INFORMATION CONSUMPTION IN SOCIAL NETWORKS DURING THE COVID-19'S CRISIS IN SPAIN

Consumo de información en redes sociales durante la crisis de la COVID-19 en España

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Abstract

Introduction: The Covid-19 pandemic has brought social changes, also affecting communication. The use of social networks has increased during the confinement and the way of informing us through them or instant messaging such as WhatsApp have led to the viralization of hoaxes. Methodology: Through a pioneering survey during the confinement, we have collected more than 1700 responses that have been analyzed with machine learning techniques to learn how the Spanish have been informed during the confinement and how they have interacted with the information they received about the Covid- 19. In addition, we have participated in meetings with the founding partners of Maldita, a pioneer verifier in Spain, who has carried out fundamental work in detecting fake news during the pandemic. Results: The results show different behaviors in the use of social networks, especially at different ages: why they share information; if they doubt her; what kind of hoaxes have they received; what types of contacts do they receive most often, etc. Conclusions: Different profiles of information consumers are appreciated, some more aware of the reliability of the networks, who also verify the

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dubious content and another that is reported in a more superficial way and that does not verify the information that comes through these online channels.

Keywords: Covid-19; Social networks; WhatsApp; Fake News; Health information; Fact checkers; Information consumption.

Resumen

Introducción: La pandemia de Covid-19 ha traído cambios sociales afectando igualmente a la comunicación. El uso de las redes sociales ha aumentado durante el confinamiento y la forma de informarnos a través de ellas o de mensajería instantánea como WhatsApp han propiciado la viralización de bulos. Metodología: A través de una encuesta pionera durante el confinamiento hemos recopilado más de 1700 respuestas que se han analizado con técnicas de *machine learning* para conocer cómo se han informado los españoles durante el confinamiento y como han interactuado con las informaciones que recibían sobre la Covid-19. Además, hemos participado en encuentros con los socios fundadores de Maldita, verificador pionero en España, que ha realizado una labor fundamental en la detección de *fake news* durante la pandemia. Resultados: Los resultados muestran diferentes comportamientos en el uso de las redes sociales sobre todo en las distintas edades: por qué comparten una información; si dudan sobre ella; qué tipo de bulos han recibido; de qué tipos de contactos reciben con más frecuencia, etc. Conclusiones: Se aprecian distintos perfiles de consumidores de información, unos más concienciados con la fiabilidad de las redes, que además verifican el contenido dudoso y otro que se informa de forma más superficial y que no verifica la información que le llega por estos canales *online.*

Palabras clave: Covid-19; Redes Sociales; WhatsApp; Fake News; Información sanitaria; Verificadores de información; Consumo de información.

1. INTRODUCTION

The Covid-19 health crisis originated in China in December 2019, has spread globally affecting progressively, first Europe and then the rest of the World with more than 16 million people infected (Worldometers, n.d.).

With the arrival of the first case in Spain, in January 2020, the Government gradually took measures following the recommendations of the World Health Organization (WHO). Meanwhile, the population followed the news about Covid-19 with the same interest as the rest of the current news at that time. But with the declaration of the state of alarm on

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March 14, 2020, the interest of citizens in the subject has been growing rapidly and with it, the amount of information that the media have offered on the subject (Echobox, 2020).

This research is based on the analysis of the consumption of information on Covid-19 during the period of confinement in Spain, so that we know the most used channels, what type of information content they usually consume and where they receive information, among others.

During a health crisis like this, it is very important to know how the population consumes information. In this case, the Spanish verifying media Maldita.es confirmed more than 400 fake news about Covid-19 during the first 30 days of confinement (Maldita.es, 2020). The National Police in Spain already warned about the appearance of 1.5 million fake profiles on social networks related to the coronavirus that do not intend to do anything but spread fake news to manipulate public opinion (La Voz del Sur, 2020).

If we assume that "messages that are more persuasive will have a higher amplification value as a result of the persuasive success of the message. The reverse may not be true: highly amplified messages may not be persuasive" (Vos, 2017), the effect of misinformation in a health crisis can cause great damage to government crisis communication. In this regard, the Spanish Minister of the Interior, Fernando Grande-Marlaska, stated that "campaigns aimed at lying and misleading are an attack on public health" and denounced in a press conference on March 13 that the Ministry of the Interior detected 200 false hoaxes about the coronavirus registered by the Cybernetic Coordination Office (Velasco, 2020).

We have obtained a sample of more than 1700 responses, composed of different social profiles, with demographic data based on: level of studies; ages from 18 to 80 years old; gender; with presence in all autonomous communities; etc.

Lazer says that the "fake news is defined as fabricated information that mimics news media content in form, without news media's editorial standards and processes for ensuring the accuracy and credibility of information" (Lazer et al., 2018 cited in Zhao et al., 2020). Today, we know that "the propagation network of fake news is different from that of real news (...) have found that falsehood propagates significantly farther, faster, deeper, and broader than truth news in many categories of information" (Vosoughi, Roy, & Aral, 2018 cited in Zhao et al., 2020). For this reason, misinformation could be used by other political parties to criticize the government's management of the crisis. An example in Spain is the far-right party Vox, which accused the government of censoring WhatsApp and urged the population to switch to the company Telegram to continue sharing fake news (González, 2020) but this is not exclusive to one ideology. According to Mari Luz Congosto, an expert in network analysis, "recently fake profiles were created that admit both right and left" (Cid, 2020).

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1.1. Infoxication. Over-information does not guarantee to be informed

Interest in Covid-19 on social networks has been on the rise across the globe since February, being especially relevant in Spain due to the level of involvement of the virus in the country. As stated in Echobox, on February 25, shares of information sharing about the coronavirus in Spain increased from less than 4% to 14% in 48 hours, as the country detected ten new cases of coronavirus. Again, this rapid increase was not repeated in any other country.

