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**COVID-19 AND INSTAGRAM:
AN ANALYSIS OF AN IBERO-AMERICAN INFODEMIC¹**

Understanding the role of communication promoted by Ibero-American society during the Coronavirus pandemic is fundamental for building knowledge about the disease. In this scenario, Instagram occupies a privileged place, as it carries a diversity of possible languages. Furthermore, Instagram's relevance in the social media landscape is growing. This article presents, from a study developed through big data analysis procedures, the first result of several that make up an international investigation on the subject. In the project stage, the quantitative volume of publications, the average publication per user and the participation of the different languages used in this analysis group were verified. It is hoped that further investigations can be developed based on the results presented here, especially due to the urgency of knowing the role of communication in the pandemic scenario in which we live.

Keywords: communication, photography, Instagram, big data, COVID-19

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INTRODUCTION

Contemporary society has been experiencing significant transformations in various sectors, especially with the advent of digital technologies. Citizens, immersed in liquid behaviors (Bauman, 2001) and connected by networks of relationships (Castells, 2000), make up an increasingly imagistic scenario, as McLuhan (1964) expected when analyzing television at the time. However, with the emergence of the internet and mobile devices, the use of the image as a communication language between people (P2P) has been enhanced, and social networks have begun to value this type of resource even more. In this aspect, the imagery narrative experiences expressive changing processes since the advent of digital technology, becoming an important protagonist in communication processes in participatory spaces such as Instagram as “new new media” (Levinson, 2012).

Under the COVID-19 pandemic, Instagram has been experiencing a growing role among social media networks. According to *Digital 2021 global overview* in January 2021 it ranked as the fifth most popular social platform, with a global community of 1.221 million people (WeAreSocial and Hootsuite, 2021).

Through Instagram, users have played a prominent role in expressing their feelings, desires, opinions and afflictions about the pandemic. Its visual component has facilitated its role in the construction of pandemic narratives, enabling the contact and connection of users, in addition to its emotional (Cho et al., 2018) and motivational effects (Chung et al., 2017; Kamel et al., 2016). From a social perspective, Instagram makes it possible to use resources for the:

[...] access to official information at the time of entertainment; the comparison of information conveyed in different profiles; the validation of information from the mass media; sharing collective feelings through images and videos; and the semi-intimate bond with health professional influencers (Pinto et al., 2020, p. 45).

Although Igartua, Ortega Mohedano and Arcila Calderón (2020) place Instagram among the social networks with a greater visual component, with an orientation towards capturing likes rather than information, the combination of entertainment with informative and even pedagogical content creates a favorable space for health communication almost on the same plane as other networks (García and Eiró-Gomes, 2020). Thus, there have been several studies analyzing the role of Instagram in health communication (Fung et al., 2020; Kamel Boulous et al., 2016) in the framework of public health crises (Fung et al., 2017; Guidy et al., 2017; 2019; Setzler et al., 2015; 2017).

However, in the same scenario in which the image gains prominence, we find disinformation disseminated by the same relationship networks, something that in times of a pandemic becomes even less desirable. Together with the health crisis, public institutions and health organizations have been faced with an infodemic in efforts to contain the virus (Aleixandre-Benavent et al., 2020).

This investigation will present the quantitative results observed in Ibero-American fake news publications on Instagram registered at the beginning of the COVID-19 pandemic. For this purpose, publications in Portuguese and Spanish between March 13 and May 20, 2020 that contained the hashtags #covid19 and #coronavirus were collected, totaling 103,775 publications

made by 13,051 users. The selection of labels as a studio object places us in the line of works such as Wagner, Marcon and Caulfiel (2020) on the hashtag #immunebooster. This was a trend in this social network (Nikmam et al., 2020), who analyzed the social conversation articulated around #COVID-19.

Based on data visualization features provided by the Graphext platform, we quantitatively and qualitatively observe these publications and present the results so that we can, from this first moment of observation, understand the role of existing social media networks in Instagram in the first months of the pandemic in Ibero-American countries. It is expected, with the conclusion of this article, to offer subsidies for new studies related to the theme, as well as the contemplation of conditions for finding solutions to misinformation.

METHODOLOGICAL PARAMETERS

The article was guided by a general objective to be contemplated: to discover the role of image content in the construction of public discourse about COVID-19 in Ibero-American countries. To this end, the following list of specific objectives was defined:

- develop a sufficiently representative dataset to safely achieve the general objective,
- quantitatively verify publications on COVID-19 during the given period,
- conduct a comparative quantitative analysis between publications in Portuguese and Spanish registered in the period.

At the time of the development of this research, we did not have a hypothesis regarding the following research question: What will be the nature of the behavior of users on Instagram when talking about COVID-19? This has happened because, in addition to this being a new topic in communication terms, we also did not know the dimensions of the pandemic, especially considering the timing of the research, at the onset of the pandemic.

For this, CrowdTangle software was adopted, which found, between March 13 and May 20, 2020, some 103,775 publications tagged with the hashtags #covid19 and #coronavirus, in combination with a series of keywords in Spanish and Portuguese that allowed delimiting the conversation within the Ibero-American sphere, as issued by a total of 13,051 users.

