



Perceptions of Spanish citizens about disinformation in times of COVID-19: effects and mechanisms to fight against false news

Percepciones de la ciudadanía española ante la desinformación en tiempos de la COVID-19: efectos y mecanismos de lucha contra las noticias falsas

Perceções dos cidadãos espanhóis sobre a desinformação em tempos de COVID-19: efeitos e mecanismos de combate às notícias falsas

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Abstract

Disinformation has become one of the main problems for society and democracy. Despite the increase in research on this topic, citizen perception of the effects caused by fake news and how to combat it is yet an ongoing issue. Our objective is to analyze these two aspects in the context of COVID-19 in Spain. Also, we seek to identify the sociodemographic and political factors that determine them. We employed a quantitative survey run through an online panel (n=682). The results indicate that disinformation generates, as the primary effect, an increase in mistrust towards the media and politicians among Spanish citizens. Likewise, the incidence of disinformation in the change of opinion and the decision to vote has dropped. Concerning Coronavirus, falsehoods had a low impact on vaccination, although they promoted conspiracy theories among citizens. Men, young people and far-right sympathizers perceive the consequences of deception more intensely. Finally, the work of fact-checking agencies and legislation are the mechanisms to combat disinformation that citizens consider most reliable. These results have important implications for public institutions and journalism.

Keywords: disinformation; fake news; COVID-19; journalism; effects; mechanisms to combat disinformation

Resumen

La desinformación se ha convertido en uno de los principales problemas para nuestra sociedad y nuestra democracia. Pese al incremento de investigaciones sobre este tópico, la percepción ciudadana sobre los efectos causados por las noticias falsas y las formas de combatirlas es una cuestión todavía pendiente. Nuestro objetivo es analizar estos dos aspectos en el contexto de la COVID-19 en España y, además, identificar los factores sociodemográficos y políticos que los determinan. Para ello, hemos usado una encuesta cuantitativa aplicada mediante un panel online (n= 682). Los resultados revelan que la desinformación genera, como efecto principal, un incremento de la desconfianza hacia los medios y los políticos entre la ciudadanía española. Por otra parte, su incidencia en el cambio de opinión y en la decisión de voto es reducida. En relación con el Coronavirus, las falsedades han tenido un bajo impacto en el proceso de vacunación, aunque si han repercutido en el incremento de las teorías de la conspiración entre la ciudadanía. Los hombres, los jóvenes y las personas de extrema derecha son quienes perciben las consecuencias de los engaños con mayor intensidad. Finalmente, la verificación de la información y la legislación son los mecanismos de lucha contra la desinformación que la ciudadanía considera más fiables. Estos resultados tienen importantes implicaciones tanto para las instituciones públicas como para el periodismo.

Palabras clave: desinformación; noticias falsas; COVID-19; periodismo; efectos; mecanismos de lucha contra la desinformación

Resumo

A desinformação tornou-se um dos principais problemas da nossa sociedade e da nossa democracia. Apesar do aumento das pesquisas sobre o tema, a percepção do cidadão sobre os efeitos causados pelas notícias falsas e as formas de combatê-las ainda é uma questão pendente. Nosso objetivo é analisar esses dois aspectos no contexto do COVID-19 na Espanha e, além disso, identificar os fatores sociodemográficos e políticos que os determinam. Para isso, utilizamos uma pesquisa quantitativa aplicada por meio de um painel online (n= 682). Os resultados revelam que a desinformação gera, como efeito principal, um aumento da desconfiança em relação à mídia e aos políticos entre os cidadãos espanhóis. Por outro lado, reduz-se a sua incidência na mudança de opinião e na decisão de voto. Em relação ao Coronavírus, as falsidades tiveram baixo impacto no processo de vacinação, embora tenham impactado no aumento de teorias da conspiração entre os cidadãos. Homens, jovens e pessoas da extrema-direita são os que percebem mais intensamente as consequências do engano. Por fim, a verificação da informação e a legislação são os mecanismos de combate à desinformação que os cidadãos consideram mais fiáveis. Esses resultados têm implicações importantes tanto para as instituições públicas quanto para o jornalismo.

