THE SOCIAL APPROPRIATION OF ICTs IN SOCIAL MOVEMENTS: THE CASE OF #SOSCOLOMBIA

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ABSTRACT

The article's objective was to "analyze the social appropriation of ICTs (Information and Communication Technologies) in the social movement #SOSCOLOMBIA." It is an investigation with a transectional-descriptive design in which conversations of people in cyberspace were captured around the hashtag #SOSCOLOMBIA. Quantitative research was used to extract data on the networks use of those who participated in the conversations. Data mining, also known as a non-invasive technique, was used to capture conversations from April 2nd to July 1st, 2021. It is concluded that activists have exceeded the level of simple access-use and reached the level of empowerment since the activists were able to transform their social reality thanks to the social appropriation of ICT for development. It is then about putting into practice the capacities related to ICT both individually and collectively.

Keywords: Social Movements; Social Networks; Activism; Cyberspace; Social Appropriation of ICT.

A apropriação social das TIC nos movimentos sociais: o caso de #SOSCOLOMBIA

RESUMO

O objectivo do artigo foi "analisar a apropriação social das TIC (Tecnologias de Informação e Comunicação) no movimento social #SOSCOLOMBIA". Trata-se de uma investigação com um desenho transeccional-descritivo, em que se captaram conversações de pessoas no ciber-espaço em torno ao hashtag #SOSCOLOMBIA. Utilizou-se a investigação quantitativa para extrair dados sobre o uso das redes dos que participaram nas conversações. Utilizou-se a minaría de dados, também conhecida como técnica não invasiva, para capturar as conversações desde o dia 2 de Abril até a odia 1 de Julho de 2021. Conclui-se que os activistas superaram o nível do simples acesso-uso e alcançam o nível de empoderamento, visto que os activistas foram capazes de transformar a sua realidade social, graças a apropriação social das TIC, para o desenvolvimento. Trata-se, então, de pôr em prática as capacidades relacionadas com as TIC, tanto a nível individual, como colectivo.

Palavras Chave: Movimentos Sociais; Redes Sociais; Activismo; Ciber-espaço; Apropriação Social das TIC.

La apropiación social de las TICs en los movimientos sociales: el caso de #SOSCOLOMBIA

RESUMEN

El objetivo del artículo fue "analizar la apropiación social de las TIC (Tecnologías de la Información y la Comunicación) en el movimiento social #SOSCOLOMBIA". Se trata de una investigación con un diseño transeccional-descriptivo en la que se captaron conversaciones de personas en el ciberespacio en torno al hashtag #SOSCOLOMBIA. Se utilizó la investigación cuantitativa para extraer datos sobre el uso de las redes de quienes participaron en las conversaciones. Se utilizó la minería de datos, también conocida como técnica no invasiva, para capturar las conversaciones desde el 2 de abril hasta el 1 de julio de 2021. Se concluye que los activistas han superado el nivel del simple acceso-uso y alcanzan el nivel de empoderamiento, ya que los activistas fueron capaces de transformar su realidad social gracias a la apropiación social de las TIC para el desarrollo. Se trata entonces de poner en práctica las capacidades relacionadas con las TIC tanto a nivel individual como colectivo.

Palabras clave: Movimientos Sociales; Redes Sociales; Activismo; Ciberespacio; Apropiación Social de las TIC.

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Introduction

This investigation responds to the concern about the brutal police repression that has been unleashed in Colombia, based on the popular protest that has been deployed in the country since April 28th, 2021, for the implementation of the tax, health, and pension reforms, totally regressive and harmful to social rights (CLACSO, 2021).

As demonstrated in this work, popular protests find in social networks the ideal and less controlled space to make visible, channel, and organize any social cause that has as its north the defense of human rights. As Castells (2012) explains, about the properties of movements on social outrage on the network, these are, to a great extent, spontaneous and triggered by a spark of indignation created by a specific event: they have reached the limit of disgust towards the behavior of the leaders.

However, there are many perspectives from which social networks can analyze popular protests. This work is developed from the perspective of the social appropriation of ICT, given the possibility of finding a turning point in which technology can become a social lever to achieve fundamental changes. As expressed by Páez et al. (2015), since Umberto Eco baptized as "apocalyptic" the intellectuals who denounced the harmful effects of the mass media in society, and as "integrated" those who bet on its benefits, several thinkers have been arguing about the matter starting from positions that might seem irreconcilable, but are complementary. The popularization of the Internet has heated this discussion in the 90s and of social networks during the 21st century. We consider extreme positions dangerous, because they blind reasoning and prevent us from envisioning the development modalities that have the possibility of being generated through the use of ICT. In this sense, the research objective was to "analyze the social appropriation of ICTs (Information and Communication Technologies) in the social movement #SOSCOLOMBIA".