Of this set of posts, 51,893 were published in Spanish and 48,691 in Portuguese (the sixth and eleventh most popular languages used on the network, covering a wide community of users).

The choice of hashtags is related to their role in the visibility of communication themes, a role that can also promote debate perspectives and drive common narratives (Rambukkana, 2015).

The data collection period is justified as follows:

- on March 13th the Government of Spain declared a “State of Alarm”, which would last for two months;
- on March 20, the Federal Senate of Brazil approved a Decree of Public Calamity.

Although Spain and Brazil represent only two of the countries in the Ibero-American sphere, they acquired particular relevance in the crisis. In fact, following Rovetta and Bhagavathula (2020), Brazil and Spain are the second- and third-most-cited nations, in relation to

COVID-19, by the global Instagram user community (with 551,000 and 376,000 hashtags, respectively), which leads to thought about the true polarization of social conversation.

As this is an exploratory research article, which has a broader methodological complex, the data presented here are limited to quantitative perspectives. Therefore, an investigation of ethnographic content is developed, commonly adopted to understand and explain contemporary social and cultural phenomena. The ethnographic method, according to Agrosino (2009, p. 31), “[...] is based on field research (conducted in the place where people live and not in laboratories where the researcher controls the elements of behavior to be measured or observed)”. In the article in question, the use of the multifactorial method was adopted, which has as its essence the use of two or more data collection techniques. For this purpose, netnography is considered, which consists of collecting data from ethnographic research on the internet.

The research has been built on two pillars: theoretical conceptualization and data analysis. The two are directly related, since it is essential to know the theories to interpret the data results. Otherwise, we will have an almost empirical reading, at least when it comes to understanding what has happened. For this, in addition to classic authors such as Manuel Castells, we have adopted recent research, such as that developed by the authors of this research, as well as that of Pamela Pinto, Felipe Brasileiro, Margarida Almeida and Maria João Antunes, who have published articles on similar topics.

SOCIAL NETWORKS IN DIGITAL SPACES

In contemporary society cultural and technological changes have become increasingly present and incisive in the daily lives of subjects. The different forms of communication are enormously impacted by the changes resulting from the numerous digital communication and information technologies available.

The space in which this happens is called cyberspace, a space for new media that emerges from the internet. The term cyberspace includes not only the infrastructure of technological materials, but also the contents and subjects that are transmitted and are immersed in it, respectively. Faced with this digital context, new ways of being, feeling, relating and knowing become accessible to subjects, thus giving rise to cyberculture (or digital culture) in which subjects relate and share content through different media, instantly, participatorily and collaboratively. According to Levy (2010, p. 17), cyberculture is “the set of techniques (material and intellectual), practices, attitudes, ways of thinking and values that develop along with the growth of cyberspace”.

In cyberspace we do everything that people do when they meet, but we do it with words, images, videos and on the screens of computer interfaces. From it, we can think that the signs of a medium create, generate, build other signs in different ways, thus demonstrating the possibility of an unlimited semiosis. Worldwide, billions of people belong to digital social networks in which our identities mix and interact electronically, regardless of time and place (Santaella, 2013, p. 123). It is also important to mention that in this context, the social markers of difference – socio-economic and cultural conditions, race, gender, and generations – are present and effectively manifested in the context of the relationships established by the subjects.

Digital culture contemplates the creation/production of content in media supports and the intensification of the interconnection that may exist between these contents. Different media allow people to connect through different platforms that are grouped in a single device, which allows us to talk about convergence. This convergence is not only built on the evolution of the media, nor on what they are called to present as an unprecedented use, but above all it brings a significant change in the paradigms of social, cultural and consumption relations, establishing an expanded way of integrating and interacting with the different content and information available.

Convergence is characterized as a cultural transformation that occurs as the need to search for information and connectivity to content arises.

For Jenkins (2009, p. 27), convergence is:

content flow through multiple media supports, cooperation between multiple media markets and the migratory behavior of media audiences, who go almost anywhere in search of the entertainment experiences they want.

The interactions present in the digital context do not happen only through the technological apparatus, but mainly through the ways in which subjects appropriate technologies to produce culture. In digital culture, the subject is at the center of the process, because it makes content converge on different media platforms while it also makes itself present in these different spaces. The media are important, as they are the support that contributes to the changes in the actions of the subjects immersed in it, but without a change in the subject's perception, it would not be possible to develop interactions in cyberspace.

The most relevant thing is, therefore, to understand how the relationship between cultural subjects and these media is constructed and translated. One of these most evident processes is the virtualization of personal identity. With it come the virtual profiles that free the entity from the bonds of space-time:

Virtualization is not a derealization (the transformation of an entity into a set of possibles), but a mutation of identity, a shift in the ontological center of gravity of the object under consideration: instead of being defined mainly by its actuality (a 'solution'), the entity starts to find its essential consistency in a problematic field (Levy, 2011, pp. 17–18).

Thus, we understand that convergence is a process that allows for fluidity between media and languages, enabling access to different information and content that can contribute to the structuring of knowledge that breaks through the barriers defined for each medium.