Palavras-chave: desinformação; notícias falsas; Espanha; jornalismo; efeitos; mecanismos de combate à desinformação

1. Introduction

COVID-19 has placed misinformation in the focus of social attention. During this health crisis, the circulation of fake news worldwide has increased significantly (Gabarron et al., 2021). The dimension reached by this phenomenon makes it a central problem of our society due to its potential consequences for public health and the political management of the pandemic (García-Borrego & Casero-Ripollés, 2022).

Various investigations have dealt with analyzing the content and spreading of hoaxes (León et al. 2022; Pérez-Dasilva et al. 2020). However, the effects of disinformation on the public, and the reliability of the mechanisms to deal with it need to be investigated. Our objective is to analyze the citizen perception of the consequences and the formulas to combat fake news in the context of the Coronavirus and to know the incidence of sociodemographic factors in them.

Knowing the incidence of disinformation about COVID-19 among citizens is a fundamental factor in fighting against this public health issue. Finding out this offers data to articulate a response from the media and the political system to minimize the negative consequences of this phenomenon. We must not forget that fake news about the Coronavirus has promoted conspiracy theories, polarization, propaganda, psychological disorders or destabilization campaigns based on geopolitical interests, among other consequences (Ball & Maxmen, 2020). Determining citizen perception offers valuable information that can be used to combat these threats more efficiently.

2. Literature review

2.1. Disinformation in the context of COVID-19

The digital environment and social media have promoted the spread of disinformation and fake news (Lazer et al., 2018). In this context, new actors and strategies that use deception to obtain political benefits within the framework of post-truth in our society have emerged (McIntyre, 2018). All of this has given rise to information disorders (Wardle & Derakhshan, 2017) that enable the production and massive circulation of deliberately false information, harmless misinformation and malicious information. These contents and their political use question the credibility of the central institutions of the public sphere and can affect the legitimacy of democracy (Bennett & Livingston, 2018).

Academic interest in studying this phenomenon linked to information manipulation has multiplied since 2016 (Lazer et al., 2018). Two political events marked the international agenda that year: Brexit in the United Kingdom and Donald Trump's electoral victory in the United States. After these two decisive moments of disinformation came the health crisis of COVID-19. When this global pandemic broke out, the ideal conditions for the proliferation of fake news simply through any digital media already existed (García-Marín, 2020). News consumption by citizens intensified instantly and extraordinarily (Casero-Ripollés, 2020a). Within this framework, the circulation of hoaxes and falsehoods multiplied (Zunino, 2021; León et al., 2022), generating an infodemic.

2.2. Effects of disinformation and formulas to combat deception

Exposure to disinformation can have a significant impact on people's thoughts, actions, and memories. Therefore, fake news can influence citizens' behaviour (Levy, 2017). Even short exposure to misleading content can significantly change people's unconscious behaviour (Bastick, 2021). This determines the high importance of this phenomenon due to the social and democratic consequences that it can cause.

Research on the effects of disinformation on citizens is underdeveloped. However, some studies provide relevant elements on the factors that enhance the consequences of fake news. Thus, age is a significant element since the intensity of the effects of misinformation is more profound in older people than among young people (Guess et al., 2019; Gómez-Calderón et al., 2022). On the other hand, education appeared to be a variable that reinforces the scope of misleading content. The less trained and educated citizens are more affected by these messages (Pennycook & Rand, 2019).

Ideology is the third factor that causes the incidence of disinformation to be stronger (Jang & Kim, 2018). People are more susceptible to disinformation when fitting their pre-existing attitudes or beliefs (Greenspan & Loftus, 2021). Some research suggests that conservatives are more affected by fake news than the rest (Guess et al., 2019; Gómez-Calderón et al., 2022). On the other hand, there is evidence about a connection between the consumption of fake news and feelings of cynicism and alienation towards politicians (Balmas, 2014).

