

## Gem from the Global South

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# Disinformation, hoaxes, curation and verification: review of studies in Ibero-America 2017-2020

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**Abstract:** The objective of this article is to carry out a review of disinformation research in the Ibero-American area between 2017 and 2020. To do this, American Psychological Association standards for social scientific reviews are followed and about 60 papers published in indexed journals in Ibero-America are analyzed, as well as published books on the subject. The results are shown grouped into three parts. First, the three fundamental concepts related to disinformation are reviewed: the term of disinformation itself, as well as post-truth and infodemic. Second, the main disinformation products are studied: fake news, information disorders and hoaxes, according to their types, themes, formats, and channels. In the third part, the main strategies against disinformation are presented, reviewing the published works of two of them: content curation and fact checking. The most notable authors, by quantity of research, on the subject are Magallón-Rosa with 6 works, Ufarte-Ruiz with 4 and García-Marín with 3 works. Likewise, the studies by Dolors Palau-Sampio (2018. Fact-checking y vigilancia del poder: La verificación del discurso público en los nuevos medios de América Latina [Fact-checking and surveillance of power: The verification of public discourse in Latin America's new

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**Mario Pérez-Montoro**, Centre of Research in Information, Communication and Culture CRICC. Faculty of Information and Audiovisual Media, University of Barcelona, Barcelona, Spain, E-mail: [perez-montoro@ub.edu](mailto:perez-montoro@ub.edu)

media]. *Communication & Society* 31(3). 347–365), Ángel Vizoso & Jorge Vázquez-Herrero (2019. Plataformas de fact checking en español. Características, organización y método [Fact checking platforms in Spanish. Characteristics, organization and method]. *Communication & Society* 32(1). 127–144), and Carlos Rodríguez-Pérez (2019. No diga fake news, di desinformación: Una revisión sobre el fenómeno de las noticias falsas y sus implicaciones [Don't say fake news, say disinformation: A review of the fake news phenomenon and its implications]. *Comunicación* 40. 65–74), can be highlighted for their analysis of disinformation in the Ibero-American area; for their analysis of the typologies of hoaxes the work of Ramón Salaverría, Nataly Buslón, Fernando López-Pan, Bienvenido León, Ignacio López-Goñi & María-Carmen Erviti (2020. Desinformación en tiempos de pandemia: tipología de los bulos sobre la covid-19 [Disinformation in times of pandemic: Typology of Covid-19 hoaxes]. *El profesional de la información* 29(3). e290315) and for the proposals on curation the works of López-Borrull with collaborators. Conclusions include that the phenomenon of disinformation is highly polyhedral, but society has instruments to deal with it, such as curation and verification (fact checking).

**Keywords:** content curation; disinformation; fact checkers; fact checking; fake news; hoaxes; infodemic; post-truth; verification

## 1 Introduction

This article presents a review of recent studies on disinformation in Ibero-America (the term includes Latin-language speaking countries in the Americas, together with Spain and Portugal). To this end, the main studies published between 2017 and 2020 are reviewed around three interrelated aspects: First, disinformation itself as a phenomenon, as well as the related concepts of post-truth and infodemic. Second, the main products or manifestations of disinformation, i.e., hoaxes, information disorders and fake news, analyzing their types, topics, formats and channels. Finally, the main strategies for responding to disinformation are shown, with special attention to two of them, curation and fact-checking.

For each section, the most commonly used and related terms are presented and discussed, analyzing the main contributions of the Ibero-American literature, with relevant examples or manifestations. As the research approach for this article, the recommendations of APA 7th edition (American Psychological Association 2020) on literature review articles have been adopted, in which it is recommended that the authors of a review article clearly define the problem, synthesize or summarize previous research to inform readers of the status quo of the problem, identify relationships between the studies analyzed in the review and suggest

possible ways to solve the problem. We have tried in the following to follow the guidelines recommended by APA for this type of work.

## 2 Disinformation, post-truth and infodemic

This section provides an overview of the three most commonly used terms to allude to the phenomenon we are studying based on what has been established in recent literature.