In the case of the appropriation of technologies, since it is an innovative act, it becomes reappropriation through the involvement of people in the process of design and creation of applications (Feenberg, 1995). When reappropriation occurs, the user participates in the construction of that technology and what Carroll et al. (2001) call it "reshaping".

Appropriation goes beyond the object, since the citizen appropriates its functionality "appropriation of technology requires the user to test and evaluate the technology, select it, adapt some of its attributes and take possession of its capabilities to satisfy their needs, simultaneously producing a process of dis-adoption of previous practices or customs" (García & Santiago, 2009, p. 33).

Thus, simultaneous processes of appropriation, reappropriation, non-appropriation, or expropriation converge. The citizen appropriates a technology as long as there is the possibility of adapting it to his own needs. According to Carroll (2004), the design processes are completed during the appropriation process made by the individual (figure 1).

Figure 1
Appropriation processes
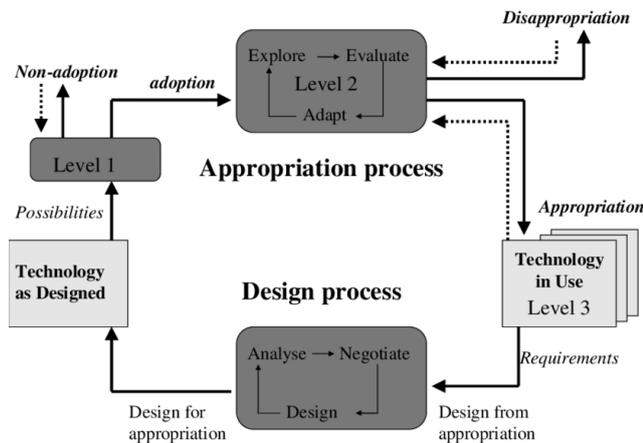
Taken from: The Technology Appropriation Cycle (Carroll, 2004)

The act of appropriation has a social, cultural, economic, and political character, since technology penetrates the social fabric in such a way that it is impossible to reduce its impact in terms of functionality or simplicity of interfaces (Cardon, 2005).

In collective use, there are innovations that the manufacturer doesn't plan. Cardon (2005) defines them as innovations by use (also called "bottom-up innovations" or "horizontal innovations"). These are "technological or service innovations that arise from user practices and are disseminated through the exchange networks between users" (Cardon, 2005, p. 1).

The article's objective was to "analyze the social appropriation of ICTs (Information and Communication Technologies) in the social movement #SOSCOLOMBIA". It is an investigation with a transectional-descriptive design in which conversations of people in cyberspace were captured around the hashtag #SOSCOLOMBIA. Quantitative research was used to extract data on the use of the networks of those who participated in the conversations. Data mining, also known as a non-invasive technique, was used to capture conversations from April 2nd to July 1st, 2021.

Literature review

The research by Weismayer et al. (2021) uses the metadata of 627,632 Instagram posts for the Austrian capital of Vienna during the period from October 30th, 2011 to February 7th, 2018, to extract the sentiment, as well as the basic individual emotions according to the Wheel of Emotions from Plutchik, from the captions, including the hashtag terms. A crucial empirical finding from the study is that more experience and self-confidence in Instagram posting, and increased expectations, appear to lead to a more critical poster over time. Businesses interested in using influencer marketing to promote their products and services through Instagram should consider this finding successful.

An interesting question about participation in social networks is whether or not they allow a two-way relationship. In this sense, Ribeyro (2021) argues that social networks have allowed a new way of communicating and expressing ourselves with the brand through interactions and user-generated content known as value co-creation. It is important to have various communication channels in social networks that are reliable and positively promote the brand, which allows reinforcing the identity and creating a digital link with the community. In addition, win to win can be obtained because it loyalty to users by becoming brand communicators, and it benefits the brand to know the needs and concerns and thus improve in the future.

Even though Ribeyro (2021) research does not address the issue of social movements, the object of study, which is social networks, is valuable. It is concluded that young people between 18 and 24 years old from Modern Lima maintain a high level of interaction in social networks, which is explained because brands are connected in the virtual world, and it is a new way of communicating and reaching more precisely and constant with his public to achieve close relationships. This also allows brands to generate various relevant content for users and thus obtain affinity with the brand. This interactivity allows frequent communication, and each brand adapts its own style that it wants to convey.

Regarding the relationship between social networks and people, Enginkaya & Yılmaz (2014) affirm that online platforms and social networks directly influence the consumer-brand relationship. Consumer behaviors evolve in this connective world as a vital part of individuals' self-concept, while social identities take center stage through these online platforms. Brands, which offer extensions of identity and symbolic values to their clients and seek visibility, try to create interaction and engagement with consumers through their online presence. This study has been carried out to explore the motivations of consumers to interact with and/or about brands on social media and to develop a related scale. The result of the exploratory and confirmatory analyzes revealed five different motivating factors: "Brand Affiliation", "Research", "Opportunity Search", "Conversation" and "Entertainment".