Another determining factor in the influence of misleading content is the credibility given to the source of the information. Lower trust in the media is related to higher levels of disinformation (Valenzuela et al., 2022). However, there is controversy regarding the possibility that exposure to fake news undermines trust in the media. Some investigations affirm that this occurs (Ognyanova et al., 2020; Blanco-Alfonso et al., 2021), while others argue that it is less influential than initially expected (Valenzuela et al., 2022). Meanwhile, other evidence suggests that the media are losing social influence in the digital environment, an aspect that would reduce its ability to combat disinformation (Casero-Ripollés, 2020b).

The possible solutions to curb the harmful effects of disinformation on citizens are state regulation, media education (Vianna & Carvalho-Mendonça, 2021) and fact-checking or information verification (Rúas-Araújo et al., 2020). The use of laws against disinformation has expanded to various countries such as the United Kingdom, Italy, China and Germany (Cardoso et al. 2018). Some research argues that policy efforts can reduce citizens' chances of encountering fake news, particularly in the context of COVID-19 (Hartley & Vu, 2020). However, applying the legislation has generated risks to freedom of expression (Tambini, 2017).

Media literacy is related to the ability to participate positively, critically, and competently in the digital environment (McDougall, 2019). Having a high level of this ability reduces the chances of believing and sharing fake news (Kahne & Bowyer, 2017). This quality, and its preventive capacity, is a fundamental tool in the fight against hoaxes according to various academics (Agarwal & Alsaeedi, 2020).

Finally, fact-checking is an activity consisting in denying and discrediting fake news (Rodríguez Pérez, 2020; Tuñón-Navarro & Sánchez-del-Vas, 2022). COVID-19 has strengthened this way of fighting disinformation (López-García et al., 2021; Teixeira &

Martins, 2021). Along with the news media, a series of independent platforms have appeared in the digital environment that make this task their reason to be (García-Vivero & López-García, 2021). Fact-checking is always reactive since it occurs after the spreading of the hoax and does not prevent its circulation. This causes the elimination of the effects generated by disinformation to be problematic. Also, this questions the ability to fact-checking to combat disinformation since the correction does not guarantee the elimination of the negative consequences generated by falsehoods in the people exposed to them (Wittenberg & Berinsky, 2020).

3. Methodology

The specific objectives of this research are:

- O1. To know the perception of Spanish citizens about the effects of disinformation.
- O2. Determine the incidence of sociodemographic and political factors in the perception of the consequences of fake news among Spanish citizens.
- O3. Explore the perception of Spanish citizens about the reliability of the different mechanisms to fight against disinformation.
- O4. To discern the influence of sociodemographic and political factors on the perception of the reliability of formulas to combat fake news among Spanish citizens.

The applied methodology is based on a quantitative survey applied through an online panel. The questionnaire was launched in July 2021 through the Qualtrics platform. The sample comprises 682 Spanish citizens. The data processing was executed with the statistical package SPSS v.27.

Two dependent variables have been selected:

- a) Effects of disinformation perceived by citizens. Eight categories make it up: they made me change my point of view on a relevant event; they made me change my opinion about a group such as immigrants; they made me change my political option for the next elections; they helped me to realize that the COVID-19 vaccine is not safe, and I decided not to get it; they made me realize that there are political and economic interests in the origins of COVID-19; they made me realize that the legacy media are not reliable sources of information; they made me realize that social media are not reliable sources of information; they made me realize that all politicians lie, and it is not worth going to vote. This variable has been measured with a Likert scale where 1 corresponds to "not at all agree" and 5 to "strongly agree".
- b) Mechanisms to combat disinformation perceived by the public. Five categories comprise it: reading news in legacy media; publication of information by fact-checking agencies; media literacy education; creation of laws to penalize its

dissemination; government action plans. This variable has been measured with a Likert scale where 1 corresponds to "low reliability" and 5 to "high reliability".