### 2.1 Disinformation

To define the phenomenon, which we have been witnessing in recent years at a global level, this term presents the greatest consensus among the public. Moreover, it questions the veracity of much of the information and content to which we are exposed and which we citizens all over the world consume on a daily basis.

A commonly accepted definition of disinformation is the one proposed by the European Commission (2018), which refers to content that is “false, inaccurate or misleading [...] designed, presented and promoted intentionally to cause public harm or to gain certain benefit.” Also, Del-Fresno-García adds, it “change[s] the perception of large groups of people or societies and influence their behavior (political, economic, ideological ...)” (Del-Fresno-Garcia 2019, p. 3).

Therefore, we can see that three main types of content produce disinformation: false, inaccurate and misleading contents. However, the motives or intentions behind them is just as important as these types of products, which we will return to in the next section. We see that intents are either to cause public harm, or to produce particular benefits, or to mislead or change people’s perceptions and influence their behavior (or more than one of these at a time). When there is determined intentionality, the manipulation, falsification or transformation (to varying degrees or in different ways) of reality are tools to achieve the ends of causing harm, obtaining benefits or influencing people’s behavior. Some purposes also can be usually covert and remain invisible or at least are not made explicit to the target audience.

Although this is not a new phenomenon (based on a summary of its historical evolution, see Parra Valero and Oliveira 2018), what is new about it is the greater dimension reached in our time: “the era of big data, has also made massive lies possible” (Guallar 2018). The massive dimension makes the problem today much more important than it has ever been in the past. A widespread perception, moreover, is that the problem, far from being on the way of solving, is going to

exacerbate. An example of this perspective (with catastrophist overtones) is the well-known report by the consulting firm Gartner, which warned in 2017 that in 2022 the public will consume more fake news than authentic news (Panetta 2017).

Multiple reasons explain this phenomenon of disinformation, so researchers regard it as a problem with multidimensional roots (Aparici and García-Marín 2019; Ireton and Posseti 2018; Wardle and Derakhshan 2017), although basically, the reasons can be classified into two large groups. On the one hand, technological advances and the typical characteristics of the social web fuel the spread of any falsehood instantly and globally with a potentially massive reach. On the other hand, various psychological motivations, such as cognitive dissonance processes or confirmation biases (García-Marín 2020), make people not only prone to believe false information, but may even give it more credibility than the truth.

It is also worthwhile to dwell on two other terms closely related to disinformation, which provide specific and complementary nuances: post-truth and infodemic.

## 2.2 Post-truth

The extension of disinformation situations and processes to which we are alluding has made another term emerge with force, post-truth, which was declared word of the year in 2016 by the Oxford English Dictionary. The definition provided by Oxford University Press, one of the most widely cited versions, considers post-truth “circumstances in which objective facts are less influential in shaping public opinion than emotional appeals and personal beliefs” (Oxford University Press, 2016). Other definitions show different nuances, but as Rodrigo-Alsina and Cerqueira point out, they all agree on “the influence of emotions and beliefs on people and public opinion” (Rodrigo-Alsina and Cerqueira 2019, p. 226). Thus, “the era of information and communication has turned out to be that of emotion” (Aparici et al. 2019). This implies that subjectivity has prevailed over objectivity; and that personal assessment, vision or emotion can become more important than reality itself. Taking the approach to the extreme, objective reality would be undervalued in order to believe in a new reality in which “what people feel is not only their personal feeling; it is, moreover, the truth itself” (Del-Fresno-García 2019, p. 3).

Capilla (2019) goes further and in a study in which he delves into the concept of post-truth based on the use of it in the news media, he concludes that: “(a) post-truth is a concept of political communication that poses a change in the relationship that society has with the truth; and (b) it is a term with political bias that is used to designate an opponent perceived as the enemy of the model of society” (Capilla 2019). Finally, for some authors, this phenomenon can be attributed only

to the loss of media influence caused by the rise of social networks: “social networks play the dominant role (...) the post-truth society is no longer the responsibility of the media, as it was in the 20th century” (Marcos Recio et al. 2017), and this situation would be nothing but another manifestation of the current “decline of the public sphere” (Álvaro Sánchez 2018).

