Comunicação e Sociedade, vol. 40, 2021, pp. 169-187
https://doi.org/10.17231/comsoc.40(2021).3251

Who Do the Portuguese Trust? Government Communication Management in the Covid-19 Pandemic

Gisela Gonçalves
LabCom – Comunicação e Artes, Faculdade de Artes e Letras, Universidade da Beira Interior, Covilhã, Portugal

Valeriano Piñeiro-Naval
Observatorio de los Contenidos Audiovisuales, Facultad de Ciencias Sociales, Universidad de Salamanca, Salamanca, Spain

Bianca Persici Toniolo
LabCom – Comunicação e Artes, Faculdade de Artes e Letras, Universidade da Beira Interior, Covilhã, Portugal

Abstract

In a health emergency situation, the degree of public compliance with orders from health authorities and governments can significantly affect the course of the pandemic. Based on the assumption that (non-)compliance with the authorities' recommendations is directly linked to trust in the sources of information, in this article, we discuss the concrete case of the Portuguese government communication during the beginning of the second wave of the disease. In the context of an international investigation of the European Public Relations Education and Research Association *Com-Covid* network, an online survey was applied to 460 Portuguese citizens between October 7 and November 11, 2020. For this paper, we analyzed a section of the survey with questions regarding the sources of information that inspire greater confidence among the Portuguese population and their opinion on the management of government communication. The surveys were coded and entered in the SPSS statistical software. The study concluded a positive perception of government communication among respondents but that the Portuguese consider healthcare personnel to be more reliable sources of information than the media or government authorities. Regarding the gender issue, it was concluded that women trust the government more and have a better opinion about the authorities' communication. Regarding age, it was found that young people are the ones who trust more the authorities and the media, while at the same time being the most critical of the government's performance in managing the crisis. In general, respondents showed little confidence in digital social networks and digital influencers as a source of information about covid-19, and the higher the academic degree, the lesser confidence respondents have in influencers and digital social networks.

Keywords
communication, trust, covid-19, source of information, Portugal

Em Quem Confiam os Portugueses? A Gestão da Comunicação Governamental na Pandemia Covid-19

Resumo

Numa situação de emergência sanitária, o grau de cumprimento público das ordens governamentais das autoridades de saúde pode afetar grandemente o curso da pandemia.

Partindo do pressuposto que o (in)cumprimento das recomendações das autoridades está diretamente ligado à confiança nas fontes de informação, neste artigo, discutimos o caso concreto da comunicação governamental de Portugal durante o início da segunda vaga da doença. No contexto de uma investigação internacional da rede European Public Relations Education and Research Association *Com-Covid*, foi aplicado um inquérito online a 460 cidadãos portugueses entre 7 de outubro e 11 de novembro de 2020. Para este trabalho analisamos uma secção do inquérito com questões relativas às fontes de informação que inspiram maior confiança junto da população portuguesa e à opinião dos portugueses sobre a gestão da comunicação do governo. Os inquéritos foram codificados e inseridos no software estatístico SPSS. O estudo concluiu que sobressai uma perceção positiva sobre a comunicação governamental entre os inquiridos, mas que os portugueses consideram os atores do campo da saúde fontes de informação mais confiáveis do que os *media* ou as autoridades governamentais. Em relação à questão de género, concluiu-se que as mulheres confiam mais no governo e que têm também melhor opinião sobre a comunicação das autoridades. No que concerne à idade, verificou-se serem os jovens quem mais confia nas autoridades e nos *media*, ao mesmo tempo que são os mais críticos do desempenho do governo na gestão comunicacional da crise. De maneira geral, os inquiridos demonstraram pouca confiança nas redes sociais digitais e nos influenciadores digitais como fonte de informação sobre a covid-19, sendo que quanto maior é o grau académico menor é a confiança dos inquiridos nos *influencers* e nas redes sociais digitais.

Palavras-chave
comunicação, confiança, covid-19, fontes de informação, Portugal

1. Introduction

Since its emergence in Wuhan, China, in December 2019, the disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has brought devastating effects on societies, communities, and economies worldwide. In just 6 weeks, the new coronavirus rapidly expanded to 20 countries, prompting the director-general of the World Health Organization (WHO) to declare on January 30 2020, that the outbreak constituted a public health emergency of international concern. The global number of deaths caused by covid-19 exceeded 2,000,000 on January 30 2021, 1 year later, with more than 100,000,000 cases of infection declared worldwide; Europe being the most affected region, and Portugal leading in the number of cases and daily deaths (Center for Systems Science and Engineering, 2021).

From the outset, governments have sought to contain the pandemic by imposing restrictions on activities that require larger gatherings and allow the virus to spread rapidly. The measures included restrictions on travel, closing schools and stores, enforcing mandatory remote work and stay-at-home orders/recommendations, although with differences over time and depending on the country[1]. At the same time, several awareness campaigns were put forward by official public health entities in different media, encouraging citizens to adopt preventive behaviours, particularly the use of masks, hand washing and social distancing. However, the population's responses to the appeals of governments and health authorities have significantly varied depending on the country, the evolution of the pandemic and age groups (Hale et al., 2021; Muto et al., 2020).

[1] Those variations can be seen in The Oxford Covid-19 Government Response Tracker (Blavatnik School of Government, n.d.).

Some factors may explain the non-compliance of the population with the measures required by governments — lack of trust in authorities and information sources (Muto et al., 2020; Seale et al., 2020), misunderstanding of the information received by some segments of the population, or lack of clarity in the messages conveyed by government sources (Garrett, 2020), among others.

In a health emergency situation, the degree of public compliance with the orders of health and government authorities can significantly affect the course of the pandemic, mainly when covid-19 vaccination rollout is still in its early stages. Therefore, it is not surprising that there has been an exponential increase in public health and risk communication research on the topic, both nationally and supranationally (Torres-Salina, 2020).

