

Covid-19 communication management in Spain: Exploring the effect of information-seeking behavior and message reception in public's evaluation

Ángeles Moreno; Cristina Fuentes-Lara; Cristina Navarro

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Ángeles Moreno ✉

<https://orcid.org/0000-0002-0777-2957>

Universidad Rey Juan Carlos. Grupo de Estudios Avanzados en Comunicación
Camino del Molino, s/n.
28943 Fuenlabrada (Madrid), Spain
mariaangeles.moreno@urjc.es



Cristina Fuentes-Lara

<https://orcid.org/0000-0003-3198-7701>

Universidad Francisco de Vitoria
Ctra. Pozuelo a Majadahonda, Km 1.800
28223 Madrid, Spain
cristina.fuentes@urjc.es



Cristina Navarro

<https://orcid.org/0000-0003-0522-4428>

Gulf University for Science and Technology
Mass Communication Department
P.O. Box 7207, Hawally 32093, Kuwait
navarro.c@gust.edu.kw

Abstract

The *World Health Organization* (2011) has emphasized communication as one of the biggest challenges and places risk communication among the essential competencies required to tackle a pandemic. In light of the Covid-19 crisis, the aim of this paper is to assess how information forms and sources influence the public's information-seeking behaviors, and the perception of government's crisis response strategies during the pandemic. An online survey was conducted between March 14 and April 14, 2020, the first four weeks after the declaration of the State of Alarm in Spain. The online questionnaire included questions regarding information-seeking behavior, trust in different sources and channels, perception of government communication management, message retention, and demographic questions. Findings show a synchronous use of multiple media and platforms in line with channel complementarity theory. Three of the four most used information channels are considered mainstream news media. However, the second source of information is *WhatsApp*. People who relied more on the mainstream news media for Covid-19 information are generally most likely to express positive opinions of the government's communication strategy. Findings also show that people less able to make correct attributions of governmental information were the most critical of the government's crisis response. Finally, trust in public authorities' decreases as the crisis evolves as a general matter. It is specially truth for the *WHO*, but there is also a striking exemption for local governments. Implications for theory and empirical research and recommendations and new issues to address are identified and discussed.

Keywords

Crisis communication; Risk communication; Emergency communication; Covid-19; Coronavirus; Pandemics; Strategic communication; Media; Spain.

1. Introduction

In 2020, the world is experiencing the worst health crisis since 1918, caused by a new coronavirus (SARS-CoV-2). Covid-19 first made its appearance in China on December 31, 2019 and spread quickly to South Korea, Iran, Italy, and across Europe, arriving in Spain on January 31st when a German tourist tested positive in the Canary Islands. The day before, the *World Health Organization (WHO)* had declared the 2019-nCoV outbreak a public health emergency of international concern under the *International Health Regulations (IHR)*. On March 13th, the Prime Minister of Spain, Pedro Sánchez, announced a nationwide State of Alarm, banning all trips that were not force majeure and confining the population to their homes to flatten the curve and contain the epidemic.

By May 26th, there had been 26,834 deaths and 235,400 infections in Spain (*Ministerio de Sanidad, 2020*), making it second the country with the highest number of coronavirus deaths relative to its population (*Saura, 2020*). The unexpected emergence and rapid spread of the virus triggered government officials' efforts to provide information about the rate of transmission, the best means of containment, treatment, the de-escalation process, and so on. However, despite the task force daily briefings, numerous press conferences, and speeches by members of the government, the management of communication has been widely questioned by professional organizations (*FAPE, 2020; RSF, 2020*) and experts in political communication (*González-Harbour, 2020*). The main criticisms have to do with the delay in offering information, the lack of consistent and sufficient data, as well as the lack of clarity and empathy on the part of the Prime Minister. These communication mistakes have negatively affected the government's approval ratings (*Costa-Sánchez; López-García, 2020; Crespo; Garrido, 2020*). In this exceptional situation, the consumption of information immensely increased, particularly news related to the evolution of the outbreak (*Edelman, 2020; WHO, 2020*). Active communicative behaviors in information-seeking serve as essential coping mechanisms in the face of crisis information exposure (*Austin; Liu; Jin, 2012; Zhao; Zhan; Liu, 2018; Zhu; Anagondahalli; Zhang, 2017*). The impact of information sources is especially important during crisis times because of the potentially dramatic consequences that may arise as a result of how the public understands and frames the crisis (*Van-der-Meer, 2018*). According to the *WHO*,

“By May 26th Spain was the second country with the highest number of coronavirus deaths relative to its population”

“The capacity to relay information quickly and clearly on different media platforms (television, radio, print, web), [...] is essential to the effective management of a public-health emergency” (2011, p. 116).

In risk and crisis communication, channel selection and trustworthiness are important predictors of information processing and, hopefully, adherence to recommended preventative behaviors (*Park; Boatwright; Johnson-Avery, 2019*). Despite a number of warnings from the scientific community (*GPMB, 2019*) and the lessons learned from previous infectious disease emergencies, including the 2002 SARS-CoV, 2009 H1N1 influenza pandemic, MERS-CoV, Ebola virus, and Zika virus outbreaks, governments around the world have shown low capacities to respond effectively to health emergency outbreaks.