### 2.3 Infodemic

This last term expanded rapidly in 2020 after February 15, when the World Health Organization declared the fight against the proliferation of false or misleading news and information to be related to the Covid-19 pandemic as a priority, describing this situation as “infodemic” (WHO 2020). Thus, infodemic, an accentuation of the situation of disinformation, literally an “epidemic of disinformation,” would be an extreme level of the phenomenon we are discussing, and is usually identified with a more or less limited period of time and a specific fact or event, generally used in the context of health crisis. In this sense, global disinformation about the Covid-19 in 2020 can be considered to have reached these levels of infodemic, although strictly speaking, at other times in the past, infodemics have also occurred (García-Marín 2020). Likewise, a variant of the term is used by UNESCO in its reports, speaking of “disinfodemic” (Posetti and Bontcheva 2020a, 2020b).

Given that the phenomenon has been placed in its conceptual and global dimension, let us now look at its manifestations (hoaxes and information disorders) as well as possible actions in response.

## 3 Manifestations of disinformation: types, topics, formats and channels

The following are the terms most commonly used to identify the manifestations of disinformation, i.e., fake news, information disorders and hoaxes, and we show the results of some recent Ibero-American research on their types, topics, formats and dissemination channels.

### 3.1 Fake news, information disorders and hoaxes

The terms most commonly used to refer to events or products that generate disinformation are definitely these three: fake news, information disorders and hoaxes.

Fake news is not only the most widely used term in the academic literature, it is also commonly used when referring to concrete manifestations of disinformation. It was chosen as the Collins dictionary's Word of the Year 2017, which defines them as "false, often sensational, information disseminated under the guise of news reporting," being an expression that appears "almost inextricably linked" to disinformation and post-truth (Rodríguez-Ferrándiz 2019). The Oxford Dictionary (2019), defines them as "news that conveys or incorporates false, fabricated or deliberately misleading information, or is characterized or accused of doing so" and the 2016 U.S. presidential election is seen as the beginning of the term's popularity.

Critics argue that if a news story is false, it cannot be called news, so they call for giving preference to two other more precise terms, or the more generic one, disinformation (Rodríguez-Pérez 2019). Thus, regarding the term fake news, on the one hand, it is almost inevitable to bring up the concept in any discussion on the subject (as this article does), but on the other hand, institutions such as UNESCO (Ireton and Posetti 2018) advise against using the expression. The latter recommendation is mainly aimed at journalists, curators and disseminators, and the reason given by UNESCO is that some governments will use it with ulterior motives. They suggest using the concept of disinformation or any other concept related to it, such as information disorders, which we will discuss below.

Information disorders would be the expression with the broadest conception (the most diverse) of the three, as it would encompass all possible variants. For Del-Fresno-García (2019), they are "intentional productions whose strategy consists of the fabrication of doubt and false controversies in order to achieve economic or ideological benefits."

Finally, the term "hoax" as a classical term has gained acceptance in the current context of recent studies that are unfavorable to fake news. Salaverría et al. (2020) firmly advocates their use, defining them as follows: "all those false contents that reach a publicly disseminated result is intentionally fabricated for a variety of motives, which may range from simple jokes or parodies, to ideological controversies, including economic fraud." However, these authors warn that the boundaries of hoaxes remain blurred, and while sometimes they are clearly premeditated, in other cases they are little more than exaggerations, misinterpretations, or confusion. The following is a review of the main types, formats, topic and channels of disinformation based on what has been established in recent research.

