

From digital hegemony to electoral defeat: majority illusion in the Chilean constitutional plebiscite

De la hegemonía digital a la derrota electoral: *majority illusion* en el plebiscito constitucional chileno

Da hegemonia digital à derrota eleitoral: ilusão de maioria no plebiscito constitucional chileno

Pedro Santander, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile
(pedro.santander@pucv.cl)

Claudio Elórtegui-Gómez, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile
(claudio.elortegui@pucv.cl)

Héctor Allende-Cid, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile
(hector.allende@pucv.cl)

Pedro Alfaro-Faccio, Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile
(pedro.alfaro@pucv.cl)

Sebastián Rodríguez, Universidad Técnica Federico Santa María, Valparaíso, Chile
(srodrigu@alumnos.inf.utfsm.cl)

ABSTRACT | This article analyzes the digital campaign within that supporters from a new Constitution for Chile and defenders of the one drafted during Pinochet's dictatorship carried out on Twitter, in the context of the Approval or Rejection plebiscite held in October 2020, in which 78.27% of voters approved to draft a new one. Our digital analysis operated on two levels: the so-called selective approach, which is volumetric and analyzes specific topics such as relevant users, tags, hashtags, and trending topics and, second, the entire field approach, which looks at the topological characteristics of the network structure. Although the defenders of the status quo conducted a campaign that was a success from the volumetric point of view, our holistic analysis shows that that same success generated digital homophily (Boutyline & Willer, 2016) on the basis of which a majority illusion was built (Lerman and others, 2016).

PALABRAS CLAVE: plebiscite; digital campaign; volumetric analysis; topological analysis; digital homophilia; majority illusion.

HOW TO CITE

Santander, P., Elortegui, C., Allende-Cid, H., Alfaro-Faccio, P., & Rodríguez, S. E. (2022). De la hegemonía digital a la derrota electoral: *majority illusion* en el plebiscito constitucional chileno. *Cuadernos.info*, (53), 70-94. <https://doi.org/10.7764/cdi.53.37379>

RESUMEN | Este artículo analiza la campaña digital que los partidarios de una nueva Constitución para Chile y los defensores de la elaborada durante la dictadura de Pinochet protagonizaron en Twitter, en el marco del plebiscito por el Apruebo o Rechazo realizado en octubre de 2020, en el que 78,27% de los votantes aprobó redactar una nueva carta magna. El análisis digital llevado a cabo operó en dos niveles: primero, en el llamado selective approach, que es volumétrico y analiza tópicos específicos como usuarios, etiquetas, hashtag y trending topics relevantes y, segundo, en el entire field approach, que se fija en las características topológicas de la red. Si bien los defensores del status quo realizaron una campaña que desde el punto de vista volumétrico fue un éxito, el análisis holístico demuestra que ese mismo protagonismo generó conductas digitales homofílicas (Boutyline & Willer, 2016), sobre cuyas bases se construyó una ilusión de mayoría (Lerman et al., 2016).

KEY WORDS: plebiscito; campaña digital; análisis volumétrico; análisis topológico; homofilia digital; ilusión de mayoría.

RESUMO | O artigo analisa a campanha digital que os partidários de uma nova Constituição para o Chile e os defensores da que foi redigida durante a ditadura de Pinochet realizaram no Twitter, no âmbito do plebiscito de 'Aprovo' ou 'Rejeito' realizado em outubro de 2020, no qual 78,27% dos votantes aprovaram a elaboração de uma nova Constituição. A análise digital realizada operou em dois níveis: primeiro, a chamada abordagem seletiva, que é volumétrica e analisa tópicos específicos tais como usuários, tags, hashtags e tópicos de tendências relevantes, e segundo, toda a abordagem de campo, que analisa as características topológicas da rede. Enquanto os defensores do status quo fizeram uma campanha volumetricamente bem sucedida, a análise holística mostra que o mesmo destaque gerou comportamentos digitais homofílicos (Boutyline & Willer, 2016), com base nos quais foi construída uma ilusão de maioria (Lerman et al., 2016).

PALAVRAS-CHAVE: plebiscito; campanha digital; análise volumétrica; análise topológica; homofilia digital; ilusão de maioria.

INTRODUCTION

In recent years, the literature specialized in political communication has described the intense use that political actors make of social networks at election time. Following that line, this paper analyzes a complementary aspect: how a successful digital campaign can become a mirage that leads a political actor to overestimate its electoral strength.

This gap between a successful digital performance and negative electoral results is the basis for the object of study and the analysis of the digital behavior of the advocates of preserving the 1980 Constitution, drafted during the Chilean military dictatorship, during the 2020 referendum campaign to draft a new one. The underlying hypothesis is that, while building a successful digital deployment, they simultaneously built an illusion of majority (Lerman et al., 2016). The former is what is understood in this paper as digital hegemony, i.e., communicative and topological achievements in virtual space; the latter is conceptualized as a digital distortion and for to characterize it we perform, following Takikawa and Nagayoshi's (2017) proposal, both an entire field approach and a selective approach. The first one focuses on the topological characteristics of the network structure and the second one, on relevant users, tags and hashtags.

In its 210 years of independence, Chile has had three constitutions: those of 1833, 1925, and 1980. The latter, drafted during the dictatorship, is the one that has been in force since then, with subsequent reforms. However, it began to be strongly questioned after the social outbreak of October 18, 2019, which for months meant continuous, radical, massive street protests throughout the territory (Garcés, 2020; Somma et al., 2020; Tótoro & Torres, 2021). The response of the State was varied; repression was one of them and, according to figures from the National Institute of Human Rights (Instituto Nacional de Derechos Humanos, 2020), by March 2020 more than 460 people had suffered eye mutilation as a result of police shootings, thousands were detained, and four international reports condemned the Human Rights violations (Human Rights Watch, 2020; Comisión Interamericana de Derechos Humanos, 2022; Amnistía Internacional, 2020; Alto Comisionado de las Naciones Unidas para los Derechos Humanos, 2019).