A central factor of cyberspace is the algorithm that social media platforms use, through artificial intelligence, to interpret and use the data generated by users, generally for commercial purposes. In this sense, Fosch-Villaronga et al. (2021) demonstrate how online and social media platforms employ automatic recognition methods to presume user preferences, sensitive attributes such as race, gender, sexual orientation, and opinions. These opaque methods can predict behaviors for marketing purposes and influence behavior for profit, serving the attention economy, and reinforcing existing biases such as gender stereotypes. An online pilot survey was conducted to understand better the accuracy of gender inferences Twitter makes of its users' gender identities. This served as the basis for exploring the implications of this social media practice.

Methodology

It is an investigation with a transectional-descriptive design in which conversations of people in cyberspace were captured around the hashtag #SOSCOLOMBIA. Quantitative research was used to extract data on the use of the networks of those who participated in the conversations. Data mining, also known as a non-invasive technique, was used to capture conversations from April 2nd to July 1st, 2021 with the BRAND24, VICINITAS and TAGS v6.1.9.1 programs. Through BRAND24, there was access to data of 3.8 million users on social networks and 1.8 million from other platforms (Figure 1); 100 conversations were captured with the VICINITAS software and 10,077 conversations were captured with TAGS v6.1.9.1.

Figure 2
Data captured with Brand24
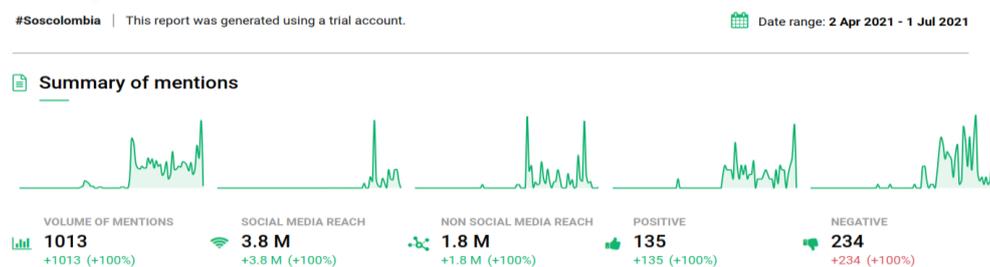
Source: BRAND24

Non-invasive or unobtrusive research techniques are not intended to exclude the classic techniques of the social sciences such as interviews and questionnaires; they are considered to be complementary insofar as they allow the collection of unusual data such as garbage, graffiti and obituaries, as well as other more conventional ones, such as published statistics. They also make it possible to strengthen hypotheses and investigate sensitive topics such as sexual behavior (Kalman, nd).

Results

Next, we present the analysis of the results obtained through BRAND24, VICINITAS and TAGS v6.1.9.1, to respond to the objective "to analyze the social appropriation of ICT in the social movement #SOSCOLOMBIA through social networks". ICTs are presumed to function as a social lever to achieve fundamental changes. This investigation responds to the concern about the brutal police repression that has been unleashed in Colombia, based on the popular protest that has been deployed in the country since April 28th, 2021 for the implementation of the tax, health and pension reforms, totally regressive and harmful to social rights (CLACSO, 2021).

Table 1 and graph 1 show that, the Twitter users who participated in the #SOSCOLOMBIA movement have 56,445,350.00 followers, with an average of 5,629.33, a median of 345, and a mode of 258. Table 2 and graph 2 show that users who participated in the #SOSCOLOMBIA movement have a total of 18,850,976 friends on Twitter, with an average of 1878.14, a median of 636, and a mode of 497.

Based on these first results, it would be interesting to know the degree of influence of the activists. Affde (2021) explains how many followers you need to be an influencer. There is no magic number that you have to pass so that the speakers are turned off, and the ticker tape falls in congratulations for having improved your influencer status. The numbers can vary considerably depending on what field you are in, the commitment of your followers, and what you hope to win.

You could say that you are an Instagram influencer once a brand decides that you are an influencer. However, even it is likely that different brands have different expectations for qualifying someone as an influencer. However, some rough figures will help you give yourself the kind of online presence you will need to be able to call yourself an influencer (Affde, 2021):

a) Nano influencer
Nano influencers on social media tend not to be influential stars or celebrities, but ordinary people.
b) Micro influencer
Micro-influencers are still ordinary people, but they have taken their influencer marketing to the next level. Micro influencers will go the extra mile to create good quality content, which means that they will attract a large following. In fact, micro-influencers are likely to have around 100,000 followers, although this number is usually lower (Affde, 2021).
c) Influential macro
Macro influencers are people that the general public is most likely to know, and in many cases, they became known thanks to the Internet. They usually have more than 100,000 followers, but this number can be much higher. Macro influencers tend not to search for companies that use them as Instagram influencers.