## 3.2 Types

It is difficult to formulate a precise categorization that encompasses all types of hoaxes, so we are going to refer to only some proposals, which we consider to have achieved a broader or more inclusive categorization of the variants observed. Aparici et al. (2019) categorize five types of hoaxes based on a study about the disinformation associated with the Catalan conflict of October 2017:

- False attribution: Relating images from other contexts, places and/or times to current events.
- Exaggeration of facts: Information that is not completely false, but is exaggerated to reinforce an argument.
- Image manipulation: Photographs in which non-existent elements are added to reinforce a message.
- Invention of facts (a category that the authors identify with fake news): Entirely false and fabricated content using guerrilla marketing 2.0 tactics, such as automated bots and impersonation.
- Counterfeit: A specific subcategory of the previous one, which consists of creating fake pages or profiles on social networks that imitate the image of corporate brands or real people.

Analyzing a broader context (not only political), Salaverría et al. (2020) establishes four main types of hoaxes: pranks, exaggerations, decontextualizations and deceptions, from lesser to greater seriousness:

- Prank: Dissemination of false information with a burlesque, parodic, satirical or caricatural purpose.
- Exaggeration: Content that has a certain link to the truth, but goes beyond the limits of truth and enters the realm of falsehood.
- Decontextualization: A hoax that uses real facts or statements in a deliberately false or misrepresented context.
- Deception: Outright falsification, in which content is fabricated with the intention of making the public believe false statements or facts.

## 3.3 Topics

In terms of topics, although the results of existing studies are difficult to compare because they analyze different temporal contexts and in different channels or countries, some general trends can be seen. Globally, political information has traditionally been the most abundant area of disinformation, together with other recurring topics such as hoaxes about migration (with a racist focus) or hoaxes

about science, although starting in 2020, with the spread of the COVID-19 pandemic, hoaxes with health content have grown notably.

Thus, for example, Bernal-Triviño and Clares-Gavilán (2019) classify topics of hoaxes in 2018 into these categories and percentages: Politics (35%), characters (15%), immigration or racism (12%), gender (10%) and science (9%). And if we go to more recent articles, from 2020, we see that Salaverría et al. (2020), argued for three major categories: Science and Health; Politics and Government; and Others, with a fairly homogeneous distribution of hoaxes among these three categories; Pozo-Montesa and León-Manove (2020), point out that the predominant topic of hoaxes is politics and false attributions to institutions; Sánchez-Duarte and Magallón-Rosa (2020) distinguish four topics in relation to COVID-19: contagions, prevention, measures taken against the pandemic and others (security, origin of the virus, predictions, etc.) and García-Marín (2020), research about COVID-19 as well, finds topic quite similar to the previous study.

Finally, Posetti and Bontcheva's UNESCO report (2020a) states the following as the major issues of disinfodemic:

- Origins and spread of coronavirus and the disease
- Medical science: Symptoms, diagnosis and treatment
- False and misleading statistics
- Impacts on the society and the environment
- Economic impacts
- Discrediting of journalists and the media
- Politicization
- Content promoted by celebrities seeking fraudulent financial gain.

### 3.4 Formats

A report by Posetti and Bontcheva (2020a) for UNESCO identifies four key formats of disinformation:

- Emotive narratives and memes
- Websites and counterfeited identities
- Fraudulently distorted, fabricated or decontextualized images and videos
- Infiltration and planned disinformation campaigns

Other studies, such as Salaverría et al. (2020), show that the predominant format continues to be text, often in combination with other multimedia formats, and it is noteworthy that no cases are found of such dangerous formats as “deep fakes” based on the creation of false images through artificial intelligence.



### 3.5 Channels

If we distinguish three main types of channels in the dissemination of disinformation content: the media, open social networks (such as Twitter, Facebook or Instagram) and closed social networks and messaging services (such as Whatsapp, Telegram or Facebook groups), the results of various studies have shown that the last group accounts for a large share of the spread of disinformation, although the presence of the phenomenon in the second group is also frequent, while its presence in the first group, the news media, is much lower. In this regard, Salaverría et al. (2020, p. 11) conclude: “WhatsApp has indeed proved to be the platform where hoaxes are disseminated in the greatest quantity and with the greatest reach. However, there is also considerable dissemination of false content in open social networks, such as Twitter.”