The present study utilizes the channel complementarity theory (*Dutta-Bergman, 2004*), which draws from selective exposure and uses and gratifications theories, to suggest that audiences select certain types of media based upon the functions relevant to them. During crises, people actively participate in the consumption of media types, choosing media forms that are most likely to serve the functions that are personally relevant to them (*Dutta-Bergman, 2006*). This theory was developed in response to arguments and theories predicting that the uses of some media—particularly new technologies facilitated by the Internet—displace the uses of other media. Channel complementarity theory stands in contrast to an earlier perspective that the rise of the Internet would displace the existing media for information-seeking (*Dimmick; Chen; Li, 2004*). There is extensive literature on crisis management in Spain, especially reputational crisis management (e.g., *Gaspar et al., 2014; González-Herrero; Smith, 2008; Moreno-Millán, 2008*). However, because the Covid-19 health crisis is something unprecedented in the recent history of the country, this research will provide valuable information on the ability of Spanish public authorities to communicate effectively. To that end, a national survey (N = 546) was conducted during March and April 2020, when anxieties about the threat of Covid-19 peaked in Spain. This empirical study has theoretical and practical implications. Theoretically, findings will add to the literature in the field of risk and crisis communication. Practically, the results provide insights on how information forms and sources influence the public's information-seeking behaviors and perception of crisis-response strategies during crises and disasters.

“Governments around the world have shown low capacities to respond effectively to health emergency outbreaks”

2. Literature review

2.1. Crisis and risk communication in pandemics

Although the terms “risk communication” and “crisis communication” are often used interchangeably, there are clear distinctions between them. Risk communication raises awareness of the nature, magnitude, and significance of risks in the hope of reducing the likelihood of a crisis event in the long term (*Hampel, 2006; Sheppard; Janoske; Liu, 2012*).

Hence, risk messages seek to induce behavioral change by presenting a threat and describing an alternative behavior that may alleviate the threat (**Reynolds; Seeger, 2005**).

Conversely, crisis communication

“involves the sending and receiving of messages to prevent or lessen the negative outcomes of a crisis” (**Coombs, 1999, p. 4**).

The main goals are to contain harm, provide specific information to stakeholders, initiate and enhance recovery, manage image and perceptions of blame and responsibility, repair legitimacy, generate support and assistance, explain and justify actions, apologize, and promote healing, learning, and change (**Seeger; Sellnow; Ulmer, 1998**). Both forms of communication aim to reduce harm for the involved parties through different but credible communication channels (**Reynolds; Seeger, 2005**). In fact, some researchers suggest that crisis communication is just a more limited form of risk communication (**Lundgren; McMakin, 2018**).

Over the years, a more and more central role has been attributed to risk and crisis communication in responses developed to mitigate infectious diseases (**Burton-Jeangros, 2019**). Experts in risk and crisis communication have stressed the importance of monitoring the needs and expectations of citizen groups, enhancing trust and offering timely, accurate, specific, sufficient, consistent, and understandable information (**Laajalahti; Hyvärinen; Vos, 2016**). During public-health emergencies, such as the Covid-19 pandemic, a well-coordinated and efficient communications strategy helps stakeholders to define risks, identify hazards, assess weaknesses and promote community resilience, thereby increasing the capacity to cope with the difficulties. In this regard, the report of the *WHO Review Committee* on the global response to the 2009 influenza A (H1N1) pandemic placed risk communication at the same level as technical skills among the essential capabilities required to tackle a pandemic (*WHO, 2011*).

Efforts have been made to combine notions of risk communication and crisis communication into a practice described as crisis and emergency risk communication (CERC)

Recently, efforts have been made to combine notions of risk communication and crisis communication into a practice described as crisis and emergency risk communication (CERC) (**Reynolds, 2002; Ringel; Trentacost; Lurie, 2009**). This blended form of communication emphasizes the developmental features of a crisis and the various communication needs and exigencies of the population at various points in the ongoing development of an event. As such, it embraces a process view of crisis which begins with the prevention of risk and risk development, moves through the eruption of some triggering event during crisis stages, and passes into the postmortem and clean-up phases (**Coombs, 1995; Seeger et al., 1998**).

2.2. Information seeking, forms and sources

In the context of crises, such as the Covid-19 outbreak, the media play a crucial role in the public awareness of risks that are often invisible or remote to most of the population (**Roslyng; Eskjær, 2017**). Existing research has revealed the public's different motivations for crisis information seeking (**Austin et al., 2012; Lu; Jin, 2020**), emphasizing the needs for additional information, receiving timely and unfiltered information, learning about the magnitude of a crisis, checking on family/friends, mobilizing, connecting with a community, and fostering emotional support (**Fraustino; Liu; Jin, 2017**).

Immediately after the citizens learn of a public health-related outbreak, they start seeking and processing information from different sources, ranging from print media to television, radio, or social media channels (**Masip et al., 2020**). According to *Comscore* (2020), during the last week of March 2020, the consumption of information from social networks grew in Spain by 55%. In comparison to this data, the growth was 30% in Italy, 11% in Germany, 18% in the United Kingdom, and 14% in France. Focusing on information seeking related to the pandemic, 70% of the population followed coronavirus news at least once a day or several times a day, with 45% claiming to have had difficulty finding trustworthy sources and reliable guidance when they needed it (**Edelman, 2020; WHO, 2020**). Interestingly, some notable differences emerge among age groups, particularly among those following the news most closely. According to the *Pew Research Center* (**Jurkowitz; Mitchell, 2020**), more than two-thirds of American adults aged 65 or older (69%) followed the news of the pandemic very closely in late March. At the other end of the spectrum, only about four out of 10 young adults between the ages of 18 and 29 were paying as much attention to Covid-19 news.

Some researchers have previously investigated how information forms and sources influence the public's information-seeking behaviors, emotional responses, and perception of crisis response strategies during crises (**Austin et al., 2012; Coombs; Holladay, 2005; Liu; Austin; Jin, 2011; Schultz; Utz; Göritz, 2011**). Classical crisis communication theories neglect the role of the medium and focus mainly on the interplay between crisis type and crisis communication strategy. **Coombs and Holladay (2009)** noted that the effect of media type on the public's evaluation of crisis response strategies is minimal. Conversely, other authors have found that the source type has a larger in-

Immediately after the citizens learn of a public health-related outbreak, they start seeking and processing information from different sources

fluence on stakeholders than the content of the message (Schultz *et al.*, 2011). For example, Liu *et al.* (2011) study showed that the source of the crisis response moderates the public's acceptance of crisis messages distributed via traditional media, social media, and word-of-mouth.