Starting from the assumption that (non-)compliance with authorities' recommendations is directly linked to trust in information sources, this paper discusses the concrete case of Portugal's government communication based on empirical data collected via an online survey conducted in October 2020. The main objective is to analyse whether trust in information sources influences the population's opinion on government communication strategies in response to the pandemic crisis. Framed by the literature on risk communication, this research has theoretical-practical implications. The main hypothesis is that the higher the degree of confidence in the government's official sources, the better the opinion of the Portuguese population on governmental communication management throughout the pandemic crisis.

2. Literature Review

2.1. Communication and Risk Awareness

Risk communication has been establishing itself as a specialised field of theory and practice (Heath & O'Hair, 2009; Lundgren & McMakin, 2013). Its development has been particularly driven by public health and food safety issues and experiences in cases of chemical and environmental disasters (Plough & Krimsky, 1987). The elaboration of communicational models that allow the development of persuasive messages to change risk behaviours (Earle & Siegrist, 2008; Witte et al., 2001) is one of the main areas of study of risk communication. In this sense, it differs from crisis communication; a field focused primarily on image/reputation repair and the definition of immediate crisis response strategies, mostly from the organisational perspective and its central figures (Benoit, 1995; Coombs, 2007).

Over the years, risk communication has been given an increasingly central role in health emergency scenarios, notably to mitigate infectious diseases (Burton-Jeangros, 2019). Risk communication is relevant to increase public awareness of the nature, magnitude, and significance of risks in the hope of reducing the likelihood of a long-term crisis (Hampel, 2006; Sheppard et al., 2012). Therefore, it requires "the effective and accurate exchange of information about health risks and hazards (...) that advances risk awareness and understanding and promotes health-protective behaviours among individuals, communities, and institutions" (Weaver et al., 2008, p. 601).

The WHO emphasises that a first step in defining any risk communication plan or strategy involves an assessment of the public's perception of risk (World Health Organization, 2020b, 2020c). Health decision-making involves considering the potential consequences or benefits of a given action (Ferrer & Kelin, 2015), and risk perception is a subjective judgement about the nature and severity of that risk (Renner et al., 2015). In addition to being influenced by the type of information consumed, risk perception may also reflect personal experiences (Wright et al., 2002). As Chen and Kaphingst (2001) spell out, we perceive a higher risk when someone close or a family member becomes ill. The perceived severity of the risk will also be proportional to the lethality rate (Slovic, 1987).

Risk communication experts have long emphasised the importance of monitoring the needs and expectations of citizen groups by providing timely, accurate, specific, sufficient, consistent, and understandable information (Anderson & Spitzberg, 2009). WHO also underlines this guideline: "the capacity to relay information quickly and clearly on different media platforms (television, radio, print, web), across cultures and in many languages is essential to the effective management of a public-health emergency" (World Health Organization, 2011, p. 116). Therefore, knowing communicational preferences, that is, how and where audiences consume information, is fundamental to any effective risk communication plan.

In risk communication situations, the selection of information sources from audiences and their perception of the reliability of information are essential factors in predicting the degree of adherence to recommended preventive behaviours (Park et al., 2019). Hence, in a pandemic context, the media play a central role. By responding to the public's need for information, they amplify the voice of the authorities and contribute to the creation of risk perception. Edelman's (2020) research, conducted in 12 countries (not including Portugal) during the second week of March 2020, confirmed the crucial role played by traditional news media during the pandemic crisis — 64% of respondents sought information from mainstream news organisations.

Theoretically, given their reach, media will be the appropriate channel to educate the public about behaviours that help reduce risk at the individual level (Gollust et al., 2009). Indeed, studies have shown that during public health crises, many of the messages disseminated by the media did not follow journalistic "best practices" or contained misinformation (Parmer et al., 2016), either in mainstream or digital media (Li et al., 2020; Malecki et al., 2020). Furthermore, the "covid-19 infodemic" has shown that audiences access information both from trustworthy and questionable sources in a digital environment and that they do not show different diffusion patterns in social media (Cinelli et al., 2020). Also, according to Edelman (2020), young adults (18-34 years old) were the group that used digital social networks the most for information on the new coronavirus.

In the case of the covid-19 pandemic, the citizens' information requirements focus mainly on knowledge about the following topics: how to protect oneself against the virus; how to stop the spreading of the virus; the strategies adopted by the government; the evolution of statistical data (number of deaths, confirmed and monitored cases, number of hospitalised and in intensive care, and recovered cases); the state and the health

service's capacity to respond to the pandemic; predictable scenarios; among others. In the Portuguese context, the daily report released by the Directorate-General for Health (Direção-Geral de Saúde; DGS) through its digital social networks and the daily press conferences, often live, have been central in disseminating information on the evolution of the pandemic (Arriaga et al., 2020). Regardless of the critical assessment of the Portuguese government's communication performance (Araújo, 2020), it is expected that these informative reports can help citizens make more informed decisions about how best to protect themselves and their communities.

2.2. Trust and Government Communication

Communication is central to the management of any pandemic. However, despite lessons learned from other infectious diseases, for example, the 2009 H1N1 pandemic, better known as swine flu, or the ebola and zika virus outbreaks, the WHO considers that governments around the world have shown ineffective communication in cases of health emergency outbreaks (Global Preparedness Monitoring Board, 2019). In situations of public health risk, civic engagement and collective action are key (Harring et al., 2021). Therefore, governments and public authorities have a crucial role in defining communicational strategies that provoke an appropriate response from the community.

Trust in government is the foundation of collective action. As important as it is complex, the concept of trust has received various frameworks in the risk management and communication literature (Earle et al., 2010). From the receiver's perspective, there is a "widespread expectation that the message received is truthful and reliable and that the communicator demonstrates competence and honesty by conveying accurate, objective, and complete information" (Renn & Levine, 1991, p. 179). From the sender's perspective, it is expected that the more people trust public institutions and government, the more motivated they will be to follow their recommendations and make informed decisions to protect themselves, their families, and their communities (Devine et al., 2020). Studies have shown that the degree of trust in the national health care system has a significant impact on the public's willingness to receive health care instructions (Devos et al., 2002). Low levels of trust can lead the public to distance themselves from the health care system, leading to situations of neglect and non-compliance with guidelines, with severe consequences for public health (Meyer et al., 2014).