According to Affde (2021), taking into account the average number of followers, the activists who participated in the #SOSCOLOMBIA movement classify as micro influencers.

Table 1.

Followers on Twitter of users who participated in the #SOSCOLOMBIA movement

Statistics		
	Followers	
N	Valid	10027
	Lost	21
Mean		5629,3358
Median		345,0000
Mode		258,00
Total		56445350,00

Source: Own elaboration based on TAGS v6.1.9.1

Figure 1.

**Followers on Twitter of users who participated in the #SOSCOLOMBIA movement**
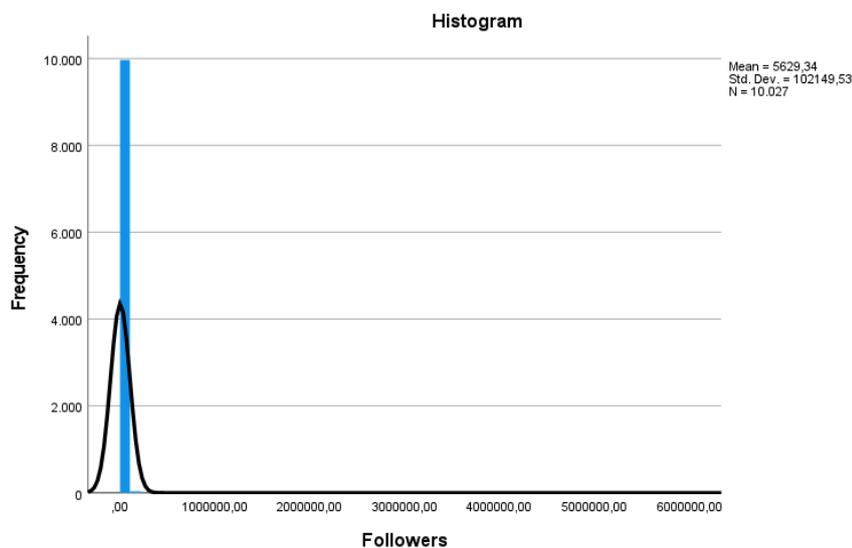
Source: Own elaboration based on TAGS v6.1.9.1

Table 2.

Friends or followed on Twitter of users who participated in the #SOSCOLOMBIA movement

N Valid	10037
Lost	18
Mean	1878,1485
Median	636,0000
Mode	497,00
Total	18850976,00

Source: Own elaboration based on TAGS v6.1.9.1

Graph 2.
**Friends or followed on Twitter by users who participated in the #SOSCOLOMBIA movement**
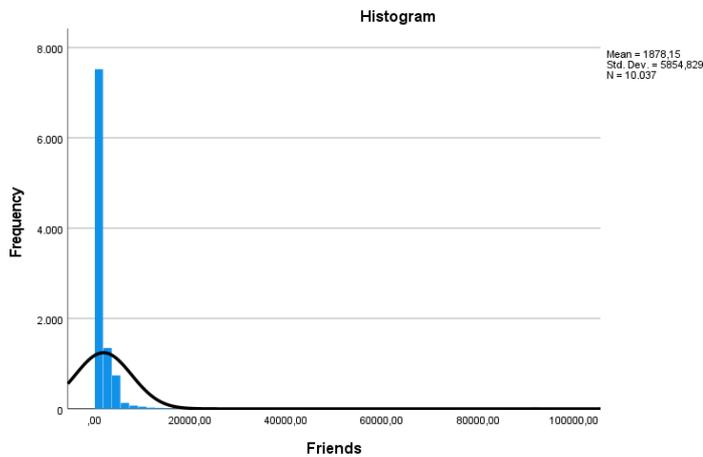
Source: Own elaboration based on TAGS v6.1.9.1

Another platform used by the #SOSCOLOMBIA movement is Twitch, with LanyDelRey, el_bombii, and Lobomolotov as main influencers. LanyDelRey classifies as a micro-influencer and has the largest number of followers on the platform, with a total of 14,695 followers. However, its growth has not been significant in the last 30 days compared to el_bombii, which does not have the most followers. However, the growth has been 25% of its total (graphs 3 and 4).

