria included being the media with the largest circulation and largest number of readers, as well as, in the case of the regional media, the fact of covering local information. The selection criteria for the journalistic units were based on a search through keywords of those related to the two case studies published between 13 and 16 October 2017 for the case of the Galicia fires, and from 10 to 26 August 2019

for those in Gran Canaria. The selected journalistic units published news related to both events, excluding interviews, reports or opinion articles. Based on these criteria, a total of 501 journalistic units were selected and included in the analysis, distributed among the different newspapers in the proportion shown in Table 1:

Table 1. Media and journalistic units analysed.

Fires in Galicia (2017)				
<i>La Voz de Galicia</i>	<i>Faro de Vigo</i>	<i>El País</i>	<i>El Mundo</i>	Total
165	122	39	21	347
Fires in Gran Canaria (2019)				
<i>La Provincia</i>	<i>Canarias 7</i>	<i>El País</i>	<i>El Mundo</i>	Total
28	90	23	13	154

Source: Compiled by authors.

The methodology used for the analysis was based on the application of the content analysis technique, searching in the body of the news for allusions to the different aspects that constituted the research objectives. The protocol for data collection consisted of the preparation and subsequent application of an analysis sheet in which the coded variables were specified and the allusion to them in the body of the selected news was checked (excluding headlines and introductions). These variables were collected from previous analyses on the subject (López 2020; Rodríguez-Cruz 2012; Delgado and Vicente 2019):

- Sources used (officials, experts, testimonies of affected people, witnesses and/or neighbours).
- Reference to the victims and those affected.
- Event itself (its state, control or spread, the affected hectares or the devices and means used for extinction efforts).
- Technical aspects related to the investigation of the events (possible perpetrators, impact on health or the environment).
- Reference to background.
- Description of the event.
- Editorial political alignment with the regional government.
- Provision of useful data for citizens (number of active, stabilized and controlled fires, provinces and municipalities affected).

Regarding the quantitative analysis, the total number of news items published in relation to the two cases of analysis in the different media were counted (without the use of any software), as well as the number of news items in which the coded variables were contained, through a Excel document from which the percentages were calculated.

The results are presented in absolute terms and in percentages based on the following parameters and main and secondary research objectives:

Main objective 1. To identify the level of *journalistic specialisation in environmental issues* shown in the news items published. To this end, the following specific questions were addressed:

Secondary objective 1.1. To analyse *journalistic rigour and reliance on official and/or expert sources* by taking into account the number of news items that relied on (1) official sources; (2) victims' testimonies; or (3) witnesses and neighbours in the affected areas.

Secondary objective 1.2. To review the *contents and the diversity of approaches*, differentiating between those news items (1) oriented towards human interest, focusing on the victims and those affected; (2) focused on the event itself, i.e., its status, control or spread, etc.; or (3) related to technical aspects of the investigation itself, such as the identification of possible perpetrators or the impact on health and the environment.

Secondary objective 1.3. To verify the *allusion to the context of the fires, their causes and consequences* through the inclusion of contextual data in the journalistic pieces, such as

(1) background information; (2) information focused on the description of the facts; or (3) the possible existence of ideological alignment between the editorial line of the media and the autonomous governments in charge of the political management of the cases in the first instance.

Secondary objective 1.4. To determine the extent to which the media assume a *public service function* through the publication of adequate, truthful and useful information that allows citizens to make the right decisions for their survival: for example, accurate data on the geographical location of fires, their extent or evolution to enable citizens to move away from danger zones.

Main objective 2. To know the possible existence of *information sensationalism* to the detriment of or in contrast to the transmission of specialised information. To this end, the aim was to determine (a) the inclusion of *morbidity information* that contributes to the spectacularisation of events; (b) the use of *catastrophic expressions* that further dramatise the event; and (c) the use of *tragic images* that deepen the pain and desperation of the public.

3. Results and Discussion

The results of empirical studies on the role played by the media in forest disasters in Spain point to a “predominance of social and economic information over ecological information and a high level of politicisation of media coverage” (Domínguez et al. 2014), in the specific case of the news coverage of the forest fires in the Valencian Community in 2012. In turn, the work by Pereiro et al. (2018) addresses the news treatment given by Portuguese and Spanish newspapers to the fires in Galicia in 2017 with the specific aim of determining to what extent the media comply with the advice established by the [Professional Association of Journalists of Galicia \(2008\)](#) in the *Decalogue of recommendations for media and journalists of catastrophe events*, as well as in the *Practical Guide for the news treatment of emergencies, catastrophes and missing persons*. And in the same case—the forest fires in Galicia in 2017—[Delgado and Vicente \(2019\)](#) studied the coverage by two national and regional newspapers (*El País* and *La Voz de Galicia*), reaching the conclusion, among others, that the editorial line of these media largely determined the content of the information transmitted and, consequently, key aspects of the political management of risk, such as the establishment of possible causes and the attribution of responsibilities, were politicised. In contrast to the aforementioned study, and coinciding with some of the conclusions reached, in our analysis, we include two other media for the analysis of the same case: the national newspaper *El Mundo* and the regional one *Faro de Vigo*. In the case of the fires in Gran Canaria, and despite being a recurrent phenomenon in this region, we have not found any previous detailed studies or scientific articles that explore further the news treatment of this event.

The results of the analysis are presented below, arranged according to the objectives set out above.

3.1. Main Objective 1: Level of Journalistic Specialisation in Environmental Issues

3.1.1. Secondary Objective 1.1: Journalistic Rigour and Trust in Official and Expert Sources

In relation to the first objective of the research, the results relating to the level of journalistic rigour and reliance on official and expert sources⁷ shown by the journalistic units published in the different media analysed are set out below.

