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INTERNET GOVERNMENT COMMUNICATION ON COVID-19: a descriptive benchmarking

COMUNICAÇÃO DE GOVERNO NA INTERNET SOBRE O COVID-19: um benchmarking descritivo
COMUNICACIÓN DEL GOBIERNO DE INTERNET SOBRE COVID-19: una evaluación comparativa descriptiva

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ABSTRACT:
Nowadays, information can be disseminated extremely quickly, whether it is validated information or not. With the emergence of COVID-19, governments and specialized health agencies have implemented web portals exclusively aimed at COVID-19, as a way of providing reliable information. This work aims to present a descriptive benchmarking of representative government portals on COVID-19, through an interdisciplinary research method. The results point to the general scenario of how some countries are providing information about COVID-19.

KEYWORDS: Benchmarking; COVID-19; Government Communication; Health Communication; Web Communication.

Introduction

The emergence of a global pandemic has highlighted the importance of communication in society. It became clear that information can be disseminated too quickly, that is before it is verified or proven. Studies on CoV-SARS-2 and its disease COVID-19 are transmitted, replicated, altered, succinctly, or mistakenly, even before they are consolidated. A natural governmental response to this problem was the implementation of websites (or web portals) exclusively related to COVID-19, both to disseminate health information based on scientific evidence to health professionals and to disseminate health guidelines to the population in general, approved by the government.

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The need for reliable information on COVID-19 is proven ex-ante. It establishes the relevance of exclusive content government websites on this matter. Hence, these websites are essential for the professional practice of the so-called frontline combatants.

They receive this information actively, when they search for the information themselves, or passively through social networks, internet, television, institutional communications, etc. Their insecurity on the information received conduct them to search validation, especially when they receive the information by unofficial media such as social networks. These professionals seek government websites to learn, not only about service guidelines but also about protection standards and conduct. Consequently, it is acceptable to assume that these COVID-19 health websites have achieved unprecedented notoriety for this type of website.

The importance of the communication provided by government web portals on COVID-19 transcends nations. The World Health Organization (WHO) was the first institution to offer an international web portal so that national governments could send WHO their pandemic information, to centralize the global data of the COVID-19 pandemic. This initiative has been replicated by other institutions for national purposes, for research, and monitoring purposes. These initiatives are not uniform, and possibly, each one tries a form of innovation that makes communication with the population, health professionals, and researchers more effective, efficient, or comprehensive.

Therefore, this work presents a descriptive benchmarking of these representative web portals on COVID-19. In this work, we seek to raise the main characteristics of these web portals concerning the pandemic. The evaluation of this survey will possibly allow, by comparison, the managers of these websites to improve the communication of health information provided by them, or even, this analysis is the inspiration for innovations in government communication about COVID-19.

After the introduction that presents the problem of governmental communication of the pandemic and its importance, a brief comment on benchmarking is presented, because of its use might support future improvements. Visualization and presentation of data, both necessary for the development of websites, especially for understanding the behavior of this pandemic, are commented. After that, a section on access to information is provided, which approaches the question of the use of Information and Communication Technologies (ICT) for the provision of information, in particular for health, and to complete the context, a brief explanation is made of SARS-COV-2 and COVID-19.

These sections of introduction, benchmarking, data visualization and presentation, and access to information serve as the basis for this work, and it is hoped that with this

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foundation, the managers of the pandemic-related web portals will have a common basis to discuss improvement and evolution communication they promote. Then, the methodology used in carrying out this study is presented. This section is partitioned into three subsections. The first subsection deals with how the IRPM (Interdisciplinary Research Project Management - Management of Interdisciplinary Research Projects) is used in this work. The second subsection addresses the definition of the analysis criteria and the sample to be analyzed in this study. The third subsection reports the data collection process. Next, the results of this research are presented in an independent section to be concluded in a discussion section with a subsection of final considerations.

Benchmarking

Benchmarking is a technique used to measure the company's performance (product, service, or institution) and to know what must be done to improve it, based on the analysis of the strengths and weaknesses of an item under analysis. It is the process by which the objective is to learn from others (LANKFORD, 2000; STEVENSON, 1996). Benchmarking uses pre-existing knowledge and experience under analysis in order to improve a given job. "Benchmarking provides the quantum leaps needed to stay on top" (Harper, 1996).

