

The institutional and media transparency of the coronavirus. An analysis of data portals and digital media in Ibero-America

La transparencia institucional y mediática del coronavirus. Un análisis de los portales de datos y de los medios de comunicación digitales en Iberoamérica

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ABSTRACT

Introduction. The health emergency caused by the COVID-19 has had various consequences on the institutional and media scene. Faced with a situation of this magnitude, governments have introduced transparency measures into their daily routines to provide citizens with up-to-date, quality information on the pandemic. This has also affected journalistic practices, as the volume of information dedicated to the coronavirus has been increasing in the media. Data journalism is presented as one of the most recurrent formulas of digital media, with the development of maps and graphs using official data. **Methodology.** This research aims to find out, on the one hand, the degree of information transparency of Ibero-American governments on the disease, as well as the development of open journalism, data journalism and other practices by the media to report on the coronavirus. To this end, an evaluation of the COVID-19 information portals in 12 Ibero-American countries and of the two most relevant digital media in each country has been made. **Conclusions.** Despite the enormous effort made by the institutions to inform the public about the health

emergency, the transparency portals show various deficiencies. The media, on the other hand, have mainly developed data journalism, but they have not promoted media transparency or citizen participation in the elaboration of content.

KEYWORDS: open journalism; coronavirus; transparency; open data; participation; collaboration; portals.

RESUMEN

Introducción. La emergencia sanitaria producida por la COVID-19 ha tenido diversas consecuencias en el panorama institucional y en el mediático. Ante una situación de esta magnitud, las instituciones gubernamentales han tenido que introducir medidas de transparencia en sus rutinas diarias para ofrecer a la ciudadanía una información actualizada y de calidad sobre la pandemia. Esto ha afectado también a las prácticas periodísticas, ya que el volumen de información dedicada al coronavirus ha ido en aumento en los medios de comunicación. El periodismo de datos se presenta como una de las fórmulas más recurrentes de los medios de comunicación digitales, con el desarrollo de mapas y gráficos que utilizan los datos oficiales. **Metodología.** Este trabajo de investigación pretende conocer, por un lado, el grado de transparencia informativa de los gobiernos de Iberoamérica sobre la enfermedad, así como el desarrollo del periodismo abierto, el periodismo de datos y otras prácticas por parte de los medios de comunicación para informar sobre el coronavirus. Para ello, se ha elaborado una evaluación de los portales de información sobre el COVID-19 de 12 países iberoamericanos y de los dos medios digitales más relevantes de cada país. **Conclusiones.** A pesar del enorme esfuerzo realizado por las instituciones para informar a la ciudadanía de la emergencia sanitaria, los portales de transparencia presentan diversas deficiencias. Los medios de comunicación, por su parte, han desarrollado principalmente el periodismo de datos, pero no han fomentado la transparencia mediática ni la participación de la ciudadanía en la elaboración de contenidos.

PALABRAS CLAVE: periodismo abierto; coronavirus; transparencia; datos abiertos; participación; colaboración; portales.

CONTENT

1. Introduction. 2. Theoretical framework. 2.1. The need for health transparency. 2.2. New media trends: open and transparent journalism 3. Objectives, hypotheses, and research questions 4. Methodology 4.1. Institutional transparency on the coronavirus 4.2. Media: data journalism, fact-checking, transparency and media participation 5. Results. 5.1. Institutional websites of the governments. 5.2. Media. 6. Conclusions. 7. References

Translation by **Carlos Javier Rivas Quintero** (University of the Andes, Mérida, Venezuela)

1. Introduction

In recent years, the study of information transparency has highlighted multiple benefits derived from disclosing information of the public sector. It has also highlighted the improvement of efficiency and innovation in the services provided to citizens by the institutions that release the information (Ruijter *et al.*, 2019), as well as the opportunity for the citizenry to evaluate and control the power, who can analyze public data and hold administrations accountable (Caridad Sebastián & Martínez Cardama, 2016).

In this article, healthcare is understood as a public service. Therefore, releasing data regarding healthcare can result in greater service efficiency and the development of investigations utilizing these data in order to analyze them or as a source of information. In addition, there is the monitoring by citizens and the media which can be exercised with health data.

The coronavirus crisis has entailed numerous debates concerning both the publication of data by competent institutions and its treatment in the media, as well as the request for greater transparency as the pandemic spreads. In this sense, from the very media, there were various reflections (Barón, 2020; Maldita, 2020; Escudero, 2020) about the necessity of reinforcing transparency, releasing the data in accessible formats, and unifying criteria between institutions so that the data could be comparable in the content produced by journalists and that the population could receive quality information.

We must add to this context the constant disinformation climate on social networks, which the Spanish National Police themselves echoed (EFE, 2020), and even the World Health Organization (2020) spoke of the danger of the infodemic, the dissemination of fake news that has accompanied the pandemic. In this sense, the need to reinforce disciplines such as fact-checking arises (Amazeen, 2017), which consists in using official data to verify information and combat hoaxes that go viral on WhatsApp, Twitter, Facebook, and other social networks, as well as to reinforce confidence in the media and bring them closer to citizens.

This research aims to study the degree of institutional transparency development regarding the coronavirus crisis in Ibero-American countries. It intends to know the type of data published by governments and health authorities on their transparency portals, their characteristics and the possibilities they offer. In addition, it also intends to delve into the development of open journalism, data journalism, and fact-checking in the media of these countries to report on the coronavirus pandemic.

2. Theoretical framework

2.1. The need for health transparency

Democratic countries have experienced growth as a result of increasing transparency in policies, which has implied implementing regulations, and these have gone hand in hand with technological advancement (Palomares Herrera, 2017). Transparency is understood as the disclosure aimed at keeping citizens informed and being accountable to them. This can occur actively, through the voluntary dissemination of information on the Internet, and passively, through requests for access to information (Manfredi, 2017; Paniagua *et al.*, 2017).

This improvement in information openness also concerns the health sector due to the implications of any nation's healthcare system for the population's well-being; hence information becomes an asset that citizens search for and need, since it affects them directly in terms of public and personal welfare. This became evident during the coronavirus pandemic, as it entailed a drastic change in the lives of citizens.