On March 10, Spain recorded a massive increase in coronavirus interactions, eclipsing the record levels set by Italy and registering 22% of all actions on that day. On the day, Spanish confirmed cases rose from 1231 to 1674 and the government closed schools and banned public events in several areas, including Madrid.

March 12 was an unprecedented news day. Shares of Covid-19 information sharing in Spain accounted for 37% of all shares that day. This was the day members of the Spanish government and royal family were tested for coronavirus, schools were closed across the country, and the IBEX fell a record 14% (Echobox, 2020).

Other countries have also seen an increase in information consumption in general. Specifically Global Web Index (2020) found that over 80% of consumers in the US and UK say they consume more content from the shoot, with streaming TV and online videos (YouTube, TikTok) as the top media across all generations and genders (Jones, 2020).

1.2. Infodemia. Fake news in a global crisis

Spreading unverified news, lying or telling an incomplete story is not something new. Sometimes it is done in a premeditated way through websites and social networks, even reputable media, others, it is done unconsciously betrayed by our memory.

Several studies show how repeatedly recounting facts entrenches them in our memory (Coman et al. , 2016) but what if what we repeat is false?

Daniel Schacter, who studies memory at Harvard University in Cambridge, Massachusetts, states, "The development of Internet-based misinformation, such as recently publicized fake news sites, has the potential to distort individual and collective memories in disturbing ways" (Spinney, 2017).

There are several examples that demonstrate that a false fact can become a true memory for some people. One of them is the `Mandela Effect', a term coined by Fiona Broome, when she became aware that she thought Nelson Mandela had died in prison in the 1980s and not in 2013 in freedom, as actually happened.

Society perpetuates fake news generally because it does not stop to think about whether that information is contrasted or not, whether it is truthful or not. Moreover, although we can find reliable sources from official institutions or reputable media on

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social networks, most social media platforms are not designed to prioritize the best information: they are designed to display content that is more likely to be engaged with first, whether it is accurate or not. Content that keeps users on the platform takes priority (Allem, 2020).

1.3. Social networks as viralizing agents of information

The speed with which information spreads has grown since we have channels that escape the professional management of information by reputable and solvent media. The virality of social networks has been fundamental in the consumption of information on the global crisis of Covid-19 and one of the questions that have been raised in the Academy are the personal reasons of citizens for sharing content.

Several studies have attempted to determine the reasons why people share information on social networks. In the case of Twitter, Boyd et al. (2010) established ten reasons why people tend to retweet information: To amplify or disseminate tweets to new audiences; to entertain or inform a specific audience, or as an act of curation; to comment on someone's tweet by retweeting and adding new content, often to start a conversation; to make their presence visible as a listener; to show agreement publicly with someone; to validate the thoughts of others; as an act of friendship, loyalty, or tribute by calling attention to it, sometimes through a retweet request; to acknowledge or reference less popular people or less visible content; for self-benefit, either to gain followers or reciprocation from more visible participants; and to save tweets for future personal access (p. 6).

According to Allem, the truthfulness of a post or the accuracy of a claim was not an identified motivation for retweeting. That means that people might be paying more attention to whether a tweet is popular or exciting than whether its message is true (Allem, 2020).

Drivers of retweeting behaviors can be extrinsic or intrinsic. Different motivations for retweeting could be instrumental in assessing or inferring reasons for user engagement on different topics or issues. Gruber's findings that showing approval, arguing, and getting attention are predominantly interpersonal factors that drive retweeting behavior (Gruber, 2017) while other researchers suggested that retweeting is driven by four factors: showing approval, arguing, getting attention, and additionally entertaining (Majmundar et al. , 2018).

In a survey of Australia, Brazil, Canada, China, France, Germany, India, Ireland, Italy, Japan, New Zealand, the Philippines, South Africa, Singapore, Spain, the United Kingdom and the United States, around two-thirds said that platforms should provide verified content, with a similar proportion wanting them to filter out fake news (Global Web Index, 2020).

In fact, on April 7, 2020, WhatsApp announced new policies to set limits on forwarded messages to restrict virality during the Covid-19 crisis after observing "a significant increase in quantity" and users relayed to them that they were "overwhelming and may

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contribute to the spread of misinformation." These measures were implemented, according to the company, with the consensus of NGOs and governments, "including the World Health Organization and more than 20 national health ministries, to help connect people with accurate information" (WhatsApp, 2020).

Facebook also implemented systems to warn users, so that they would know when a content was false, and then suggest them to visit the WHO website to see the recommendations and disproved hoaxes.

The verification system of Facebook and other apps owned by Facebook is based on certified external verifiers, which in the case of Spain are: AFP Spain, Newtral and Maldito Bulo, which determine whether the information is: false; partially false; true; false title; unverifiable; satire; opinion; joke news and unqualified (Facebook, n.d.).

In general, the population seems to have more confidence in the media than in social networks when it comes to getting information. Globally, according to the second wave of the Global Web Index study, people are more likely to turn to news channels (60%), news websites (55%), newsletters (45%), government updates (50%) and social networks (47%) to stay informed about the outbreak. About one-third stay updated through conversations with friends/family or updates from health organizations (Global Web Index, 2020). In Spain, moreover, a co-occurrence relationship has been seen between the media that citizens have relied on for information about Covid-19 and the political ideology of the media. Moreover, this trust is marked by polarization to a large extent, so that those who trust television stations of an ideological line located further to the left also trust radios and press of the same tendency. Similarly, this occurs with right-wing ideological media (López-Rico et al., 2020).

Despite all this, social networks have the largest trust gap as a source, while 47% keep updated through this channel, only 14% believe it is one of the most trusted sources (Global Web Index, 2020). However, in Spain, trust in social networks for information during confinement stands at an average of 23%, with citizens between 18 and 40 years old being above it. It is important to qualify that, in the case of WhatsApp, trust in information about Covid-19 through this channel increases among people aged 41 years and older, with special relevance in the group aged 66 to 80 years (López-Rico et al. , 2020, p. 84).