Several studies conducted on disinformation in WhatsApp support this idea: Canavilhas et al. (2019) study disinformation in WhatsApp groups during the 2018 Brazilian presidential election campaign, with a field study of their own (not based on fact-checker refutations) and find that 60% of the 472 posts analyzed, shared in Whatsapp groups, contain totally or partially false information. As the authors point out, “the findings corroborate the existence of a circle of disinformation among WhatsApp users” (Canavilhas et al. 2019).

## 4 Responses to disinformation: general framework, curation and verification

In this section, we present different strategies for coping with disinformation. We first provide a general framework and then look at the recent literature on two of these strategies, which can be ranked as the most important ones: curation and verification.

### 4.1 General framework

The UNESCO reports (Ireton and Posetti 2018; Posetti and Bontcheva 2020a, 2020b) provide a general framework for identifying different types of responses and actions against disinformation, ranging from political, economic and legislative responses to educational ones, or to concrete activities, such as monitoring, verification and curatorial activities. Such a framework can be seen as an overall

strategy to combat against disinformation, in which different actions can be incorporated into the framework, each necessarily complementing the other.

Thus, the set of measures against disinformation involves the establishment of some effective regulatory systems and procedures for taking actions against websites where false information is published. A review of some of these initiatives can be found in Ramón Fernández (2020). In addition to the regulatory front, the role of the administrations in general, and the governments in particular, is of course key to the solution.

In the case of the Covid pandemic, several recent investigations have confirmed this. For example, in the case of Spain, the hoaxes about the coronavirus formed a prominent part of the statements made by the Spanish Prime Minister in his public appearances during the state of alert decree in March and April 2020, “warning people the danger of sharing false information and appealing to use only official and reliable sources” (Castillo-Esparcia et al. 2020 p. 19). Beyond concrete measures, a more substantive strategy must include a profound media and digital literacy of citizens (Loterio-Echeverri et al. 2018).

Another group of essential measures against disinformation are those to be carried out by the social network platforms themselves where, as we have seen, the vast majority of hoaxes are disseminated. Catalán-Matamoros (2020) refers to some of them: Twitter, YouTube and Whatsapp have reinforced their verification filters to reduce the circulation of false information on their platforms, including in some cases, the removal of hoaxes, and they collaborate, in the case of Covid, with the World Health Organization and the sanitary authorities of different countries to promote access to reliable information about the pandemic. An example of this would be the Facebook initiative of the Coronavirus Information Center (Facebook 2020).

Another necessary front is related research and the academia. To some extent, articles like this one are in line with what authors like Catalán-Matamoros defend vehemently: from the perspective of the academia, it is essential to contribute by analyzing the specific sociocultural context in which we live, “governed by the decline of experts and specialists, the increase of populist politicians without a scientific profile, and more profoundly, by the social psychology of emotions, values and beliefs” (Catalán-Matamoros 2020, p. S6). Two professions, at least, have been very directly challenged by the widespread extension of disinformation, being constant in recent literature the manifestations of this concern and worry, in reference to what should be the performance of journalism professionals (Blanco-Herrero and Arcila-Calderón 2019; Mayoral et al. 2017; Marzal Felici and Casero Ripollés 2017; Nigro 2018; Rodríguez-Fernández 2019; Sánchez de la Nieta Hernández and Fuente Cobo 2020) and of information and documentation (Caridad-Sebastián et al. 2018; López-Borrull et al. 2018). Closely linked to these professions,

two fundamental activities and/or strategies in the fight against disinformation, are curation and verification. We will mention them in the final part of this article.

## 4.2 Content curation

Curatorial activities and services or products, in other words, curated selection (i.e., providing value and context) of reliable and high-quality information sources and contents, are highlighted in the recent UNESCO report by Posetti and Bontcheva (2020b), as one of the key elements in the fight against disinformation. In this sense, curators, bibliographers, librarians, documentalists and information professionals in general have the function and the responsibility to provide quality information from the different projects, services or information units they are able to contact with to help citizens fight against disinformation. In this way, López-Borrull et al. (2018), consider that disinformation, rather than a threat, constitutes an opportunity for these professional groups.