According to Santaella (2005), with digital convergence, content transmutations occur in countless virtual versions that emerge as the receiver places himself in the position of co-author. Thus, there is also a qualitative sum of the matrices of language and thought, whether sound, visual and/or verbal, which give new meanings to the productions.

Every new language brings with it new ways of thinking, acting, feeling. Coming from the phenomenological convergence of all languages, hypermedia means an unprecedented synthesis of the matrices of sound, visual and verbal language and thought with all its possible developments and mixtures (Santaella, 2005, p. 392).

From this context, we understand that with the intensification of connectivity between subjects made possible by digital convergence, new ways arise for the construction of knowledge to take effect. These new modes started to be guided by the exponential increase of some substantive characteristics of the information available in digital media, including the multiplicity of languages in which they are constituted; the diversity of sources; the volume, quantity, reach, scope and scale; the plurality of opinions; and the worldwide phenomenon of political/ideological polarization, in addition to the constant confrontation of misinformation.

This very complex scenario incisively affects some social spheres, such as the world of work, political management, investment in science and technology, the environmental agenda, consumption, communication, progressive agendas in defense of fundamental social rights, interpersonal relationships, and education as well. Finally, our entire culture is in a constant process of change (qualitative and quantitative), with the increasingly intensive and extensive participation of digital media in social reality.

The digital convergence movement enhances the actions that can be carried out in a network, and something that for nearly two decades has deserved close attention in mediated environments is the connections between people, popularly known as the network. Previously defined as a meeting or social mobilization around a common theme, the concept of the network began to receive new interpretations with the advent of the Internet. The Spanish sociologist Manuel Castells was a pioneer in the interpretation of this new social configuration that started to rely on mediated environments and, above all, the importance of the citizen in the processes of building networks.

In his work *The Network Society*, Castells (2000) proposes the importance of being in the information society and the communication processes based on the identity of networks. According to Castells (2000, pp. 57–58), “by identity, I understand the process by which a social actor recognizes and builds meaning mainly based on a certain cultural attribute or set of attributes, to the point of excluding a broader reference to other social structures”.

It is important to emphasize that Castells does not consider the concept of “network” in the same way as technology scholars consider the term. Although the philosophy is the same – computer networks or social networks are interconnected by various nodes, whether neural, process or physical connection – the network proposed by Manuel Castells goes beyond this simplification, as a social network is supported by other characteristics, including immaterial ones such as mutual interests and goals. This social network drives collective changes, voluntarily or involuntarily.

In a more current work, Castells (2013) presents the concept of social network with specific purposes of mobilization and collective change, writing how “in fact, social change involves an individual and/or collective action that is, in its essence, emotionally motivated, in the same way as all human behavior” (Castells, 2013, p. 126).

On this topic, the author also demystifies the need for technology for the formation and existence of networks. For Castells, technology collaborates and empowers, but the key is the sharing of interests, needs and solutions.

They are networked in multiple ways. The use of internet communication networks and cell phones is essential, but the way to connect to the network is multimodal. It includes online and offline social networks, as well as preexisting networks and others formed during the movement’s actions.

Networks are formed within the movement, with other movements from around the world, with the internet blogosphere, with the media and with society in general. The technologies that enable the constitution of networks are significant for providing the platform for this continued practice, which tends to expand, evolving with the change in the format of the movement (Castells, 2013, p. 128).

When debating the formation of networks, Castells values the language used to share collective ideas. Among the most prominent, the image occupies a privileged status in the process. According to Castells (2013, p. 130), “the power of images is sovereign. YouTube was probably one of the most powerful mobilization tools in the early stages of the movement”. Effectively, for the author the image is the protagonist of greater power to mobilize and form networks, which can be observed from the quantitative results presented by this investigation.

However, when thinking about networks in the context of this investigation, we must consider the territorial scope. As proposed by Marc Augé (1994), in digital environments we rely on non-place, and based on this idea, he develops an anthropological reading of contemporary society as a network of people who inhabit the non-place, as this does not depend on physical conditions to connect. For the author, “The non-place is the space of others without the presence of others, the space constituted in a spectacle” (Augé, 1994, p. 167). He considers in a different text that non-place is the common space of what he defines as supermodernity. He explains:

But, insofar as non-place is the negative of place, it is indeed necessary to admit that the development of spaces for circulation, communication and consumption is a pertinent empirical feature of our contemporaneity, that these spaces are less symbolic than encoded, ensuring in them all signs and a whole set of specific messages (through monitors, synthetic voices) in the circulation of passersby and passengers (Augé, 2006, p. 115).

However, Augé’s idea is not uncontested. From another perspective, the Portuguese Boaventura Sousa Santos (2005) defends an intermediate position between geographic and virtual territory, stating:

The present time appears to us as dominated by a dialectical movement in which globalization processes occur alongside localization processes. [...] social relations in general seem to be increasingly deterritorialized [...]. But on the other hand, and in apparent contradiction to this trend, new regional, national and local identities are emerging, built around a new prominence of root rights. Such localisms refer to real or imagined territories, as well as to ways of life and sociability based on face-to-face relationships, proximity and interactivity (Santos, 2005, p. 54).