2. OBJECTIVES

This study aims to find out how Spanish citizens have consumed information through social networks and instant messaging during the Covid-19 confinement and what their behavior has been when it comes to managing and sharing the information received.

In this sense, the main objective of this research is to know how it has affected Spaniards when consuming information through social networks and messaging, the massive flow of information or the increase of deception during confinement. Taking into

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account that this context in which we have been confined, has allowed us to have more access to information throughout the day.

For this purpose, we determined the following dependent variables:
- Use of social networks and WhatsApp messaging service to learn about Covid-19.
- User behavior when disseminating information about Covid-19 on social networks and WhatsApp messaging service.
- To know the type of hoaxes received through social networks during the confinement.
- To know which sources have disseminated a greater volume of information about Covid-19 on social networks and WhatsApp.

As for the independent variables, we have established the sociodemographic variable of age and educational level.

3. METHODOLOGY

We use quantitative and qualitative methods that allow us to know what type of media have been most used; what type of content they have shared; what type of information they have received and through what channels.

Within the confinement period (April 3-10, 2020), we launched an online survey with 30 questions on the information consumed from Covid-19 in Spain. The survey provided us with a valid sample of N = 1708 participants. All statistical analyses were performed with Alterix and Tableau to visualize the data.

The methodology established for data management has been carried out by counting unique users, which is essential especially for multiple-choice questions. For this purpose, a relational database has been created which is composed of a main table, where the primary key is the ID of each respondent, and other secondary tables for the multiple-choice questions. These correspond to the ID of the survey, through one-to-many relationships (1:n).

For the associations between questions, *machine learning* techniques were used by combining the respondents' answers to the questions.

We have used the *affinity analysis* model that allows us to discover co-occurrence relationships between the different answers selected by the users in several questions. Thus, it will result in correlations and not causality.

For item combinations, association rules have been created with an a priori algorithm, which identifies items individually by their frequency in the database and creates larger combinations when that data set has sufficient frequency in the database itself.

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On the other hand, we have counted on the contributions of experts such as the founding partners of Maldita, journalists Julio Fuentes and Clara Jiménez, on the most relevant hoaxes that have been launched during the sample period and that have been denied by Maldita.es, the first verification media in Spain.

4. DISCUSSION

4.1. The use of social networks for information on Covid-19

In the use of social networks during confinement, the use of WhatsApp stands out in all age groups, with this channel being the most used by all to share information about the coronavirus, followed by Facebook.

Particularly notable is Instagram in the 18-30 age group, who are the ones who most often say they don't tend to share anything about Covid-19 in general.

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Dónde comparte información
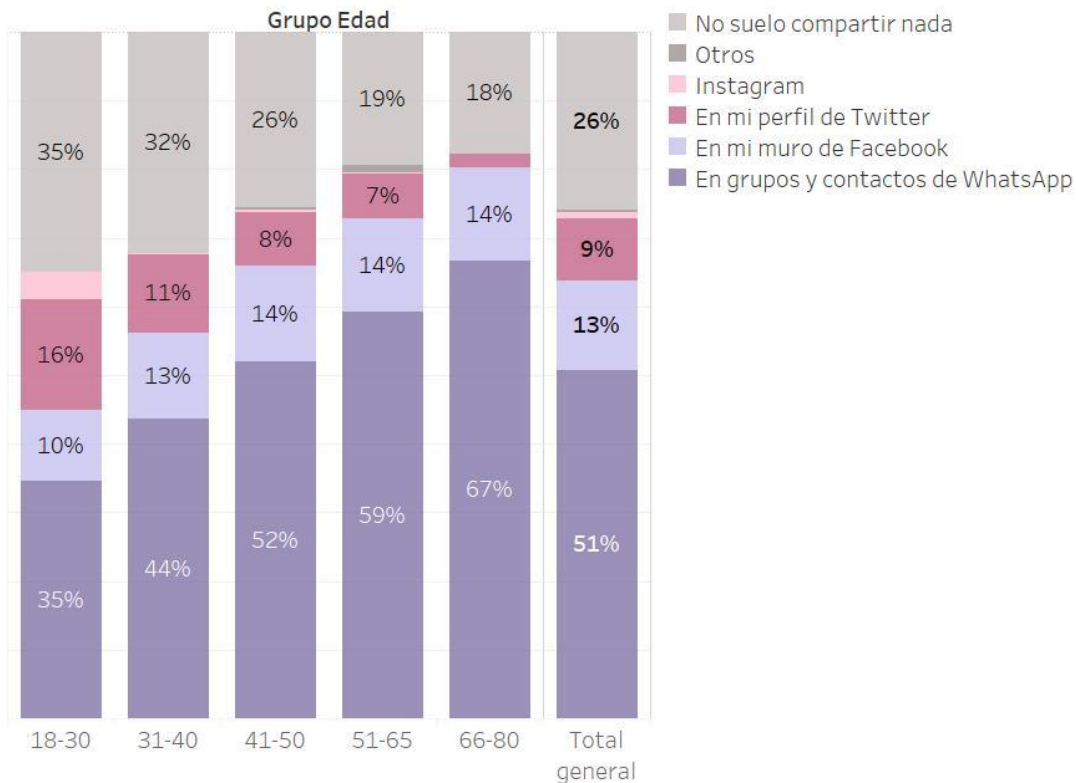
Graph 1. *Social networks through which most information about Coronavirus is shared by age.*
Source: Own elaboration.

In terms of the content shared, respondents aged 18 to 30 are the group that shared the most content unrelated to the virus, which shows a lower interest in the subject by the young population. The next most shared content in this age group are humorous messages or memes about Covid-19, which reinforces the idea that this population sector has experienced the health crisis from a less worrying perspective.