Across the library and documentary sectors, several studies highlight both the role they already play and their potential for expanding the curatorial activities against disinformation, such as in the selection of resources, the development of reading guides, the management of library collections, or support for teaching and user training in the use of information (Caridad-Sebastián et al. 2018; López-Borrull et al. 2018; Martínez-Cardama and Algora-Cancho 2019). On all these fronts, various library and information sector initiatives have been carried out, some of them driven by national and international institutions and associations, such as those promoted by the International Federation of Library Associations and Institutions (IFLA). One of the strengths of the sector is, in the words of López-Borrull et al. (2018, p. 1354), that “libraries have one of the most precious things in the world: a brand that is respected and trusted by users.”

In line with these actions, the recent López-Borrull and Ollé (2019) article proposes that libraries adapt the paradigm of content curation in the fight against fake science, suggesting that libraries should expand their role in media information literacy promotion to scientific content.

Another professional field in which documentarians and curators play their role against disinformation is the news media sector itself. In this field, curators, whether they are journalists or documentalists or other professionals, perform this curatorial function of filtering truthful information and provide it with meaning and context (Codina and Guallar 2019; Guallar and Codina 2018; Guallar and Cornet 2020). This aspect is linked to the following, closely related section, which is playing the most important role in the fight against disinformation: Verification of information.

### 4.3 Verification and fact-checking

Verification is by no means a novelty for news media, and it has been a traditional practice associated with good journalism and indissolubly linked to the specialty of journalistic documentation (Guallar and Cornet 2020; Redondo 2018). But while it has always been one of the essential functions of journalism professionals, the growing concern about disinformation has brought it to an unprecedented level of prominence. Several publications and updated manuals focus on its use, the most important of which in Spanish was written by Redondo (2018): “Digital verification for journalists. Manual against hoaxes and international disinformation.” In addition to the generic use of verification that every competent journalist or press documentarian should be very aware of, numerous projects specialized in it have emerged around the world, precisely as a response to the spread of the disinformation phenomenon. As a result, this fact-checking movement, through numerous global platforms, has been widely taken into account and valued “the most important variant of journalism in the digital era,” in the words of the founder of the pioneering organization Politifact, Bill Adair (quoted by López Pan and Rodríguez Rodríguez 2020). Accordingly, platforms specializing in fact checking have aroused enormous interest in research on disinformation in recent years, so that there are already numerous studies focusing on them, most likely more than on any other topic in this article. While a significant number of these articles are from the United States or elsewhere in the world, a significant number of articles from Ibero-America are of interest, both in terms of the overall level of the various verification platforms and case studies of specific platforms.

Fact checking is, according to Amorós García (2018), of all the existing tools, the best to counter disinformation and fake news, and has been considered by some authors as a new journalistic genre (Rodríguez-Pérez 2020). It emerged in the United States in the early years of the 21st century, although there were earlier precedents closely related to controlling falsehoods in political information, and thanks to some very successful brands, fact-checking careers have grown quickly in momentum and given rise to the trend, such as the aforementioned Politifact (founded 2007), or specialized departments for fact-checking in the news media, such as the Washington Post’s famous “pinocchios” (Guallar 2011; López-Pan and Rodríguez-Rodríguez 2020). This initial momentum has developed in recent years, largely thanks to the controversial statements of President Donald Trump, thus becoming a benchmark for fact-checking organizations in the rest of the world. See, for example, the study by Magallón-Rosa (2018a).

The U.S. influence spread to Ibero-America in just a few years, and the initial model for the region was the Argentine platform Chequeado, born in 2010, which

obtained the Gabriel García Márquez Prize in 2015 in the innovation section of the Foundation for the New Ibero-American Journalism (FNPI). To follow the emergence and evolution of some of these initiatives in Ibero-America, see Echevarría (2017).