Graph 3
**Twitch influencers and their followers.**
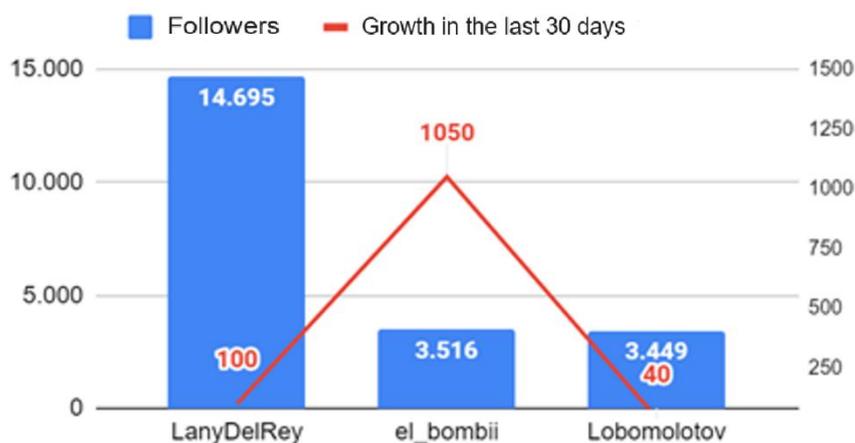
Source: Own elaboration with the information obtained from BRAND24

Regarding the views that Twitch influencers had by their followers, it can be seen in graph 4 that LanyDelRey has had a total of 757,680 views, well above el_bombii (32,171 views) and Lobomolotov (4,940 views). It should be mentioned that these last two influencers have had significant growth in the last 30 days (graph 4, table 3).

Views are one of the indicators of engagement. The ore views a common user or influencer has, the greater the engagement. Engagement is a term that refers to the degree of interaction that an account achieves with its followers on social networks. It measures the number of 'likes', shares, views, or comments on the posts (LAVERBENALAB, 2016). To get an idea of the engagement

of LanyDelRey, we will use the formula: (757,680 Views / 14,980 Number of Followers) x 100; the result would be 5,057.94. Social media experts agree that a good engagement rate would be between 1% and 5%, depending on functions such as the sector in which the brand works, the size of its audience, or the type of content it publishes (Chantal, 2021).

Graph 4
Twitch influencers and their views.
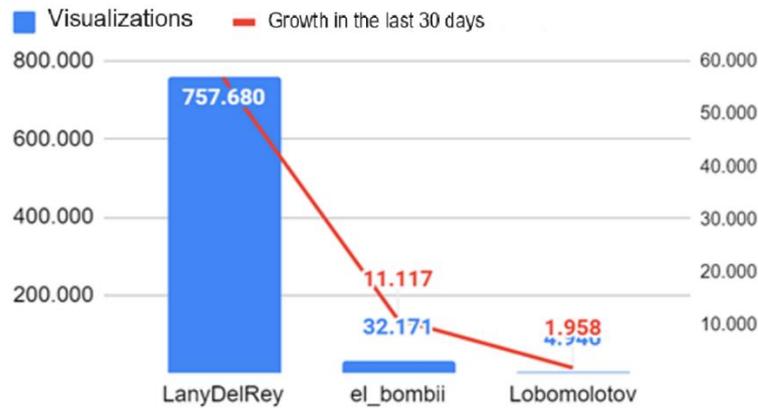
Source: Own elaboration with the information obtained from BRAND24
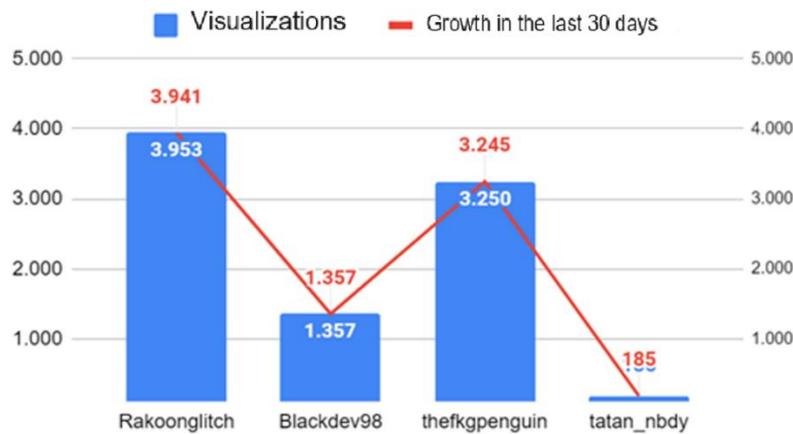
Table 3
Qualitative data Twitch influencers

Users	LanyDelRey	Lobomolotov	el_bombii
Name	Lany	N/A	Sebastian Camargo
Description	I'm better than a negative pregnancy test.	Streamer - Gaming Cosplayer 🏆NB 👾Sponsored by Logitech G. ♥ I'm part of Partner Program of LoL Riot Games official.	Hello! I'm Sebastián but you can tell me Bombi, After much insistence, my friends convinced me to stream, so I decided to light your life. I shake every time I can and from now on I warn you that I am one-armed in all existing games, follow me that the laughs will never be lacking
Followers	14,695	3,449	3,516
Growth in the last 30 days	100	40	1,050
Views	757,680	32,171	4,946
Growth in the last 30 days	56,947	11,117	1,958

Source: Own elaboration with the information obtained from BRAND24

On the other hand, we have the most active users on Twitch, which according to graph 5 and table 4 reflect a large number of views and growth in the last 30 days. As the most active user and with

the highest number of views, we found Rakooglitch with a total of 3,953 views, followed by thefkpenguin with a total of 3,245 views.