70% of the population followed coronavirus news at least once a day or several times a day

Emerging research highlights the importance of social media because they uniquely provide an unfiltered, up-to-date line of communication (Procopio; Procopio, 2007; Tai; Sun, 2007) and emotional support during crises (Choi; Lin, 2009; Macias; Hilyard; Freimuth, 2009). Social media use increases during crisis events (Fraustino *et al.*, 2017), and this trend continues to grow exponentially (Reuter; Kaufhold, 2018; Thompson *et al.*, 2017). For example, Facebook's total use across its messaging services increased in April 2020 by more than 50% in areas most affected by the virus. With social gatherings on pause, messenger and WhatsApp channels, voice and video calling doubled in the same timeframe (J.P. Morgan, 2020). However, other authors claim that traditional media are primarily used for information needs because citizens perceive them—especially broadcast news and newspapers—to be more credible than social media (Austin *et al.*, 2012). The inclusive reach and capacity for rapid information dissemination makes traditional media, particularly television, ideal resources for sharing instructional messages during crises (Frisby; Veil; Sellnow, 2014). Television, specifically, is the most common medium used in times of risk and crisis in the United States due to its delivery of immediate information with visual aids (Heath; O'Hair, 2009).

Edelman's research (2020) conducted in 12 countries during the second week of March 2020 regarding Covid-19 confirms the crucial role played by traditional mass media during crises. In Spain, Masip *et al.* (2020) found that online newspapers (38.9%) and television (33.9%) were the main sources of information, far ahead from social media and messaging services (11.4%), and radio (8.3%). These would be the "refuge media" to which people come back for trust in challenging moments (Xifra, 2020, p. 12). These finding, however, conflicts with other studies supporting the prevalence of social media during crises (Bates; Callison, 2008; Procopio; Procopio, 2007). Spanish citizens had a negative opinion about the role played by the media during the first weeks of the pandemic. The main complaints were related to the overabundance of information, the ideological biases and the tendency toward sensationalism (Masip, 2020). Conversely, 54% of U.S. adults say the news media have done an excellent or good job responding to the coronavirus outbreak, according to a survey conducted during the period March 19-24, 2020 as part of the *Pew Research Center's Election News Pathways* project (Gramlich, 2020). Opinions about the news media's response to the outbreak vary considerably, depending on the platform Americans use for obtaining news. Citizens who get the news from two network television stations and print publications are the most likely to say the news media are doing an excellent or good job responding to the coronavirus outbreak. When asked about source credibility, social media information received the worst score.

The choice of a medium influences the individual's process of making sense of the crisis (Utz; Schultz; Glocka, 2013). Consequently, more research is needed to assess the effectiveness of information and crisis communication across various platforms. To understand how an organization can best position itself as the preferred source, communication professionals need to understand how crisis information forms and sources affect the public's levels of acceptance of crisis response strategies.

2.3. Government communication strategy

The role of governments, public agencies, and expert sources in communicating key information is central to how a community anticipates, understands, prepares, and responds to an emergency such as the Covid-19 pandemic. Public governance systems often turn out to be flawed, incompetent, and chaotic in the face of epidemic outbreaks (Gu; Li, 2020). During previous health crises, such as the 2009 influenza A (H1N1) outbreak, numerous problems emerged with regard to the coordination of communication across institutions. In a survey conducted by the Swiss national public health authority, a large majority of medical doctors reported poor communication as the biggest challenge they had to face, considering that information had been partial, insufficient, and contradictory (WHO, 2011). In fact, the post-A(H1N1) review confirmed that the absence of a coordinated and coherent strategy fostered confusion between citizens and professionals, affecting the credibility of the authorities (Van-Tam *et al.*, 2010).

Spanish citizens had a negative opinion about the role played by the media during the first weeks of the pandemic

According to Burton-Jeangors,

"early and intensive communication is associated with the necessity to counter rumors, alternative views and potential panic" (Burton-Jeangors, 2019, p. 115).

Moreover, a strategic approach entails matching the content, form, and style of communication with the media, timing, and frequency so that information will reach the intended audience and serve the intended purpose. It is also important to note that criticism of public authorities is often harsher in the second stage of outbreaks (Hughes; Kitzinger; Murdock, 2006; Nerlich; Koteyko, 2012), once journalists decide to stop uncritically endorsing official views. In later stages of risk communication, the interest of the outside world shifts toward issues related to accountability (Krimsky, 2007).

Simply informing the public is not enough. According to **Mileti and Fitzpatrick** (1991), the public must (a) receive the information; (b) understand that information; (c) understand that the message relates to them directly; (d) understand the risks they face if they do not follow the protective action provided; (e) decide that they should act on the information; (f) understand the actions they need to take; and (g) actually be able to take action.

During previous health crises numerous problems emerged with regard to the coordination of communication across institutions

When a crisis hits, the media scrutiny intensifies and questions about the ineffectiveness of government authorities regarding prevention and containment will be raised. Previous research found that trust in government has a big impact on how citizens follow public health authorities' recommendations. Trust consists of judgments about the competence, fairness, honesty, caring, accountability, and transparency of leaders or risk managers. It can be influenced by the characteristics and performance of official spokespersons and by message content during the outbreak (**Vaughan; Tinker, 2009**). In this regard, **Edelman's** research (2020) found that the source of information less trusted during the first weeks of the Covid-19 outbreak was government officials (48%), who were only ahead of journalists (43%). In contrast, scientists, health officials, and medical doctors were the sources that citizens trusted most.