Covering an area close to the one we explore in this article, Vizoso and Vázquez-Herrero (2019) analyze all existing Spanish-language fact checking initiatives, according to the Duke Reporters' Lab database, and find 19 platforms, which can be considered the most exhaustive study we can review for the Ibero-American sphere. Considering only the 14 active initiatives, they analyze Chequeado (Argentina), Chile Check and El Polígrafo (Chile), Colombia Check and Detector de mentiras (Colombia), El Objetivo, La Chistera, Maldito Bulo and Polétika (Spain), Detector de mentiras (United States), Con Pruebas (Guatemala), El Sabueso (Mexico), UY Check (Uruguay) and Cotejo (Venezuela). Among other aspects of these platforms, they study their work systems, their verification methods and the professions of their members (most of them are journalists, although other professionals such as data analysts and experts in computer science and statistics are also included). As for the formats used to report the veracity or falsity of the information analyzed, textual explanations predominate, as well as verification scales between the terms "true" and "false," and in some cases, visual and chromatic scales are also used.

Palau-Sampio (2018) analyzes fact-checking platforms in Latin America. Using the same Duke Reporters' Lab database, he finds 17 initiatives, and discarding the inactive ones, he analyzes 11 of them, most of which coincide with those analyzed in the previous study: Chequeado (Argentina), Truco, Aos Fatos and Agência Lupa (Brazil), Colombia Check and Detector de mentiras (Colombia), Con Pruebas (Guatemala), El Sabueso (Mexico) and UY Check (Uruguay). His analysis largely coincides with that of Vizoso and Vázquez-Herrero (2019), but several aspects of interest can be highlighted: the confirmation of the relevant role of Chequeado in the development of verification in the region (since Chequeado advised the implementation of other platforms, such as those analyzed in Colombia, Mexico and Uruguay); the use of sources for verification, in which Chequeado also stands out for being the platform that consults a higher average number of sources (6.8) and the typology in the comparative grading of verdicts:

- reliable, true ... (true)
- true with nuances, true, but ... (almost true)
- exaggerated, inflated, ridiculous, misleading, inaccurate ... (undefined)
- untenable, almost false (almost false)
- false (false)
- cannot be proved ... (not evaluable).

Along this line, the most recent work published in Ibero-America, Rodríguez-Pérez (2020) analyzes with similar results what he considers to be the six main means of verification in South America and Spain: Chequeado (Argentina), Colombia check and La Silla Vacía (Colombia), Ecuador Chequea (Ecuador) and Maldita and Newtral (Spain).

If we look at case studies by platforms or countries, we find a great variety of them in Spain. Starting with overall studies on platforms in Spain, Ufarte-Ruiz et al. (2018) points out that at that time there were ten verification projects; six of them sections of press or television media (from *El país*, *El confidencial*, *La sexta* ...) and 4 independent: Maldita hemeroteca, Maldito bulo, Mala prensa and Miniver. More recently, López Pan and Rodríguez (2020) made a global study of the existing platforms, and show their genesis, characteristics and evolution, highlighting the three independent ones: Maldita, Newtral and Verificat, in addition to sections and blogs in journalistic media, as well as specialized civic initiatives, such as *Salud sin bulos*. Also recently, Ufarte-Ruiz et al. (2020a, 2020b) made a comparative study of Spanish and Italian independent platforms. With regard to Spain, they analyze the method of information verification, the business model and the interactivity mechanisms of Maldito bulo (Maldita's sub-brand) and Newtral. And finally, Salaverría et al. (2020), in a very complete study already referred to, analyze the hoaxes refuted by the three Spanish platforms included in the International Fact-Checking Network (IFCN): Maldita, Newtral and EFE Verifica.

As for case studies on concrete platforms, those dedicated to Maldita stand out in number. Magallón-Rosa (2018a, 2018b) and Bernal-Triviño and Clares-Gavilán (2019) analyze the operating system of Maldito Bulo and Maldita, respectively, by analyzing the first 3,000 tweets of Maldito Bulo in the first case and in the second case, conducting interviews with Maldita's managers and a content analysis of 568 hoaxes disproved in 2018.