There is a downward trend in humor in older age groups, especially those between 66 and 80 years of age, as this is the group that has been hardest hit by the pandemic. On the other hand, we observed that messages of encouragement to healthcare workers and advice and recommendations about the virus are more prevalent among the content shared by those aged 41 and older.

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Qué contenidos comparte
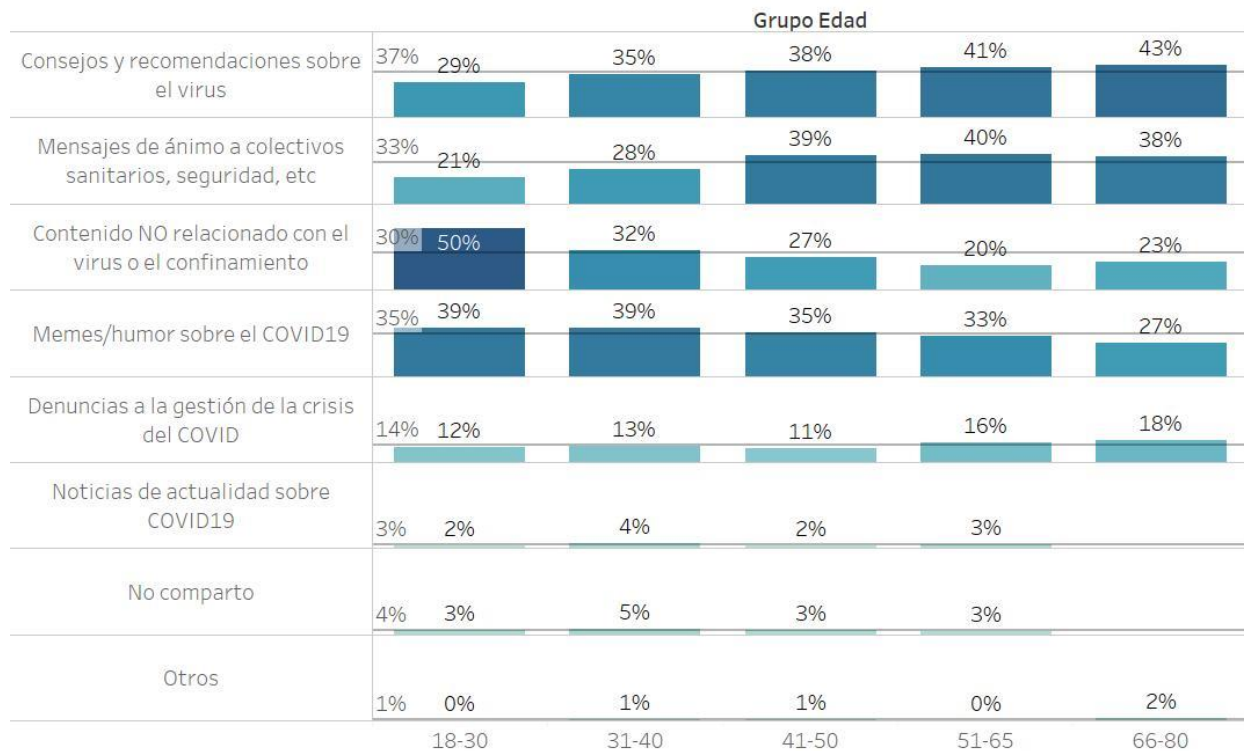
Type of content shared on social networks by age.
Source: Own elaboration.

Likewise, we believe it is important to know not only the type of content shared during confinement, but also from whom. In this sense, we observe that the older the respondents are, the more content from personal contacts they share on social networks. However, in the case of the youngest respondents, the content that most respondents claim to share comes from media profiles and other public profiles that they follow.

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De quien comparte información en redes sociales

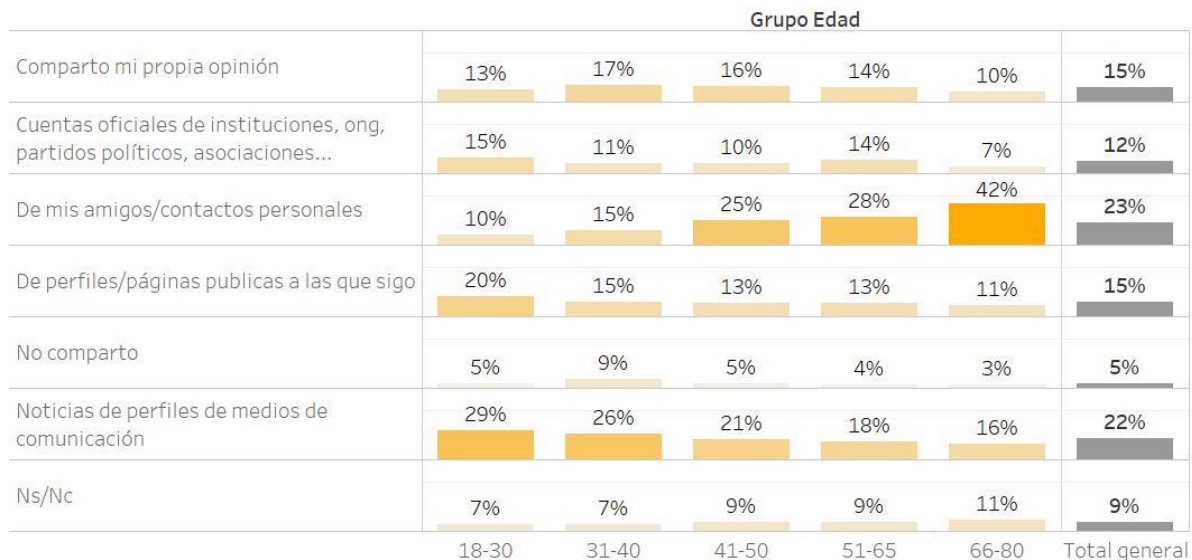|	Grupo Edad					
	18-30	31-40	41-50	51-65	66-80	Total general
Comparto mi propia opinión	13%	17%	16%	14%	10%	15%
Cuentas oficiales de instituciones, ong, partidos políticos, asociaciones...	15%	11%	10%	14%	7%	12%
De mis amigos/contactos personales	10%	15%	25%	28%	42%	23%
De perfiles/páginas publicas a las que sigo	20%	15%	13%	13%	11%	15%
No comparto	5%	9%	5%	4%	3%	5%
Noticias de perfiles de medios de comunicación	29%	26%	21%	18%	16%	22%
Ns/Nc	7%	7%	9%	9%	11%	9%

Figure 3. *Source of the content usually shared on social networks by age.*
Source: Own elaboration.