The variable trust in government has been related to the level of health compliance in other health emergencies, such as the 2009 H1N1 pandemic (Freimuth et al., 2014; Siegrist & Zingg, 2014) or the 2014 to 2016 ebola outbreak in West Africa (Blair et al., 2017). Recent studies on the covid-19 pandemic follow the same line. For example, Bavel et al. (2020) found that greater trust in government leads to greater compliance with health policies — such as being confined or quarantined, testing, and restrictions on group meetings. Another study highlights that in European countries where higher levels of trust in government had been documented prior to covid-19, there were more

significant reductions in risky behaviours, for example, less non-essential local travel during March 2020 (Bargain & Aminjonov, 2020).

When making decisions during health crises, individuals need to trust the information they receive from institutions and the spokespersons communicating that information (Abu-Akel et al., 2021). Having trust in the source of information is crucial for effective risk management and communication (Slovic, 1993). If a communicator is not deemed trustworthy, the communication strategy will likely fail (Lundgren & McMakin, 2013). That is particularly true when the risk is poorly known or too complex, as it involves relying on expert assessments rather than on one's own judgement (Siegrist & Cvetkovich, 2000).

In this regard, Edelman (2020) found that the least trusted source of information during the first weeks of the covid-19 outbreak was government officials (48%), slightly ahead of journalists (43%). In contrast, scientists, health officials, and doctors were the sources that citizens trusted the most. These data were corroborated by research from different contexts. In Spain, for example, Moreno et al. (2020) found that although at the beginning of the lockdown, the government and the covid-19 task force were the most trusted source for half of the Spanish citizens, as the pandemic progressed, this trust declined and shifted to prestigious health personalities, such as epidemiologists and the WHO's high-ranking officials. Criticism towards public authorities is often harshest in the second phase of outbreaks (Nerlich & Koteyko, 2012), a period when analyses shift to issues related to attribution of responsibility (Krimsky, 2007).

Other factors may influence (dis)trust in general and in government authorities in particular, namely, the credibility and transparency of the source. Credibility can be defined as the degree of technical expertise attributed to the source and its message (Llewellyn, 2020; Renn & Levine, 1991). Expertise is usually confirmed by the speaker's credentials, experience, and institutional affiliation (Lundgren & McMakin, 2013; Seeger et al., 2018). Transparency can stem from one's history, the source's previous behaviour in analogous situations (Earle & Siegrist, 2008). If there are reports of data omission or manipulation, subsequent messages are more unlikely to be trusted.

Given the importance of the trust factor in both information sources and government in health emergencies, and based on the literature review, two main questions (RQ) guided our research:

RQ1: Which information sources inspire greater trust among the Portuguese population?

RQ2: What is the opinion of the Portuguese on the government's communication management?

With the first research question, we intend to understand whether the Portuguese place greater trust in government authorities, national or international health experts, news media, or information about covid-19 shared on digital social networks (either by digital influencers, doctors, or other health professionals or by friends). The second research question will allow us to understand whether respondents agree that the government's communication has been reliable, clear, and timely, or whether, on the contrary, they consider that the same communication has been confusing, did not reveal the whole truth, or raised a social alarm. The central hypothesis guiding our study is the following:

H1: In the battle against the pandemic, the greater the degree of trust in the government's official sources, the better the Portuguese's opinion of their communication management.

Considering that a pandemic is a prolonged crisis during which government communication strategies change depending on the phase it is in (Reynolds & Quinn, 2008), our research delves into the opinion of the Portuguese in October 2020. This period corresponds to the beginning of the school year, when in-person classes returned, Portugal standing officially in a state of contingency due to the increase of contagions and the beginning of the second wave of the pandemic (Direção-Geral da Saúde, 2020).

3. Methodology

3.1. Sample and Questionnaire

In the context of an international investigation from the European Public Relations Education and Research Association (Euprera) *Com-Covid*[2] network — a project that aims to monitor the management of covid-19 crisis communication in several countries — a survey was applied to 460 Portuguese citizens between October 7 and November 11, 2020. The sample, representing a 95% confidence level and a margin of error of 4.6% over the country's population (10,295,909 inhabitants), comprised 65.7% women and 34.3% men, with a mean age of $M = 41.01$ years ($SD = 12.09$).

This sample was reached using the snowball technique. Invitations with a link to the survey were sent out via email and digital social networks, primarily WhatsApp and Facebook. The invitation encouraged people to complete and disseminate the questionnaire to their contacts, and there was no compensation for participating in the research. The online questionnaire included questions on information-seeking behaviour, reliance on different information sources, perceptions of government communication management, message retention, and demographic questions. The survey script followed the guidelines defined in the international Euprera *Com-Covid* project.

For this paper, we analyse a section of the survey with questions concerning the sources of information that inspire more confidence among the Portuguese population and the perception of the Portuguese on the management of government communication, corresponding to two scales composed of 13 and six items, respectively. The response options for each item were operationalised by seven-point Likert-type scales, with one being the lowest and seven the highest. The items were included in two exploratory factor analyses (EFA) to reduce scale dimensions to detect associations between them and create, after the event, aggregate variables with increased explanatory value.

As shown in Table 1, each of the 13 items related to trust in information sources has a significant weight on one of the three factors suggesting EFA as latent structure (explained variation = 61.94%, KMO = .83, Bartlett's test: $p < .001$).

[2] The European Public Relations Education and Research Association *Com-Covid* network (European Public Relations Education and Research Association, n.d.) is a project aimed at monitoring the management of covid-crisis communication in several countries and from different perspectives and methodologies. In a first phase of the project, a survey was launched to monitor information channels, information sources, levels of trust and understanding of information by the general public in three countries (Spain, Italy, United Kingdom). A second survey, in October 2020, was extended to a new set of countries, including Finland, Turkey, Croatia, United States of America, Brazil, Argentina, Nigeria and Portugal.