Also regarding Maldita, Sánchez-Duarte and Magallón-Rosa (2020) analyze 166 hoaxes reported by this organization to its collaborative platform Latam Chequea between February and April 2020, and finally, Molina-Cañabate and Magallón-Rosa (2019, 2020) analyze their two sub-brands specializing in migration/racism and science hoaxes, respectively: Maldita Migración and Maldita Ciencia. Concerning studies on Newtral, Pozo-Montesa and León-Manove (2020) analyze 104 hoaxes about COVID-19 disproved by Newtral between March 14 and May 4, 2020, highlighting some issues already observed in other studies, such as the main channel for their dissemination being WhatsApp. They highlight false attributions to institutions, which aim at misleading the public.

Likewise in Spain, Ufarte-Ruiz and Murcia-Verdú (2018) make a case study of the pioneering platform in Spain and now defunct Miniver, showing its characteristics and exploring its business model. And more rarely in the literature,

Palomo and Sedano (2018) discuss the verification section of a daily newspaper through a case study: B de Buló, from the *Southern Daily* and recently, Ufarte-Ruiz et al. (2020a, 2020b) analyze the verification projects of two public television stations in Spain: RTVE Verifica, from RTVE, and Coronabulos, from the Basque television station, EITB.

On the other hand, this review showed far fewer case studies of any verification platforms in other countries of this region. Among them, we emphasize that Vázquez-Herrero et al. (2019), when studying verification platforms from all over the world, selected the Argentinean Chequeado as the one most representative of Ibero-America, observing the structure of its verification pieces, verification formats and dissemination system via Twitter and Facebook. Likewise, Magallón-Rosa (2019) studies the use of Twitter by Verificado México during the 2018 Mexican electoral campaign, a very interesting project in that it brought together a team of more than 90 news media outlets and organizations that partnered to verify electoral information between March 29 and June 27, 2018. The study identifies specific moments that accelerate verification, which are election debates and Election Day, and distinguishes the types of hoaxes according to the pre-campaign, campaign and post-campaign periods. And finally Seibt (2020) analyzes the project Truco nos Estados, by Agência Pública, during the 2018 Brazilian elections in terms of the contributions offered by fact checking to structural changes in journalism.

## 5 Conclusions

This article is aligned with the recommendations of the main international organizations that fight against disinformation and infodemic, providing a review work that can be useful for researchers, professionals and scholars of the subject.

Review articles like this one also help to establish future interdisciplinary developments, as they put the status quo of the question on the table, from which interdisciplinary research teams have a common basis.

It was found that in the period studied, the most productive authors at a quantitative level were Magallón-Rosa with 6 papers, Ufarte-Ruiz with 4 and García-Marín with 3 papers. Likewise, studies by Palau-Sampio (2018), Vizoso and Vázquez-Herrero (2019) and Rodríguez-Pérez (2020) are noteworthy for their analysis of disinformation in the Ibero-American area; the work of Salaverría et al. (2020) is fundamental for its analysis of the typologies of hoaxes; and the work of López-Borrull with collaborators is noteworthy for its proposals on curation.

It is clear that, to use the most general term, the phenomenon of disinformation is highly multifaceted. In addition to presenting diverse natures and facets, it

has a wide variety of motivations. Some are simple parody (although it can later generate disinformation in part of the public), but other situations where the intent is to cause personal or corporate harm, or to influence the electoral process through deception, are some of the potentially more serious situations.

It can also be seen that, nevertheless, society has the tools to deal with this kind of pandemic: quality journalism, media education or curation are among the most prominent, through procedures such as investigative journalism, curatorial activities, verification or fact checking.

All this, important as it is, does not relieve citizens of the obligation to be socially responsible in at least two ways. On the one hand, they must avoid becoming vectors of disinformation by being reasonably critical when disseminating news and information. On the other hand, they should resort only to reliable sources (e.g., reputable media and high-quality curated sources).

In any case, constant studies will be necessary on this crucial subject (without exaggeration) for the future of humanity.

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