Beginning with the analysis of the local or regional media in which the news related to the fires in Galicia (2017) are collected, in most of the news items published by the newspaper *La Voz de Galicia* a single point of view from *expert* (49.26%) and *official* (38.97%) sources predominates, which indicates a certain dependence on institutional statements. A fairly low percentage of the reports are based on the *testimonies of those affected* by the disaster (3.67%) and of *witnesses and neighbours* (6.61%). There is, therefore, a notable presence of people as protagonists of the news and as sources of information (in 10.28% of the units if we add the two previous items together), which provides humanism and a certain enrichment of the information without reaching the dramatism and/or sensationalism that excessive use would entail. It should be noted, however, that on occasion, videos are

published in which those affected are filmed and not edited, maintaining the conversations and/or comments of those around them, with the resulting dramatisation that this entails.

For its part, *Faro de Vigo* is the Galician newspaper that publishes more journalistic units in relation to the 2017 wave of fires in Galicia (244 news items compared to 136 published by *La Voz de Galicia*). Most of the news items resort to *expert sources* (49.59%) and *official sources* (33.60%), although in this newspaper a notable percentage of journalistic units (13.52%) resort to *testimonies of witnesses and neighbours* of the affected areas compared to 6.61% in *La Voz de Galicia*.

Regarding the fires in Gran Canaria (2019), in the newspaper *La Provincia*, the majority option is to resort to *expert sources* (51.78%). In a lower proportion, we find the news items that resort to *official sources* (26.78%), followed by the *testimonies of witnesses and neighbours* of the affected areas (14.28%). News items whose content is based on the *testimonies of those affected* account for 7.14%. The difference in the total number of news items published compared to the news published by *Canarias 7* is striking, as shown in Table 2.

Table 2. Level of journalistic rigour and trust in official and expert sources.

	Official Sources	Testimonies of Those Affected	Witnesses and Neighbours	Expert Sources	Total
<i>La Voz de Galicia</i>	53 (38.97%)	5 (3.67%)	9 (6.61%)	67 (49.26%)	136 (100%)
<i>Faro de Vigo</i>	82 (33.60%)	6 (2.45%)	33 (13.52%)	121 (49.59%)	244 (100%)
<i>La Provincia</i>	15 (26.78%)	4 (7.14%)	8 (14.28%)	29 (51.78%)	56 (100%)
<i>Canarias 7</i>	61 (67.77%)	9 (7.62%)	4 (3.38%)	44 (37.28%)	118 (100%)
<i>El País</i>	44 (57.89%)	7 (9.21%)	8 (10.52%)	17 (22.36%)	76 (100%)
<i>El Mundo</i>	25 (53.19%)	4 (8.51%)	8 (17.02%)	10 (21.27%)	47 (100%)

Source: Compiled by authors.

In the case of *Canarias 7*, there is a high percentage of news units that use *official sources* in their reports (67.77%), mainly statements from the president of the regional government, mayors and ministers of the Spanish government. This trend almost doubles the proportion of news items that use *expert sources* (37.28%), such as technical directors of emergency and civil protection centres, local police or firefighters. Finally, a low percentage of news items (7.62%) use *testimonies from those affected*, and only 3.38% include *testimonies from witnesses and neighbours* of the affected areas.

In the four local or regional newspapers analysed, the tendency to resort to official and expert sources when conveying information on the catastrophic events is predominant. However, the proportion of news items that use the testimonies of those affected, witnesses and neighbours is not negligible.

With regard to the national newspapers (*El Mundo* and *El País*) for both cases—fires in Galicia in 2017 and in Gran Canaria in 2019—the total number of news items decreases with respect to the regional media.

As can be seen in Table 2, most of the news items in *El País* refer to *official sources* (57.89%), with a notable distance from the news items whose content refers to data from *expert sources* (22.36%). Specifically, the official sources referred to in the content of the news items are mainly ministers and the president of the Spanish government, the presidents of the autonomous communities of Galicia and Gran Canaria and the mayors of the affected municipalities, including their statements. In those news items in which reference is made to expert sources, for example, university professors, researchers from reference centres, biologists or specialists in remote sensing of forest fires are used.

In relation to the newspaper *El Mundo*, the trend is similar to that of *El País*. Thus, 53.19% of news items are published that use *official sources*, followed at a considerable distance by those that use *expert sources* (21.27%). In this case, too, the official sources referred to are mainly presidents and ministers of the national government, presidents and

regional councillors, members of the High Court of Justice and the High Public Prosecutor's Office. As for expert sources, the Military Emergency Unit (UME), Civil Defence, the National Meteorological Agency or the Spanish National Research Council⁸ are used.

Also, in the case of the national media, there is a greater tendency to resort to official and expert sources than to the testimonies of the people affected in the case of both events.

3.1.2. Secondary Objective 1.2: Review of Content and Diversity of Approaches

In order to achieve this objective, we have differentiated between (a) news focused on the *victims and those affected* (oriented towards *human interest*); (b) those focused on the *event itself* (on its state, control or propagation); and (c) those related to *investigation of events and/or technical aspects* (Table 3).

Table 3. Journalistic units whose content refers to.

	Victims and Those Affected	Event Itself	Investigation and/or Technical Aspects	Total
<i>La Voz de Galicia</i>	7 (10.29%)	10 (14.70%)	52 (76.47%)	68 (100%)
<i>Faro de Vigo</i>	9 (7.37%)	72 (59.01%)	41 (33.60%)	122 (100%)
<i>La Provincia</i>	5 (17.85%)	13 (46.42%)	10 (35.71%)	28 (100%)
<i>Canarias 7</i>	14 (14.58%)	72 (75%)	10 (10.41%)	96 (100%)
<i>El País</i>	14 (22.58%)	24 (38.7%)	24 (38.7%)	62 (100%)
<i>El Mundo</i>	8 (21.05%)	19 (50%)	11 (28.94%)	38 (100%)

Source: Compiled by authors.

During the period of analysis established for the case of the fires in Galicia in 2017, the digital edition of the newspaper *La Voz de Galicia* contains 10.29% of news oriented towards *human interest*, that is, focused on the *victims and those affected*, which are not contrasted or appear to be related to other sources or visions of the events. This newspaper gives similar treatment to all victims, that is, without distinguishing between fatalities and those affected. There is a notable gap in the volume of news items referring to *technical issues and aspects* (possible perpetrators, impact on health or the environment), which reach 76.47%, compared to 14.70% of news items referring to the *event itself* (its state, control or spread, the hectares affected or the devices and resources used in the fire-fighting work), all of which are data obtained from official sources.