However, in addition to seeking to identify the best practices used by others to succeed, when using benchmarking, it is necessary to consider everything that can add to the performance. According to Lankford (2000): Benchmarking is about adding value. This implies that the changes resulting from the practice of benchmarking should only be implemented if they bring any benefit, otherwise, nothing should be changed.

For Robert and Boxwell (1994), benchmarking is an efficient and accelerated form of improvement as it seeks to adapt existing processes, being able to increase their performance. Currently, there are three main types of benchmarking in use (Bogan & English, 1994): Process Benchmarking, which acts on daily processes, improving the way they are carried out daily; Performance Benchmarking focuses on analyzing competitiveness through comparison with available information; and Strategic Benchmarking, this focuses on the analysis of the successful strategies being used.

But there are other types of benchmarking (Robert & Boxwell, 1994). Competitive Benchmarking that evaluates the competition that operates in the same industry; the Cooperative and Collaborative Benchmarking, which consists of an exchange of information; and Internal Benchmarking, which aims to identify the best practices within the organization to transmit to the organization as a whole.

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Data visualization and presentation

It is noticeable that images are able to communicate information faster than written words. In this context, Ward, Grinstein, and Keim (2010) explain that "the interpretation of the image is carried out in parallel in the human perceptual system, while the speed of the analysis of the text is limited by the sequential reading process". I mean, it is easier to interpret an image than a text. For these authors, visualization means transmitting information through the use of graphic representations, which are independent of a local language, that is, a group of people can understand an image even if their language is not common.

According to Ward et. al. (2010), data visualization can be used by the user to explore interesting things, to confirm hypotheses or even, to present the results of an analysis, besides, the visualization allows the conversion of data and tasks into a more intuitive so that users can perform their activities. As a result, there are different user profiles, each of which may have different perceptions about each view, so Ward et. al. (2010) explain that it is not possible to guarantee the effectiveness of a visualization based on a pattern, since each observation of a total of data represents only information.

In this field, "information visualization techniques are becoming increasingly important for the analysis and exploration of large multidimensional data sets" (Keim, 2000). So we can highlight some approaches:

> The designer of a new visualization usually begins with an analysis of the type of data available for display and the type of information the viewer expects to extract or transmit with the display.
> The data comes from several sources; it can be collected from sensors or surveys or it can be generated by simulations and calculations. [...] The data can be raw (untreated) or can be derived from raw data through some process, such as smoothing, noise removal, scaling or interpolation. It can also have a wide range of characteristics and structures Ward et al. (2010).

Ward et al. (2010) state that scientific visualization and information visualization represent data, even though they are different. The practice of visualization techniques has increased considerably, causing them to be implemented in several data mining systems (Keim, 2000). These techniques allow the user to have direct interaction with the data (Keim, 2000). Therefore, "many new visualization techniques have been developed and existing techniques have been extended to work with larger data sets and to make displays interactive" (Keim, 2000).

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Information access

Information is part of people's daily lives and it is through it that it is possible to keep up to date on what happens in the world. In this sense, the availability of digital technologies was developed with the aim of allowing the creation of content and the sharing of data by users (Lupton, 2014). In other words, technological tools come to facilitate people's access to information so that they have the ability to communicate with other people and also get informed about the subjects they are interested in. For Lyu (2019) and Haluza (2015), Information and Communication Technology (ICT) transforms people's lifestyles, for example, by consulting the Internet, people can acquire knowledge and information related to any type of subject.

For most users, access to information needs to be dynamic, practical, intuitive, and available anywhere to make the search for information more efficient. In this context, Riley et. al. (2011) explain that the responsiveness of web sites is important as it adapts the access of information to various models of devices, such as cell phones, tablets, computers, etc., enabling accessibility for users. In addition, it is understood that the way information is made available tends to adapt according to the user's needs.

In this context, for example, when information is presented to a high-level public manager, the data is not presented in several spreadsheets or extensive reports, a panel with all the consolidated information, easy to read and adjustments to parameters, that is, a management dashboard. On the other hand, an analyst/researcher needs to have access to the data that make up the information and not necessarily the consolidated information. Thus, the analyst/researcher needs to have access to spreadsheets or to the "pure" data source, without any manipulation, usually in the .csv or .xls format, and can even consume this data directly from the source through interaction with other services - defined by Zeng et. al. (2003) as web services.