As previously stated, the communication strategy of the Spanish prime minister has been widely criticized, especially by the media and journalists' associations. More than 400 journalists sent an open letter to the government entitled "The Freedom to Ask," proposing a new system based on videoconferences granting a more transparent flow of information (**RSF, 2020**). The daily appearances of government representatives and the technical committee in charge of managing the health emergency received harsh criticism due to the filtering of questions by the Secretary of State for Communication. Unlike authorities of other European countries such as Italy, Germany, the United Kingdom, and France, neither the president nor any other member of the government agreed during the first three weeks of the State of Alarm to answer to questions asked directly by journalists electronically. The government argued, instead, that the formula followed was "simple and efficient," taking into account the high volume of journalists and questions, which guarantees the right of participation and information (**El país, 2020**). Finally, and under pressure from the media, the Secretary of State for Communication yielded to pressure from the media, and from April 6th onwards agreed to hold press conferences with journalists by videoconference and allow them to reformulate questions.

Spain reached the outbreak's peak one month and a half after the declaration of the State of Alarm. Even if there were genuine uncertainties and differences among epidemiologists, the government misjudged the gravity of the threat (**Crespo; Garrido, 2020**). Similarly, **Costa-Sánchez and López-García** (2020) point out that the government and the Covid-19 task force did not prepare the citizens for the most negative scenario, overprotecting them with a message of calm in initial stages. These mistakes negatively influenced the citizens' assessments of the government, which highlights the importance of effectively managing any crisis. Perceptions of credibility and trust in public authorities also influences risk perception. Building of trust requires not just expertise in implementing rescue activities and mitigating harmful consequences but also openness and empathy when explaining decisions and alternatives (**Palttala; Boano; Lund; Vos, 2012**).

Existing research on health-related crises have partially addressed the role of information channels (e.g., **Reifegerste; Bachl; Baumann, 2017; Wang; Ahern, 2015; Wedderhoff et al., 2018; Zhang; Zhou, 2019**), but few studies have adopted a comprehensive approach to evaluate how information channels and sources influence the public's perceived risks and their evaluation of the government's response. While crisis communication is a burgeoning field, a number of questions still remain to be answered about how people consume, process, retain, and evaluate information during health crisis events (**Austin; Jin, 2016; Liu et al., 2012**).

The source of information less trusted during the first weeks of the Covid-19 outbreak was government officials (48%), who were only ahead of journalists (43%)

This paper focuses on five research questions and five hypotheses derived from a literature review and previous studies.

- RQ1. What, if any, differences emerge in use of information channels during the Covid-19 outbreak?
- RQ2. How does the Spanish population assess the management of communication by the government of Spain?
- RQ3. What messages sent by the government did the Spanish population retain before the declaration of the State of Alarm?
- RQ4. In which sources of information has the population shown the greatest confidence?
- RQ5. How much accurate information has the Spanish population had about Covid-19?
- H1. The use of traditional media was prevalent during the crisis.
- H2. People who get their news from traditional media are generally most likely to express a positive opinion of the crisis response.
- H3. Criticism of the government was more moderate in the first stage of the crisis.
- H4. People less in agreement with governmental information are the most critical of the crisis response.
- H5. Trust in public authorities' decreases as the crisis evolves.

3. Methodology

3.1. Questionnaire

The questionnaire was constructed on an online server and was active between March 14 and April 14, 2020. A snow-ball sample technique was used to deliver invitations explaining the motivation of the questionnaire and with a self-directed link to the server through *WhatsApp*, *Telegram*, *Twitter*, *Facebook*, *Instagram*, and *LinkedIn*. The invitation encouraged people to disseminate the questionnaire to their contacts. The dissemination of the questionnaire among the participants was solely based on criteria of interest and motivation for the research, so that no compensation was offered for participating in the research. The online questionnaire included questions regarding information-seeking behavior, trust in different sources and channels, perception of government communication management, message retention, and demographic questions.

To answer RQ1, participants were asked to indicate the channel they used for information during the crisis situation (e.g., “Which of the following information channels do you use to get information about the Covid-19?”). There were 15 channels listed: *WhatsApp*, *Telegram*, television news, radio news, print newspapers, online newspapers, magazines, *Twitter*, *Facebook*, *Instagram*, and other. To identify any differences among social media platforms, the most popular social media platforms (i.e., *Twitter*, *Facebook*, *Instagram*, *YouTube*, *WhatsApp*, and *Telegram*) were selected.

To explore the perception of the government’s response to the crisis (RQ2) participants were asked to indicate their levels of agreement with the following statements on a 7-point scale (from 1 = Strongly disagree to 7 = Strongly agree): (a) “The government communication has been clear and adequate”; (b) “Has not revealed the whole truth”; (c) “Has been scheduled at the appropriate times”; (d) “Has been confused”; (e) “Has been the most reliable information”; and (f) “Has created social alarm.”

In order to explore the governmental messages retained by the citizenry (RQ3), the third question was composed of four statements extracted from press conferences of the prime minister and the spokesperson for the Covid-19 committee during the second week of March 2020. These statements were operationalized as: (a) “You must be calm because Covid-19 is not dangerous for most of the population”; (b) “Covid 19 only affects elderly and sick people with underlying conditions”; (c) “Covid 19 spreads easily and you must stay home to protect the elderly and sick”; and (d) “Covid 19 spreads easily and you must stay at home so that the economy does not suffer a longer interruption”.

Two additional statements that had not being directly disseminated by the Government were added to the question to check the correct attribution of messages by the population: (e) “Covid-19 is dangerous and borders should have been closed to persons from countries with a high level of contagiousness” and (f) “Covid-19 is dangerous and borders should have been closed to persons from countries with a high level of contagiousness”.

Next, (RQ4) participants were asked to evaluate on a 7-point scale their levels of trust in 15 sources of information, such as authorities, mass media, social media influencers, friends, etc. (Newman; Fletcher, 2017).