The newspaper *Faro de Vigo* dedicates 59.01% of its news items to issues related to the *event itself* and to the description of the conditions of the evolution of the fires, followed by those journalistic units referring to the *investigation and technical aspects* of the fires (33.60%). Only 7.37% of the news items include aspects related to the *victims and those affected*.

The journalistic units included in the newspaper *La Provincia* dedicate most of their content to the *description of the event itself* (46.42%) and to reporting on issues related to the *investigation and technical aspects* of the fires in Gran Canaria (35.71%). A percentage of 17.85% corresponds to news focused on the *victims and those affected*.

In the case of the newspaper *Canarias 7*, 75% of the news items focus on the *description of the event*. Next, 14.58% of the news items focus on the *victims and those affected* by the fires, and finally, 10.41% include content on the investigation into the possible causes of the fires. Specifically:

- (a) Human interest-oriented news items focusing on the *victims and those affected* tend to focus on their statements and testimonies, which are generally contrasted with other sources such as institutions or experts.
- (b) News items referring to the *event itself* usually refer to the hectares burnt, based on data provided by the regional government, the stabilisation of the fires, aerial devices used or the development of the extinguishing work. For this purpose, information provided by local government representatives and responsible technicians is usually used. Their statements are used to verify the sincerity of the testimonies of victims and

- those affected. In addition, data obtained from satellites—such as those of Copernicus or the VIIRS infrared sensors—are provided, always indicating the name of the source.
- (c) News items referring to the *investigation and technical issues* of the event usually refer to the background of the event, as well as the possible intentionality in the origin of the fires. For this purpose, sources such as the local police, Guardia Civil, and even the Public Prosecutor's Office are used.

In terms of national newspapers, the digital edition of *El País* shows a clear trend in which news items referring to the *event itself* and those focusing on the *investigation and technical aspects* of the event are equally placed (38.7%). In a smaller proportion, aspects related to the *victims and those affected* by both catastrophic events are mentioned (22.58%).

In detail:

- (a) In the news oriented towards human interest, that is, focused on the *victims and those affected*, reference is made to the number of deaths and the number of injured admitted to hospitals. In the case of the fires in Galicia, sources such as the regional government are used, and the information is contrasted with the testimonies of mayors, witnesses and neighbours. In the case of the fires in Gran Canaria, official sources such as the president of the regional government are used.
- (b) In the news items that refer to the *event itself*, sources that are reliable are used, such as the regional or local government (which can report on the control or spread of the fires, as well as providing updated data on their evolution), a specific regional government department (in relation to the number of active fires), or the Spanish Meteorological Agency (on possible weather alerts). Likewise, links are provided to access the web pages of these sources, and images and graphs are used to represent the waves of fires, active fires and the evolution of burnt hectares, always quoting the sources. Both in the case of the fires in Galicia and Gran Canaria, if a tweet or statement from any of the cited sources published through social networks is used, the source is also indicated.
- (c) News items referring to the *investigation and technical issues* of the event focus mainly on the police investigation carried out in relation to the possible causes and/or perpetrators of the fires (including statements such as “the first indications point to intentionality in most of the fires” or “the existence of isolated accidental cases”). Other news items focus on topics such as the investigations carried out by the Galician Public Prosecutor's Office and the police arrests of those possibly responsible for the fires based on decrees, sentences and data on crimes against the environment and town planning; statements and reports by environmental groups providing data on the impact of the fires on the environment; data provided by the autonomous meteorological agency; government balances with percentages on the number of fires and the area affected; and the contents of legislative proposals relating to fire management.

With regard to the news items in the newspaper *El Mundo*, the percentage is more spread out: 55.88% of the units focus on the *event itself*; 32.35% of the news items focus on the *investigation and technical issues*; and, finally, 23.52% of the news items are oriented towards the *victims and those affected*. Specifically:

- (a) We did not find any human interest-oriented news items in this newspaper, i.e., focused on the *victims and those affected*, in the case of the fires in Gran Canaria. They do appear in relation to the fires in Galicia, in which testimonies of the people affected or witness statements (such as the driver of the vehicle in which some of its occupants died or firefighters who participated in the rescue work) are used.
- (b) In relation to the news items referring to the *event itself*, both *El Mundo* and *El País* use graphic representations of the affected areas, whose sources are, among others, the Military Emergency Unit (cited in the caption). Testimonies by the president and different ministers of the Spanish government are used to legitimise the data presented in the news. Data from the State Meteorological Agency are used to forecast upcoming temperatures and meteorological phenomena and how these may affect

- the evolution of the fires. In this case, tweets from the official media are also attached. When referring to the number of hectares burnt or the number of active fires, data provided by regional government officials are usually cited as sources of information.
- (c) The news items that refer to the *investigation and technical issues* of the event mainly focus on (a) police investigations, using as sources the statements issued by the Public Prosecutor's Office or the Guardia Civil; or (b) investigations on the environmental impact of the fires, using the testimonies of technicians and specialists to explain their consequences for the fauna and the ecosystem.

3.1.3. Secondary Objective 1.3: Inclusion of Contextual Data

News stories provide the reader with the possibility of developing their own perception of the event, as well as establishing relationships between the data, and this should be done by distancing the content from the anecdotal and/or sensationalist. Furthermore, as [Rodríguez-Cruz \(2012\)](#) states, easy access to the scene of the events, as in the two cases analysed, can lead to a lack of depth and the production of information based "more on the event than on the process, with a decontextualised and shallow presentation" ([Rodríguez-Cruz 2012](#), p. 1). In this sense, the inclusion of contextual data is decisive in shaping the social perception of risk to the citizens of the areas affected by the fires.