There are different motivations that lead administrations to develop transparency. Thus, information openness processes seek to restore public confidence, prevent corruption and promote participation (Kemp, 2020), among other reasons. One of the most outstanding aspects of transparency is that it generates greater effectiveness and efficiency in the services offered by administrations (Huijboom

& Broek, 2011). Disclosing data on the operations of administrations and their structures facilitates decision-making and allows taking well-informed measures.

Transparency and accountability policies in healthcare systems can lead to an improvement in their healthcare results, since making data accessible generates knowledge; hence professionals can anticipate new challenges, which increases their efficiency and improves planning (García-Altés & Barba, 2013).

Ford *et al.* (2019) highlight the breakthroughs in healthcare and health research that derive from the increasing availability of data, as well as the advances in computational power to process these data. Healthcare transparency and technological evolution make an important contribution to knowledge, and, therefore, to research –especially in Health Sciences.

Transparency policies stimulate innovation and economic growth, which are essential requirements for having more effective public services (Ruijter *et al.*, 2019). In this article, healthcare is understood as an indispensable public service for the development of a well-being state.

Paradoxically, transparency can be used strategically to disguise opaqueness, as pointed out by Ruijter *et al.*, (2019), by disclosing information through incomprehensible datasets or disseminating data that is safe, meaning that it does not contain information that could be detrimental to the institution releasing it. Therefore, information must be understandable.

One of the main requirements for transparency is its reuse, which is covered by the legal framework, such as the Act on Transparency, Access to Public Information, and Good Governance, in its Article 5: “The appropriate mechanisms shall be established to enable the accessibility, interoperability, quality and reuse of the information published, as well as its identification and location” (Act 19/2013).

These requirements refer to the opportunity citizens, as well as companies, have to generate information services based on the harnessing of public sector information (Cerrillo-i-Martínez, 2012). Information has a great economic and social value that can be exploited in many different ways, such as mobile applications, cartography, and different information services based on the analysis of datasets.

Therefore, it is essential for institutions to share information in formats adequate for its reuse, and to be accessible. This allows monitoring the public sector, which in turn increases collective intelligence (Caridad Sebastián & Martínez Cardama, 2016).

Citizens accessing datasets gives them the opportunity to evaluate what public administrations, those who they have given the responsibility to and trust in, decide. Certain characteristics must be met on these data portals and Lourenço (2015), in this sense, emphasizes that information must be of quality, precise, complete, visible, comprehensible, up-to-date, detailed, and useful.

Ibero-America constitutes an interesting region regarding information access. In this sense, the Ibero-American Charter for Quality in Public Management [ES: *Carta Iberoamericana de Calidad en la Gestión Pública*] states that public administrations must be transparent in their management, open to be subjected to public scrutiny, tolerant of criticism, and open to the proposals coming from citizens for improvement and change (CLAD, 2008:8).

According to Cotino Hueso (2017), it is one of the most advanced regions regarding transparency, even more than Europe. The author highlighted the fact of the Inter-American Court of Human Rights recognizing the access to information as a human right, as well as the presence of the Ibero-American countries in the Open Government Partnership.

Ruiz-Rico Ruiz (2019) underlines that the Mexican Federal Law of Transparency and Access to Public Government Information, published on May 9, 2016, is more comprehensive than the Spanish law on the duty of institutions to seek information that must be in their power. While the Spanish legislation tends to exclude the information that is not within an obliged subject's power, the Mexican one requires that an exhaustive search be conducted if this information falls within their competence.

Article 23 of the Organic Law on Transparency and Access to Public Information of Ecuador is also worthy of notice, since it indicates the sanctions imposed upon officials and public and private employees who illegitimately deny access to information.

However, Cotino Hueso (2017) emphasizes that legal and normative transparency is a far cry from reality in Ibero-America, which does not lead to accountability and to fight corruption. This demonstrates the necessity of enacting laws on access to information while creating resources and processes to ensure transparency in practice.

2.2. New media trends: open and transparent journalism

Transparency results in citizens having access to datasets, which in turn leads to the reuse of this information for different matters. Thus, new business opportunities based on the use of the Open Data model emerge (Paucar Carrión & Coronel-Salas, 2019), regardless of their origin (public or private):

The user with this stance not only promotes information with free access to content, but also makes the data available without technical or legal restrictions; allowing content generation and/or curation. This way, the public can consult, verify, contrast, and if required, reuse and redistribute information without conditions in: license, format, and free access. (Paucar Carrión & Coronel-Salas, 2019: 488).

In this sense, journalism can derive benefit from transparency, with disciplines that harness disclosed data to create new content. One of these practices is data journalism, which utilizes the thousands of informative sources accessible on the Internet to create news pieces based on current narratives and data visualization (López-García *et al.*, 2016). It is a journalistic practice that uses large datasets as a source to tell stories through infographics, interactive maps, and other tools available on the Internet (Gray *et al.*, 2012). Data journalists' profile, according to these same authors, requires knowledge of datasets management, in addition to skills in computing, statistics, quantitative tracking and analysis, and information visualization.

In this sense, it is also important to point out the proliferation of the prosumer (Tofler, 1980), who has modified the old roles of addressers and addressees, allowing the latter to assume characteristics

in the construction and dissemination of information, which were only limited to the media. Users, who have undertaken an increasingly active role in the construction of the journalistic discourse, can exercise a new twofold role, as inspectors and collaborators of the media, hence promoting the necessity of advancing towards a more transparent journalism that fosters the capacity of the media with three objectives: to discover their working methods, to create reusable content, and to harness the social capital of prosumers to collaborate in the reporting process (Campos-Domínguez & Redondo, 2015).

With these characteristics, we are moving towards a concept of “open source Journalism” (Sampedro, 2015) in which users can access all the raw content and collaborate to improve the stories by adding new data or enhancing the treatment of the information already obtained. Therefore, journalism is improved in order to think of information as a process in continuous evolution and not as an end product (Lewis & Usher, 2013).

As for harnessing the social capital of prosumers, at first, the media were interested in introducing simple elements with limited participation, such as the use of social networks, comments, news evaluation or sending simple content such as photographs. These practices are rather used as new forms to disseminate information and build audiences’ loyalty, limiting their participation to a more superficial and specific type of interaction rather than truly contributing to media’s content (Bachmann, 2012). More recent studies (Barredo & Díaz, 2017) reinforce this idea of the limited social participation of users, which constrains their creativity and restricts their involvement by associating professional routines to conventional platforms, although they do recognize that interaction is currently essential for the media as a persuasive process.