Information sources	Influencers and RRSS (factor 1)	Authorities and media (factor 2)	Healthcare workers (factor 3)
Influencers from other fields	.877		
Alternative medicines influencers	.871		
Healthcare influencers	.763		
Friends on digital social networks	.695		
Healthcare workers disseminating information on digital social networks	.654		
Other	.612		
Government and Directorate-General for Health		.858	
Local authorities		.773	
World Health Organization		.730	
Media		.602	
Professional associations in the healthcare field			.759
Personal acquaintances from the healthcare field			.755
Prestigious figures in the healthcare field			.657
Eigenvalue	4.345	2.623	1.084
Explained variation	33.42%	20.17%	8.43%
Cronbach's alpha	.84	.77	.71

Table 1 *Scope of information sources through exploratory factor analyses with varimax rotation and reliability test*

The same is true in Table 2 with variables regarding the opinion of the Portuguese on the government's communication management. Each of the six items shows a significant weight on some of the two factors suggesting the EFA as a latent structure (explained variation = 69.65%; KMO = .70; Bartlett's Test: $p < .001$).

Opinion on the government's communication management	Positive (factor 1)	Negative (factor 2)
It has always been clear and sufficient	.831	
It has been the most reliable	.828	
It was disseminated in the appropriate moments	.826	
It has been confusing for the population		.827
It did not reveal the whole truth		.805
It raised social alarm		.767
Eigenvalue	2.469	1.711
Explained variation	41.14%	28.51%
Cronbach's alpha	.78	.73

Table 2 *Scope of the opinion of the Portuguese on the government's communication management through exploratory factor analyses with varimax rotation and reliability test*

The internal consistency of each factor, measured with the statistical parameter Cronbach's alpha (αc), revealed adequate reliability in all cases (Hair et al., 1999; Robinson et al., 1991).

3.2. Analysis and Results

All surveys were conducted using Google Forms and then coded and entered into the SPSS (Statistical Package for the Social Sciences, version 24). We calculated a metric for each factor based on the average of the items that compose it, detected in the EFAs (Tables 1 and 2 above). These new indices were used, in turn, to carry out different descriptive and inferential tests (repeated measures ANOVA, Student's *t*, Pearson's *r*).

After the statistical treatment of the data extracted from the 460 questionnaires, it is possible to establish three types of primary sources of information, presented in Table 3 next to the specific items that compose them, ordered according to the average confidence of the respondents regarding these sources.

Information sources	n	M	SD	Percentage of high confidence*
Influencers and RRSS (factor 1)	460	2.19	1.07	
Healthcare workers disseminating information on digital social networks	460	2.65	1.68	15.7
Friends on digital social networks	460	2.43	1.35	7.5
Healthcare influencers	460	2.37	1.51	11.8
Other	460	2.20	1.58	9.1
Alternative medicines influencers	460	1.82	1.28	5.2
Influencers from other fields	460	1.67	1.13	3.5
Authorities and media (factor 2)	460	4.60	1.26	
World Health Organization	460	5.15	1.71	68.9
Government and Directorate-General for Health	460	5.02	1.69	69.1
Local authorities	460	4.31	1.65	51.2
Media	460	3.94	1.56	38.3
Healthcare workers (factor 3)	460	4.79	1.37	
Prestigious figures in the healthcare field	460	5.07	1.70	69.5
Professional associations in the healthcare field	460	4.71	1.67	61
Personal acquaintances from the healthcare field	460	4.60	1.80	56.8

Table 3 *Descriptive statistical data of the information sources and the items that compose them*

Note. * Combined percentage of respondents who expressed *quite* (five), a *lot* (six) or *full* (seven) confidence in information sources.

After performing a repeated measures analysis of variation, we observed that the differences between the information sources are statistically significant [λw = .205, F (2, 458) = 888.5, $p < .001$, η2 = .795], with "health personnel" generating the most trust in the Portuguese population (RQ1) above "authorities and media" [t (459) = 3.037, $p < .01$,

d = .144] and "influencers and digital social networks" [t (459) = 40.227, p < .001, d = 2.115]. If we compare the "authorities and media" with the "influencers and digital social networks", there are also significant differences between them [t (459) = 33.509, p < .001, d = 2.061].

By itself, it is the WHO (M = 5.15, SD = 1.71) that inspires the most trust in citizens, followed by prestigious figures in the healthcare field (M = 5.07, SD = 1.70) and the government and Directorate-General for Health (M = 5.02, SD = 1.71). Regarding the opinion of the Portuguese on the government's communication management, it is also possible to establish two distinct opinions, which are shown in Table 4 next to the specific items that integrate them.

Citizens' opinion on the government's communication	N	M	SD	Percentage of high agreement*
Positive (factor 1)	460	4.13	1.39	
It was disseminated in the appropriate moments	460	4.33	1.61	45.9
It has been the most reliable	460	4.21	1.69	45.5
It has always been clear and sufficient	460	3.87	1.69	39.3
Negative (factor 2)	460	3.86	1.55	
It has been confusing the population	460	4.07	1.86	44.6
It did not reveal the whole truth	460	3.93	1.95	40.9
It raised social alarm	460	3.58	1.95	32

Table 4 *Statistical data describing citizens' opinions regarding the government's communication and the items that compose them*

Note. * Combined percentage of respondents who expressed *quite* (five), a *lot* (six) or *full* (seven) agreement with the statements.

We can state that there are significant differences between the opinions [t (459) = 2.594, p < .01, d = .183], although the scope of the effect is limited (Cohen, 1988; Johnson et al., 2008). However, the positive opinion is the most widespread among the Portuguese regarding government communication (RQ2).