On the other hand, the ideological tendency of the media can determine the transmission of information in accordance with it, establishing (or not) an alignment between the editorial line and the ideology of the autonomous government party in each of the two cases. According to the analysis carried out by [Alaminos-Fernández \(2011\)](#), the readers of the newspapers selected for the analysis show the following ideological tendencies: in the case of *El País*, 90.1% of its readers are Socialist Party voters (centre-left), while in the case of *El Mundo*, 50.4% are Partido Popular voters (centre-right). With regard to the regional media, we do not have data showing such marked tendencies, although based on the analysis carried out, their ideological tendency would be mainly left-wing, except in the case of *La Voz de Galicia* (Table 4)

Table 4. Journalistic units whose content alludes to.

	Background of the Event	Description of the Event	Editorial Policy/Government Alignment	Total
<i>La Voz de Galicia</i>	24 (35.3%)	21 (30.88%)	23 (33.82%)	68 (100%)
<i>Faro de Vigo</i>	45 (36.88%)	44 (36.06%)	33 (27.04%)	122 (100%)
<i>La Provincia</i>	6 (21.42%)	13 (46.42%)	9 (32.14%)	28 (100%)
<i>Canarias 7</i>	21 (21.87%)	61 (63.54%)	14 (14.58%)	96 (100%)
<i>El País</i>	26 (40.62%)	30 (46.87%)	8 (12.5%)	64 (100%)
<i>El Mundo</i>	10 (31.25%)	14 (43.75%)	8 (25%)	32 (100%)

Source: Compiled by authors.

In *La Voz de Galicia*, 35.3% of the news items include in their content aspects related to the *background of the event*, 30.88% describe the *event itself*, and a not insignificant percentage of 33.82% refer to political issues, with a background that seems to show a certain *political alignment* with the ideology of the regional government, coinciding with the conclusions reached in the work of [Delgado and Vicente \(2019\)](#). Specifically, they refer to the possible responsibility of third parties using terms such as "arson terrorism" or "arson", and highlight the actions and measures carried out by the Galician government to fight the fires and provide assistance to those affected.

On the other hand, the newspaper devotes considerable space to the victims, showing a certain informative bias. Thus, on 14 October 2017, the newspaper published its first reports in a rather superficial manner and based on technical reports prepared by the regional government. Initially, no reference is made to the possible causes or foreseeable

consequences of the event, both for the inhabitants of the affected areas and for the environment. However, as the fires spread, increasing in severity and affecting the inhabitants and their homes, the media's perspective shifts towards a focus on the victims and their families, whose stories are described with considerable drama.

In *Faro de Vigo*, as in *La Voz de Galicia*, we also find very similar percentages between the news items that refer to the *background* (36.88%) and the *description of the event* (36.06%). Likewise, in 27.04% of the journalistic units published, certain *alignment* between the editorial line of the newspapers and the regional government is detected.

In *La Provincia* there is a higher proportion of news items *describing the event* (46.42%), compared to those referring to the *background* (21.42%). The possible *political alignment* between the editorial line of this newspaper and the regional government of the Canary Islands can be seen in 32.14% of the news units analysed.

In the case of *Canarias 7*, *political alignment* between the editorial line of the newspaper and the regional government is observed in 14.58% of the news items. Although this is the item with the lowest percentage, this issue is noteworthy, not only because several news items focus on the president's statements on the fires, but also because in no case arguments from the opposing parties are used to refute his institutional statements, and videos of the president's own press conferences are also attached.

As for the national newspapers, in the case of *El País*, the content of the news items is mostly distributed between those that focus on the possible *background* of the events (40.62%), and those that focus on the more *descriptive details* of the fires (46.87%). As for the third item, i.e., the *alignment between editorial policy and government*, this is particularly noticeable in the specific case of the fires in Galicia, since numerous news items refer to the deficient management by the president of the regional government, refuting his arguments with criticisms from opposition parties.

In the newspaper *El Mundo*, with a considerably lower total number of news items compared to news items published in *El País*, the percentage of news items that *describe the technical details* of the event is higher (43.75%) than those relating to the *background* (31.25%) for the coverage of both cases. The possible existence of *ideological alignment* between the newspaper and the government can be seen in the fact that in numerous news items, the regional government's statements are used, without trying to refute them and arguing in favour of them. Specifically, in both cases, statements by the president of the regional government are used to support some news, without including other points of view or refuting them with other arguments. Even so, *El Mundo* seems to maintain a more neutral tone compared to *El País*, which presents a more critical position towards the political management of the events.

3.1.4. Secondary Objective 1.4: Assumption of a Public Service Function

We should begin by pointing out that one of the recommendations of the Professional Association of Journalists for the coverage of critical or catastrophic situations is that the media should offer practical information that allows citizens to make the right decisions for survival. However, despite the relevance of the messages broadcast by the traditional media, most of the studies carried out to date on the coverage of forest fires point, above all, to a treatment of the crisis in which most of the news stories do not provide adequate information for citizens (Pereiro et al. 2018) (Table 5).

Table 5. Do the media provide practical information for citizens? Regional newspapers.

	Yes	No
<i>La Voz de Galicia</i>	46 (33.82%)	90 (66.17%)
<i>Faro de Vigo</i>	96 (39.34%)	148 (60.65%)
<i>La Provincia</i>	25 (44.64%)	31 (55.35%)
<i>Canarias 7</i>	28 (29.16%)	62 (64.58%)

Source: Compiled by authors.

In this sense, *La Voz de Galicia* appears to achieve a certain public service function through the publication of news items whose priority is to report on the extent of the fires in urban areas and homes (33.82%). However, in general terms, the analysis shows that the service function of the information published by this media organization does not go much further than the transmission of data derived from official and institutional sources (66.17%). Neither do the newspapers *Faro de Vigo* and *La Provincia* seem to adopt such a function, as their journalistic units do not provide information of a practical nature for citizens in 60.65% and 55.35% of the news items, respectively. In fact, as can be seen in previous sections, both media have a fairly high percentage of news items focused on aspects related to the victims and those affected and, therefore, are susceptible to adopting a certain degree of dramatism which, from the outset, would not provide useful information for citizens. In the case of *Canarias 7*, 29.16% of news items contain useful information compared to the news items in which no relevant information for decision-making and/or survival is transmitted (64.58%). Examples of useful information include information from institutional sources on the number of active fires, stabilised and controlled fires, which provinces and municipalities are affected, and, in general, information that can help citizens to know the state of the situation and act in the most appropriate way.