In addition, four independent variables of a sociodemographic and political nature have been used:

- 1) Gender. It is divided into two categories: men and women.
- 2) Age. It is divided into four categories: 18-29, 30-49, 50-64, 65+.
- 3) Education. It is divided into three categories: school graduate or less; secondary studies; university studies.
- 4) Ideology. It is divided into five categories: extreme left; left; center; right; extreme right.

3.1. Effects of disinformation on Spanish citizens

The data reveals that Spanish citizens perceive the effects of disinformation with a medium-low intensity. All the categories considered are between 2.19 and 2.83 on a scale of zero to five (Table 1). This shows that citizens generally lack the feeling that fake news causes relevant disruptions in their daily lives.

A thorough analysis allows us to observe that the categories linked to changes in citizen opinion due to disinformation register lower values than the rest (Table 1). Thus, Spanish citizens do not consider that fake news caused changes in their points of view, views on immigration or voting decision. However, the categories related to distrust of the media and politicians register higher values. Thus, disinformation has caused an increase in the average number of citizens who perceive legacy media and social media as unreliable sources of information and consider politicians liars. This reveals a certain distrust towards these central actors in the public sphere blamed for the phenomenon of fake news.

Concerning COVID-19, the data provide two pertinent pieces of evidence (Table 1). First, the consequences of disinformation about the COVID-19 vaccination process are low. The results indicate that these false contents did not prevent most citizens from becoming immunized in the face of this health crisis. On the other hand, the average value obtained by the perception of the citizenry is higher than at the origins of the Coronavirus, as there were political and economic interests. This reveals the presence of conspiracy theories about COVID-19 among Spanish citizens.

Table 1. Effects of disinformation

	MEAN	SD
They made me change my point of view about a socially relevant event	2,35	1,18233
They made me change my opinion about a group such as immigrants	2,29	1,20811
They made me change my political option for the next elections	2,22	1,2362
I have been made to realize that the COVID-19 vaccine is not safe, and I have decided not to take it	2,19	1,29117
They made me realize that there are political and economic interests in the origins of COVID-19	2,54	1,3145
They have made me realize that the legacy media are not reliable sources of information	2,72	1,30564
They made me realize that social media is not a reliable source of information	2,83	1,28466
They made me realize that all politicians lie, and it is not worth going to vote	2,77	1,29204

Source: Authors

If we introduce the gender variable, the data show that men present higher values than women in all the effects of disinformation, except in the category linked to the change of point of view on socially relevant events (Table 2). In addition, the results obtained in the case of men appear in all categories above the general average shown in Table 1. Also, women are below average. These two pieces of evidence reveal that women perceive the consequences of disinformation less intensely. On the other hand, men are more affected by fake news when it comes to changing their opinions and their decision to vote, getting vaccinated against COVID-19, believing in conspiracy theories, and distrusting both traditional and digital media and politicians.

Table 2. Effects of disinformation by gender

	Men		Women	
	MEAN	SD	MEAN	SD
They made me change my point of view about a socially relevant event	2,36	1,227	2,35	1,139
They made me change my opinion about a group such as immigrants	2,35	1,241	2,23	1,174
They made me change my political option for the next elections	2,36	1,305	2,08	1,15
I have been made to realize that the COVID-19 vaccine is not safe, and I have decided not to take it	2,23	1,283	2,15	1,298
They made me realize that there are political and economic interests in the origins of COVID-19	2,6	1,337	2,48	1,291
They made me realize that the legacy media are not reliable sources of information.	2,79	1,307	2,65	1,301
They made me realize that social media is not a reliable source of information.	2,94	1,309	2,71	1,251
They made me realize that all politicians lie, and it is not worth going to vote	2,86	1,29	2,68	1,288

Source: Authors

Considering age, we can observe that as it increases, the perception of the intensity of the effects of disinformation decreases (Table 3). Thus, young people (18 to 29 years old) are less critical and perceive the effects of fake news more intensely than older people (both over 65 and 50 to 64 years old). These last two age ranges present low average values in most categories analyzed (table 3). Specifically, people between 50 and 64 believe that fake news did not alter their views, their conception of immigration, or their decision to

vote. In the case of those over 65, their confidence in legacy and social media as sources of information stands out due to the low values recorded in these two categories (Table 3).