In situations such as the one caused by the COVID-19, during which an enormous amount of data is produced worldwide, it is interesting to assess citizens’ participation potential when gathering and treating this type of information, especially in the context of smart mobs, who can implement crowd-sourcing (Anderson *et al*, 2013) to amplify, complete or improve journalistic products.

Regarding media’s potential to generate reusable content, as well as to show their working methods, it is necessary to think about transparency forms that transcend media’s traditional accountability systems; hence, it is convenient to delve into the new mechanisms that have emerged in the context of the Internet and Web 2.0 (Vegas, De los Ríos & Anguiano, 2016). These new mechanisms, namely open drafting, disclosure of working methods or sources, are in line with open source journalism, which bases its principles on those of the open source code.

Transparency, both in sources and in journalistic information construction processes, is also an element that would strengthen media competence as a resource against disinformation, a phenomenon that has exponentially spread through social media, the Internet, mobile telephony, and the use of artificial intelligence (Vivar, 2019), and which is particularly incipient in contexts concerning political information and of great public interest.

Different portals, specialized in fact-checking or content verification, are already using transparency in their work methods (Loterio-Echeverri *et al*, 2018), to show users how the content is created and for them to acquire sufficient competence to detect whether information is false or manipulated. This is why it is equally necessary to promote transparency in the most generalist media that are not specialized in content verification, since they are also the most consumed ones.

3. Objectives, hypotheses, and research questions

This research work has two fundamental objectives. The first is to explore the degree of information openness of the Ibero-American governments regarding the new coronavirus during the first months of the pandemic, that is, to study the institutional transparency around the disease and its impact on these countries.

The second main objective is to verify the degree of openness of digital media in these countries and to examine the development of journalistic practices aimed at making the population understand the global emergency situation during the first months of the epidemic.

The following specific objectives were taken into account during this study's development:

1. To draw a comparison between the different countries.
2. To check whether the most affected countries were the ones that developed their transparency the most and had more journalistic development.
3. To study the open data disclosed by governments.
4. To examine whether healthcare institutions try to disclose reusable data.
5. To analyze the furthering of transparency and participation by the chosen digital media.

The hypotheses were:

H1. Governments show transparency deficiencies over the coronavirus.

H2. The media have not implemented open journalism during the coronavirus crisis to report on the pandemic and there are very few examples of this.

H3. The media have used data journalism to report on the coronavirus.

These research questions were also proposed in order to achieve this work's objectives:

1. Are there differences between the European and the American countries?
2. Have there been differences between the countries with more infected people and the rest?
3. What type of data do governments share to report on the coronavirus?
4. Are participation and reuse of data promoted in any way?
5. Do digital media promote transparency and participation in any way?

4. Selection of the sample and methodology

In order to analyze both the news portals created by the governments to report on the coronavirus and the media coverage, the interest focused on the Ibero-American countries. The intention was to conduct an international comparison including two different continents, and, therefore, a sample of twelve Ibero-American countries was chosen, including Spain and Portugal. The chosen countries were the twelve that had more people infected with the coronavirus at the time when this research was designed (March 25, 2020): Spain, Brazil, Portugal, Chile, Ecuador, Panama, Mexico, Peru, Argentina, Colombia, Uruguay, and Costa Rica.

Regarding the digital media, the two most visited websites in each country¹ were selected. Thus, the sample of institutional portals and digital media was the following:

Table 1. *Selection of the research sample*

¹ Except for Brazil, since the first one (*Folha de São Paulo*) is paid and its content could not be accessed without having a Brazilian postal code.

Country	Media	
Spain	La Vanguardia	El País (España)
Brazil	O Globo	O Estado de Sao Paulo
Portugal	Público	Jornal de Noticias
Chile	Biobio	Emol
Ecuador	La República (Ecuador)	Vistazo
Panama	La Estrella	Prensa
Mexico	Aristegui Noticias	El Universal Online
Peru	El Comercio	La República (Perú)
Argentina	Clarín	Infobae
Colombia	El Tiempo	Publímetro
Uruguay	El País (Uruguay)	República
Costa Rica	La Nación	Telética

Source: authors' own creation based on online ratings.

Regarding the dates during which this work was codified, it should be noted that we chose the month of April initially. However, after realizing that some transformations occurred on the websites, we finally decided to repeat the codification in May, when the global pandemic was already in an advanced stage, to codify the material again. This way, we had up-to-date results and greater credibility in the data obtained.

This study had two different parts. The first one consisted in a study of the transparency portals created by governments to report on the COVID-19. The second part was an analysis of the media, aimed at verifying the openness, transparency, and participation levels of these media, as well as the development of certain journalistic practices. It is important to point out that a pre-test was performed by the raters in both studies to verify that the measuring process was adequate. The methods selected for both parts are explained hereunder.

4.1. Institutional transparency on the coronavirus

First, we conducted a content analysis of the transparency portals created by the governments to inform citizens about the coronavirus. The objective was to check these open portals' level of development and thus to study their usefulness to inform the public, to produce journalistic content, as well as to be reused by citizens for different practices –for example, to create applications-.

To this end, we first checked that government institutions had a specific section dedicated to reporting on the COVID-19 in their respective Ministries of Health. We also verified whether they published prevention measures for the general public, information on its pathology and recommendations for infected people. Likewise, regarding the measures taken by the Governments and issues concerning citizens, we studied whether the governments shared information on the

purchased material (such as masks, gloves, and other items), the measures taken by each institution to face the pandemic, data on affected workers and measures taken in this regard, and contracts made related to the coronavirus. In addition, knowing whether the administrations published citizens' frequently asked questions drew our interest, given their usefulness under these circumstances.