According to While & Dewsbury (2011), ICTs have the potential to change the way people use health services, given that with the help of technology, access to information becomes closer to people, giving them the ability to easily access information about protection and care issues, as well as current news related to health promotion.

Joseph-Shehu and Ncama (2017) claim that ICT's offer other forms of support that enable an improvement in health promotion interventions. For Joseph-Shehu (2017), health promotion is used comprehensively as a means of disease prevention, allowing people to have knowledge about the behaviors necessary to provide optimal health. In this context, ICT's have an important role in people's lives as they facilitate access to information, and people can acquire knowledge and information related to health issues.

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SARS-cov-2 AND COVID-19

According to the World Health Organization (WHO), Coronavirus is a family of viruses that can cause disease in animals or humans. In humans, several of these viruses cause respiratory infections, ranging from a simple cold to more serious diseases, such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). SARS-CoV-2, popularly known as COVID-19, is an infectious disease caused by the most recent discovered Coronavirus. The outbreak began in Wuhan, China, in December of 2019. Currently, COVID-19 has become a pandemic affecting many countries.

According to WHO information, the most common symptoms of COVID-19 are fever, dry cough, and tiredness. However, there are other symptoms that can affect some patients, such as pain, nasal congestion, headache, conjunctivitis, sore throat, diarrhea, loss of taste or smell, or rash on the skin or discoloration of the fingers or toes. These symptoms are usually mild and appear gradually. It is worth mentioning that some infected people show only very mild symptoms.

COVID-19 can be transmitted from person to person. The disease spreads mainly through small drops in the nose or mouth, which are expelled when a person infected with the disease, coughs, sneezes, or speaks. That is to say, if a person breathes these droplets, he could be infected. The WHO points out in some reports that people without symptoms can transmit the virus, however, there is no precise data on how to spread COVID-19 through asymptomatic people.

Methodology

In this section, we will present the methodological path taken in the development of this work, the development methodology, the methods, and the tools used. Thus, the main stages of this journey are detailed in the following subsections.

Interdisciplinary Research Project Management

As a development methodology for this work, we use the Interdisciplinary Research Project Management (IRPM), which allowed us to integrate all the methods and concepts necessary for the development of this work. The IRPM was defined by Letouze (2012) as "an interdisciplinary approach strategy for a real problem using Project Management" – Figure 1.

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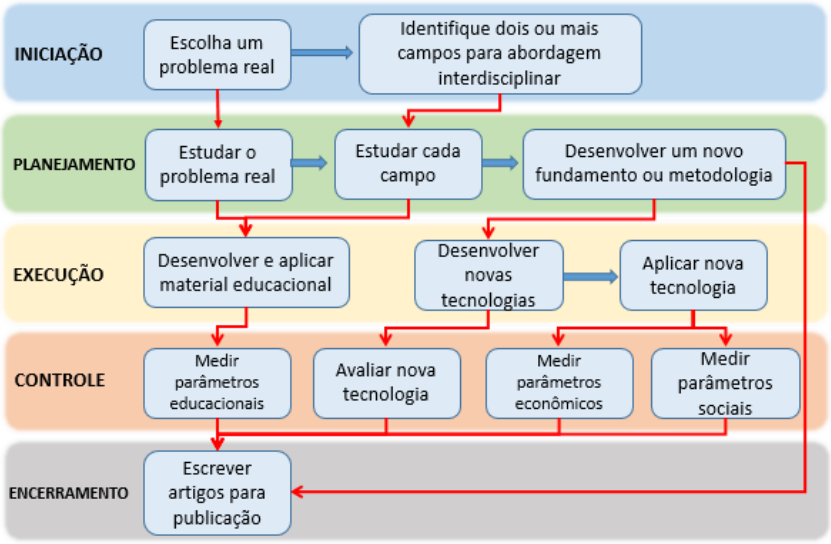
Figure 1 Interdisciplinary Research Project Management.



Source: Letouze (2011).

Descriptively, this work is the artifact generated in the closing phase, writing an article for publication. The article covers the initiation and planning phases of the IRPM – Figure 1. The availability of information on SARS-CoV-2 is the real problem chosen at the initiation. Still at the beginning, for the interdisciplinary approach, three areas were chosen: Access to Information; Data Visualization, and Information and Communication Technology.