These concepts lead to a fundamental understanding to sustain the value of the publications found by this investigation. It is noticed that there is spatial coherence that reflects, in a way, the pandemic situation in Portuguese-speaking and Hispanic countries.

DATA INTERPRETATION

The first graphical analysis of the publications was carried out with the support of Graphext software, a platform that allows the creation of graphs and graphs from big data on social networks. Figure 1 is an initial representation of the data collection and crossing

process, composed of contents in Spanish and Portuguese. It is important to point out that the segmentation in different languages generated two macro-clusters of publications that are disconnected from each other. This is because the interests of the Hispanic and Lusophone communities differ.

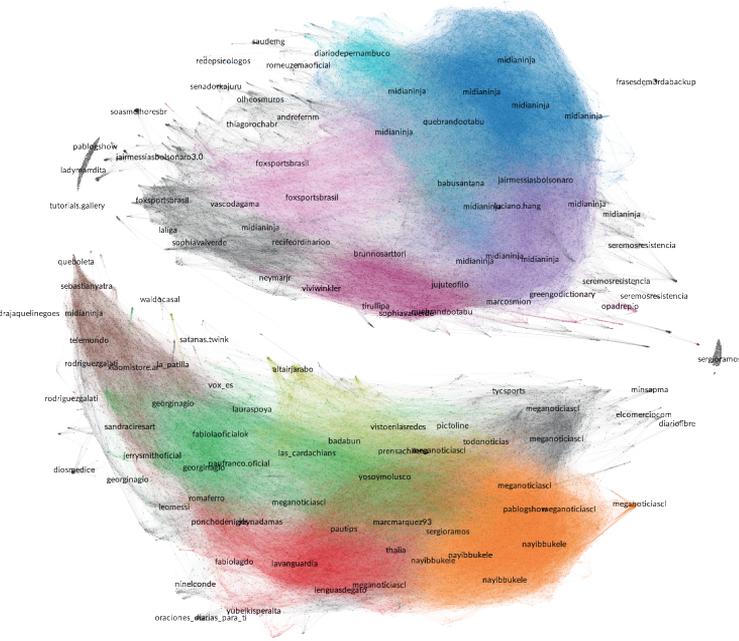


Figure 1. Map of publications in Portuguese (above) and Spanish (below)

The *cluster* of publications in Spanish comprises 51,893 posts on Instagram, while the Portuguese-speaking community is represented by 48,691 posts. It is essential to clarify that the collection also identified 2% of cases of publications in English or in languages not defined by the system.

TEMPORAL EVOLUTION

As well as the relevance of publications on media scandals (Thompson, 2002), publications with hashtags #covid19 and #coronavirus went through a cycle, as clearly interpreted in Figure 2. At the beginning of the analyzed period, we observed a strong growth of publications tagged by hashtags coinciding with the decree of the State of Alarm in Spain and in much of Europe, although with time these publications taper off. This was not because the coronavirus disappeared, but because less and less talk about the topic occurred on Instagram. This phenomenon that was found by other studies on the use of social networks in the first phase of the

pandemic, (e.g., Hung et al., 2020), and it could be considered as among the first symptoms of “pandemic fatigue”. In addition, there is a peak in publications after the decree of public calamity declared by the Government of Brazil, with the same concerns in Spanish and Portuguese. It is noteworthy that the virus arrived in Latin America at the same time that it manifested itself in Brazil. The same goes for Portugal and Spain, which had similar situations in time.

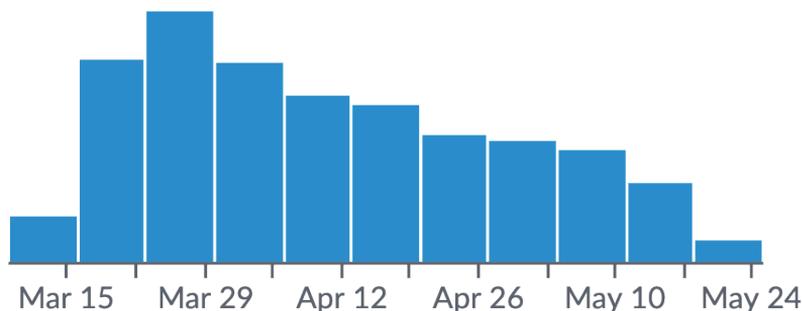


Figure 2. Evolution of publications. Graphext font

Figure 3, however, represents something curious. Unlike what was analyzed in other investigations on the behavior of users of social networks (Martínez-Rolán et al., 2019), if we look at daily publications, we notice a drop in posts with the hashtags #coronavirus and #covid19 on weekends, when the use of social networks tends to be more intense. This reality deserves detailed qualitative observations. One possible explanation is the lower informative pressure of the media about the coronavirus on weekends, when there is a lack of data and official information, which leads people to develop more habitual attitudes on Instagram, as the publication and interaction form around leisure themes which are less worrying and/or depressing.