For RQ5, participants had to select from 24 statements related to Covid-19 risks, treatment or preventive measures those that were correct.

3.2. Sample

The Spanish adult population numbers 46.3 million people. A representative sample would need a total of 385 respondents. In total, 1,216 respondents began the survey. The data for this study were cleaned by following **Morrow** and **Skolits**’ (2014) process to bolster data quality. For example, participants with incomplete answers or those who took less than two minutes to complete the survey were excluded from the analysis. The final sample for analysis was based on 546 completed questionnaires by the target population. A random sampling by socio-demographic quotas has not been carried out, but for this object of study it has been considered of greater research interest to show the raw data of the questionnaire. In the sample, 71.1% are women, 28% men, and 0.9% no binary-gender. All age groups were in the sample, with 36.6% under 30 years old. Regarding their education, 43.7% are undergraduates and 28.3% graduates. For this research, an analysis by regions in Spain has been conducted. However, the sample was not considered large enough to provide statistically significant differences.

3.3. Statistical analysis

Data were codified in operative variables for statistical analysis (**Bardin**, 1996) and once operationalized and re-codified, they were analyzed using the *Statistical Package for the Social Sciences (SPSS)* 22 version. Univariable and bivariable analysis with frequencies, contingent tables and correlations were run and tested with chi-square and independent samples t-test. Results from these statistical tests are included in notes in the tables.

“Television (86.2%), *WhatsApp* (77.6%), online newspapers (75%), and radio (42.6%) were the most frequent information channels”

4. Findings

4.1. Media use and complementarity in the Covid-19 crisis

Media research underlines the increase in information seeking and media consumption during emergencies. RQ1 explored media consumption during the first four weeks of the State of Alarm. As shown in Table 1, television (86.2%), *WhatsApp* (77.6%), online newspapers (75%), and radio (42.6%) were the most frequent information channels, while magazines (7.4%), *Telegram* (5.7%), and web/blogs specialized in alternative therapies (4.6%) were the least used ones.

These information-seeking trends do not reveal important differences regarding gender and education level of the respondents. Women had a higher use of media in general, in particular *Instagram* and health websites and blogs, while men received more information from radio stations. Young people under the age of 29 got more information than the rest of the age groups from *Twitter* (63%, $p \leq 0.01$) and websites/blogs from public institutions (48%, $p \leq 0.01$). Older participants reported a highly significant use of television (90%, $p \leq 0.01$) and a very limited consumption of information from social media and online media channels. People with higher levels of education read the print press more frequently.

Table 2. Information source during the Covid-19 health crisis by age

| Source | Age | | | | |
|--|---------------|-------------|-------------|-------------|-------------|
| | 29 or younger | 30-39 years | 40-49 years | 50-59 years | 60 or older |
| Television ** | 87.5% | 84.6% | 81.9% | 89.2% | 90% |
| <i>WhatsApp</i> ** | 77.0% | 78.1% | 77.1% | 81.1% | 65% |
| Online newspapers ** | 76.5% | 79.5% | 73.3% | 70.3% | 55% |
| Websites/Blogs from public institutions ** | 48.0% | 44.5% | 37.2% | 37.9% | 10% |
| <i>Twitter</i> ** | 63.0% | 38.7% | 20.1% | 17.6% | 15% |

Note. **Highly significant difference (chi-squared $p \leq 0.01$). Scale 1 (Never) – 7 (A great deal). Percentages: Frequency based on scale points 5-7.

Hypothesis 1, related to the use of traditional media was prevalent during the crisis, is only partially confirmed. Three of the four most used information channels are considered mainstream news media. However, the second source of information is *WhatsApp*. Results show that citizens made synchronous use of multiple media and platforms.

4.2. Media use and government crisis communication management

The more favorable assessments of government crisis communication management and its specialized committee—“communication has always been clear and sufficient”; “has been scheduled at the appropriate times”; and “has been the most reliable information”— were mainly made by people who use the news media extensively. Indeed, print newspapers consumption show the highest values for these three favorable statements about government communication (40.2%, 29.9%, and 43.3%, respectively). By contrast, most people who had a stronger use of social media believe that government communication caused social alarm and confused the population. An analysis by gender shows that more than half of the women believe that the government has not revealed the whole truth (55.5%) and that it has generated social alarm (51.8%). Unlike men, who only 39.6% believe that the government has created social alarm. Regarding differences by age, 62.5% of the youngest (29 years or less) believe that social alarm has been generated, while in the intermediate age groups this statement is only supported by a third of the sample.

People who were mainly informed through *Twitter* (53.4%, $p \leq 0.01$) and *Facebook* (52.5%, $p \leq 0.01$) strongly believed that the government's communication caused social alarm, and confused the population (50.7 and 49.5%, respectively). However, most audiences for all media agree with the statement “The government has not revealed the whole truth,” especially *Twitter* users (57.1%, $p \leq 0.01$) and print press readers (56.7%, $p \leq 0.01$).

Table 1. Information source during the Covid-19 health crisis

| Information source | Percentage |
|-----------------------------------|------------|
| <i>WhatsApp</i> | 77.6% |
| <i>Telegram</i> | 5.7% |
| <i>Facebook</i> | 36.6% |
| <i>Twitter</i> | 40.2% |
| <i>Instagram</i> | 34.9% |
| <i>YouTube</i> | 16.8% |
| Television | 86.2% |
| Radio | 42.6% |
| Print newspapers | 17.8% |
| Online newspapers | 75.0% |
| Magazines | 7.4% |
| Webs/Blogs of public institutions | 41.9% |
| Health Webs/Blogs | 26.1% |
| Alternative therapies Webs/Blogs | 4.6% |
| Scientific Webs/Blogs | 20.2% |

Note: Q1: Which of the following information channels do you rely on to get Covid-19 information? Scale 1 (Never) – 7 (A great deal).