The planning phase begins with the study of the problem: the Benchmarking sessions, Data Visualization / Presentation Techniques, Access to Information, and Coronavirus - SARS-CoV-2 - COVID-19 that make up the theoretical framework, that is, the topics that give the state of the art on the subject on screen. Then, the planning continues with the study of each field: carrying out a benchmarking to glimpse the best practices of how government agencies of the countries with the largest Bruno Domestic Product (GDP) and WHO are providing information on COVID -19 for society; discussion about this availability process. Figure 2 illustrates the steps of the IRPM performed in this work:

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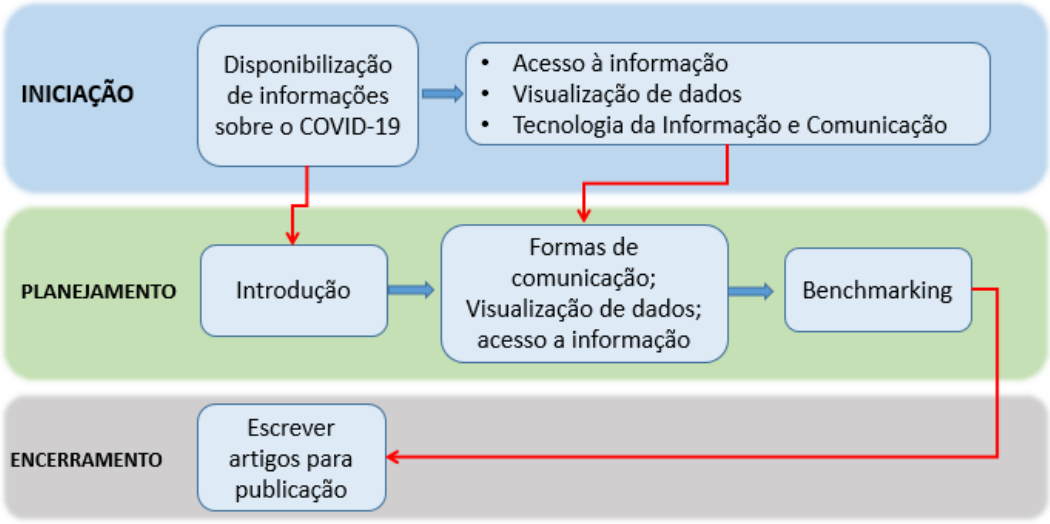
Figure 2 Management of interdisciplinary research applied to benchmarking on displaying data about Covid-'9.



Source: Research data

In this way, Figure 2 summarizes how we use the IRPM in this work, the other steps performed in this methodological path are presented in the subsections below..

Definition of Sampling and Criteria for Analysis

After defining the IRPM as a development methodology, we carried out a bibliographic survey on the researched topic. The bibliographic survey provided us with knowledge about the necessary characteristics to define the criteria to be analyzed in the development of benchmarking. To obtain the scenario close to the state of the art on the subject on screen, the following search string was used: *Covid-19 or SARS-CoV-2 and Benchmarking and "Data visualization" and "access to information"* in the databases: Science Direct[1], IEEE Explorer[2], Springer[3], and Google Scholar[4] that we obtained 11 results.

The next stage of the methodological path was the definition of the elements that will be observed as criteria for the evaluation regarding the visualization of data about Covid-19. Thus, the defined criteria are:

[1] The Data is updated periodically.

[2] It displays the data according to the area.

[3] It lists/provides access to research and publications on Covid-19.

[1] https://www.sciencedirect.com/
[2] https://ieeexplore.ieee.org/Xplore/home.jsp
[3] https://link.springer.com/
[4] https://scholar.google.com/

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[4] It provides ways of direct contact.

[5] It has interactive data visualization.

[6] It lists links to external tools that display data about Covid-19.

[7] It allows access to "raw" data.

[8] It provides guidelines to the public.

[9] It displays data in English.

Additionally, to arrive at the nine criteria analyzed above, several rounds of analysis and discussion on the items to be evaluated were carried out. 42 desirable items were listed for displaying the data and/or communication that could be used. After that, these criteria were grouped by similarity, specific function, the form of communication. Thus, we move on to 34 evaluation items. Again, another round of grouping was carried out, with which we defined 9 items and 25 sub-items, making a new update, where we had 9 items and 22 sub-items, the version being used for evaluation. The complete table is presented in Appendix A. Criterion [9] was used as an exclusion criterion for the sample items, that is, the sites that are not in English have not been analyzed. This was because we chose not to use automatic translation tools for websites.