On the other hand, it is found that people critical of government communication management tend to trust official government sources less [r (458) = -.167, p < .001]. This correlation, which is statistically significant, is negative because the more management criticism increases, the less trust is placed in the government, and vice versa (H1). In this regard, the gender issue is interesting because trust in the government is higher for women (M = 4.71, SD = 1.23) than for men (M = 4.39, SD = 1.30), and the differences are significant [t (458) = 2.604, p < .01, d = .252]. And there are also differences regarding opinion about government communication [t (458) = 1.963, p < .05, d = .194] in the same direction: women (M = 4.22, SD = 1.35) have a higher favorable opinion than men (M = 3.95, SD = 1.45).

As for age groups, this variable was initially quantitative as respondents answered with the exact age they were at the time of participating in the study. Therefore, the initial

variable was recoded into three groups: young, adult, and mature[3] to allow age-based comparisons. In Table 5, we can see the comparisons that resulted statistically significant as to age groups.

Comparable variables	N	M	SD	ANOVA
Trust in authorities and media				
Young	149	4.83	1.24	F (2, 457) = 3.685, p = .026, $\eta 2$ = .016
Adult	168	4.51	1.32	
Mature	143	4.46	1.19	
Total	460	4.60	1.26	
Negative opinion on government communication				
Young	149	4.02	1.58	F (2, 457) = 4.185, p = .016, $\eta 2$ = .018
Adult	168	3.97	1.57	
Mature	143	3.55	1.47	
Total	460	3.86	1.55	

Table 5 *Age group comparisons of trust in authorities and average and negative opinion of government communication (ANOVA)*

In both cases, young people are the ones who place higher trust in the authorities and the media, but at the same time, they are the most critical of government trust. Lastly, regarding the level of education, the contrasts are produced in the way they appear in Table 6.

Trust in influencers and digital social networks	N	M	SD	ANOVA
No academic degree	102	2.53	1.28	F (3, 456) = 6.931, p < .001, $\eta 2$ = .039
Bachelor's degree	157	2.22	1.11	
Master's degree	100	2.01	.90	
PhD	101	1.96	.85	
Total	460	2.19	1.07	

Table 6 *Trust in influencers and digital social networks as a function of education level*

In this sense, the higher the academic degree, the lower the respondents' trust in influencers and digital social networks.

4. Discussion and Conclusion

Research on risk communication has highlighted how trust in information sources, especially in government and authorities, can affect risk perception and preventive behaviours in pandemic scenarios (Bargain & Aminjonov, 2020; Bavel et al., 2020; Lundgren

[3] It was possible to recode the initial quantitative variable "age" into another ordinal qualitative variable based on three age groups of homogeneous sizes by calculating the P_{33} and P^{66} percentiles. Thus, the 1 = young (n = 149) from 18 to 36 years, the 2 = adult (n = 168) from 37 to 47, and the 3 = mature (n = 143) from 48 to 79 (age of the oldest survey in the sample).

& McMakin, 2013). In this context, the results discussed in this paper offer original findings regarding respondents' opinions about the Portuguese government's communication management and trust in governmental and non-governmental information sources at the onset of the second wave of the covid-19 epidemic in Portugal in October 2020.

In general, two opposing perceptions, one negative and one positive, about government communication stand out. However, the positive opinion was the most prominent among all respondents. In particular, many were those who considered that the government's information was timely and reliable. Even the most critical people, that is, those who consider that the government's communication has confused the population or has not revealed the whole truth, tend to trust the government and the Directorate-General for Health. These results allow us to discuss the risk communication advocated by the government of Portugal in a theoretical-practical dimension, besides pointing to other research paths.

First, our research allows for a reflection on the respondents' trust in governmental sources compared to non-governmental sources. The Portuguese trust healthcare personnel more, particularly prestigious personalities in the healthcare field, such as doctors, epidemiologists, or the director of the WHO. These sources of information are considered more trustworthy than the media or government authorities, both at the national (government and Directorate-General for Health) and local level. The trend, already identified in studies on the first days of the pandemic in neighbouring Spain (Moreno et al., 2020), underlines the importance of giving more prominence to expert/technical sources than political sources in managing covid-19 crisis communication. Even though 69% of the Portuguese claim to trust the government and the Directorate-General for Health as an information source, this figure allows us to infer the existence of criticism to more politicised discourses. That conclusion is in line with previous studies at the beginning of the pandemic and internationally. The Edelman (2020) study highlighted that 58% of respondents are concerned about the possibility of authorities being alarmist for political gain.

Second, the results showed the respondents' low trust in digital social networks and digital influencers as a source of information about covid-19. Trust in this type of source is lower than trust in authorities, news media, and healthcare workers. In addition, the higher the academic degree held by the respondents, the lower the trust in influencers and digital social networks. Still, the items "health staff disseminating information on digital social networks" and "digital health influencers" obtained a higher percentage of the trust. These data align with the previous conclusion, confirming that specialised personnel, such as experts, scientists, and physicians, provide more credibility to the sources, and consequently, the Portuguese trust more. In this sense, one can reflect on the government's importance in giving more room to experts in its communication strategy. After all, as Lundgre and McMakin (2013) pointed out, "information alone, no matter how carefully packaged and presented, will not communicate risk effectively if trust and credibility are not established first" (p. 20).

Therefore, the study found that the higher the degree of trust in the government's official sources, the better the opinion of the Portuguese about the government's communication management in the battle against the pandemic, thus confirming the primary hypothesis that guided this research.

Effective management of a pandemic depends on trust in the information disseminated, in the sources, and particularly in public authorities. The results of our study underline the significance of bringing the voice of health experts to the centre of communication management, avoiding the "divorce between government and science" (Fiolhais, 2021, para. 4) predicted by opinion-makers and journalists. This fact is crucial in prolonged crises such as the one we are currently undergoing, and in which the government and authorities need to continuously ensure, with different levels of intensity, compliance with prevention standards. One cannot neglect the risk that the longevity of the crisis leads to pandemic fatigue and reduced perception about the severity of the risk (World Health Organization, 2020a).