Percentages: Frequency based on scale points 5-7.

More than half of the women believe that the government has not revealed the whole truth (55.5%) and that it has generated social alarm (51.8%), unlike men, who only 39.6% believe that the government has created social alarm

Table 3. Perception of the government’s communication strategy by media consumption

| Perception | WhatsApp | Facebook | Twitter | Websites/Blogs from public institutions | Printed press | Online newspapers | Television | Radio |
|---|----------|----------|---------|---|---------------|-------------------|------------|-------|
| Has always been clear and sufficient** | 32.4% | 31.5% | 33.3% | 35.4% | 40.2% | 34.5% | 35.7% | 36.5% |
| Has not revealed the whole truth** | 54.6% | 53.5% | 57.1% | 53.3% | 56.7% | 54.5% | 54.1% | 49.8% |
| Has been scheduled at the appropriate times** | 22.9% | 23.5% | 23.7% | 24.9% | 29.39% | 24.0% | 23.8% | 27.5% |
| Has confused the population** | 47.8% | 49.5% | 50.7% | 44.1% | 45.4% | 46.7% | 45.9% | 43.8% |
| Has been the most reliable information** | 39.0% | 37.5% | 43.3% | 43.2% | 43.3% | 39.4% | 39.9% | 42.5% |
| Has generated social alarm** | 50.8% | 52.0% | 53.4% | 47.2% | 51.5% | 47.9% | 48.8% | 44.6% |

Note. Q2. To what extent you agree with the following statements regarding the Government’s communication on Covid-19. Q1: Which of the following information channels do you rely on to get Covid-19 information? Scale 1 (Strongly disagree) – 7 (Strongly agree). Percentages: Frequency based on scale points 5-7.

**Highly significant difference (independent simple T test $p \leq 0.01$).

These results partially prove hypothesis 2: People who relied more on the mainstream news media for Covid-19 information are generally most likely to express positive opinions of the government’s communication strategy.

4.3. Growing criticism of governmental crisis communication management

During the 30 days of the State of Alarm, 38% of the citizens claimed that the government was the most reliable source of information. More than one-third of the respondents (33.8%, $p \leq 0.01$) evaluated this information as clear and sufficient at all times, and 22.8% ($p \leq 0.01$) thought that it was timely. Nevertheless, 52.8% of the citizens believed that the whole truth was not revealed; 45.9% that the information confused the population, and 48.4% that it had caused social alarm.

Half of the Spanish citizens stated that the government has not revealed the whole truth (52.8%), followed by “has caused social alarm” (48.4%) and “has confused the population” (45.9%). Nevertheless, four out of 10 citizens strongly believed that the government was “the most reliable information source” (38.4%), and every one out of three thought it was clear and sufficient (33.8%). The timing of communication is the most critical aspect: Only 22.8% thought the information was timely.

“ People who relied more on the mainstream news media for Covid-19 information are generally most likely to express positive opinions of the government’s communication strategy ”

Moreover, the statement regarding appropriate timing of communication was the one that showed a bigger variation between the first and the second fortnights of the State of Alarm. Even through only 21.4% ($p \leq 0.01$) of the people thought that the government had correctly timed communication, the percentage doubles in the second fortnight (42.9%, $p \leq 0.01$).

Furthermore, increasing criticism of government communication management took place in the second fortnight. There was a three-percentage point decrease in people who believed “the information was clear and enough” and a smaller decrease in people who believed “the information was the most reliable” (from 38.6% to 37.1%, $p \leq 0.01$). Altogether, more people believed the whole truth was not revealed (from 52.7% to 54.2%, $p \leq 0.01$). There were no significant differences by gender or age between the two fortnights of the State of Alarm.

Table 4. Perception of the government’s communication strategy by fortnights

| Perception | Total | First fortnight | Second fortnight |
|---|-------|-----------------|------------------|
| Has always been clear and sufficient** | 33.8% | 34.1% | 31.4% |
| Has not revealed the whole truth** | 52.8% | 52.7% | 54.2% |
| Has been scheduled at the appropriate times** | 22.8% | 21.4% | 42.9% |
| Has confused the population** | 45.9% | 46.4% | 40.0% |
| Has been the most reliable information** | 38.4% | 38.6% | 37.1% |
| Has generated social alarm** | 48.4% | 48.3% | 48.6% |

Note. Scale 1 (Strongly disagree) – 7 (Strongly agree). Percentages: Frequency based on scale points 5-7.

**Highly significant difference (independent simple T test $p \leq 0.01$).

Results corroborates hypothesis 3: Criticism of the government is more moderate during the first stage of the State of Alarm.

4.4. Retention of governmental information

Most citizens had a correct retention of governmental messages. Nevertheless, in spite of moderate criticism, it does not appear that all citizens correctly attributed some of the messages disseminated by the government before the declaration of State of Alarm. For instance, 6.8% attributed to government the need to stockpile provisions. The main messages from the government before the declaration of the State of Alarm that were retained by most people were that Covid-19 was not dangerous for most of the population, except for the elderly population and those who had underlying health conditions, and that confinement was an act of solidarity with vulnerable people.

“ Before the declaration of State of Alarm, 6.8% of citizens attributed to government the need to stockpile provisions ”

Relationships between age and gender were tested. Looking at the differences by gender, men show a greater retention of the messages referring to

“staying at home so that the economy does not suffer a longer interruption” (31.3%)

and that

“the most important thing is to have food at home” (62.2%).

In contrast, the message that almost three quarters of women (73.5%) have retained is that

“Covid-19 only affects the elderly and sick people with people with underlying conditions. Differences by age groups were also found, with younger people showing a greater retention of the message that “the most important thing is to have food at home” (43.2%).