As mentioned above, the motivations for citizens to share information are diverse. In this study, we found that some respondents have never considered why they do it, being higher in the 18-30 age group, as we can see, this effect decreases with increasing age.

The opposite happens when the motive is to disseminate content with which they agree, which is higher in respondents aged 66 to 80 years and decreases in the lower age groups. Therefore, the older the respondent is, the more he/she disseminates information that reaffirms his/her opinion.

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Con qué intención comparte contenido

	18-30	31-40	41-50	51-65	66-80
Divulgar contenido con el que estoy de acuerdo	43%	50%	55%	58%	58%
Nunca me lo he planteado	26%	18%	18%	14%	11%
Dar mi opinión	13%	14%	9%	12%	6%
Denunciar situaciones con las que no estoy de acuer..	8%	9%	9%	9%	9%
Revelar información que nos ocultan	2%	3%	3%	2%	6%
Criticar la gestión del gobierno	4%	2%	3%	3%	3%
Criticar la gestión de la oposición	1%	3%	2%	1%	5%
Intentar influir en la opinión de los demás	1%	1%	1%	0%	

Intention to share information about Coronavirus in social networks by age.
Source: Own elaboration.

4.2. The use of WhatsApp for information on Covid-19

The frequency with which they received information from Covid-19 during confinement via WhatsApp was mostly daily in all age groups surveyed.

As we can observe, this information was widely received from personal contact groups, followed by individual conversations from personal contacts. Information that respondents say they received from groups of social institutions or political groups is irrelevant, so information about Covid-19 was mostly disseminated by personal sources/contacts.

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De quién y con que frecuencia recibe información por Whatsapp

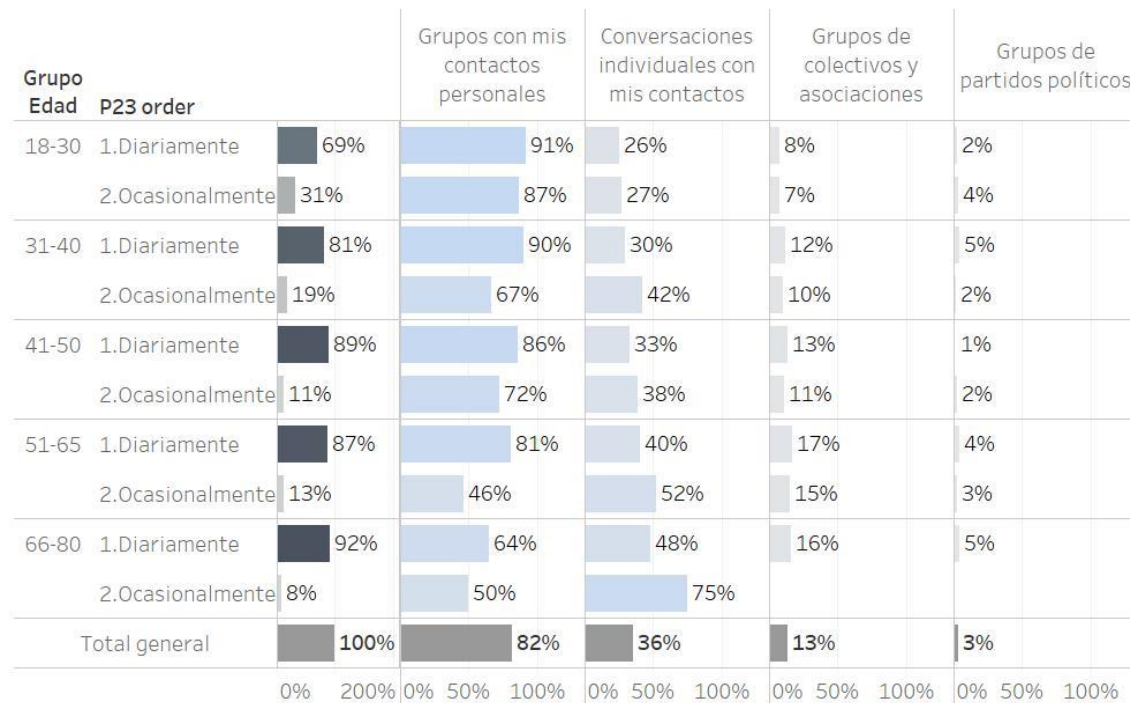| Grupo Edad	P23 order		Grupos con mis contactos personales	Conversaciones individuales con mis contactos	Grupos de colectivos y asociaciones	Grupos de partidos políticos
18-30	1.Diariamente	69%	91%	26%	8%	2%
	2.Ocasionalmente	31%	87%	27%	7%	4%
31-40	1.Diariamente	81%	90%	30%	12%	5%
	2.Ocasionalmente	19%	67%	42%	10%	2%
41-50	1.Diariamente	89%	86%	33%	13%	1%
	2.Ocasionalmente	11%	72%	38%	11%	2%
51-65	1.Diariamente	87%	81%	40%	17%	4%
	2.Ocasionalmente	13%	46%	52%	15%	3%
66-80	1.Diariamente	92%	64%	48%	16%	5%
	2.Ocasionalmente	8%	50%	75%		
Total general		100%	82%	36%	13%	3%