To evaluate the openness of information of these transparency portals, it was important to analyze the open data. Therefore, we first studied whether these institutional websites on the coronavirus had a data repository, and, if it existed, whether it fulfilled a set of requirements, namely:

- The data could be downloaded in a reusable format.
- These data were updated at least twice a day.
- At least the following data was provided:
 - Data by ages.
 - Data on admitted patients.
 - Data on deaths.
 - Data on discharged patients.
 - Data on people who recovered.
 - Data by regions.
 - Tests performed.
- Positive and negative tests.
- Other data that could be of interest for this research.

Another relevant aspect is for information to be understandable, and to that end, data visualizations are very useful. For this reason, we analyzed whether there was any data visualization of the information, and, specifically, we wanted to know if it was presented as a map of infections, epidemic curve, or in some other form.

4.2. Media: data journalism, fact-checking, transparency and media participation

After conducting the analysis of the institutional portals, we proceeded to the second part of this research, which was a study of the openness, transparency, participation, and development of various journalistic aspects in the selected media in their sections dedicated to the coronavirus. Therefore, we wanted to know whether these media had a specific section about the coronavirus on their home page, to group the news about the subject of study.

As aforementioned, we studied the development of different journalistic practices, such as data journalism –in this sense; we examined whether these media had interactive maps on infection rates, epidemic curves, or other graphs–, fact-checking, any real-time update section, or other journalistic practices worthy of notice.

Regarding the development of open journalism in these media, the analysis had two parts: one focused on transparency and the other on participation and collaboration. In the section focused on transparency, we studied whether the media published the datasets on the coronavirus, the methods used, and the sources in an accessible way. In the participation and collaboration part, we analyzed whether the media made specific participation channels about the COVID-19 available to the public, whether there were ways to collaborate in the elaboration of content, and whether cooperation with other media or different entities (associations, institutions) existed. Finally, a section was added at the end of each analysis sheet to include any aspect of these media that could be relevant for this research.

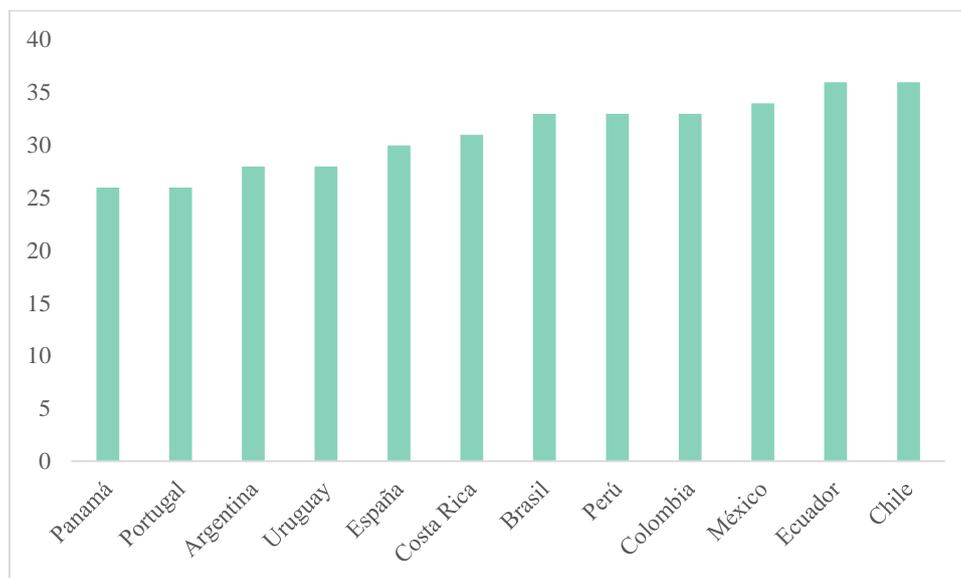
5. Results

5.1. Institutional websites of the governments

Faced with the global emergency situation caused by the coronavirus, state governments decided to feed information on the disease to their online portals, not only for the sake of the media, but also for the general public.

As already mentioned in the methodological section, we had to repeat the codification because we noted that, as the pandemic spread, governments began to include changes on their news portals about the coronavirus that had to be addressed. Therefore, this evolution must be pointed out first. Spain is an example of this development, since they initially published a significant amount of the data in PDF, and by mid-May they already allowed downloading them in reusable formats. Nevertheless, this country continued having various documents in PDF, despite these elements being avoided due to the difficulty that reusing them entails (Cabezas Mardones, 2014). The improvement in the Chilean data repository also stood out, which was very complete in the second evaluation.

Therefore, during the second codification notable differences between the various websites were found. In this sense, the countries that obtained the worst results were Panama and Portugal (with 26 points in total). On another note, Chile and Ecuador were the countries with the best results (36), followed by Mexico (34), Colombia, Peru, and Brazil (33), Costa Rica, Spain (30), and Uruguay and Argentina (28). The order of the countries can be observed in the graph below:



Graph 1. *Transparency of the institutional portals analyzed about the coronavirus.*

Source: authors' own creation.

Broadly speaking, despite the fact that these institutions obtained acceptable scores regarding open data, many significant deficiencies were identified. In fact, it should be noted that this study does not aim to establish a ranking of countries, but to determine the strengths and weaknesses of these transparency portals. A thorough search labor was conducted throughout this investigation, which makes the results relatively positive. However, this information was on many occasions difficult to find on these online platforms, hence we consider that the result obtained is somewhat better than it

should be if the codification difficulties are taken into account. We think that easiness of finding information is also part of transparency, as well as the structure and navigation on the websites.

Except for Panama, all the countries had a specific section on their website dedicated to information on the COVID-19. One of the main deficiencies found was that only Peru published the contracts made during the health emergency period on its transparency portal. This is extremely serious, since it is essential to inform citizens about the money that is being spent and on what during this situation in order to be accountable for the handling of this pandemic.



Figure 1: *Peru's coronavirus portal*

Source: <https://www.datosabiertos.gob.pe/dataset/contrataciones-ante-la-emergencia-sanitaria-por-la-existencia-del-coronavirus-organismo>

In this same line, Peru was also one of the few countries, together with Brazil and Chile (the latter one only partially), which disclosed information on the material purchased to face the health crisis. Again, it is very negative for countries not to share this information, since citizens deserve to know on what their money is being spent.

We note that these countries made particular efforts to provide basic information, such as data on pathology (symptoms), prevention recommendations for citizens, and the main measures taken by governments. Of course, there are important differences between them. In the section about measures taken, for example, Portugal simply summarized the measures, while Peru, in addition to the information by sections on its home page, published the government's actions daily.