Graph 5
Most active Twitch users and their views

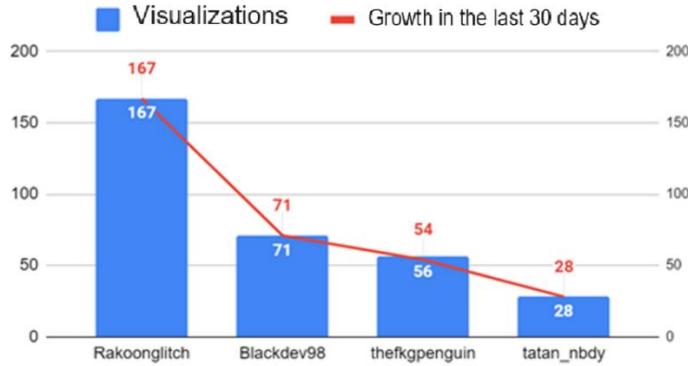Source: Own elaboration with the information obtained from BRAND24

Table 4
Qualitative data most active user of Twitch

Users	Rakoonglitch	Blackdev98	thefkgpenguin	tatan_nbdy
Name	Tona & Tapuki	N/A	Andrés Felipe Merchán	N/A
Description	Hello! We are Tona and Tapuki a couple of strange young people who enjoy playing survival games and chatting.	Software developer, I love videogames, that is here it is stained with honor and surely they will see me furious strongly.	29 y/o Colombian Professional Musician who loves videogames, books, and history. Music Composer and Sound Designer for Videogames.	Tatan Nobody The Original. : D Follow Me, Streams Almost All Day, Almost Every Day. : v
Followers	167	71	56	28
Growth in the last 30 days	167	71	54	28
Views	3,953	1,357	3,250	186
Growth in the last 30 days	3,941	1,357	3,245	185

Source: Own elaboration with the information obtained from BRAND24

Graph 6 shows the most active Twitch users and their followers. First, we have Rakooglitch who has 167 followers, followed by Blackdev98 with a total of 71 followers, thefkpenguin with 54 followers, and tatan_nbdy with 28 followers.

Graph 6
Most active Twitch users and their followers

Source: Own elaboration with the information obtained from BRAND24

In graph 7 and table 5, we can see that there is a large participation of Twitter influencers in the social movement #SOSCOLOMBIA, finding, for example, @Tao2108 with 3324 followers, 28 tweets and 160 retweets, followed by @JAIMEERNESTOCA1 with 881 followers, 5 retweets, @ser_seavers with 310 followers, 0 tweets and 161 retweets, @Canadaxcolombia with 221 followers, 36 tweets and 102 retweets and finally @LUZMARINAGRANA8 with 175 followers, 0 tweets and 176 retweets. The participation was important because it allowed stimulating the information and, possibly, sensitizing the national and international population about what was happening in the social mobilization.

Graph 7
Twitter influencers

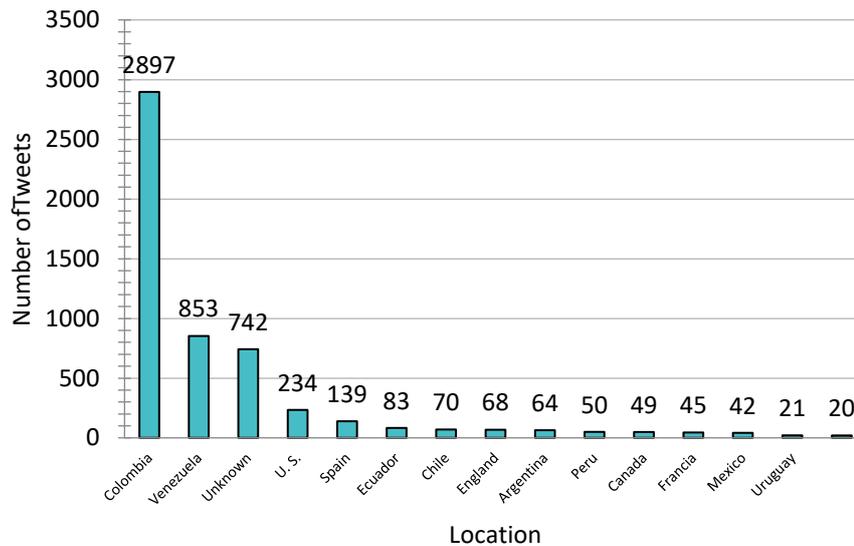
Source: Own elaboration with the information obtained from BRAND24