Lastly, some demographic data that emerged in this study may be relevant indicators for government communication management and point to new avenues of research. Regarding the gender issue, it was concluded that women trust the government more and have a better opinion on the authorities' communication management. In future studies, it would be interesting to investigate whether this result has to do with the fact that the prominent spokespersons of the government during the crisis, the minister of health and the director-general of health, were women. Regarding age, it was found that young people (18-36 age group) are the ones who trust the authorities and the media the most, while they are the most critical of the government's performance in communicational crisis management. Communicating effectively in situations of risk is challenging since several factors may condition its success. Distrust in authorities and failure to adapt the information to different subpopulations have been pointed out as one of the main reasons for communication failures in the context of infectious diseases (Gesser-Edelsburg & Shir-Raz, 2016). Therefore, it will be essential to develop more comprehensive reception and opinion research allowing for the cross-referencing of sociodemographic data with the issue of trust in government and health authorities. The topic of trust in politicians and rulers is well developed in studies on the quality of democracy but less common in risk communication research.

Translation: Susana Valdez

Acknowledgements

Research funded by the Fundação para a Ciência e Tecnologia (FCT) of Portugal (LABCOM/UIDB/00661/2020).

References

Abu-Akel, A., Spitz, A., & West, R. (2021). The effect of spokesperson attribution on public health message sharing during the covid-19 pandemic. *PLoS ONE*, *16*(2), Article e0245100. https://doi.org/10.1371/journal.pone.0245100

Anderson, P., & Spitzberg, B. (2009). Myths and maxims of risk and crisis communication. In R. L. Heath & H. D. O'Hair (Eds.), *Handbook of risk and crisis communication* (pp. 205–226). Routledge.

Araújo, R. (2020, November 12). Continuamos à espera de um "milagre" na comunicação da covid-19. *Público*. https://www.publico.pt/2020/11/12/sociedade/opiniao/continuamos-espera-milagre-comunicacao-covid19-1938975

Arriaga, M. T., Ângelo, R., Gaspar, R., Espassandim, T., & Leiras, G. (2020). *Princípios orientadores para comunicação de riscos e crise, baseados na perceção de riscos*. Direção Geral da Saúde. https://covid19.min-saude.pt/wp-content/uploads/2020/03/Principios-Orientadores-Comunicac%CC%A7a%CC%830-Crise-2020-.pdf

Bargain, O., & Aminjonov, U. (2020). *Trust and compliance to public health policies in times of covid-19.* Institute of Labor Economics. https://www.iza.org/publications/dp/13205/trust-and- compliance-to-public-health-policies-in-times-of-covid-19

Bavel, J. J. V., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J. N., Drury, J., Dube, O., Ellemers, N., Finkel, E. J., Fowler, J. H., Gelfand, M., Han, S., Haslam, S. A., Jetten, J., . . . Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behavior 4*, 460–471 https://doi.org/10.1038/s41562-020-0884-z

Benoit, W. L. (1995). *Accounts, excuses, and apologies: A theory of image restoration.* State University of New York Press.

Blair, R., Morse B., & Tsai, L. (2017). Public health and public trust: Survey evidence from the ebola virus disease epidemic in Liberia. *Social Science & Medicine, 172,* 89–97. https://doi.org/10.1016/j.socscimed.2016.11.016

Blavatnik School of Government. (n.d.). *Covid-19 government response tracker*. Retrieved February 14, 2021, from https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker

Burton-Jeangros, C. (2019). Epidemics and risk communication: Why are lessons not learned? In M. Bourrier, N. Brender, & C. Burton-Jengros (Eds.), *Managing the global health response to epidemics* (pp. 105–125). Routledge.

Center for Systems Science and Engineering. (2021, January 30). *Covid-19 dashboard*. Johns Hopkins Coronavirus Resource Center. https://coronavirus.jhu.edu/map.html

Chen L, S., & Kaphingst, K. A. (2011). Risk perceptions and family history of lung cancer: Differences by smoking status. *Public Health Genomic, 14*, 26–34. https://doi.org/10.1159/000294151

Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L., Zola, P., Zollo, F., & Scala, A. (2020). The covid-19 social media infodemic. *Scientific Reports, 10*, 1–10. https://doi.org/10.1038/s41598-020-73510-5

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Earlbaum.

Coombs, W. T. (2007). Protecting organisations reputations during a crisis: The development and application of situational crisis communication theory. *Corporate Reputation Review, 10*, 163–176. https://doi.org/10.1057/palgrave.crr.1550049

Devine, D., Gaskell, J., Jennings, W., & Stoker, G. (2020). Trust and the coronavirus pandemic: What are the consequences of and for trust? An early review of the literature. *Political Studies Review 19*(2), 275–285. https://doi.org/10.1177/1478929920948684

Devos, T., Spini, D., & Schwartz, S. (2002). Conflicts among human values and trust in institutions. *British Journal of Social Psychology*, *41*(4), 481–94. https://doi.org/10.1348/014466602321149849

Direção-Geral da Saúde. (2020, September 10). *Portugal entra em situação de contingência no dia 15 de setembro.* Covid-19. https://covid19.min-saude.pt/portugal-entra-em-situacao-de-contingencia-no-dia-15-de-setembro/

Earle, T., & Siegrist, M. (2008). Trust, confidence and cooperation model: A framework for understanding the relation between trust and risk perception. *International Journal of Global Environmental Issues, 8*(1-2), 17–29. https://doi.org/10.1504/IJGENVI.2008.017257

Earle, T. C., Siegrist, M., & Gutscher, H. (2010). Trust in risk management: Uncertainty and scepticism in the public mind. In T. C. Earle, M. Siegrist, & H. Gutscher (Eds.), *Trust, risk perception and the TCC model of cooperation* (pp. 1–49). Routledge. https://doi.org/10.4324/9781849773461