Figure 5. *Most frequent senders of those receiving information about Coronavirus and frequency via WhatsApp by age.*
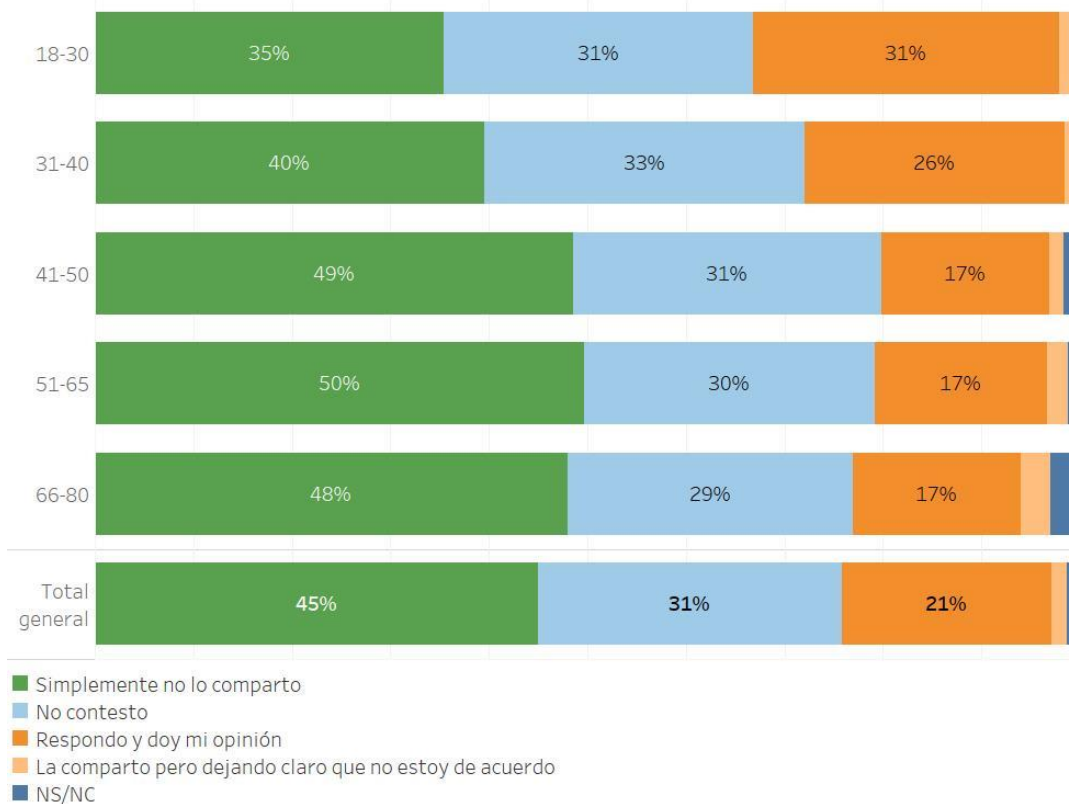**Source**: Own elaboration.

We have seen how the motivation to share information on social networks is based primarily on sharing content with which we agree, but we have analyzed the behavior of the respondent if he/she does not share the content of the information received.

In this case, it stands out that in all age groups they decide not to share that information via WhatsApp, followed by not replying to the sender of the information.

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Comportamiento con información a través de Whatsapp con la que no estoy de acuerdo

Legend:
- Simplemente no lo comparto
- No contesto
- Respondo y doy mi opinión
- La comparto pero dejando claro que no estoy de acuerdo
- NS/NC

What do you do with the information you receive if you do not agree with it, by age?
Source: Own elaboration.

As we can see in the following graph, people who indicated that they read only the headline that appears on the social network also marked that they never verify the information they receive via WhatsApp. Specifically we see this co-occurrence in the age groups of 41 to 80 years and 18 to 30. This trend is also shown in the opposite case: people who claim to click on the news link in the social network and read the whole news, also indicate that they almost always verify the information that reaches them by WhatsApp. This situation is seen to a lesser extent in 18-30 year olds.

So we can see a more committed consumer profile when it comes to information, who makes an effort both to read the entire content of the news and to verify what he doubts when it arrives via instant messaging, which is not a qualified journalistic source. This profile contrasts with its opposite, those citizens who devote less effort both to be fully informed and to verify the doubtful information they receive.

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Como consume noticias en redes sociales y cuanto verifica la información en Whatsapp

		Casi siempre	Algunas veces	Pocas veces	Nunca	Total general
18-30	Pinchas el enlace y lees toda la noticia en el medio	30%	24%	21%	26%	28%
	Pinchas el enlace y lees el titular y parte de la noticia en el medio	32%	31%	24%	16%	30%
	Lees el encabezado y la descripción que aparece visible en la red social	23%	31%	37%	16%	26%
	Lees sólo el titular de la noticia que aparece en la red social	15%	13%	18%	42%	17%
31-40	Pinchas el enlace y lees toda la noticia en el medio	35%	23%	18%	25%	30%
	Pinchas el enlace y lees el titular y parte de la noticia en el medio	24%	23%	30%	22%	25%
	Lees el encabezado y la descripción que aparece visible en la red social	23%	34%	30%	31%	27%
	Lees sólo el titular de la noticia que aparece en la red social	18%	19%	23%	22%	19%
41-50	Pinchas el enlace y lees toda la noticia en el medio	47%	33%	28%	17%	38%
	Pinchas el enlace y lees el titular y parte de la noticia en el medio	20%	25%	20%	17%	21%
	Lees el encabezado y la descripción que aparece visible en la red social	17%	23%	30%	17%	20%
	Lees sólo el titular de la noticia que aparece en la red social	16%	19%	22%	48%	21%
51-65	Pinchas el enlace y lees toda la noticia en el medio	41%	30%	31%	24%	35%
	Pinchas el enlace y lees el titular y parte de la noticia en el medio	23%	36%	19%	12%	25%
	Lees el encabezado y la descripción que aparece visible en la red social	18%	19%	27%	32%	21%
	Lees sólo el titular de la noticia que aparece en la red social	18%	14%	23%	32%	18%
66-80	Pinchas el enlace y lees toda la noticia en el medio	43%	32%	27%	14%	33%
	Pinchas el enlace y lees el titular y parte de la noticia en el medio	15%	24%	7%	14%	16%
	Lees el encabezado y la descripción que aparece visible en la red social	28%	40%	33%	7%	29%
	Lees sólo el titular de la noticia que aparece en la red social	15%	4%	33%	64%	22%