With the criteria defined and well established, we set out to define the delimitation of our research universe, that is, which set of data will be part of our assessment, benchmarking. We initially thought about conducting the research on the government websites of the 20 largest GDP's in the World and on the WHO website they are making information about COVID-19 available to society, however, we analyzed the representativeness of each of the GDP's, as shown in With the criteria defined and well established, we set out to define the delimitation of our research universe, that is, which set of data will be part of our assessment, benchmarking. We initially thought about conducting the research on the government websites of the 20 largest GDP's in the World and on the WHO website they are making information about COVID-19 available to society, however, we analyzed the representativeness of each of the GDP's, as shown in Figure 3. Well, as in the image cited, The World Bank[5] makes it clear that the 173 countries out of the top 20 represent less than a quarter of the total global economy. In addition, the sum of GDP's from the 11th to the 20th is only 0.5% (of the total percentage), greater than the sum of the 6th to the 10th. Our criterion was to focus on the countries with the greatest economic power. Well, as in the image cited, The World Bank's website, in Portuguese, makes it clear that The 173 countries out of the top 20 represent less than a

[5] https://www.worldbank.org/

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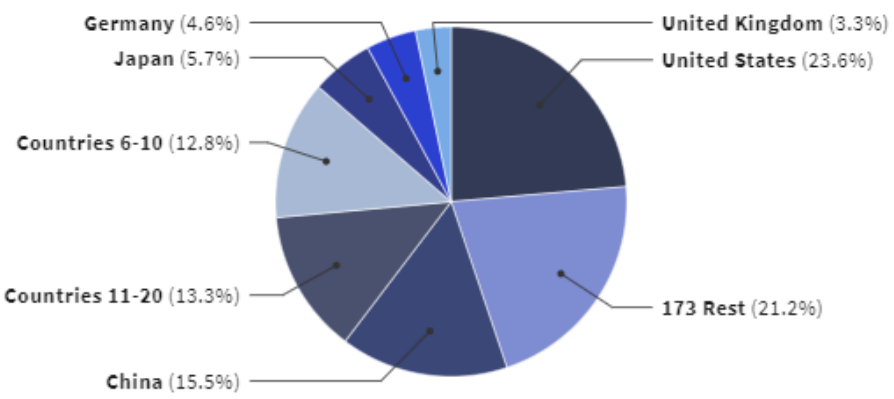
quarter of the total global economy. In addition, the sum of GDP's from the 11th to the 20th is only 0.5%[6] (of the total percentage), greater than the sum of the 6th to the 10th. Our criterion was to focus on the countries with the greatest economic power.

Figure 3 Representation of the distribution of world GDPs..



Source: Investopedia[7]

Based on this information, we decided to analyze how the agencies of the countries with the 10 largest GDPs are disseminating information about COVID-19 to the population through their website. In addition to the aforementioned elements, we included in our analysis the World Health Organization (WHO) and the European Continent bloc through the European Center for Disease Prevention and Control, in Portuguese European Center for Disease Prevention and Control.

For the analysis contained in this work, the government pages related to health in the: United States, European Union, China, Japan, Germany, United Kingdom, France, India, Italy, Brazil, and South Korea were considered. In addition, the World Health Organization (WHO) was also included in the analysis, since it is the world body related to health promotion. Thus Table 1 below lists the countries and bodies that would be evaluated.

Table 1 List of Institutions Evaluated

País/Instituição	Órgão
Organização das Nações Unidas	*World Health Organization*[8] (Organização Mundial de Saúde)

[6] https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?most_recent_value_desc=true
[7] https://www.investopedia.com/insights/worlds-top-economies/
[8] https://www.who.int/

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Estados Unidos	*Centers for Disease Control and Prevention*[9]
EUROPA	*European Centre for Disease Prevention and Control*[10]
China	*National Health Commission of the People's Republic of China*[11]
Japão	*Ministry of Health, Labour and Welfare*[12]
Alemanha	*German Federal Ministry of Health*[13]
Reino Unido - U. K.	*Department of Health & Social Care*[14]
França	*Ministère des Solidarités et de la Santé*[15]
Índia	*Ministry of Health and Family Welfare*[16]
Itália	*Ministero della Ialute*[17]
Brasil	*Ministério da Saúde*[18]
Coreia do Sul	*Ministry of Health and Welfare*[19]