Except for Panama and Costa Rica, all the governments had a FAQ section, which can be very useful in a crisis like this.

There was less uniformity between countries regarding other data, such as the publication of recommendations for affected people (seven countries published them and other two did it partially), as well as information on affected workers and the measures taken in this regard (five countries did not do so and only one did it partially). It is striking because this is probably one of the issues that

arouse the most interest in citizens, since this crisis has generated the highest global increase in unemployment rates ever recorded².

All the countries included in this study had a data repository on the spread of the virus. There were four countries that did not allow downloading the data in a reusable format, reducing their usefulness greatly and limiting citizens and professionals' capacity to use them to create new content. Although the majority did publish data in reusable formats, it is important to point out the necessity for all of them to fulfill this requirement. This analysis suggests that data should ideally be updated twice a day, something that was only done on the Argentine portal, on which a short report –somewhat poor and in PDF– was published in the morning and another one in the afternoon.

In these repositories, all the countries published the number of deaths and the data by regions. Almost all the countries (except for Argentina) also published the data on patients who were admitted, people who recovered (except Argentina and Peru), and the affected age groups (Panama and Uruguay did not do it, and Costa Rica and Peru only partially). In this last aspect, there were differences between the countries. The majority published the affected age groups, while others broke down each data by age.

Only seven out of the twelve analyzed countries published the number of coronavirus tests conducted, as well as those that tested positive and negative. We emphasize that some countries, such as Ecuador, differentiated between some diagnostic tests from others, as shown hereunder.



Figure 2: Ecuador's coronavirus portal

Source: <https://www.salud.gob.ec/wp-content/uploads/2020/05/INFOGRAFIA-NACIONALCOVID19-COE-NACIONAL-10052020-08h00.pdf>

Only Ecuador and Chile shared data on people discharge from hospitals. This is very important information when it comes to knowing the positive aspects of the pandemic evolution. As pointed out before, not only the number of people who have recovered is necessary, but also the number of those who have been hospitalized, since it allows comprehending the development of the most serious cases.

Graphic materials were considered particularly relevant in this research, since infographics can be very useful to know the extension of the virus. An interactive infection map was found on all the portals. Except for Peru and Uruguay, all the countries also had a graph of the epidemic curve.

² RTVE (2020). The OECD warns of an “unprecedented” rise in unemployment rates in April due to the coronavirus. Source: <https://www.rtve.es/noticias/20200513/ocde-paro-espana-advierte-aumento-paro-sin-precedentes-mundial-abril/2013991.shtml>

Almost all the countries additionally included other interesting graphs, of which we highlight the following:

- Graphs by age and gender (number of infected people and death toll).
- Detailed maps by municipalities and even by districts.
- Development of the spread of the virus by areas.

We have previously pointed out that this study's objective is to indicate the main deficiencies, some already mentioned in this section. Other weaknesses detected were the excessive sharing of data in PDF, as in Spain and Costa Rica, or the absence of a specific section on the pandemic in Panama, which made collecting much of the information during this analysis difficult.

Hereunder, we present a list of the good practices found during the codification that were positively assessed:

- Section of hoaxes related to the COVID-19 (Brazil, Ecuador, Mexico, and Colombia).
- Publication of specific sections of great interest in Mexico, such as measures with gender perspectives, information for children and the elderly, myths and realities, information for indigenous peoples, scientific articles, and sections on culture, bioethics, and mental health.
- Ecuador created an online memorial for the COVID-19 victims, a tribute that drew our attention.
- Self-assessment test (Ecuador, Argentina).
- Information on hygienic and cleaning measures recommended under different circumstances (Argentina).
- Peru offered a space to participate and for users to indicate possible improvements to the website.
- Colombia had an open call section for material suppliers.

5.2. Media

As for the media, the results regarding their mechanisms for transparency and users' participation in the content related to the COVID-10 were significantly worse than the ones of the governments' institutional websites.

Out of the 24 analyzed media, only one of them reached half of the maximum score that could be obtained in the codification items (maximum score was 26); this is the case of the newspaper *La Nación* of Costa Rica (16). Four digital media almost obtained the minimum score to approve with 12 points: *Público* (Portugal), *Biobio* (Chile), *Emol* (Chile), and *La República* (Perú). On the other hand, the media that obtained the worst score (0), since none of the items were found on their websites, were: *La República* (Ecuador), *Vistazo* (Ecuador), and *El País* (Uruguay). These three media did not have a special section on the COVID-19, did not conduct any type of data or infographic work, and did not implement transparency or participation practices regarding the content related to the pandemic.

The following graph shows the analyzed media in an ascending order based on their scores:

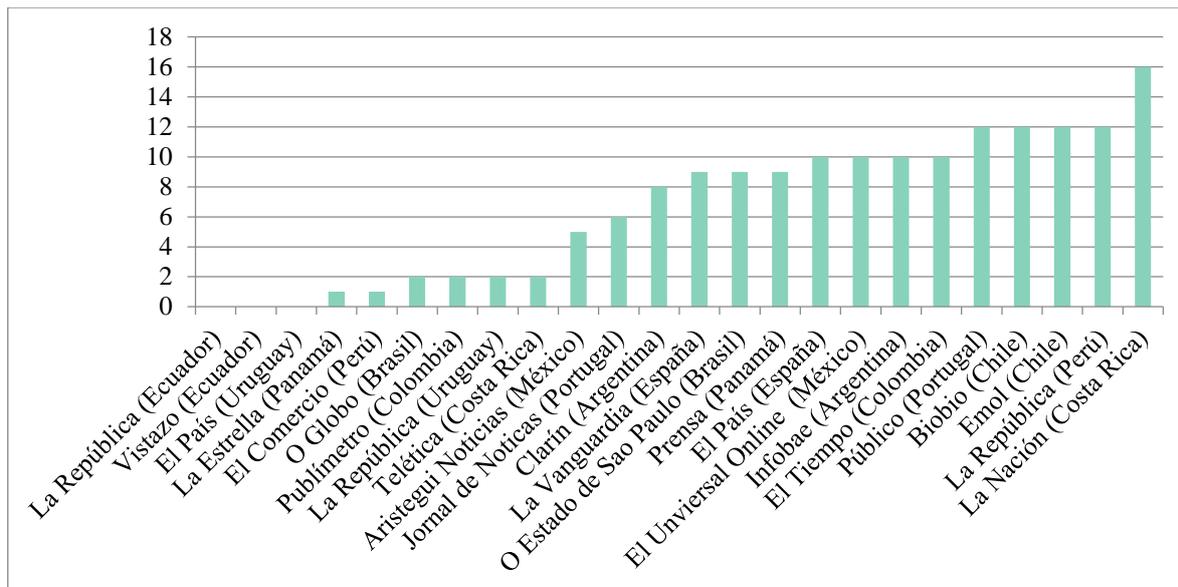


Chart 2: Media openness
Source: authors' own creation

In general, most of the Ibero-American analyzed media created a special section on the Coronavirus prominently displayed on their homepage. The only three media that did not include a different section were *La República* and *Vistazo* (Ecuador), and *El País* (Uruguay). In the case of *La Estrella* (Panamá) and *El Comercio* (Perú), this section was merely a link to the news containing a related hashtag, but it was not a separate section from the rest of the content. The remaining analyzed media did have a specific highlighted section dedicated to the COVID-19.

Regarding data journalism and the creation of infographic material, this was the item in which, in general, the Ibero-American media stood out the most during the codification. Only 9 out of the 24 analyzed media did not implement any type of data journalism, or include graphs or infographics in their content. The media that did not include these practices are those mentioned in the previous paragraph and *O Globo* (Brazil), *Publímetro* (Colombia), *La República* (Uruguay), and *Telética* (Costa Rica). *Aristegui Noticias* (Mexico) did not develop their own data journalism either and the most prominent graphic material included was an insertion of the map developed by the Whiting School of Engineering of the Johns Hopkins University in the United States and the bar graphs containing demographic data developed by the government, but no material of their own creation was included.

All the other media developed their own material using data journalism techniques and created interactive maps and epidemic curves. Except for *Jornal de Noticias* (Portugal) that only developed a single static infographic piece that included a non-interactive map and other bar graphs, but not the epidemic curve.

In the context of data journalism, some media developed a wide variety of infographics and graphs within their sections dedicated to the COVID-19. In addition to an interactive map and epidemic curve, they included graphs with demographic data of the affected population, maps and graphs of countries different from the one of the newspaper analyzed, data broken down by regions of the country, and even graphs showing indexes of the value of the Mexican peso and of the oil (*El Universal Online*, México).

Furthermore, some media developed additional infographic content, such as chronologies of the COVID-19 pandemic, infographics with the symptoms of the virus, illustrations on prevention or how to disinfect surfaces, and other informative content.

Throughout the analysis, it is striking that, out of the 24 analyzed media in the study, only 1 created fact-checking content related to the COVID-19, despite the fact that dissemination of disinformation has become a healthcare problem during this pandemic (Salaverria *et al.*, 2020). It is important to point out that no Colombian media implemented fact-checking content, even when a section to refute hoaxes was found on the Colombian government's webpage during the analysis. The only medium that used this type of practices was *La Nación* (Costa Rica), through the section titled *#NoComaCuento* [Don'tBuyIntoThatStory], which periodically refuted hoaxes related to the pandemic during March and April, by textual publications and podcasts.

#NOCOMACUENTO

#NoComaCuento: Recuento de las mentiras sobre el nuevo coronavirus que circulan en Costa Rica

Esta nota se actualizará, regularmente, con los nuevos chequeos sobre el tema que realice 'La Nación'.

Gustavo Arias Retana. 24 abril

Episodio 4. ¿El alcohol en gel puede causar que su carro se quem? No Coma Cuento.

Con la llegada del coronavirus Covid-19 al país se multiplicaron las informaciones falsas que circulan en redes sociales sobre la enfermedad.

Estas son algunas de las mentiras que se comparten en Facebook, WhatsApp y Twitter, que ya fueron aclaradas por la iniciativa de lucha contra la desinformación #NoComaCuento.

Esta nota se actualizará, regularmente, con los nuevos chequeos sobre el tema que realice *La Nación*.

24 de abril: Ni el OIJ ni la Fuerza Pública reportan casos de ladrones que dan mascarillas con 'químicos' a víctimas para dormir las

Ni el Organismo de Investigación Judicial (OIJ) ni la Fuerza Pública tienen reportes de

#NoComaCuento

Las más recientes

- 1 #NoComaCuento: Audios divulgan cifras falsas sobre casos nuevos de covid-19 en San Carlos
- 2 Página de Facebook orquesta campaña de desinformación sobre nicaragüenses y covid-19
- 3 #NoComaCuento: Supuestas fotos del Ejército de Nicaragua ayudando a migrantes a cruzar a Costa Rica son en realidad de Guatemala

Figure 3: Section against hoaxes on *La Nación*

Source: <https://www.nacion.com/no-coma-cuento/nocomacuento-recuento-de-las-mentiras-sobre-el/PDZBAAQCAVBMJIR6GQZZ5YWZSI/story/>

As for transparency, we only identified three media that implemented good practices in this regard, these were *El País* (Spain), *Estadao do Sao Paulo* (Brasil), and *La Nación* (Costa Rica). For *El País*, the methodology used in their data journalism pieces was published in several reports. Through informational texts, they explained how they made the epidemic curve graphs to users or provided information on the metrics used. The other two media, *Estadao do Sao Paulo* and *La Nación*, published in open access the datasets utilized to prepare their content, in a way that made it available for any reader to download it.