In general terms, in the case of local media that can provide information on the evolution of the fires, we cannot speak of the assumption of a public service function that would help citizens to make the right decisions for their survival, as long as no technical or scientific sources are used that could help to provide clearer and more useful information, far from a political alignment derived, precisely, from the excessive dependence on official and institutional sources.

In the case of the national media, most of the news items in *El País* do not provide information of a practical nature, such as the inclusion of maps to visualise the waves of fires and where they are, the roads cut off due to the proximity of the fire, as well as the recommendations established by the town councils of the different municipalities affected. Satellite images are also presented to see the areas and hectares affected (Table 6).

Table 6. Does the newspaper provide practical information for citizens? National newspapers.

	Yes	No
<i>El País</i>	22 (34.37%)	42 (65.62%)
<i>El Mundo</i>	15 (46.87%)	17 (53.12%)

Source: Compiled by authors.

In the case of the newspaper *El Mundo*, there are also more news items that are not of a practical nature for citizens. However, the figures are more even: 46.87% do provide useful information, compared to 53.12% of the news items that do not. This useful information consists of the transmission of data relating to the stabilisation and progressive control of the fires, the possibility of the return of evacuated residents, people relocated, and the number of citizens affected, the cancellation of classes at universities and schools, roads and highways cut off, or information on emergency levels. In addition, in some news items, there is an update on the celebrations of upcoming festivities and recommendations addressed to citizens in relation to the cancellation of different events.

The newspapers that seem to adopt the public service function that is so necessary in crisis or emergency situations through the transmission of truthful, close and useful information are a regional one, *La Provincia*, and a national one, *El Mundo*, in which the number of news items whose content includes data that can help citizens to make decisions is higher than that of the other newspapers analysed (44.64% and 46.87% respectively). It is surprising that one of them is a national newspaper whose media agenda would be more distant from the event and whose involvement should initially be less.

3.2. Main Objective 2. Information Sensationalism versus Specialised Information

The second main objective of this research was to determine whether the media coverage of the forest fires analysed was *sensationalist* to the detriment of the transmission of *specialised information*. This section identifies the most prominent media in relation to three issues: (a) the inclusion of *morbid data*; (b) the use of *catastrophic expressions*; and (c) the use of *tragic images* that deepen the dramatisation of the events under study. This is why, on this occasion, the results are presented by cases and not by media, given that not all of them were relevant in this respect.

After the analysis of the journalistic units collected, we can say that, in relation to the fires in Galicia, *La Voz de Galicia* is the newspaper that seems to be more inclined towards a human interest approach, that is, focusing its information on the victims and those affected, something that could give rise to news with a superficial content and tending towards sensationalism. Specifically:

- (a) Data on the fatalities are published with dubious relevance and only contribute to the spectacularisation of the events. The publications offer personal details of the deceased, such as their family situation, number of children and even their lifestyle.
- (b) There is no editing in the audiovisual materials included in the news. Videos provided by witnesses are used in which anonymous people face the flames or drive along roads in dangerous situations. Being a common practice by the media and social networks, these are contents that bring a personal experience closer to the readers and could make them better understand the emergency situation. However, the fact of not eliminating the ambient sound, usually highly charged with emotion and nervousness, contributes to a greater spectacularisation of the events.
- (c) Expressions such as “black nightmare”, “Dantesque situation” or “heartbreaking stories” are used to describe the situation. Far from helping readers to remain calm, these expressions emphasise the drama and suffering, producing a social amplification of the risk as set forth at a theoretical level by authors like [Pidgeon et al. \(2003\)](#).

As for the national media, in the case of Galicia, *El País* shows a clear description of the details of the deceased, providing their names and ages. In 30.76% of items published in relation to this case, there is some morbid detail that does not really provide relevant information for citizens and their survival: for example, the account of the death of the deceased or the image of a dog carrying her burnt puppy. In addition, we find numerous catastrophic expressions such as “Dantesque panorama”, “great flakes of fire”, “tongue of black lava” and “black night”, among others. In the newspaper *El Mundo*, 23.07% of news items include some kind of morbid detail to capture the reader’s attention, either about the deceased or about the testimonies of some of those affected, and expressions such as “devilish dimensions”, “Dantesque”, “sweet brazier death”, “black landscape”, “volcano of fire” or “tongue of flame” are used.

In the case of the fires in Gran Canaria, *Canarias 7* is the newspaper with the least information of this nature in comparison with the other local newspapers analysed, since only four news items contain some morbid information. These data are mainly related to the testimonies of those affected and their experiences, but without delving too deeply into the pain and drama. Even so, expressions are used to refer to the fire such as “storms of fire”, “catastrophic”, “the monster”, “tsunami of fire”, “devastating fire” or “authentic hecatomb”. In the newspaper *El País* for this case study, 16% of news items use morbid data. For example, we find the testimony of an affected person who lost his beehives, and therefore, his way of life, narrating that “it was such a bestial thing that it disintegrated everything” or that these “went straight to hell” and “they all burnt inside”, and expressions such as “tongue of fire”, “virulent fire”, “the flames descended in rivers of lava”, “petrified tempest”, “corpses of thousands of pine trees” or “lookout of death” are used. In the newspaper *El Mundo*, only 3 out of 13 news items contain some morbid information, which means that this type of journalism is used less frequently than in the newspaper *El País*. Even so, we find expressions such as “voracious forest fire”, “voracious fire” or “fire is like a tsunami that has to be fooled”.

Finally, the use of *tragic images* that deepen pain and despair is low in practically all of the newspapers except in *La Voz de Galicia* in relation to the fires in Galicia, which includes numerous images that are sensitive and that deepen the pain and the spectacularisation of the events: for example, mountains devoured by flames, burnt houses or those affected by the fire crying at the losses caused by the fires.

It can be deduced from the information gathered that, in general terms and in the majority of the media analysed, sensationalism is expressed in the use of gimmicky language, the use in some cases of material provided by readers that is neither contrasted nor verified, and in the concern for the emotions and feelings of the victims, which, precisely, should not be emphasised in a critical situation (Domínguez et al. 2014).