Citizens more critical of the government were less able to correctly identify messages displayed by leaders of the government or the task force before the State of Alarm declaration. Most people who believed the government did not reveal the whole truth also thought that the most important thing was to have food at home (54.1%, $p \leq 0.01$) and that borders should have been closed to people from countries with a high level of contagiousness (59.7%, $p \leq 0.01$). However, both messages were never displayed by the government before the State of Alarm.

On the contrary, those who had a more positive assessment of government communication, such as those who thought the information was clear and enough or was the most reliable information, made fewer mistakes in attributing statements (see Table 5).

Table 5. Perception of the government communication management and messages retention

| Perception | You must be calm because Covid-19 is not dangerous for most of the population | Covid-19 only affects elderly and sick people with underlying conditions | Covid-19 spreads easily and you must stay home to protect the elderly and sick | Covid-19 spreads easily and you must stay home so that the economy does not suffer a longer interruption | Covid-19 will cause a state of emergency and the most important thing is to have food at home | Covid-19 is dangerous and borders should have been closed to persons from countries with a high level of contagiousness |
|---|---|--|--|--|---|---|
| Has always been clear and sufficient * | 33.7% | 29.3% | 36.4% | 42.4% | 18.9% | 27.8% |
| Has not revealed the whole the truth** | 53.7% | 57.0% | 51.0% | 43.8% | 54.1% | 59.7% |
| Has been scheduled at the appropriate times * | 23.0% | 20.9% | 22.8% | 26.3% | 13.5% | 25.0% |
| Has confused the population ** | 46.0% | 50.5% | 42.7% | 38.7% | 62.2% | 54.2% |
| Has been the most reliable information ** | 37.2% | 35.1% | 40.0% | 48.4% | 21.6% | 34.7% |
| Has generated social alarm ** | 44.3% | 52.3% | 46.9% | 46.5% | 62.2% | 55.6% |

Note. Scale 1 (Strongly disagree) – 7 (Strongly agree). Percentages: Frequency based on scale points 5-7.

** Highly significant difference (independent simple T-test $p \leq 0.01$).

* Significant difference (independent simple T-test $p \leq 0.05$).

The results corroborate hypothesis 4: People less able to make correct attributions of governmental information were the most critical of the government's crisis response.

4.5. Trust in the sources and evolution of trust in public authorities

In the first month of confinement, the government was a highly trusted source for half of the Spanish citizens. Even more credible was the government’s Covid-19 Committee (58.3%). Both the government and the Covid-19 task force enjoyed greater trust from women than from men. Conversely, regional (37%) and local authorities (33.6%) do not pass the exam of public trust. *WHO* (79.3%) and health staff were the most trusted sources of information. They stand out in comparison to prestigious health staff figures (75.1%), personally known health staff (73.5%), and health bodies and associations (61.4%). Other health personnel not personally known who disseminated messages via social media were credible only for half of the population, while influencers on health topics were irrelevant. Notwithstanding the high consumption of information, Spanish citizens did not trust media overall. Only four out of 10 respondents considered news media a trusted source, with people aged 29 and under showing the least confidence in the media (9%).

A detailed comparison between the first and the second fortnights of confinement indicate a general descent of trust in sources as time went by. Only local authorities gained trust from citizens (from 33.2% to 40.1%, $p \leq 0.01$). Media experienced a smaller increase in trust from 42.5% to 42.9% ($p \leq 0.01$). Personal information from health personnel retained the highest credibility, while the government and the Covid-19 committee lost 20 points in the second fortnight. It is worth highlighting that the largest drop in trust was in the *WHO*, which declined from 80.9% to 54.3% ($p \leq 0.01$). Hypothesis 5 is partially proven: Trust in public authorities, except for local authorities, declines when the crisis evolves.

“ People less able to make correct attributions of governmental information were the most critical of the government’s crisis response ”

Table 6. Trust in information sources by fortnights

| Source | Total | First fortnight | Second fortnight |
|---|-------|-----------------|------------------|
| Government | 50.6% | 51.9% | 31.4% |
| Covid-19 committee | 58.3% | 59.6% | 39.9% |
| Regional authorities | 37.0% | 37.6% | 31.4% |
| Local authorities | 33.6% | 33.2% | 40.1% |
| Media | 42.5% | 42.5% | 42.9% |
| Friends on social networks | 17.7% | 18.0% | 14.7% |
| Unknown health personnel who have spread on social networks | 49.9% | 50.4% | 45.7% |
| Personal information from the health sector | 73.5% | 73.8% | 70.6% |
| Health influencers | 15.1% | 15.5% | 11.5% |
| Influencers on alternative therapies | 2.4% | 2.6% | 0.0% |
| Influencers of other topics (not health) on social networks | 3.7% | 3.8% | 2.9% |
| <i>World Health Organization</i> | 79.3% | 80.9% | 53.4% |
| Associations of health groups (e.g. professional associations of doctors, etc.) | 61.4% | 61.8% | 53.4% |
| Prestigious healthcare personalities (e.g. epidemiologists) | 75.1% | 75.2% | 74.3% |

Note. Scale 1 (Strongly disagree) – 7 (Strongly agree). Percentages: Frequency based on scale points 5-7.

** Highly significant difference (independent simple T-test $p \leq 0.01$).

5. Discussion

Public relations research has documented that information forms and sources affect the public’s information-seeking behaviors and highlighted the importance of strategically aligning forms and sources of information (Liu *et al.*, 2011). This study yields evidence that people rely on different information channels during crisis situations, as it supports the channel complementarity theory (Dutta-Bergman, 2004). First, results corroborate the high use of mainstream mass media channels, such as television, newspapers and radio, during the Covid-19 crisis in Spain. The inclusive reach and rapid dissemination of news by television has previously been discussed, particularly as an ideal medium for sharing instructional messages during crises (Frisby *et al.*, 2014). It could be said that the health crisis returned television to its purpose as a nation-building medium (Moreno, 2003). These results are consistent with previous research (e.g. Austin *et al.*, 2012; Casero-Ripollés, 2020; Hornmoen; Backholm, 2018; Masip *et al.*, 2020; Rodero, 2020; Turner; Shaikh; Rimal, 2016), suggesting that professionals need to thoughtfully incorporate social media platforms into crisis communication plans, while not neglecting traditional media.