Table 3. Effects of disinformation by age

	From 18 to 29		From 30 to 49		From 50 to 64		Over 65	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
They made me change my point of view about a socially relevant event	2,43	1,183	2,38	1,186	1,63	0,917	2.50	1
They made me change my opinion about a group such as immigrants	2,33	1,215	2,35	1,217	1,7	0,929	2	1,154
They made me change my political option for the next elections	2,27	1,243	2,24	1,227	1,81	1,225	1,25	0,5
I have been made to realize that the COVID-19 vaccine is not safe, and I have decided not to take it	2,19	1,306	2,25	1,287	1,86	1,212	1,25	0,5
They made me realize that there are political and economic interests in the origins of COVID-19	2,52	1,312	2,59	1,312	2,29	1,373	2,25	0,957
They made me realize that the legacy media are not reliable sources of information.	2,71	1,3	2,8	1,301	2,31	1,325	1,5	0,577
They made me realize that social media is not a reliable source of information	2,8	1,276	2,9	1,253	2,54	1,501	1,25	0,5
They made me realize that all politicians lie, and it is not worth going to vote	2,74	1,306	2,85	1,266	2,38	1,315	2,5	1,732

Source: Authors

Regarding the level of studies, we can observe that people with intermediate educational levels, corresponding to secondary studies, perceive the effects of fake news less intensely since they present the lowest levels (table 4). People with more education (university studies) agree more with the fact that disinformation has changed their opinions and their decision to vote. In addition, they are the most critical of the legacy and digital media, considering them unreliable as information sources. Finally, the least educated people are the most likely to believe conspiracy theories related to COVID-19 due to fake news. These

results suggest that the educational level has disparate consequences on the perception of disinformation by Spanish citizens. In any case, the data show that a higher level of studies does not imply a more potent defense against the effects of fake news.

Table 4. Effects of disinformation by education

	High school graduate or less		Secondary studies		University studies	
	MEAN	SD	MEAN	SD	MEAN	SD
They made me change my point of view about a socially relevant event	2,36	1,172	2,17	1,137	2,5	1,201
They made me change my opinion about a group such as immigrants	2,15	1,053	2,11	1,131	2,46	1,263
They made me change my political option for the next elections	2,36	1,282	1,98	1,131	2,4	1,282
I have been made to realize that the COVID-19 vaccine is not safe, and I have decided not to take it	2,44	1,329	1,94	1,14	2,37	1,369
They made me realize that there are political and economic interests in the origins of COVID-19	2,73	1,408	2,42	1,281	2,62	1,326
They made me realize that the legacy media are not reliable sources of information.	2,5	1,35	2,67	1,361	2,79	1,251
They made me realize that social media is not a reliable source of information.	2,76	1,282	2,65	1,306	2,98	1,25
They made me realize that all politicians lie, and it is not worth going to vote	2,86	1,398	2,71	1,319	2,81	1,258

Source: Authors

Finally, considering ideology, the data reveals that far-right sympathizers perceive a greater incidence of disinformation in the following cases: changing opinion, voting decisions, and distrust of legacy media and social media as sources of information (table 5). They also present a higher average in the effects of fake news about the COVID-19 vaccination and, especially, in the incidence of conspiracy theories about this health crisis.

Finally, extreme right supporters are more critical of political actors (M=3.1). This could likely lead these citizens to reject the institutional system and position themselves in anti-political positions.