4. Conclusions

The waves of fires in Galicia (2017) and Gran Canaria (2019) highlighted the great challenge the media face in providing their readers with useful and quality information in critical or catastrophic situations. The analysis carried out shows the existence of a scarce specialised journalistic treatment of fires, so that the information is closer to general journalism. Likewise, the existence of “information gaps” derived from the excessive dependence on official sources, the scarce inclusion of technical and scientific data, and the presence of certain forms of sensationalism in the journalistic coverage of disasters can be deduced. Specifically, of the regional and national media analysed:

- (1) They impart certain tinges of informative sensationalism (emotional tone, superficial nature of the information, emphasis on showing human stories told in the first person or the use of terms that emphasise drama and suffering).
- (2) They move away from important aspects of specialised journalism (such as the use of expert sources, the contrast of information or the appropriate contextualisation of facts).
- (3) They show in their news stories the existence of “communication gaps” (da Silva et al. 2019) between scientific information and media communication, which makes clear the need to adapt the characteristics, tone and content of the information in a particularly sensitive and complex context such as a risk or disaster situation.

We can, therefore, conclude that it is still a major challenge for the media to inform citizens facing emergency situations in an accurate and useful way. Measures such as the use of appropriate language, restrained, adjusted to reality and not too catastrophic, avoiding excessive recourse to political statements, as well as the contrast of information and the use of expert sources that can provide technical and scientific data, would undoubtedly contribute to overcoming the existing information gaps between scientific information and media communication in crisis or disaster situations. In this sense, we end by recalling the arguments of Túñez (2007) on this issue. According to this author:

- (1) Information (data) is only one component of the communicative action. The way in which it is provided is fundamental and decisive, especially in states of emotional nervousness, uncertainty or fear.
- (2) Communication in emergency or disaster situations must be at the service of the best solution. And for it to be useful, it must necessarily be based on truthful data, to the extent that sensationalism, lies or misrepresentation constitute the most serious threat to its ultimate usefulness.

Author Contributions: Conceptualization, A.R.-T. and L.R.-M.; methodology, A.R.-T. and L.R.-M.; formal analysis, A.R.-T. and L.R.-M.; investigation A.R.-T. and L.R.-M.; writing—original draft preparation, A.R.-T. and L.R.-M.; writing—review and editing, A.R.-T. and L.R.-M. All authors have read and agreed to the published version of the manuscript.

Funding: This research and the ACP were funded by Spanish National Research Agency MCIN/AEI/10.13039/501100011033, Grant PID2019-107443RA-I00.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

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

Notes

- ¹ On journalistic ethics and the social function of journalism in the event of disasters, see (Ortiz Luque and Oubiña 2021; Almenara Lorenzo 2016; Domínguez Panamá 2017).
- ² PID2019-107443RAI00. This project deals with the incorporation of experience-based knowledge in the prevention, management and recovery of environmental disasters and risk mitigation in resilient societies. More information on the project can be found in Santiago-Gómez and Rodríguez-Rodríguez (2023).
- ³ According to the typology of forest fires established by the Spanish Ministry for Ecological Transition and Demographic Challenge (n.d) on the basis of the surface area affected, those that affect less than 1 hectare of burnt area are classified as *conatos*; fires between 1 and 100 hectares are classified as *fires*; and those that affect areas larger than 500 hectares are classified as *major fires*.
- ⁴ The Guardia Civil is a Public Security Corps of military nature and national scope that forms part of the State Security Forces and Corps. It is accountable both to the Ministry of the Interior and the Ministry of Defense.
- ⁵ This is the European Union Program for Earth Observation (Copernicus) that makes it possible to analyse the planet and its environment by providing data and information services obtained via satellite and through in situ data.
- ⁶ *Cabildo* is the name for the local government of each island in the Canary Islands.
- ⁷ The term "official sources" refers to institutional information from governments and official organizations, and "expert sources" to technicians, professionals and scientific and academic personnel.
- ⁸ The Spanish National Research Council is a State Agency for scientific research and technological development, with a special legal status, its own assets and treasury, functional and managerial autonomy, full legal capacity and of unlimited duration (source: <https://www.csic.es/en/csic> accessed on 2 February 2023).

References

- Alaminos-Fernández, Antonio. 2011. Los medios de comunicación y la orientación política. Available online: <https://rua.ua.es/dspace/handle/10045/74068> (accessed on 23 January 2023).
- Alexander, David. 2014. Social media in disaster risk reduction and crisis management. *Science and Engineering Ethics* 20: 717–33. [CrossRef]
- Almenara Lorenzo, Alba. 2016. Aspectos éticos y deontológicos de la cobertura periodística de las catástrofes tecnológicas: El caso del accidente ferroviario de Santiago de Compostela (2013). *Fonseca. Journal of Communication* 13: 187–205. [CrossRef]
- Areia, Neide P., Diego Intrigliolo, Alexandre Tavares, José Manuel Mendes, and Mario D. Sequeira. 2019. The role of media between expert and lay knowledge: A study of Iberian media coverage on climate change. *Science of The Total Environment* 682: 291–300. [CrossRef] [PubMed]
- Aznar, Hugo. 2005. Ética de la comunicación y los nuevos retos sociales: Códigos y recomendaciones para los medios. In *Papeles de Comunicación*. Barcelona: Paidós.
- Aznar, Hugo, and Juan Serrano-Moreno. 2017. Autorregulación de la comunicación: Análisis de las cien primeras resoluciones de la Comisión de Arbitraje, Quejas y Deontología de la FAPE. *Profesional de la Información* 26: 182–91. [CrossRef]
- Barreal, Jesús, María Luz Loureiro, and Juan Picos. 2012. Estudio de la causalidad de los incendios forestales en Galicia. *Economía Agraria y Recursos Naturales* 12: 99–114. [CrossRef]
- Beramendi, Mario, and Susana Acosta. 2017. La escasa lluvia del verano no paliará los problemas generados por la sequía en Galicia. *La Voz de Galicia*. June 22. Available online: https://www.lavozdegalicia.es/noticia/galicia/2017/06/22/escasa-lluvia-verano-paliara-problemas-generados-sequia-galicia/0003_201706G22P6995.htm (accessed on 3 February 2023).
- Bird, Deanne, Megan Ling, and Katherine Haynes. 2012. Flooding Facebook: The use of social media during the Queensland and Victorian floods. *Australian Journal of Emergency Management* 27: 27–33.
- Brito Galindo, Andrés. 2008. Periodismo científico y sensacionalismo. La síndone de Turín. Ph.D. thesis, University of La Laguna, Santa Cruz de Tenerife, Spain. Available online: <https://www.educacion.gob.es/teseo/imprimirFicheroTesis.do?idFichero=MhfRU2fHhY=> (accessed on 6 March 2023).
- Conde Crespo, Sonia. 2019. Análisis del tratamiento informativo de los incendios forestales en Cantabria a través de la prensa (2015–2018). University of Cantabria (Spain). Available online: <https://repositorio.unican.es/xmlui/handle/10902/17263> (accessed on 10 February 2023).
- Crawford, Kate. 2009. Following you: Disciplines of listening in social media. *Continuum: Journal of Media and Cultural Studies* 23: 525–35. [CrossRef]
- Crowe, Adam. 2012. *Disasters 2.0: The Application of Social Media Systems for Modern Emergency Management*. Boca Raton: CRC Press.