Edelman. (2020). *Special report: Trust and the coronavirus*. https://www.edelman.com/sites/g/files/aatuss191/files/2020-03/2020%20Edelman%20Trust%20Barometer%20Coronavirus%20Special%20Report_0.pdf

European Public Relations Education and Research Association. (n.d.). *Com-covid*. https://euprera.org/what-we-do/member-networks/com-covid/

Ferrer, T., & Klein, W. (2015). Risk perceptions and health behavior. *Current Opinion in Psychology, 5,* 85–89. https://doi.org/10.1016/j.copsyc.2015.03.012

Fiolhais, C. (2021, February 4). Portugal nos cuidados intensivos. *Público*. https://www.publico.pt/2021/02/04/opiniao/opiniao/portugal-cuidados-intensivos-1949125

Freimuth, V., Musa, D., Hilyard, K., Quinn S. C., & Kim, K. (2014). Trust during the early stages of the 2009 H1N1 pandemic. *Journal of Health Communication, 19*(3), 321–339. https://doi.org/10.1080/10810730.2013.811323

Garrett, L. (2020). Covid-19: the medium is the message. *The Lancet*, *395*(10228), 942–943. https://doi.org/10.1016/S0140-6736(20)30600-0

Gesser-Edelsburg, A., & Shir-Raz, Y. (2016). *Risk communication and infectious diseases in an age of digital media*. Routledge.

Global Preparedness Monitoring Board. (2019). *A world at risk: Annual report on global preparedness for health emergencies*. World Health Organization. https://reliefweb.int/sites/reliefweb.int/files/resources/GPMB_annualreport_2019.pdf

Gollust, S. E., Lantz, P., & Ubel, P. (2009). The polarizing effect of news media messages about the social determinants of health. *American Journal of Public Health, 99*, 2160–2167. https://doi.org/10.2105/AJPH.2009.161414

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (1999). *Multivariate data analysis.* Pearson Prentice Hall.

Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). A global panel database of pandemic policies (Oxford Covid-19 Government Response Tracker). *Nature Human Behaviour, 5*, 529–538. https://doi.org/10.1038/s41562-021-01079-8

Hampel, J. (2006). Different concepts of risk – A challenge for risk communication. *International Journal of Medical Microbiology*, *296*, 5–10. https://doi.org/10.1016/j.ijmm.2005.12.002

Harring, N., Sverker, C., & Jagers, Å. (2021). Covid-19: Large-scale collective action, government intervention, and the importance of trust. *World Development*, *138*, Article 105236. https://doi.org/10.1016/j.worlddev.2020.105236

Heath, R., & O'Hair, D. (2009). *Handbook of risk and crisis communication.* Routledge.

Johnson, B. T., Scott-Sheldon, L. A. J., Snyder, L. B., Noar, S. M., & Huedo-Medina, T. B. (2008). Contemporary approaches to meta-analysis in communication research. In A. F. Hayes, M. D. Slater & L. B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 311–347). Sage.

Krimsky, S. (2007). Risk communication in the internet age: The rise of disorganised skepticism. *Environmental hazards*, *7*(2), 157–164. https://doi.org/10.1016/j.envhaz.2007.05.006

Li, H. O.-Y., Bailey, A., & Huynh, D. (2020). YouTube as a source of information on covid-19: A pandemic of misinformation? *BMJ Glob Health, 5,* Article e002604. https://doi.org/10.1136/bmjgh-2020-002604

Llewellyn, S. (2020). Covid-19: How to be careful with trust and expertise on social media. *BMJ, 368*, m1160. https://doi.org/10.1136/bmj.m1160

Lundgren, R. E., & McMakin, A. H. (2013). *Risk communication: A handbook for communicating environmental, safety and health risks*. Wiley.

Malecki, K., Keating, J. A., & Safdar, N. (2020). Crisis communication and public perception of covid-19 risk in the era of social media. *Clinical Infectious Diseases, 72*(4), 699–704. https://doi.org/10.1093/cid/ciaa758

Meyer, S., Ward, P., Coveney, J., & Rogers, W. (2014). Trust in the health system: An analysis and extension of the social theories of Giddens and Luhmann. *Health Social Review, 17*(2), 177–186. https://doi.org/10.5172/hesr.451.17.2.177

Moreno, Á., Fuentes-Lara, C., & Navarro, C. (2020). Covid-19 communication management in Spain: Exploring the effect of information-seeking behavior and message reception in public's evaluation. *El Profesional de la Información*, *29*(4), Article e290402. https://doi.org/10.3145/epi.2020.jul.02

Muto, K., Yamamoto, I., Nagasu, M., Tanaka, M., & Wada, K. (2020). Japanese citizens' behavioral changes and preparedness against covid-19: An online survey during the early phase of the pandemic. *PLoS ONE, 15*(6), Article e0234292. https://doi.org/10.1371/journal.pone.0234292

Nerlich, B., & Koteyko, N. (2012). Crying wolf? Biosecurity and metacommunication in the context of the 2009 swine flu pandemic. *Health & Place, 18*(4), 710–717. https://doi.org/10.1016/j.healthplace.2011.02.008

Park, S., Boatwright, B., & Johnson-Avery, E. (2019). Information channel preference in health crisis: Exploring the roles of perceived risk, preparedness, knowledge, and intent to follow directives. *Public Relations Review*, *45*(5), Article 101794. https://doi.org/10.1016/j.pubrev.2019.05.015

Parmer, J., Baur, C., Eroglu, D., Lubell, K., Prue, C., Reynolds, B., & Weaver, J. (2016). Crisis and emergency risk messaging in mass media news stories: Is the public getting the information they need to protect their health? *Health Communication,, 31*(10), 1215–1222. https://doi.org/10.1080/10410236.2015.1049728

Plough, A., & Krimsky, S. (1987). The emergence of risk communication studies: Social and political context. *Science, Technology, & Human Values, 12*(3-4), 4–10.