Cooccurrence between how they consume the information they receive through social networks and the frequency with which they verify the information they receive through WhatsApp by age.
Source: Own elaboration.

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The hoaxes that users have identified among the information they have received about the coronavirus are mainly those related to the political management of the crisis, theories about the origin of the virus, methods to be cured and the measures adopted by the government during the confinement.

According to Maldita.es, through its tool Maldito Bulo, as of July 15, the number of hoaxes denied by this verification project, integrated in IFCN (International Fact-Checking Network), amounted to 650 lies, false alerts and/or specific misinformation about covid-19. In a virtual meeting with the founding partners of Maldita.es, journalists Julio Fuentes and Clara Jiménez, assured that "during a normal day we receive about 250-300 alerts of possible hoaxes, false news, disinformation, etc., but during the pandemic there have been some days when we have received 1500 alerts, this is what we call Infodemia and it is something totally unacceptable for our current structure". Both journalists confirm Whatsapp "as the most used tool for the generation of hoaxes during the pandemic", and the most recurrent topics in the generation of interested disinformation about Covid-19 have been: public health, science, cures, political polarization, both national and international, with a lot of recurrent disinformation about the United States, Brazil and China. Faced with such a volume of disinformation received, Fuentes and Jimenez indicate the adjustments and corrections introduced in the verification system: "The first thing is to prioritize the verification, giving priority to what is viral and potentially dangerous. Secondly, we have corrected our methodology, which can be consulted on the web, introducing a multidisciplinary work (engineers, universities) coordinated with other international verification projects". In this sense, both journalists value the work of the engineer David Fernandez in the development of the concept of digital verification, consisting of the implementation of hoax search engines (chat-bots). "The covid-warrions define an innovative methodology under development that allows us to assume a larger and more reliable verification volume", say the Maldita.es managers.

Temas de bulos recibidos

	Total general	18-30	31-40	41-50	51-65	66-80	1. Sin estudios o estudios basicos (ESO)	2. Bachiller	3. Licenciado - Graduado	4. Máster	5. Doctorado
Gestión Política	61%	59%	65%	58%	60%	68%	42%	56%	65%	64%	66%
Teorías Sobre El Origen Del Virus	60%	68%	65%	61%	56%	46%	51%	56%	60%	70%	64%
Métodos Para Curarte Del Virus	49%	53%	54%	53%	45%	33%	38%	45%	50%	60%	47%
Medidas Del Gobierno	46%	57%	52%	45%	41%	40%	34%	46%	46%	55%	49%
Medidas De Higiene Para Evitar Contagio	40%	49%	46%	38%	35%	29%	28%	37%	40%	48%	41%
Datos Sobre Infectados Y Fallecidos	31%	43%	36%	26%	28%	24%	26%	29%	29%	41%	31%
Todas las anteriores	2%	1%	2%	1%	2%	1%	2%	1%	2%	2%	
Otras	0%			0%	0%			0%	0%		

Figure 8. *Subject matter of the hoaxes they have received about Covid-19 by age and education.* **Source**: Own elaboration.

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Finally, 97.5% of respondents stated that they had ever doubted information about Covid-19 received by WhatsApp, of which 10% admitted to sharing information they had doubted. In this sense, we see how a part of the respondents were not concerned about contributing to the viralization of possible false or biased information.

5. CONCLUSIONS

The role of WhatsApp during the confinement has been essential in disseminating information about Covid-19. It was the app most used by all age groups to share information about the virus. Particularly, private contact groups have been the focus of most content traffic among respondents.

It should be noted that the type of information shared was mostly news and current affairs. It is worth noting that among older respondents, advice and recommendations, messages of encouragement to healthcare workers and complaints about management were an important part of the content shared, while younger respondents preferred to share information unrelated to the virus or, alternatively, memes or humor about Covid-19.

The motivation for sharing content also changes significantly by age group. Older people are more likely to share information they agree with, while younger people have not considered why they do so.

The hoaxes they have received during the confinement are varied, being especially related to political management, theories about the origin of the virus and alleged methods to be cured of it. "There have always been sellers of 'hair growth', but today more than ever they are dangerous because they come through an apparently innocuous tool such as Whatsapp and because they affect very serious issues such as our health, so it is essential to trust in science," says Maldita.es. From professional verification tools such as this one, journalists Julio Fuentes and Clara Jiménez appeal to two fundamental issues in the fight against the hoaxes that have generated this infodemic and others: "We must bet on educommunication, educating educators in a critical culture and media literacy is essential to minimize this problem in the medium and long term and move towards a more democratic society". In the short term, they recommend "educommunicating within the families themselves, doing it with affection with our elders, perhaps the most exposed during this pandemic to these chains of hoaxes that reach them on their cell phones".

On the other hand, there is a more committed consumer profile when it comes to information, who reads all the content of the news he finds on social networks and also verifies the doubtful information he receives via instant messaging. On the other hand, we find another profile that does not inform itself in depth or verify the information it doubts. These profiles are observed transversally across all ages.