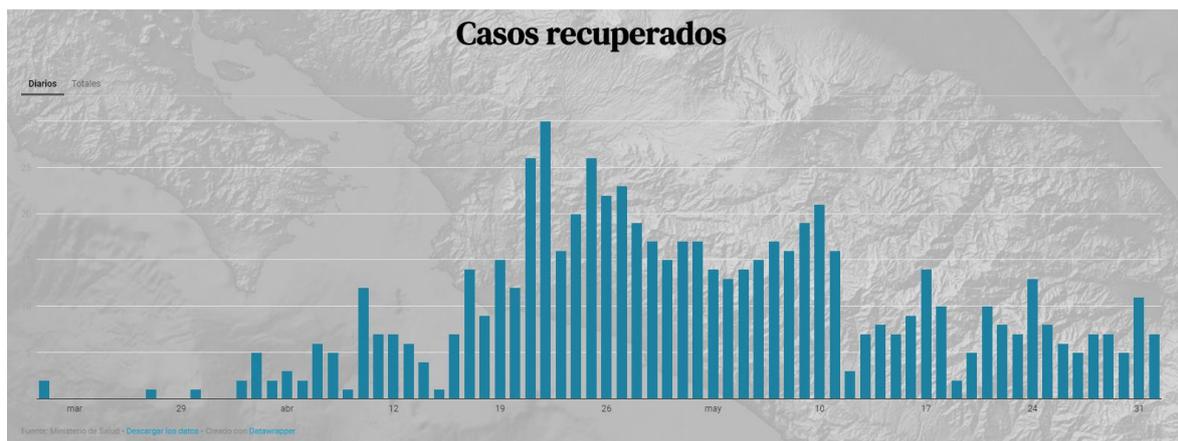


Figure 4: *La Nación* Data section

Source:

https://www.nacion.com/gnfactory/especiales/2020/Covid19/index.html#utm_source=website&utm_medium=marilyn&utm_campaign=marilyn

None of the other analyzed media that performed data journalism provided information on the methodology used or published the sources and datasets utilized in an accessible way. The majority only indicated the source textually (for example, *Source: Author's own creation* or *Source: Government of Peru*), without providing a link to the original dataset or indicating any further information.

Finally, with regards to the participation and collaboration analysis, none of the analyzed media had specific COVID-19 participation channels for users, nor did provide collaboration channels for content elaboration with the general public. We did not identify any content created collaboratively with other media or entities in the analyzed media either, although there are some cases of collaboration that have not been included in this study.

The results of the analyzed media by country show similarities in their scores regarding their home country only in some cases: as is the case of the two Ecuadorian media (which obtained the worst score, despite their Government obtaining the second best score in the analysis presented in the previous section), the Chilean media, which both obtained the same score (12), almost reaching the minimum to be approved, or the Uruguayan media, which, in spite of not having the same scores (0 *El País* and 2 *La República*), are among the media with the lowest indexes. The remaining newspapers analyzed do not show a determining relationship between the score obtained and their home country.

6. Conclusions

The coronavirus crisis has left a mark on the transparency portals across the world. In this article, we have studied the information available on the portals of 12 Ibero-American countries (Spain, Brazil, Portugal, Chile, Ecuador, Panama, Mexico, Peru, Argentina, Colombia, Uruguay, and Costa Rica). Although all the countries obtained an acceptable result in the overall picture, this analysis was not aimed at establishing a ranking by countries, but rather to highlight the strengths and weaknesses of these portals. In fact, many countries scored good results despite the many difficulties when finding certain data due to the websites' accessibility.

Thus, the first hypothesis is verified, which indicated that governments would show deficiencies in their transparency about the coronavirus. One of the main deficiencies was that governments did not disclose (with few exceptions) the contracts and purchases made related to the health crisis, data of great interest to citizens that allows holding governments accountable. Regarding the data repositories, these were updated only once a day, very few countries published the number of people discharged from hospitals, and the publication of the diagnostic tests performed could be improved. Also, the possibility of allowing users to download the material in a reusable format should be promoted, something that not all the countries did.

Regarding the media analyzed, in general, we noted some interest from most of the media in covering the pandemic in a specific way; hence 21 out of the 24 media analyzed had a discrete section on their homepages dedicated to the COVID-19. However, when speaking of practices related to open journalism, transparency, participation, and collaboration, the Ibero-American media resoundingly circumvent the use of these practices.

Therefore, the second hypothesis is confirmed, which states that the media have not implemented open journalism during the coronavirus crisis to report on the pandemic and there are few examples of this. None of the analyzed media used participation strategies with users or collaboration with other media and entities, and only three of the media created content implementing specific transparency criteria (in one case, the publication of the work methodology, and in the other two, disclosure of the datasets used in open access).

However, with regard to data journalism, we can confirm the third hypothesis which states that, in the Ibero-American context, the media have implemented this type of strategy to report on the coronavirus. Only 9 out of the 24 analyzed media did not perform any type of data journalism, and most of the others provided at least interactive maps and the epidemic curve; although, in many cases, they expanded their coverage by elaborating additional graphs related to the subject. A practice that relates to the use of governments' transparency portals, since, when citing the source, many of them, in addition to being their own creation, mentioned institutional websites as the source.

After both studies were carried out, we wanted to verify the similarities in the results between the institutional transparency analysis and the media openness one. However, no relevant results were found. As it can be seen in the following tables, there were some coincidences, such as the negative results in Uruguay and its media, and the positive results of Chile and Mexico and their respective media. However, there were also differences; such as the case of Ecuador, which was the most transparent portal regarding the institutional analysis, but its media had very negative results; and Portugal obtained the worst result at an institutional level, but the Portuguese media received better scores. Therefore, no relations were observed between the implementation of institutional transparency and media openness in the countries and media analyzed.

Table 2: *Comparison between institutional transparency of the Ibero-American countries and the openness of their media*

Country	Total (44)
Ecuador	36
Chile	36

Media	Total (24)
La Nación (Costa Rica)	16
Público (Portugal)	12
Biobio (Chile)	12
Emol (Chile)	12

Mexico	34	La República (Peru)	12
Brazil	33	El País (Spain)	10
Peru	33	El Unviersal Online (Mexico)	10
Colombia	33	Infobae (Argentina)	10
Costa Rica	31	El Tiempo (Colombia)	10
Spain	30	La Vanguardia (Spain)	9
Argentina	28	O Estado de Sao Paulo (Brazil)	9
Uruguay	28	Prensa (Panama)	9
Panama	26	Clarín (Argentina)	8
Portugal	26	Jornal de Noticias (Portugal)	6
		Aristegui Noticias (Mexico)	5
		O Globo (Brazil)	2
		Publímetro (Colombia)	2
		La República (Uruguay)	2
		Telética (Costa Rica)	2
		La Estrella (Panama)	1
		El Comercio (Peru)	1
		La República (Ecuador)	0
		Vistazo (Ecuador)	0
		El País (Uruguay)	0

Source: authors' own creation.