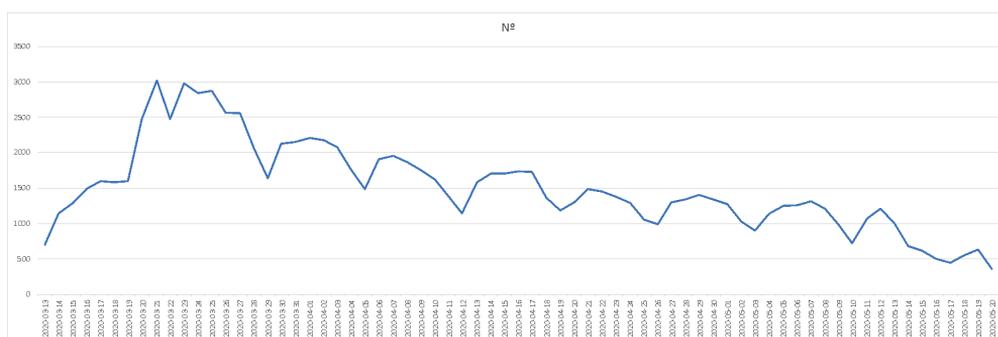


Figure 3. Daily evolution of publications

Confinement and attrition happened a week earlier in Spain than in Brazil, which projected itself into the social conversation on Instagram around the hashtags #covid19 and #coronavirus. As we can see in Figures 4 and 5, the shape of the publication curves between the two languages takes place with a week's difference. In Spain (Fig. 4), in particular, the confinement ended in May. For this reason, the publication curve declined at that time. Brazil (Fig. 5), in turn, has continued in disorderly confinement since then, although, curiously, the curve has also decreased, probably due to social exhaustion.

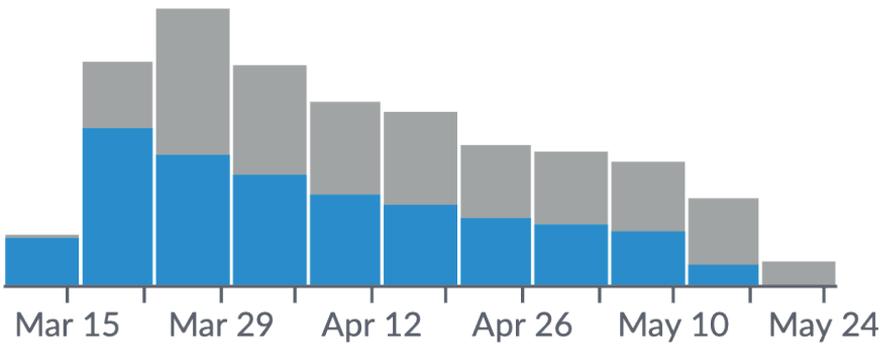


Figure 4. Evolution of publications in Spanish

Source: Graphext

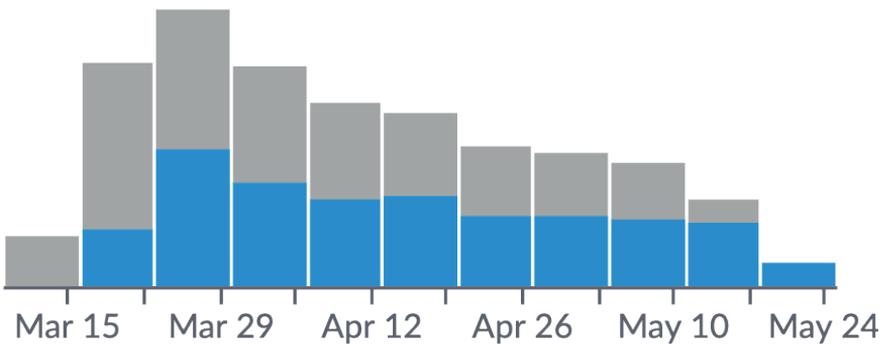


Figure 5. Evolution of publications in Portuguese

Source: Graphext

Another interesting quantitative survey obtained in this investigation refers to the type of content in the publication, as Instagram allows for a variety of formats ranging from photography to audiovisual, through iconography, texts and audio. In addition, it is possible to publish an album of up to ten photos and still carry out live video transmissions. In collecting data with the hashtags #covid19 and #coronavirus, we obtained four types of publications depending on their language-form with the following classifications (Fig. 6):

- photographs: a single photograph, optionally accompanied by a text (caption);
- album: a set of two or more photographs optionally accompanied by a text (caption);
- video: a video fragment optionally accompanied by a text (caption);
- instagram TV: a live video stream, optionally accompanied by a text (caption).

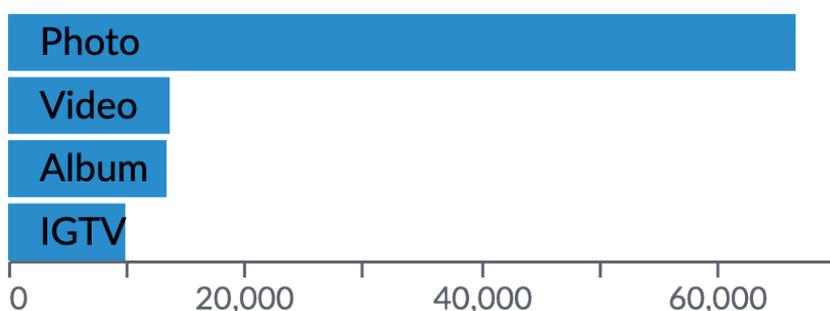


Figure 6. Varieties of publications obtained by the research

In the scope of this collection, Figure 7, with the specific figures for each type of language-form adopted, catches our attention. In the selection, there is a predominance of photographs that with 66,642 publications (64% of posts are single images). This figure lives up to the origins of the social network. Photographs are the simplest way to communicate on Instagram and are the favorite of users who share ideas, thoughts, and anxieties condensed in a single image that, accompanied by text, creates a multimodal discourse about what interactions are established.