Table 5
Qualitative Twitter Influencers Data

Users	ao218	JAIMEERNEST OCA1	ser_seavers	Canadaxcolombia	LUZMARI NAGRAN A8
Name	/A	JAIME ENRIQUE ZAMBRANO DIAZ	Andrés	Comité de Solidaridad Canadá X Colombia	Luz Marina Granados
Description	Friend of the best friends and in the grace of the Lord #antiuribista	CHAVISTA FIDELISTA, STONE PITCHER AND ANTIFASCIST, LANDER. I STILL BE A LEFT BUSHWHACKER, OUTDATED 😷 CHEAP WORK HAND AND A BIG CRITICISM	Heavy metal 🤘🎸😎🎙️ 🎧 futball 🎮⚽ soccer. travels ✈️💼🧗🏔️ 🏝️🏨🏙️	Solidarity Committee Canada for Colombia. Colombians abroad in solidarity with our compatriots desdecanadaxcolombia@gmail.com	N/A
Followers	3,324	881	310	211	175
Replies	8	136	34	4	19
Quote	3	55	5	16	5
Tweet	8	3	0	36	0
Retweet	60	5	161	102	176

Source: Own elaboration with the information obtained from BRAND24

In graph 8 we can see that since #SOSCOLOMBIA is a Colombian movement, we find the highest number of tweets in the country that represents it (2897 tweets). However, the region was very aware and active in the social network, thus having countries such as Venezuela with a large participation (853 tweets), the United States (234 tweets), countries such as Chile, Ecuador, Peru (average of 50 tweets) and European countries such as England and France (average of 55 tweets). The social network allows observing that from other countries they have identified with the social movement and have shown their position on the platform.

Graph 8
**Locations with greater participation**

Source: Own elaboration with the information obtained from TAGS v6.1.9.1

In graph 9, we can observe an analysis of sentiment (opinion mining) from characterizing the mentions obtained by the social movement #SOSCOLOMBIA on social networks. The largest number of mentions is characterized by being negative (58%).

Sentiment analysis, also known as opinion mining, is a much-discussed, but often misunderstood term. It is the process of determining the emotional tone behind a series of words, and is used to try to understand the attitudes, opinions, and emotions expressed in an online mention. Sentiment analysis can be positive, negative or neutral (Páez & Solano, 2021).

Brandwatch (2015) uses a rulemaking process to help software better understand how that context can affect sentiment. All words and phrases that imply a positive or negative feeling are taken, and rules are applied that consider how the context could affect the tone of the content. These carefully created rules help the software know that the first sentence (above) is positive and the second negative. In figure 1, we can see how the software would classify messages that use words such as "excellent" and "wonderful" as positive. In contrast, while words such as "dishonest" and "disappointing" would be classified as negative (Páez & Solano, 2021).

Figure 2
Example of negative and positive messages
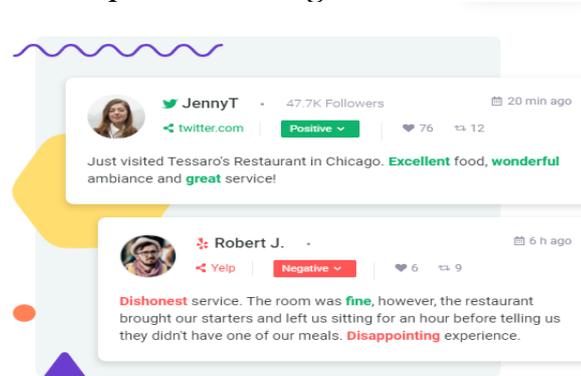
Source: BRAND24

When a pattern is triggered, the framework allows feelings to flow from words to concepts based on symbolic dependency relationships. When no pattern is triggered, the framework changes to its counterpart and takes advantage of deep neural networks (DNN) to perform the classification (Páez & Solano, 2021). In the case of this research, it is interesting to know if opinions are inclined to rejection or fear regarding the conversation around the #SOSCOLOMBIA movement. We observe in graph 9 that 58% express negative messages and 42% positive messages.

Graph 9
Characterization of mentions
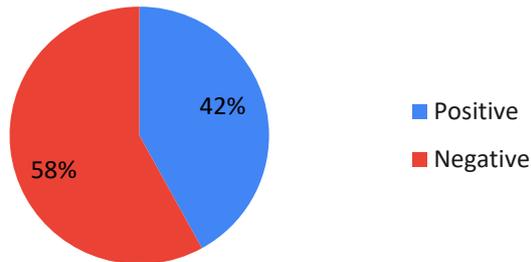
Source: Own elaboration with the information obtained from BRAND24

The website with the highest activity of the #SOSCOLOMBIA social movement was YouTube (355 mentions) surpassing important social networks such as Twitch (308 mentions), Instagram (100 mentions), Tik Tok (43 mentions), among others. This has made it possible to generate an audiovisual record on the social movement, for subsequent monitoring of the visibility of the movement both in Colombia and abroad.