Source:

Data Acquisition Process

At this stage, we performed the analysis in each source of information, if it met the criteria established for this evaluation. For this, it was performed following the similar process of the analysis of the primary studies of a systematic review of the literature, where each author evaluates the data set, and classifies the results, after analyzing the similarity between the articles chosen as those that meet the inclusion criteria (Letouze et. al., 2016). Based on this process, each author visited each of the sites and classified it in relation to each of the evaluation criteria of how the country is communicating about

[9] https://www.cdc.gov/
[10] https://www.ecdc.europa.eu/en
[11] http://en.nhc.gov.cn/index.html
[12] https://www.mhlw.go.jp/index.html
[13] https://www.bundesgesundheitsministerium.de/english-version.html
[14] https://www.gov.uk/government/organisations/department-of-health-and-social-care
[15] https://solidarites-sante.gouv.fr/
[16] https://www.mohfw.gov.in/
[17] http://www.salute.gov.it/portale/p5_11.jsp
[18] https://saude.gov.br/
[19] https://www.mohw.go.kr/eng/

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COVID-19, with this the criteria table (see, Table 3), was filled out for each site, classifying whether or not it met the desired criteria.

Data were classified according to the grouping of the items. Each sub-item has been judged separately, if a sub-item has satisfied the item for the item, it also considers itself satisfied. After the classification stage, the data generated by the authors were checked to verify divergences, obtaining a peer review (Nassi-calò, 2015). This would allow applying the Kappa coefficient (Brennan & Prediger, 1981) to the results generated. However, as there were no divergences, the result of the coefficient would be 1 (Landis & Koch, 1977).

It is noteworthy that the French website was excluded from the list of data because there is no English version. Besides, in the case of Japan, Italy and Germany have some parts that are not available in English, so you cannot evaluate all the content. In the case of Brazil, which also does not have the site in English, it was analyzed because it is the mother tongue of the researchers.

In the case of China, we are faced with a different scenario from the other sites evaluated, on the website of the National Health Commission of the People's Republic of China there is very little information about COVID-19, however, there are references to the China Daily[20] website, which is described as: "[...] a multimedia information platform that combines newspapers, websites and applications"[21]. Thus, the data from China Daily were not taken into account in this work, since the focus of this work does not include ways of making data available by third parties, and does not enter the field whether the third-party communication vehicle is governmental or not.

Results

In the previous section, the methodology of this work was presented. In particular, the second subsection deals with the definition of the evaluation criteria. Nine criteria were established. Table 2 presents compliance with these criteria in general terms, and not in their entirety. It is clear from this table that only the European Centre for Disease Prevention and Control (UK and Italy) meet the 9 criteria, totally or partially.

Despite leadership and being the first organization to address the issue, who does not include item [6] – lists links to external tools that display data on Covid-19. The other countries or institutions that do not include only one item are: the Centers for Disease

[20] http://global.chinadaily.com.cn/
[21] http://www.chinadaily.com.cn/e/static_e/about

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Control and Prevention of the United States of America does not include the item [2] – displays the data according to the area, and Brazil that does not include the item [9] – presents the data in English.

Japan does not include two items, item [3] – lists/makes available access to research and publications on Covid-19, and item [7] - Allows access to raw data. South Korea does not include three items [3], [5], and [7], being the item [5] – it has an interactive visualization of the data. India does not include four items, they are the [1], [3], [5] and [7], being the item [1] – updating the data periodically. China and Germany comprise less than half of the items, only 4. France was not included because it did not have English content.

Table 2 Comparison between criteria met and not met by the Institutions

Instituições	Critérios	
	Atendidos ou Parcialmente Atendidos	Não Atendidos
World Health Organization	[1], [2], [3], [4], [5], [7], [8] e [9]	[6]
Centers for Disease Control and Prevention	[1], [3], [4], [5], [6], [7], [8] e [9]	[2]
European Centre for Disease Prevention and Control	[1], [2], [3], [4], [5], [6], [7], [8] e [9]	-
China	[1], [3], [8] e [9]	[2], [4], [5], [6] e [7]
Japão	[1], [2], [4], [5], [6], [8] e [9]	[3] e [7]
Alemanha	[4], [6], [8] e [9]	[1], [2], [3], [5] e [7]
Reino Unido - U. K.	[1], [2], [3], [4], [5], [6], [7], [8] e [9]	-
França	-	-
Índia	[2], [4], [6], [8] e [9]	[1], [3], [5] e [7]
Itália	[1], [2], [3], [4], [5], [6], [7], [8] e [9]	-
Brasil	[1], [2], [3], [4], [5], [6], [7] e [8]	[9]
Coreia do Sul	[1], [2], [4], [6], [8] e [9]	[3], [5], e [7]

Source: Research data.