Also, citizens with political positions on the extreme left and the left present lower average values than the rest (table 5). This reveals that they appreciate a lower incidence of the consequences of disinformation than people on the centre, right and extreme right. Regarding the media, legacy and digital, radical left followers show a more favorable perception of their role as reliable sources of information. On the other hand, citizens with moderate political views and far-right supporters are the most critical in this aspect and present a greater degree of mistrust towards the media.

Table 5. Effects of disinformation by ideology

	Far left		Left		Centre		Right		Far right	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
They made me change my point of view about a socially relevant event	2,12	1,417	2,12	1,177	2,3	1,219	2,3	1,083	2,77	1,292
They made me change my opinion about a group such as immigrants	2,07	1,347	2,04	1,176	2,23	1,1	2,28	1,141	2,59	1,345
They made me change my political option for the next elections	1,97	1,31	2,05	1,183	2,04	1,208	2,13	1,14	2,71	1,401
I have been made to realize that the COVID-19 vaccine is not safe, and I have decided not to take it	1,9	1,316	1,84	1,181	2,21	1,353	2,21	1,212	2,59	1,423
They made me realize that there are political and economic interests in the origins of COVID-19	2,25	1,409	2,08	1,206	2,59	1,344	2,56	1,279	2,98	1,312
They made me realize that the legacy media are not reliable sources of information.	2,4	1,515	2,64	1,345	2,9	1,445	2,68	1,25	2,97	1,202
They made me realize that social media is not a reliable source of information.	2,5	1,414	2,73	1,307	2,76	1,303	2,68	1,213	3,09	1,322
They made me realize that all politicians lie, and it is not worth going to vote	2,55	1,568	2,4	1,246	2,78	1,316	2,79	1,273	3,1	1,289

Source: Self-made

3.2. Mechanisms to combat disinformation

The most effective formula to combat the effects of disinformation is the work of fact-checking agencies, such as Newtral or Maldito Buló, according to Spanish citizens (table 6). Next, there is regulation to punish the dissemination of this type of fraudulent content. In an intermediate position, tools to fight against this phenomenon, appear the media literacy and the promotion of government plans. Finally, the least effective method, according to the opinion of the citizens, is the consumption of news in the legacy media.

Table 6. Mechanisms to combat disinformation

	MEAN	SD
News reading in legacy media	2,89	1,132
Publication of information by fact-checking agencies	3,05	1,100
Media Literacy Education	2,99	1,104
Creation of laws to penalize its dissemination	3,00	1,174
Government action plans	2,94	1,157

Source: Authors

The analysis of the data by gender enables us to observe that men have slightly higher values than women (table 7). In addition, they are above the average, except for reading the information in the legacy media (table 7). This shows that men have higher confidence in the different ways of fighting disinformation than women, who are somewhat more skeptical in this respect. Although in both cases, the method that is considered most appropriate is the task of fact-checking agencies. The commitment to media literacy stands out in the case of men.

The age group between 30 and 49 presents the highest values in the different formulas to combat disinformation (table 8). In this age group, all the methods exceed an average of 3. This shows that citizens between the ages of 30 and 49 have the most robust confidence in the reliability of the different procedures to combat fake news. On the contrary, people over 65 are the most skeptical since they present the lowest values in all the mechanisms considered. This shows that, as age increases, especially after 50, mistrust increases regarding the different techniques to deal with fraudulent content.

All age groups agree to provide more substantial importance to the activity of fact-checking agencies as the best way to oppose disinformation (table 8). However, people between 30 and 49 place the regulation, specially criminal legislation, against this practice at the same level. Citizens aged 50 or over grant a relevant role to the legacy media in the fight against fake news.