Renn, O., & Levine, D. (1991). Credibility and trust in risk communication. *Communicating Risks to the Public: International Perspectives*, *4*, 175–218.

Renner, B., Gamp, M., Schmälzle, R., & Schupp, H. T. (2015). Health risk perception. In J. D. Wright (Ed.), *International encyclopedia of the social & behavioral sciences* (Vol 10, pp. 702–709). Elsevier.

Reynolds, B., & Quinn, S. C. (2008). Effective communication during an influenza pandemic: The value of using a crisis and emergency risk communication framework. *Health Promotion Practice*, *9*(4), 13S–17S. https://doi.org/10.1177%2F1524839908325267

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 1–16). Academic Press.

Seale, H., Heywood, A. E., Leask, J., Sheel, M., Thomas, S., Durrheim, D. N., Bolsewicz, K., & Kaur, R. (2020). Covid-19 is rapidly changing: Examining public perceptions and behaviors in response to this evolving pandemic. PLoS ONE, *15*(6), Article e0235112. https://doi.org/10.1371/journal.pone.0235112

Seeger, M. W., Pechta, L., Price, S., Lubell, K. M., Rose, D. A., Sapru, S., Chansky, M. C., & Smith, B. J. (2018). A conceptual model for evaluating emergency risk communication in public health. *Health Security, 16*(3), 193–203. https://doi.org/10.1089/hs.2018.0020

Sheppard, B., Janoske, M., & Liu, B. (2012). *Understanding risk communication theory: A guide for emergency managers and communicators*. Behavioral Sciences Division, Science and Technology Directorate, U.S. Department of Homeland Security. https://www.start.umd.edu/sites/default/files/files/publications/UnderstandingRiskCommunicationTheory.pdf

Siegrist, M., & Cvetkovich, G. (2000). Perception of hazards: The role of social trust and knowledge. *Risk Analysis*, *20*(5), 713–720. https://doi.org/10.1111/0272-4332.205064

Siegrist, M., & Zingg, A. (2014). The role of public trust during pandemics. *European Psychologist, 19*, 23–32. https://doi.org/10.1027/1016-9040/a000169

Slovic, P. (1987). Perception of risk. *Science, 236*(4799), 280–285. https://doi.org/10.1126/science.3563507

Slovic, P. (1993). Perceived risk, trust, and democracy. *Risk Analysis, 13*(6), 675–682.

Torres-Salinas, D. (2020). Ritmo de crecimiento diario de la producción científica sobre covid-19. Análisis en bases de datos y repositorios en acceso abierto. *El Profesional de la Información, 29*(2), Article e290215. https://doi.org/10.3145/epi.2020.mar.15

Weaver, J. B., Weaver, S., & DiClemente, R. J. (2008). Risk communication. *International Encyclopedia of Public Health*, 601–606. https://doi.org/10.1016/B978-012373960-5.00582-7

Witte, G., Meyer, G., & Martell, D. (2001). *Effective health risk messages: A step-by-step guide.* Sage.

World Health Organization. (2011). *Report of the review committee on the functioning of the international health regulations (2005) in relation to pandemic (H1N1) 2009*. https://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_10-en.pdf

World Health Organization. (2020a). *Pandemic fatigue: Reinvigorating the public to prevent covid-19*. https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf

World Health Organization. (2020b). *Risk communication and community engagement readiness and response to coronavirus disease (covid-19)*. https://apps.who.int/iris/rest/bitstreams/1272597/retrieve

World Health Organization. (2020c). *2019 novel coronavirus (2019-nCoV): Strategic preparedness and response plan*. https://www.who.int/docs/default-source/coronaviruse/srp-04022020.pdf

Wright, G., Bolger, F., & Rowe, G. (2002). An empirical test of the relative validity of expert and lay judgments of risk. *Risk Analysis, 22*(6), 1107–1122. https://doi.org/10.1111/1539-6924.00276

Biographical Notes

Gisela Gonçalves has a PhD in communication sciences and is an assistant professor at the University of Beira Interior, where she directs the Master in Strategic Communication: Advertising and Public Relations. She is an integrated researcher in LabCom — Communication and Arts. Her current research interests are communication ethics, political public relations, political and governmental communication. Gisela Gonçalves was coordinator of the strategic and organisational communication section of the European Communication Research and Education Association. She is the general secretary of the Portuguese Communication Sciences Association (Sopcom).

ORCID: https://orcid.org/0000-0001-7001-3622
Email: gisela.goncalves@labcom.ubi.pt
Address: Marques de Ávila e Bolama Avenue, 6200, Covilhã, Portugal

Valeriano Piñeiro-Naval has a degree in advertising and public relations (University of Vigo) and audiovisual communication (University of Salamanca). He has a European PhD in audiovisual communication, technological revolution and cultural change from the University of Salamanca and a post-doctorate in communication sciences from the University of Beira Interior. He is currently an assistant professor at the Department of Sociology and Communication at the University of Salamanca, where he is also part of the Audiovisual Contents Observatory. He is a collaborator of the communication group LabCom — Communication and Arts. His main research lines are related to the study of culture, heritage and tourism in the digital society and meta-research in communication.

ORCID: https://orcid.org/0000-0001-9521-3364
Email: vale.naval@usal.es
Address: Miguel de Unamuno Campus, Edificio FES, 37007, Salamanca, España

Bianca Persici Toniolo is a PhD student in communication sciences at LabCom -— Communication and Arts with a project funded (2020.05702.BD) by the Foundation for Science and Technology. She is editor of the journal *Comunicando* and her research is focused on governmental crisis communication, oriented by professor Gisela Gonçalves. She coordinates the Young Researchers Working Group of the Portuguese Association of Communication Sciences (Sopcom).

ORCID: https://orcid.org/0000-0001-5496-6271

Email: bianca.toniolo@ubi.pt

Address: Marques de Ávila e Bolama Avenue, 6200, Covilhã, Portugal

Submitted: 14/02/2021 | Accepted: 13/04/2021