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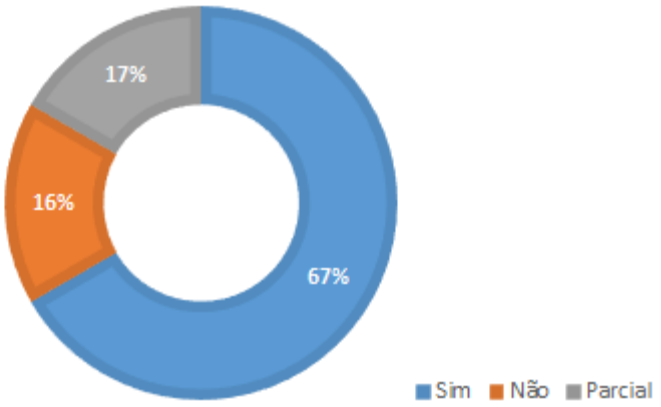
Figure 4 Displays data in English



Source: Research data.

The internationalization of information requires a common language. The UN (United Nations) recognizes two languages as an official for the organization, English, and French. In pragmatic terms, the language of greatest acceptance and use internationally is English, both for international organizations and for science. Therefore, figure 4 shows the graph on whether the web portal presents the content in English partially or totally. Approximately 2/3 (two-thirds) of web portals present the full information in English, while 1/6 (one-sixth) partially presents and the other 1/6 (one-sixth) does not present information in English.

However, these criteria are part of the method and are also results. They come from a survey and classification performed in this survey. Below in Table 3, the subcriteria is presented.

Table 3 List of Criteria

ID	Critérios
[1]	**Atualização dos dados de forma periódica**
[2]	**Exibição os dados conforme a área**
[2.1]	Regional
[2.2]	Mundial
[3]	**Relaciona/disponibiliza o acesso às pesquisas e publicações sobre Covid-19**
[3.1]	Publicações
[3.2]	Pesquisas em Desenvolvimento
[4]	**Disponibiliza formas de contato direto**
[4.1]	Chat/Assistente Virtual

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[4.2]	Whatsapp
[4.3]	E-mail
[4.4]	Número de Telefone
[5]	**Possui visualização interativa dos dados**
[5.1]	Gráficos
[5.2]	Mapas
[6]	**Lista links para ferramentas externas que exibem dados sobre o Covid-19**
[6.1]	Sites que exibem dados do Covid
[6.2]	Aplicativo mobile gerido pela instituição
[7]	**Permite o acesso aos dados "puros"**
[7.1]	Download de .CSV ou .xls
[7.2]	Web service
[8]	**Disponibiliza orientações para o público**
[8.1]	Orientações Gerais sobre Covid
[8.2]	Proteção/Cuidado/Prevenção
[8.3]	Orientações sobre Trabalho/Emprego
[8.4]	Orientações para Profissionais da Saúde
[8.5]	Recomendações de Viagem
[8.6]	Recursos de Áudio e Vídeo
[8.7]	Infográfico/Folheto/Poster
[8.8]	Orientações sobre Fomento e Auxílios
[9]	**Apresenta os dados em inglês**

Source:

Discussion

The government web portals on COVID-19 are dynamic, that is, they are constantly updated and evolving. This dynamism brings with it the challenge of raising evaluation criteria that are at least stable because the global pandemic situation is not restricted to COVID-19. It has become a possibly recurring reality that requires individual nations and their collaborative collective to be prepared.

The category of "Pandemic-Centric Websites" (PCW)[22] has acquired such importance that it will become the object of study, research, and development in a focused manner due to its particular needs and requirements. For example, it is reasonable that for the exchange of information and international access, these web

[22] Expression created by the authors.