To conclude, it was relevant to know that 10% of those who ever doubted an information they received via WhatsApp shared it anyway. Another of the results sheds some light in this regard, as most do not share information with which they do not agree,

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therefore, it leads us to conclude that emotions and the need to reinforce one's own opinion is above the veracity of the content that is shared. Although this is an issue that we would like to develop in future research, so that we can delve into the reason why citizens viralize content despite not being sure of its veracity.

6. REFERENCES

Allem, J. P. (April 6, 2020). Social media fuels wave of coronavirus misinformation as users focus on popularity, not accuracy. Retrieved on 04/08/2020, from The Conversation: https://theconversation.com/social-media-fuels-wave-of-coronavirus-misinformation-as-users-focus-on-popularity-not-accuracy-135179

Boyd, D., Golder, S., & Lotan, G. (2010). Tuit, Tuit, Retuit: Conversational Aspects of Retweeting on Twitter. *IEEE,* 1-10. doi: 10.1109/HICSS.2010.412.

Cid, G. (April 7, 2020). Millones de cuentas falsas para confundirte sobre el coronavirus. ¿Quién está detrás? El Confidencial. Spain. Retrieved 04/08/2020, from https://www.elconfidencial.com/tecnologia/2020-04-07/cuentas-falsas-bots-coronavirus-redes-sociales_2536084/.

Coman, A., Momennejad, I., Drach, R. D., & Geana, A. (2016). Mnemonic convergence in social networks: The emergent properties of cognition at a collective level. PNAS, 113(29), 8171-8176. doi: 10.1073/pnas.1525569113.

Echobox. (March 23, 2020). How coronavirus has changed the face of news in less than 30 days. Retrieved on 04/08/2020, from Medium: https://medium.com/echobox/how-coronavirus-has-changed-the-face-of-news-in-less-than-30-days-82ca1238c516

Facebook. (n.d.). Verificación de información en Facebook: qué deben saber los editores. Retrieved 12 05 05 20, from https://www.facebook.com/business/help/182222309230722

Global Web Index. (2020). Coronavirus Research | April 2020 Series 4: Media Consumption and Sport. Global Web Index. Retrieved 05/23/202020, from https://www.globalwebindex.com/hubfs/1.%20Coronavirus%20Research%20PDFs/GWI%20coronavirus%20findings%20April%202020%20-%20Media%20Consumption%20(Release%204).pdf.

Global Web Index. (April 6, 2020). Coronavirus: insights from our multinational study wave II. Retrieved 04/22/2020, from https://blog.globalwebindex.com/trends/coronavirus-insights-second-wave-multi-national-study/?_ga=2.189264302.425021237.1595836343-1027037781.1595836343.

González, M. (April 13, 2020) Vox anima a sortear las trabas que frenan la difusión de bulos en las redes sociales. El País. Spain. Retrieved 04/14/2020, from https://elpais.com/espana/2020-04-12/vox-anima-a-sortear-las-trabas-que-frenan-la-difusion-de-bulos-en-las-redes-sociales.html.

478

Gruber, H. (2017). Quoting and retweeting as communicative practices in computer. Discourse, Context & Media, 20, 1-9. Retrieved on 04/08/202020, from https://www.sciencedirect.com/science/article/abs/pii/S2211695816300848

Jones, K. (April 7, 2020). How COVID-19 Has Impacted Media Consumption, by Generation. Visual Capitalist. Retrieved 05/12/2020, from https://www.visualcapitalist.com/media-consumption-covid-19/.

La Voz del Sur. (09 of 04 of 2020). 1 Detectados 1,5 millones de perfiles falsos en España para propagar bulos y 'fake news'. Spain. Retrieved 04/14/2020, from https://www.lavozdelsur.es/detectados-15-millones-de-perfiles-falsos-en-espana-para-propagar-bulos-y-fake-news/.

López-Rico, C. M., González-Esteban, J. L., & Martínez-Hernández, A. (2020). Polarización y confianza en los medios españoles durante el COVID-19. *RECS* (1), 77-89. doi: 10.20318/recs.2020.5439.

Majmundar, A., Allem, J. P., Cruz, T. B., & Unger, J. B. (2018). The Why We Retuit scale. Plos One. doi: 10.1371/journal.pone.0206076.

Maldita.es. (April 13, 2020).). El coronavirus y sus bulos: 425 mentiras, alertas falsas y desinformaciones sobre COVID-19. Spain. Retrieved 04/14/2020, from https://maldita.es/malditobulo/2020/04/13/coronavirus-bulos-pandemia-prevenir-virus/.

Spinney, L. (07 Mar 2017). How Facebook fake news and friends are warping your memory. Nature. Retrieved 04/9/2020, from https://www.nature.com/news/how-facebook-fake-news-and-friends-are-warping-your-memory-1.21596

Velasco, P. (April 13, 2020). Marlaska: "Las campañas destinadas a mentir y engañar son un atentado contra la salud pública". Cadena Ser. Spain. Retrieved on 04/13/2020, from https://cadenaser.com/ser/2020/04/13/tribunales/1586782277_336895.html

Vos, S. C. (2017). Using Social Networking Sites During Public Health Crises: Theorizing the Diffusion of Effective Messages. University of Kentucky. Ann Arbor: UKnowledge. doi: 10.13023/ETD.2016.053.

WhatsApp. (April 07, 2020). Keeping WhatsApp Personal and Private. Retrieved on 04/08/2020, from WhatsApp Blog: https://blog.whatsapp.com/Keeping-WhatsApp-Personal-and-Private

Worldometers. (n.d.). Worldometers.info. Retrieved 04/14/2020, from https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?%20#countries.

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Zhao, Z., Zhao, J., Sano, Y., Levy, O., Takayasu, H., Takayasu, M., Havlin, S. (2020). Fake news propagate differently from real news even at early stages of spreading. *EPJ Data Science, 9* (1), 7. doi: 10.1140/epjds/s13688-020-00224-z.

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