Table 7. Mechanisms to combat disinformation by gender

	Men		Women	
	MEAN	SD	MEAN	SD
News reading in legacy media	2,89	1,16	2,89	1,106
Publication of information by fact-checking agencies	3,08	1,132	3,02	1,068
Media Literacy Education	3,05	1,153	2,92	1,052
Creation of laws to penalize its dissemination	3,05	1,194	2,95	1,154
Government action plans	2,95	1,17	2,93	1,146

Source: Authors

Table 8. Mechanisms to combat disinformation by age

	From 18 to 29		From 30 to 49		From 50 to 64		Over 65	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
News reading in legacy media	2,73	1,133	3,04	1,113	2,93	1,189	2,75	0,5
Publication of information by fact-checking agencies	2,99	1,113	3,12	1,077	2,93	1,208	2,75	0,5
Media Literacy Education	2,95	1,132	3,06	1,058	2,7	1,221	2,25	0,957
Creation of laws to penalize its dissemination	2,92	1,212	3,12	1,118	2,63	1,227	2,75	0,5
Government action plans	2,86	1,175	3,04	1,128	2,84	1,218	2	0,816

Source: Authors

Regarding education, the data indicate that as citizen education increases, confidence in the reliability of all methods of fighting disinformation grows (table 9). Thus, people with a lower educational level are generally more suspicious than those with university studies and show a higher degree of conviction in the different formulas to combat fake news. Education is configured, thus, as a determining factor in this matter.

It is significant that for people with elementary and secondary studies, the best way to deal with fraudulent content is the work of fact-checking agencies (table 9). In contrast, the most effective mechanism for individuals with higher education to deal with fraudulent information is regulation. Likewise, these last have a higher level of confidence in the role of the legacy media in restraining disinformation.

Table 9. Mechanisms to combat disinformation for education

	High school graduate or less		Secondary studies		University studies	
	MEAN	SD	MEAN	SD	MEAN	SD
News reading in legacy media	2,6	1,263	2,83	1,12	2,98	1,121
Publication of information by fact-checking agencies	3	1,115	2,93	1,061	3,15	1,121
Media Literacy Education	2,81	1,135	2,83	1,1	3,13	1,086
Creation of laws to penalize its dissemination	2,5	1,084	2,85	1,117	3,18	1,199
Government action plans	2,78	1,166	2,82	1,092	3,06	1,198

Source: Authors

Finally, ideology is another determining factor that conditions the perceptions of the Spanish citizenry regarding the formulas to fight against fake news. The data reveals that people on the extreme left are the most skeptical about the reliability of the different mechanisms to deal with disinformation. These citizens present the lowest values in all categories (table 10). On the other hand, far-right citizens show the most considerable confidence in all the procedures to combat fraudulent content. In this case, all categories are above 3.

Likewise, ideology also establishes differences in determining the most effective method to deal with disinformation. Thus, people on the left are committed to create laws to prosecute and punish the spread of fake news in the most appropriate way (table 10). Likewise, they place the action plans promoted by the Government. Consequently, these citizens look to the political-institutional system to solve this problem. Also, people on the centre, right and extreme right consider that the role of fact-checking agencies is more reliable. Complementarily, they give less reliability to legacy media and rule of law. These data reveal the different orientations of citizens in the fight against disinformation depending on their ideology.

Table 10. Mechanisms to combat disinformation by ideology

	Far left		Left		Centre		Right		Far Right	
	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
News reading in legacy media	2,2	1,136	2,99	1,103	3	1,209	2,88	1,095	3,11	1,206
Publication of information by fact-checking agencies	2,52	1,28	3,14	1,094	3,04	1,208	2,98	0,988	3,47	1,197
Media Literacy Education	2,45	1,131	3,05	1,102	3,02	1,239	2,89	1,041	3,36	1,22
Creation of laws to penalize its dissemination	2,6	1,373	3,21	1,217	2,97	1,278	2,87	1,089	3,22	1,205
Government action plans	2,57	1,412	3,15	1,092	2,88	1,172	2,78	1,099	3,26	1,252

Source: Authors

4. Discussion and conclusion

The results convey original and significant findings on how Spanish citizens perceive the consequences of disinformation and the reliability of the different methods to combat it. First, our data reveals that fake news generates, as a primary effect, an increase in mistrust towards the media and politicians. This phenomenon, based on a prior lack of credibility towards these actors, means that disinformation questions the role of the two central actors that traditionally monopolized the public sphere (Habermas, 2006). Citizens blame the media and politicians for the lack of efficiency in managing this problem, causing a rise in disaffection and anti-politics (Balmas, 2014), particularly among men with lower educational levels who sympathise with the far-right. Moreover, those citizens most critical of the media are men, youngsters, university students and extreme right supporters. Thus, fake news deteriorates the social legitimacy of the media and politicians, posing a substantial threat to their role in the democratic system.