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portals are at least bilingual, one of the languages being English (item 9). It is also expected that these websites will be periodically updated (item 1), i.e. that this is a website management policy.

The need for quick understanding and interpretation of the data suggests the importance of visualization and presentation of the data (items 2 and 5). Interactive visualization makes information attractive to the general population (item 5).

The possibility of direct communication to both the public and health professionals is an essential premise (item 4). Similarly, the easy access and availability of guidance to the public (item 8) is a basic and primordial characteristic. It corroborates for the information of the public and professionals the availability of links of complementary tools that are minimally validated or recognized by official bodies (item 6).

Concerning the research, it is necessary to make available the raw data, so that researchers can verify, corroborate, replicate, and elaborate on the new research and its results (item 7). Also, in support of research, easy access to scientific information is a facilitator and disseminator (item 3).

In this study, it was found that the availability of content in English two countries left to be desired, Brazil and France. In other cases, there was an easy-to-access button for the English version of the website. France did not have the criteria evaluated because it chose not to use automatic translators. In relation to Brazil, the authors' country, the evaluation was chosen.

In some cases, it was noticed that the information in English was partial, that is, the amount of information was perceptibly lower. In the case of Germany and China, the detection of the amount of information in English was substantially lower, while in the case of Japan the decrease in the amount of information was not as noticeable, but the decrease in the parts available in English was evident. Italy presented a similar situation to Japan in terms of the availability of content in English, for example, there was no translation of interactive charts and maps. On the other hand, it is observed that the WHO (WHO), the American CDC, European ECDC, the United Kingdom, and India have English as their official language. Therefore, in this regard, South Korea stands out.

Final Remarks

Concerning Brazil, it is considered that it contemplates all the criteria except the ninth, [9], which deals with the English version. However, Brazil has a pound accessibility plugin. The Brazilian website needs only its translation for its insertion in the international pandemic scenario COVID-19. In the opinion of these authors, this translation does not

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represent a great difficulty or cost for the Brazilian government, so this investment would place the country in a complete situation, standing out for its accessibility in LIBRAS.

It is necessary to emphasize the need for information in English as standardization, as this way the national information and data on COVID-19 (or another pandemic to come) become available to a larger community of researchers. With the availability of links on research and tools together with availability in English, there is the possibility of an informal research network or the promotion of formal networks.

The visualization and presentation of pandemic data suggest that the "Pandemic-Centric Websites" (PCW) will make extensive use of ICT development tools that favor dynamic graphs and maps. The so-called dashboards seem to be a trend that will consolidate in the area.

As future work, there is the assessment of website development frameworks for "Pandemic-Centered Health Web Portals", with the possibility of a minimum standardization monitored, supervised, or even coordinated by WHO to facilitate data integration, systematic reviews and meta-analyses

The consolidation of the "Pandemic-Centric Websites" (PHW) area should encourage research on education and training through these communication vehicles. The effectiveness and efficiency of these websites should be evaluated in the future to analyze the success of public health policies.

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RESUMO:
Nos dias atuais, uma informação pode ser disseminada de forma extremamente rápida, sendo ela uma informação validada ou não. Com o surgimento do COVID-19, governos e agências especializadas em saúde implementaram portais web exclusivamente voltados ao COVID-19, como forma de disponibilizar informações confiáveis. Este trabalho visa apresentar um benchmarking descritivo de portais governamentais representativos sobre o COVID-19, por meio de um método de pesquisa interdisciplinar. Os resultados apontam para o cenário geral de como alguns países estão disponibilizando informações sobre o COVID-19.

PALAVRAS-CHAVE: Benchmarking; Comunicação Governamental; Comunicação de Saúde; Comunicação pela Web; COVID-19.

RESUMEN:
Hoy en día, la información se puede difundir extremadamente rápido, ya sea información validada o no. Con la aparición de COVID-19, los gobiernos y las agencias de salud especializadas han implementado portales web destinados exclusivamente a COVID-19, como una forma de proporcionar información confiable. Este trabajo tiene como objetivo presentar una evaluación comparativa descriptiva de portales gubernamentales representativos en COVID-19, a través de un método de investigación interdisciplinario. Los resultados apuntan al escenario general de cómo algunos países están proporcionando información sobre COVID-19.

PALABRAS CLAVE: Benchmarking; Comunicación del Gobierno; Comunicación de Salud; Comunicación Web; COVID-19.

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