- da Silva, Nathália Tháís Cosmo, Urbano Fra. Paleo, and Jose Ambrosio Ferreira Neto. 2019. Conflicting discourses on wildfire risk and the role of local media in the Amazonian and temperate forests. *International Journal of Disaster Risk Science* 10: 529–43. [CrossRef]
- Delgado, Natalia, and Miguel Vicente. 2019. La cobertura periodística de los incendios forestales en la prensa digital de España: El caso de Galicia 2017. *Revista Española de Comunicación en Salud*, 91–106. [CrossRef]
- Domínguez Panamá, Juan José. 2017. El periodismo de desastre: De las no-rutinas a las funciones sociales del periodista. *Comhumanitas: Revista Científica de Comunicación* 8: 103–15.
- Domínguez, Martí, C. González, and Felip Pineda. 2014. Más leña al fuego: El tratamiento informativo de los incendios forestales. *Cuadernos de Investigación Geográfica* 40: 429–48. [CrossRef]
- Fernández del Moral, Javier, and Francisco Esteve. 1993. *Fundamentos de la Información Periodística Especializada*. Madrid: Síntesis.
- Fernández Sánchez, Joaquín. 1995. *Periodismo ambiental en España*. Madrid: MOPTMA.
- Gao, Huiji, Geoffrey Barbier, and Rebecca Goolsby. 2011. Harnessing the crowdsourcing power of social media for disaster relief. *IEEE Intelligent Systems* 26: 10–14. [CrossRef]
- Goffman, Erving. 2006. *Frame Analysis: Los marcos de la experiencia*. Madrid: Centro de Investigaciones Sociológicas.
- González, Pablo. 2017a. El Código Penal no soluciona el problema de los incendios forestales. *La Voz de Galicia*. October 17. Available online: https://www.lavozdegalicia.es/noticia/galicia/2017/10/17/alvaro-garcia-ortiz-codigo-penal-solucion-a-problema-incendios-forestales/0003_201710G17P11991.htm (accessed on 4 April 2023).
- González, Pablo. 2017b. Las claves de los nuevos incendios: Despoblación y hábitats periurbanos. *La Voz de Galicia*. October 19. Available online: https://www.lavozdegalicia.es/noticia/galicia/2017/10/19/claves-nuevos-incendios-despoblacion-habitats-periurbanos/0003_201710G19P6992.htm (accessed on 5 April 2023).
- Ingalsbee, Timothy. 2017. Whither the paradigm shift? Large wildland fires and the wildfire paradox offer opportunities for a new paradigm of ecological fire management. *International Journal of Wildland Fire* 26: 557–61. [CrossRef]
- Jacobson, Susan, Martha Monroe, and Susan Marynowsky. 2001. Fire at the wildland interface: The influence of experience and mass media on public knowledge, attitudes, and behavioral intentions. *Wildlife Society Bulletin* 29: 929–37.
- Jennex, Murray, ed. 2012. *Managing Crises and Disasters with Emerging Technologies: Advancements*. Hershey: IGI Global.
- Lobb, Ano, Nancy Mock, and Paul L. Hutchinson. 2012. Traditional and social media coverage and charitable giving following the 2010 earthquake in Haiti. *Prehospital and Disaster Medicine* 27: 319–24. [CrossRef]
- López, Samuel. 2020. Análisis de la cobertura mediática de los incendios forestales de Gran Canaria durante el verano de 2019. TFG. Available online: <https://riull.ull.es/xmlui/handle/915/19728> (accessed on 6 April 2023).
- Ministerio de Agricultura, Pesca y Alimentación (MAPAMA). 2017. Estadística general de incendios forestales. Available online: <https://www.mapa.gob.es/es/> (accessed on 8 April 2023).
- Montero, Tamara. 2017. Seis Concellos Concentran la Mayor Actividad Incendiaria de este Verano. *La Voz de Galicia*, August 20. Available online: https://www.lavozdegalicia.es/noticia/galicia/2017/08/20/seis-concellos-concentran-mayor-actividad-incendiaria-verano/0003_201708G20P14993.htm (accessed on 23 March 2023).
- Morales, Carmen del Rocío Monedero. 2023. Autorregulación en el ámbito del periodismo medioambiental en español. *Revista Internacional De Investigación Y Transferencia En Comunicación Y Ciencias Sociales* 1: 110–32. [CrossRef]
- Murthy, Dhiraj. 2013. New media and natural disasters: Blogs and the 2004 Indian Ocean tsunami. *Information, Communication and Society* 16: 1176–92. [CrossRef]
- Nilsson, Sofía, and Ann Enander. 2020. Damned if you do, damned if you don't: Media frames of responsibility and accountability in handling a wild-fire. *Journal of Contingencies and Crisis Management* 28: 69–82. [CrossRef]
- Odrizola, Javier. 2008. Información de Crisis y Periodismo Medioambiental: El caso Prestige en la Prensa Vasca. University of the Basque Country (Spain). Available online: <https://addi.ehu.es/bitstream/handle/10810/12319/odrizola.pdf?sequence=1&isAllowed=y> (accessed on 10 January 2023).
- Ortiz Luque, Sergio, and Carlos Portas Oubiña. 2021. La cobertura informativa de sucesos trágicos en las cadenas de televisión. Un caso de estudio: Los incendios de Pedrógão Grande en Portugal y la desaparición de Julen Roselló en España. *Observatorio* 15: 4. [CrossRef]
- Pan, José Manuel, and Enrique Vázquez Pita. 2017. Investigan acciones coordinadas en la ola de incendios que asoló parte de Galicia. *La Voz de Galicia*. October 18. Available online: https://www.lavozdegalicia.es/noticia/galicia/2017/10/18/investigan-acciones-coordinadas-ola-incendios-asolo-parte-galicia/0003_201710G18P2997.htm (accessed on 17 March 2023).
- Parratt Fernández, Sonia. 2014. El periodismo ambiental como especialidad en las universidades españolas. *Prisma Social: Revista de Investigación Social* 12: 335–63.
- Pereiro, Marta Pérez, María Ángeles Chaparro-Domínguez, and Jesús Díaz del Campo. 2018. La cobertura periodística de los incendios de Galicia y Portugal de octubre de 2017: Un análisis de la información de emergencia de diarios portugueses, españoles y gallegos. *Ação Midiática—Estudos em Comunicação, Sociedade e Cultura* 1: 197–213. [CrossRef]
- Pidgeon, Nick, Roger Kasperson, and Paul Slovic, eds. 2003. *The Social Amplification of Risk*. Cambridge: Cambridge University Press.
- Professional Association of Journalists of Galicia. 2008. Decalogue of Recommendations for Media and Journalists of Catastrophe Events and Practical Guide for the News Treatment of Emergencies, Catastrophes and Missing Persons. Available online: <http://xornalistas.gal/biblioteca/decalogo-de-recomendacions-para-medios-e-xornalistas-de-sucesos-de-catastrofe/> (accessed on 22 February 2023).
- Quesada, Montserrat. 1998. *Periodismo Especializado*. Madrid: Ediciones Internacionales Universitarias.