Another relevant finding shows that disinformation has a lower incidence when changing the opinion of citizens and their voting decisions. These data can have a double meaning. On the one hand, the public may be getting used to living in a context characterized by information disruptions and is beginning to develop defense mechanisms. On the other hand, citizens may be unaware that they are consuming fake news that shapes their attitudes. For this reason, they do not identify them as an element capable of conditioning their opinions and electoral behaviour.

On the other hand, concerning COVID-19, our data indicate that disinformation had a low impact on vaccination in Spain. Instead, it is detected that the hoaxes linked to the pandemic caused the growth of conspiracy theories. However, the results indicate that fake news generated no consequences on how citizens reacted to the Coronavirus in Spain. This may be related to the fact that in the context of a health crisis, many people consumed more information (Casero-Ripollés, 2020a), having greater possibilities of contrasting and verifying the news. In addition, more people concentrated on expert scientific sources considered more reliable and less deceitful (Yuen, 2023).

On the other hand, the results enable us to identify the sociodemographic and political factors that have a greater incidence in the effects of disinformation among Spanish citizens. According to previous studies (Guess et al., 2019; Gómez-Calderón et al., 2022; Jang & Kim, 2018), gender, age and ideology are the most influential variables. Our findings show that, men, young people and far-right followers perceive the consequences of fake news more intensely.

Regarding the mechanisms to combat disinformation, Spanish citizens point to verifying information and regulation as the most reliable formulas. Significantly, ideology and education are the key factors that determine the commitment to one tool or another. Thus, people with lower educational levels, and far-right, right and centre supporters consider fact-checking more effective. On the other hand, university students, left and far-left supporters opt for regulation as the most appropriate instrument.

Contrariwise, legacy media appear to be the least effective way. This is related to media distrust as a primary consequence of fake news detected in previous research (Blanco-Alfonso et al., 2021; Ognyanova et al., 2020). The low trust towards these actors means that most citizens do not see them as a solution to this problem. Only people over 50 give a relevant role to the legacy media in the battle against disinformation. The data suggest that journalism remains in a marginal position in facing information disorders, at least from the citizens' perception.

The sociodemographic and political factors affecting the perception of Spanish citizens about the reliability of the mechanisms to combat disinformation are gender, age, education and ideology. Thus, women, elderly people, less educated citizens and far-left supporters present the highest levels of distrust and criticism against the different formulas for fighting fake news.

The absence of a comparative analysis with other countries is the main limitation of this research. However, our findings have high social importance since they allow identifying central aspects of the consequences of disinformation and ways to combat it from the perception of Spanish citizens. These data can help in designing plans to reduce the social effects of fake news. Therefore, governments, institutions and organizations (private or public) can draw relevant lessons on how to deal with information disorders more efficiently.

Finally, our data have important implications for journalism. Our results suggest that the legacy media should implement new strategies to combat fake news that contribute to effectively reducing this type of information and, thus, managing to regain public trust. Otherwise, they risk occupying an increasingly irrelevant position in our society that threatens their future.

Authors' contribution

Andreu Casero-Ripollés: Conceptualization, Writing–Original Draft, Writing-Revision and Editing, Project Administration, Funding Acquisition. **Hugo Doménech-Fabregat:** Writing–Original Draft, Writing-Revision and Editing. **Laura Alonso-Muñoz:** Methodology and Formal Analysis. All authors have read and agree to the published version of the manuscript. Conflicts of interest: The authors declare that they have no conflict of interest.

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