The remaining 36% of the publications (a total of 37,133 posts) are distributed more evenly among Instagram's other types of language-form. Thus, with 13% of the sample, we can highlight the practical balance between publications with photo albums (an expansion of photographs present in 13,387 publications) and those that use videos to contribute their perspective to the collective narrative of the pandemic on Instagram (13,706 publications).

In this sense, a positive evolution of publications that use the audiovisual format on Instagram can be noted. Although static images – photos and albums – continue prevail among the publications developed on these platforms, the growing presence of videos and the rapid evolution of video transmissions on IGTV (10,040 publications that already account for 10%

of the analyzed sample) allow us to observe an evolution in the conception and appropriation of this platform by the user community.

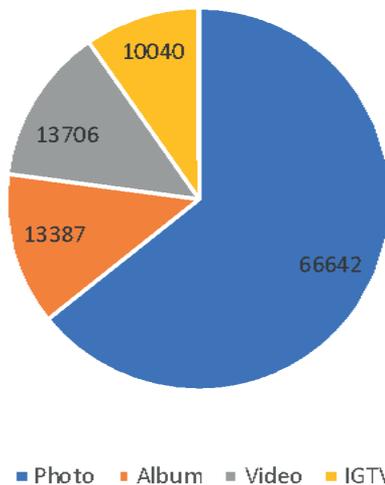


Figure 7. Percentage of publications obtained

This mix of languages allows us to support the idea that Instagram is a post-photographic social media space, considering the concept presented by Joan Fontcuberta (2011). For the author, the contemporary mediation environment is characterized by the association of various image languages such as photography, audiovisuals, infographics and iconography.

TYPES OF INTERACTION, MEAN AND MEDIAN

The research sample is represented by 103,775 publications, a number which provides high mean and median figures. Authors such as Sheldon and Bryant (2016) define Instagram as a network centered more on people than on relational identity. In the daily life of the platform and the interactions established on it, certain personalities (from different offline entities) have been defined as carrying greater weight and influence in social conversation. These influencers – including in the field of health – have become true opinion leaders (Fregber et al., 2011), to the point that several health authorities have requested they collaborate in the fight against the virus (Público, 2020), and their acting in the social conversation of Instagram has been the object of study (Torres Romay and García Mirón, 2020).

Thus, the publication with the highest volume of sample interaction, that authored by the Argentine soccer player Leo Messi, has, at the time of analysis, 2,656,944 shares divided into likes and comments. On the other hand, the one making the least impact was that of Brazilian Member of the Chamber Deputy Arnaldo Jardim, who had amassed 17 likes.

As can be seen in Table 1, when considering the total number of publications and interactions received, an average of 18,947 interactions is obtained, with a median of 3,232 interactions. The data are relatively high, as the number of video reproductions is always expressive. In this case, an average of 55,831 reproductions should be considered (the median is significantly lower, with 24,165 reproductions).

On the other hand, the traditional forms of interaction (likes and comments) reached more modest figures. The average number of likes per publication is 4,982, accompanied by 59 comments. Although the number that is repeated the most – median – refers to the publication that contains 2,024 likes and 59 comments, this represents one comment for every 34 likes (median) or every 28 likes on average.

Table 1. Mean and median of types of interaction

	Likes	Comments	Views	Total interactions
Mean	4,982	177	55,831	18,947
Median	2,024	59	24,165	3,232

TOTAL USERS AND VOLUME OF PARTICIPATION

With a total of 103,775 Instagram postings or publications, 13,051 different users were counted. Of these, approximately half of users appear with a single publication: 6,326. On the other hand, the remaining 6,587 users who were selected by the show are responsible for the remaining 97,449 publications. It is worth noting that the distribution of this participation is irregular and does not respect the average (14.7 publications per user).

First, it should be noted that a small number of users (only 13) are responsible for more than 500 publications. In addition, there are 159 users who have published between 100 and 500 posts and 1,230 users are authors of a range between ten and 100 posts. The largest share of users falls in the range of two to ten publications, representing a total of 5,185.

Table 2. Volume of publications per user

Post range	Number of publications
Users with 1 post	6,326
Users between 1–10 posts	5,185
Users between 10–100 posts	1,230
Users between 100–500 posts	159
Users +500 posts	13
Total users	13,051

CONCLUSIONS

The data obtained from the methodology used in this netnographic study demonstrate a relevance in the observation of Instagram as a space for understanding the media ecosystem during the first two months of the COVID-19 pandemic in Portuguese- and Spanish-speaking countries. In addition to expressive figures, there is a similar evolutionary design in both regions (Lusophone and Hispanic), namely Spain and Brazil. Likewise, there is a surge in publications right after the declaration of State of Alarm by the Government of Spain and the Decree of Public Calamity by the Federal Senate of Brazil.