- Quesada, Montserrat. 2010. Los sucesos como foco de atención informativa. In *La especialización en el periodismo. Formarse para informar*. Sevilla and Zamora: Comunicación Social ediciones y publicaciones.
- Real Rodríguez, Elena. 2018. La profesión periodística ante sus retos éticos: Autorregulación profesional y comunicativa frente a regulación. La situación en España. *Estudios sobre el Mensaje Periodístico* 24: 341–60. [CrossRef]
- Rodríguez-Cruz, Inés. 2012. Análisis cuantitativo y calidad de la información sobre medioambiente en la prensa española. In Miquel de Moragas, *Comunicació i risc: III Congrés Internacional Associació Espanyola d'Investigació de la Comunicació*. Available online: <https://dialnet.unirioja.es/servlet/libro?codigo=578038> (accessed on 17 May 2023).
- Sachdeva, Sonya, and Sarah McCaffrey. 2022. Themes and patterns in print media coverage of wildfires in the USA, Canada and Australia: 1986–2016. *International Journal of Wildland Fire* 31: 1089–102. [CrossRef]
- Sánchez Oliver, Carolina, and Villas David Badía. 2017. Efectividad de las fajinas en el control de la erosión edáfica post-incendio en los montes de Castejón de Valdejasas. Available online: <https://zaguan.unizar.es/record/65225> (accessed on 17 May 2023).
- Santiago-Gómez, Elvira, and Carmen Rodríguez-Rodríguez. 2023. Building Forest Fires Resilience, the Incorporation of Local Knowledge into Disaster Mitigation Strategies. *Social Sciences* 12: 420. [CrossRef]
- Sykes, Trent, and Emmanuel Travis. 2012. *Social Media and Disasters: Uses, Options, Considerations*. Hauppauge: Nova Science Publishers.
- Taylor, Mel, Garrett Wells, Gwyneth Howell, and Beverly Raphael. 2012. The role of social media as psychological first aid as a support to community resilience building. A Facebook study from 'Cyclone Yasi Update'. *Australian Journal of Emergency Management* 27: 20–26.
- Túñez, Miguel, ed. 2007. *Comunicación Preventiva. Planificación y ejecución de estrategias de información interna y externa ante situaciones de crisis*. A Coruña: Netbiblo.
- Van Dijk, Teun A. 1990. *La noticia como discurso: Comprensión, estructura y producción de la información*. Barcelona: Paidós.
- Walker, Heidi M., Maureen G. Reed, and Amber J. Fletcher. 2020. Wildfire in the news media: An intersectional critical frame analysis. *Geoforum* 114: 128–37. [CrossRef]
- Weichselgartner, Juergen, and Michael Obersteiner. 2002. Knowing sufficient and applying more: Challenges in hazards management. *Global Environmental Change Part B: Environmental Hazards* 4: 73–77. [CrossRef]
- Weichselgartner, Juergen, and Patrick Pigeon. 2015. The role of knowledge in disaster risk reduction. *International Journal of Disaster Risk Science* 6: 107–16. [CrossRef]
- Weichselgartner, Juergen, and Roger Kasperson. 2010. Barriers in the science-policy-practice interface: Toward a knowledge-action-system in global environmental change research. *Global Environmental Change* 20: 266–77. [CrossRef]
- White, Gilbert F., Robert W. Kates, and Ian Burton. 2001. Knowing better and losing even more: The use of knowledge in hazard management. *Global Environmental Change Part B: Environmental Hazards* 3: 81–92. [CrossRef]
- Yates, Dave, and Scott Paquette. 2011. Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management* 31: 6–13. [CrossRef]

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