Media consumption during the Covid-19 crisis in Spain can better be explained through the channel complementarity theory as high consumption and simultaneous information seeking from multiple media and channels. This entails challenging consequences for public risk and

“ Trust in public authorities’ decreases as the crisis evolves as a general matter. It is specially truth for the *WHO*, but there is also a striking exemption for local governments ”

crisis communication professionals. Today, the quick and clear relay of information through different media platforms is essential to achieving effective management (Park *et al.*, 2019). Even from the early moments, authorities' messages should not disregard any potential channel or platform.

Channel complementarity theory has proven useful for explaining the use of media during the pandemic crisis in Spain

Second, the choice of medium influences the public's sense-making of the crisis and moderates their acceptance of crisis messages (Liu *et al.*, 2011). Although only partially supported, in general, people who got news from mainstream news media had a better retention of authority messages and expressed more positive opinions of the government's crisis response. This is not surprising since Spanish journalists show a preference for institutional political sources (Casero-Ripollés; López-Rabadán, 2012). Mainstream news media are used to being more aligned with authorities' information at the start of a crisis (Nerlich; Koteyo, 2012). This suggests that classical crisis theories based on type of crisis and responses are not enough for understanding citizens' responses today, and more factors related to media choice need to be operationalized for risk and crisis communication research.

Third, the high simultaneous and multiplatform consumption of information can explain why many people were unable to attribute correctly the information provided by public authorities. Incorrect retention and false attribution contribute to the biggest problems that authorities face in the multiplatform scenario: how to deal with rumors and fake news, especially on certain social media platforms. At the same time, people less able to make correct attributions of governmental information were the most critical of the government's crisis response. This brings a new focus: Even if the information of the authorities were correctly constructed and delayed, over-information and contra-information make some citizens unable to discern wayward messages. Thus, additional factors regarding message retention and source identification also need to be operationalized for a multivariable analysis of risk and crisis communication.

Fourth, the scope of crisis communication is to prevent or lessen the negative outcomes of a crisis. When public health depends on people understanding the actions they need to take, the possibility of lessening harm and disobedience highly depends on trust. Pandemic preparedness is based on trust in the information, trust in the sources, and particularly trust in public authorities. Results show low trust in the traditional news media in Spain, in contrast with other countries (Edelman, 2020; Jurkowitz; Mitchell, 2020). Cross-cultural research under construction will allow us to corroborate whether the same problems arise in other European countries and what consequences would follow.

Results also proved the expected decline in trust in public authorities as weeks go by. There was a higher decline in trust with regard to the WHO. This indicates a highly deceived public and raises a new question: how inter-agenda of public authorities could also have an inter-effect into trust assessment. Further research is needed to explore this issue, which may be very important in a global context.

Trust cannot be suddenly built just when a crisis arises. Professional public relations and strategic communication specialists are mandatory (Xifra, 2020) for a successful crisis committee, but it is not enough. This is just the last step in the solution. Assessments of how certain countries were best prepared for facing the pandemic suggest that risk communication before a crisis develops is necessary to reduce the likelihood of a crisis. In an uncertain world, where crises will be part of the new normal, where pandemics will emerge again, preparedness is vital to administrations and goes beyond unique efficient responses.

Communication is one of the biggest challenges identified by health authorities, at the same level as technical skills among the competencies required to tackle a pandemic (WHO, 2011). Previous studies have consistently demonstrated the effectiveness of risk communication practices in helping stakeholders achieve three major communication objectives: providing the knowledge needed for informed decision making about risks; building or rebuilding trust among stakeholders; and engaging stakeholders in dialogue (Covello *et al.*, 2001). Yet, public authorities can only be prepared if they invest in reflective relations as well as agile and robust management of communication systems before any crisis erupts (Tench *et al.*, 2019).

6. Conclusions

This paper introduces new empirical knowledge on the effectiveness of health information and crisis communication across various platforms. Channel complementarity theory has proven useful for explaining the use of media during the pandemic crisis in Spain and for establishing relationships between media choice and criticism of crisis communication response. Links between the public's assessment of authorities and retention and attribution of information have also been identified. People less able to make correct attributions of governmental information are the most critical of crisis response.

The choice of medium influences the public's sense-making of the crisis and moderates their acceptance of crisis messages

Results corroborate previous studies' findings that criticism of public authorities and trust in sources are moderate during the first stages of an emergency and become more critical as the crisis evolves. This statement has been proven for

all administrations except local governments in Spain. Implications for theory and empirical research, recommendations, and new issues for investigation have been identified and discussed.

7. Limitations

This research has several limitations. First, the results are self-reported. It cannot make associations of causality; it only demonstrates relationships. Thus, future research should explore the causal relationships between the variables in the current study. Next, we analysed a single case: the Covid-19 outbreak. Therefore, the applicability of the current study's findings to other crisis cases might be limited. Future research may want to test relationships among variables in other health crises. Lastly, online surveys exclude the non-negligible part of the populations that does not use the Internet. Comparisons between regions in countries with autonomous regional health institutions management, like Spain, should be also be further analyzed. In this research, the sample was not considered large enough to provide statistically significant differences by regions in the defined research questions and hypothesis. Although the demographics of participants were diverse, a survey with a mix-mode sampling method is desirable for increasing the generalizability of the study results.

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