It is important to consider that the Hispanic community numbers 577 million people worldwide, while the Lusophone (Portuguese speaking) community is represented by practically half that, with 260 million speakers (48%). In addition, Brazil has 210 million inhabitants, which represents almost the entire Portuguese-speaking sample.

Through the study presented here, it is observed that photography continues to be the main language of Instagram, with approximately 60% of the collected content. Adding up the photo album publications, we reach almost 75% of the publications. Still, it is important to remember that an album can contain both photography and video in a single album, which can change that figure.

The results presented strengthen the idea of the growth of imagery narrative as a contemporary language. This confirms, in addition to the hypothesis of this investigation, evidence presented by Joan Fontcuberta (2011), or even Marshall McLuhan (1964) in his investigations of society influenced by television at the time.

Another observation found in this investigation refers to the volume of publications. Considering the total number of publications with the hashtags #covid19 and #coronavirus – 103,775 – 13,051 of them seem to have been published multiple times. However, approximately half of these authors (6,587 people) are responsible for 97,449 posts, which demonstrates an inequality in the intensity of participation. This difference can be observed between the post that received the most participation (from the soccer player Lionel Messi, with 2,656,944 interactions) and the post that received the least participation (from the Brazilian federal deputy Arnaldo Jardim, with 17 interactions). This demonstrates that the identity of the author of a post is still fundamental, as the high visibility of celebrities garners them more interaction, which makes them influencers also in the non-place proposed by Augé (1994). A medium that allowed the creation of a common narrative about the pandemic of a multimodal nature, in which information from public institutions and bodies – such as the one analyzed by Pinto et al. (2020) – interspersed, at different levels, with personal experiences and experiences that, in times of solitude, became public and collective.

However, the present study is within a field which requires further work. This article proposes an analysis based on the social conversation about the coronavirus pandemic developed by the Ibero-American community on Instagram from the perspective of big data. Questions about who were the main nodes of this conversation and why will be further investigated in future articles. Given the various urgencies caused by the pandemic, communication occupies a fundamental position and requires the partial sharing of the results obtained in the investigation.

REFERENCES

- Agrosino, M. (2009). *Etnografia e observação participante*. Artmed.
- Alexandre-Benavent, R., Castelló-Cogollos, L., Valderrama-Zurián, J.C. (2020). Información y comunicación durante los primeros meses de Covid-19. Infodemia, desinformación y papel de los profesionales de la información. *Profesional de la información*, 29(4). Doi: 10.3145/epi.2020.jul.08.
- Augé, M. (1994). *Le sens des autres. Actualité de l'anthropologie*. Fayard.
- Bauman, Z. (2001). *Modernidade líquida*. Jorge Zahar Editores.
- Castells, M. (2000). *A Sociedade em rede*. Paz e Terra.
- Castells, M. (2013). *Redes de indignação e esperança: movimentos sociais na era da internet*. Zahar.
- Cho, H., Silver, N., Na, K., Adams, D., Luong, K.T., Song, C. (2018). Visual Cancer Communication on Social Media: An Examination of Content and Effects of #Melanomasucks. *Journal of Medical Internet Research*, 20(9). Doi: 10.2196/10501.
- Chung, C.F., Agapie, E., Schroeder, J., Mishra, S., Fogarty, J., Munson, S.A. (2017). When personal tracking becomes social: Examining the use of Instagram for healthy eating. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1674–1687. Doi: 10.1145/3025453.3025747.
- Fontcuberta, J. (2011). Por un manifiesto postfotográfico. *La Vanguardia*. Retrieved from: <https://www.lavanguardia.com/cultura/20110511/54152218372/por-un-manifiesto-pos-fotografico.html> [23.05.2022].
- Fregber, K., Graham, K., McGaughey, K., Freberg, L.A. (2011). Who are the social media influencers? A study of public perceptions of personality? *Public Relations Review*, 37, 90–92. Doi: 10.1016/j.pubrev.2010.11.001.
- Fung, I.C.H., Blankenship, E.B., Ahweyevu, J.O., Cooper, L.K.; Duke, C.H., Carswell, S.L., Tse, Z.T.H. (2020). Public health implications of image-based social media: A systematic review of Instagram, Pinterest, Tumblr, and Flickr. *The Permanente Journal*, 24. Doi: 10.7812/TPP/18.307.
- Fung, I.C.H., Blankenship, E.B., Goff, M.E., Mullican, L.A., Chan, K.C., Saroha, N., Duke C.H., Marina E., Eremeeva M.E., King-Wa F. Tse, Z.T.H. (2017). Zika-virus-related photo sharing on Pinterest and Instagram. *Disaster Medicine and Public Health Preparedness*, 11(6), 656–659.
- Garcia, A., Eiró-Gomes, M. (2020). O papel da comunicação: a utilização das redes sociais nos cuidados de saúde primários. *Comunicação E Sociedade*, 197–217. Doi: 10.17231/comsoc.0(2020).2747.
- Guidry, J.P., Carlyle, K.E., LaRose, J.G., Perrin, P., Messner, M., Ryan, M. (2019). Using the health belief model to analyze Instagram posts about Zika for public health communications. *Emerging Infectious Diseases*, 25(1). Doi: 10.3201/eid2501.180824.
- Guidry, J., Yan Jin, C., Marcus Messner, A.O., Meganck, S. (2017). Ebola on Instagram and Twitter: How health organizations address the health crisis in their social media engagement. *Public Relations Review*, 46(3), 477–486. Doi: 10.1016/j.pubrev.2017.04.009.