Graph 10
Busiest Websites
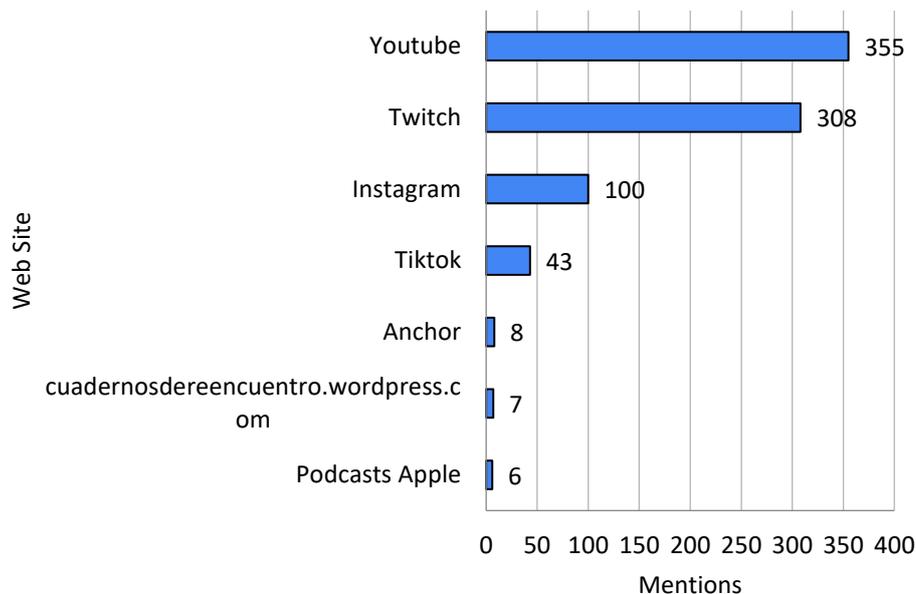
Source: Own elaboration with the information obtained from BRAND24

Discussion of results and conclusions

As established in the theoretical discussion, the main objective of the research was "to analyze the social appropriation of ICT in the social movement #SOSCOLOMBIA through social networks." We are at the beginning of a process that begins with access and ends with social impact.

As explained by Funredes (2005), access is the possibility for a person to access ICT. There are several obstacles to overcome to gain access, and they can also be described in layers: The existence of an infrastructure; - financial accessibility of infrastructure: that prices are within reach or that collective solutions - such as telecentres) - can make it possible to overcome the price barrier; - functional literacy: that the person has a sufficient capacity for expression to have functional access; and that the characters of the person's language are processable by electronic means (this is clearly the case of Spanish, but there are many languages for which this obstacle has not yet been resolved). Regarding use, it is the possibility of making efficient and effective use of ICT. To make efficient and effective use of ICT, skills are required to handle digital tools and understand the conceptual, methodological, and cultural elements associated with the digital environment. That brings us to the concept of digital literacy. It is important to note that this issue is critical not only in developing countries. Technological appropriation is when the user has a sufficient level of technology, is transparent in its use, and it is possible for him/her to create new uses to address his/her problems. Obviously, with the Internet, this appropriation requires more sophisticated capabilities that start with the appropriation of a PC, editing applications, and some expertise in searching for information.

Use with sense, is the ability to make a use that has a social meaning for the person in their personal, community, and professional environments and that allows them to solve some of their needs; not just a playful use or interpersonal communication. This should include the ability to produce content and/or create virtual communities. Social appropriation is when the person who uses it is skilled enough so that the technology is transparent for its social use. This level requires a thorough understanding of the societal impacts of the use of ICT and of the cultural (network culture or information culture) and methodological aspects linked to the environment. Empowerment is when the people and / or the community are capable of transforming their social reality thanks to the social appropriation of ICT for development. That refers to putting those capacities into practice both individually and collectively. Social innovation is when the action of transformation of social reality is the bearer of original solutions created by the person and the community. Ande human development is when the creative freedoms described under the concept of "human development" are expressed as "capabilities" (Funredes, 2005).

Páez, Morillo & Neüman (2019), explain that for social appropriation to take place, it is a condition that contact with the appropriable makes a change, not on the appropriable but similar social practices with the appropriable and then a step further; those who appropriate must be able to regulate the outcome of change in social practices. The act of appropriation has a social, cultural, economic, and political character, since technology penetrates the social fabric in such a way that it is impossible to reduce its impact in terms of functionality or simplicity of interfaces (Cardon, 2005). In this sense, it is concluded that the activists have exceeded the level of simple access-use and reached the level of empowerment, since the activists were able to transform their social reality thanks to the social appropriation of ICT for development. It is then about putting into practice the capacities related to ICT both individually and collectively.

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