Hereunder, we are going to answer the research question:

1. Are there differences between the European and the American countries?

We can affirm that better results were detected in the American portals compared to the European ones. In this sense, Portugal had one of the weakest websites, while Spain was the fifth worst. As for the media, no significant differences were identified between the European newspapers and the Latin-American ones.

2. Have there been differences between the countries with more infected people and the rest?

We did not identify any relationship between the number of infected people in the country and the development of transparency portals. In the table below, we can see the scores obtained in the analysis of the websites (in decreasing order) together with the number of infected people for each country and the position they would have hold in a ranking had the spread of the virus been considered. No relation is observed.

Table 3: Comparison between countries' transparency and impact of the COVID-19

Country	Total (44)	Nº infected (20/05/2020)
Ecuador	36	34151 (6º)

Chile	36	49579 (5°)
Mexico	34	54346 (4°)
Brazil	33	271885 (1°)
Peru	33	99483 (3°)
Colombia	33	16935 (8°)
Costa Rica	31	882 (11°)
Spain	30	232037 (2°)
Argentina	28	8809 (10°)
Uruguay	28	738 (12°)
Panama	26	9867 (9°)
Portugal	26	29660 (7°)

Source: authors' own creation

Regarding the media, we did not identify any relationships between the number of people infected and the scores obtained in the different sections either, since in some locations the media of the same country had very different scores.

3. What type of data do governments share to report on the coronavirus?

In sum, the analyzed portals shared basic information about the virus, such as symptoms, essential recommendations for the population, and the measures taken by each country. Regarding the pandemic's spread; they were particularly transparent about the death toll and the data by regions. In addition, all the countries tried to make this information understandable through an interactive map of the infection.

4. Are participation and reuse of data promoted in any way?

The promotion of data reuse was one of the most unequal aspects during the analysis of the transparency portals, since more than half did publish the data in an accessible format, but even so, various governments did not. Additionally, in general, many documents in PDF were found on these websites. The Costa Rica case was especially striking, since practically all the information published was in PDF and each item under study had to be searched for in these documents.

As for participation, only Peru had a section available for people to participate and offer improvement suggestions to the website.

5. Do digital media promote transparency and participation in any way?

In the media, the promotion of users' participation within the COVID-19 context was nonexistent, since no initiatives encouraging the general public to contribute to any type of content were found. Regarding reuse of data, the newspapers did not demonstrate interest in showing openness either, since only two of the analyzed newspapers published the datasets used in open access.

It should be noted that this study is faced with a limitation, which is the time when it was conducted. Although this work was codified during an advanced stage of the pandemic, it is possible for any of

the countries to implement changes in the future for the better or worse. This is why the codification was conducted on two occasions, at the beginning of the pandemic and in May, when it had already evolved, so that the study could encompass the progresses made by the institutions and the media.

In this sense, we repeated the codification because we noted improvements on the data portals. They had changed throughout the health crisis and evolved remarkably in comparison to their initial concept. More data and graphs were included on these websites. Therefore, it is safe to say that time led them to reconsider the structure and information that should be provided to citizens. Furthermore, this work aims to be an exploratory study of the first months of the pandemic. Reality becomes more complex as time goes by, hence further and deeper investigation is required.

It should be noted that, since it was a sudden situation, there is no legislation or previous reference that could have guided institutions on the best way to act, hence governments improvised and acted intuitively by observing what their peers were doing. This probably caused the countries with a poorer transparency culture to be more affected in this regard. Nevertheless, by detecting certain development levels on the transparency portals, it can be asserted that an emergency such as this has helped governments see the necessity of having properly up-to-date data portals and publishing in reusable formats. Likewise, it can be very useful to know citizens' information needs in order to disclose data that, even if it is not mandatory, must be disseminated.

The media, for their part, had to adapt quickly to his situation and use the data provided by governments through their websites. This has resulted in the implementation of data journalism and the use of different visual pieces in the media. However, the media did not harness this period to foster greater transparency of their methodologies and sources, or to promote citizen collaboration and participation. It is important to mention that this study analyzes two media in each country, hence it is a first sample of each country's panorama, which is broader and more varied, and so there are interesting examples of other media that have implemented innovative and open proposals. This is one of the limitations on this research, which is intended to be later expanded with more relevant media examples.

This tragic pandemic that shook the whole world has shown the need to develop transparency so that governments are up to the task during emergency situations like this and for the media to benefit from their transparency to develop open journalism.

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9. Annexes

9.1. Institutional transparency analysis sheet

Variable	Category	Link and details
1. Institution		
2. Specific section on the website about the COVID-19		
3. Prevention measure for the population		
4. Information on the pathology (symptoms, etc.)		
5. Recommendations for infected people		
6. Purchased material		
7. Measures taken		
8. Information on affected workers and measures		
9. Contracts made		
10. FAQ from the population		
11. Data repository		
11.1. Downloadable data in a reusable format		
11.2. Data update at least twice a day		
11.3. Data by ages		
11.4. Data on admitted patients		
11.5. Data on deaths		
11.6. Data on discharged patients		
11.7. Data on people who recovered		
11.8. Data by regions		
11.9. Tests performed		
11.10. Positive and negative test results		
Other aspects worthy of notice in the repository		
12. Display of information		
12.1. Map of infections (indicate whether it is interactive)		
12.2. Epidemic curve		
12.3. Other graphs		
13. Other data of interest		
Total		

9.2. Media analysis sheet

Variable	Category	Link and details
Codification date		
A) Descriptive data		
Medium		
Special section on the home page about the coronavirus		

Performs data journalism		
Interactive map of infections		
Epidemic curve		
Other graphs		
Performs fact-checking		
Special real-time update section		
Other prominent journalistic practices		
B) Transparency		
Discloses datasets		
Discloses methodology used		
Publishes sources in an accessible way		
C) Participation and Collaboration		
There are specific participation channels about the COVID-19		
There are collaboration channels for content creation		
There is collaboration with other media or entities (organizations, institutions, etc.)		
Other noteworthy aspects		