- Hung, M., Lauren, E., Hon, E.S., Birmingham W.C., Xu, J., Su, S., Hon, S.D., Park, J., Dang, P., Lipsky, M.S. (2020). Social Network Analysis of COVID-19 Sentiments: Application of Artificial Intelligence. *Journal of Medical Internet Research*, 22(8). Doi: 10.2196/22590.
- Igartua, J.J., Ortega-Mohedano, F., Arcila-Calderón, C. (2020). The uses of communication in the time of coronavirus. A cross-cultural study. *El profesional de la información*, 29(3). Doi: 10.3145/epi.2020.may.18.
- Jenkins, H. (2009). *A cultura da convergência*. Editora Aleph.
- Kamel Boulos, M.N., Giustini, D.M., Wheeler, S. (2016). Instagram and WhatsApp in Health and Healthcare: An Overview Journals. *Future Internet*, 8(3). Doi: 10.3390/fi8030037.
- Levinson, P. (2012). *New new media*. Penguin.
- Levy, P. (2010). *Cibercultura*. Editora 34.
- Martínez-Rolán, X., Tymoshchuk, O., Piñeiro-Otero, T., Renó, D. (2019). Instagram como red de promoción e hipermediación del turismo rural: el caso de Aldeias Históricas. *Revista Latina de Comunicación Social*, 74, 1610–1632. Doi: 10.4185/RLCS-2019-1401.
- Marwick, A.E. (2015). Instafame: luxury selfies in the attention economy. *Public Culture*, 27(1), 137–160. Doi: 10.1215/08992363-2798379.
- McLuhan, M. (1964). *Understanding Media – the extensions of man*. McGraw-Hill.
- Niknam, F., Samadbeik, M., Fatehi, F., Shirdell, M. (2016). COVID-19 on Instagram: A content analysis of selected accounts. *Health Policy and Technology* (In Press). Doi: 10.1016/j.hlpt.2020.10.016.
- Pinto, P.A., Brasileiro, F.S., Antunes, M.J.L., Almeida, A.M.P. (2020). *Comunicação Pública*, 15(29). Doi: 10.4000/cp.11288.
- Público (2020). Fernando Simón anima a los influencers a ayudar a controlar la epidemia. <https://bit.ly/2LrM9o3> [22.05.2022].
- Rambukkana, N. (2015). *Hashtag publics: the power and politics of discursive networks*. Digital Formations, Peter Lang.
- Rovetta, A., Bhagavathula, A.S. (2020). Global infodemiology of COVID-19: analysis of Google web searches and Instagram hashtags. *Journal of Medical Internet Research*, 22(8). Doi: 10.2196/20673.
- Santaella, L. (2005). *Matrizes da linguagem e pensamento: sonora, visual, verbal: aplicações na hipermídia*. São Paulo: Iluminuras FAPESP.
- Santaella, L. (2013). *Comunicação ubíqua: repercussões na cultura e na educação*. São Paulo: Paulus.
- Santos, B.S. (2005). *A globalização e as ciências sociais*. São Paulo: Cortez Editora.
- Seltzer, E., Jean, N., Kramer-Golinkoff, E., Asch, D., Merchant, R. (2015). The content of social media’s shared images about Ebola: a retrospective study. *Public Health*, 129(9). Doi: 10.1016/j.puhe.2015.07.025.
- Seltzer, E., Hortst-Martz, E., Lu, M., Marchant, R.M. (2017). Public sentiment and discourse about Zika virus on Instagram. *Public Health*, 150, 170–175. Doi: 10.1016/j.puhe.2017.07.015.
- Sheldon, P., Bryant, K. (2016). Instagram: Motives for its use and relationship to narcissism and contextual age. *Computers in Human Behavior*, 58, 89–97. Doi: 10.1016/j.chb.2015.12.059.
- Thompson, J. (2002). *O escândalo político: o poder e visibilidade na era da mídia*. Vozes.

- Torres-Romay, E., García Mirón, S. (2020). Influencers y coronavirus. Los contenidos sobre la pandemia COVID-19 en las publicaciones de prescriptores de redes sociales en España (2020): el caso de Instagram. *Quaderns del CAC*, 23(46), 81–91.
- Wagner, D.N., Marcon, A.R., Caulfield, T. (2020). “Immune Boosting” in the time of COVID: selling immunity on Instagram. *Allergy Asthma Clin Immunol*, 16(76). Doi: 10.1186/s13223-020-00474-6.
- WeAreSocial & Hootsuite. (2021). *Digital 2021 global overview*. Retrieved from: <https://datareportal.com/reports/digital-2021-global-overview-report> [22.05.2022].

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