Almost a month after the outbreak began, most of the parties with parliamentary representation signed the Agreement for Social Peace and a new Constitution. This implied calling a referendum to vote on whether to approve a process of drafting a new Constitution or to maintain the current one. In this context, two clearly identifiable communities began to form, both virtually and non-virtually: the I approve option, and the one that defended the I reject option. The latter grouped those who publicly defended the status

quo and opposed institutional changes. This community was very active and striking in social networks during the campaign period, and a prominent role was played by recognized far-right leaders, related to the Partido Republicano, a group that vindicates Pinochet's political-institutional legacy. However, as will be shown below, the virtual hegemony achieved clashed with the reality of the ballot boxes, when 78.27% of the citizens who voted on October 25, 2021 approved the drafting of a new Constitution and 21.73% rejected it.¹

The state-of-the-art review allows us to argue that the analysis of the digital behavior of political actors during electoral campaigns in Chile has room to deepen its characterization and deserves further study (Castillo et al., 2019; Cárdenas et al., 2017; Santana & Huerta Cánepa, 2020; Santander et al., 2017, 2020a).

Networks and electoral campaigns

There is no election campaign today in which networks do not play a pivotal role. As early as 2004, the US democratic candidate Howard Dean used incipient digital platforms such as social MeetUp.com to digitally organize meetings and raise funds (Valera, 2010; Dader, 2009). However, the first candidate who surprised the world by showing the superior potential of the Internet was Obama in 2008. These were the first steps for the emergence of a new model of digital convergence in political communication that has evolved in its professionalization for electoral moments (Espino-Sánchez, 2014). Since then, the evolution of social networks as effective tools for disseminating messages, building communities, and attracting resources (Delany, 2009), has not ceased and they are beginning to consolidate as strategic devices for politicians (Valera, 2010; Bor, 2014; Santander et al., 2020b).

Some authors already speak of the fourth era of political communication (Semetko & Tworzecki, 2017), a phase characterized by involving new tools thanks to big data that provides, for example, the possibility of micro-segmentation, automated political marketing that detects thousands of user profiles in real time, the virality of messages, levels of selective exposure never seen before, use of multiscreens, etc. (Semetko & Tworzecki, 2017; Rodríguez et al., 2018; Svensson & Klinger, 2015).

Indeed, the evolution of techno-digital potentialities has accelerated. If, for example, the tweet announcing Obama's victory in 2008 was retweeted 157 times, four years later his re-election photo received more than 800 thousand retweets (Kreiss, 2014), and Obama's team developed a database with 16 million profiles

1. Official information from the Chilean Electoral Service (<https://servel.cl/resultados-provisoriosplebiscito-nacional-2020/>).

of undecideds, which allowed them to be classified individually and reached as specific targets. Subsequently, within the framework of Trump's campaign, the Cambridge Analytica scandal broke out, demonstrating to the world what digital technology and social networks were capable of achieving if you have the right databases (Isaak & Hanna, 2018).

As such, leading universities, research centers and researchers around the world are exploring with increasing attention how these relate to electoral cycles, campaigns, and voters (Deltell et al., 2012; García, 2015; Guzmán & Sánchez, 2016; Larson & Moe, 2012).

Nowadays, a campaign that does not use technological tools and, specifically, social networks is unthinkable (Cárdenas et al., 2017; Lilleker, 2015), and not only in the United States. In Latin America, networks are activated in a particularly intense way during elections (Brito et al., 2019; López-López & Vásquez-González, 2018; Moura & Michelson, 2017; Rodríguez et al., 2018; Santander et al., 2017, 2020b). Candidates use them not only to make themselves known, but also in the hope of mobilizing the citizenry. Whether in Brazil (Brito et al., 2018; Moura & Michelson, 2014), Mexico (Montes de Oca López & Sandoval Almazan, 2019), Spain (Hernández & Fernández, 2019; Carrasco Polaino et al., 2020), or Chile (Castillo et al., 2019; Rodríguez et al., 2018; Santander et al., 2020b), political actors seek to connect with the audience through social networks.

One goal is for networks to promote collective action. As Flores-Saviaga and colleagues (2018) point out, strategically employed, they can become mobilization structures for different people to commit to a shared political objective; opportunity structures, for people who were thought to be isolated and fragmented to meet and recognize each other as like-minded and, finally, framing structures that facilitate the construction of shared meaning. These three dimensions are especially important for movements with political-electoral objectives. For that very reason, the role of social networks in campaigning is not only to disseminate information, but also to build community (Lobo, 2017). In this dynamic, they have demonstrated the capacity to facilitate digital collective action and mobilize hundreds of thousands of people in the online environment, who express themselves daily and voluntarily in a continuous, public and massive discursive flow. As Svensson and Klinger argue, "social media platforms have specifically established themselves as the main loci for mediated communication and socialization" (2015, p. 5).

Social networks and the far-right

Groups opposed to initiating a constitutional process in Chile aligned themselves under the label *Rechazo* (Rejection). Among them were recognized far-right actors who deployed an intense digital activity in defense of that alternative.

In that regard, and as our data show, we can argue that –as in other Western countries (Flores-Saviaga et al., 2018; Hernández & Fernández, 2019; Lobo, 2017)– in Chile certain extreme political projects also make intensive and effective political use of social networks.

These extreme positions have in common not only doctrinal traits, but also communicational ones. In the framework of the current electoral processes, certain characteristics of the ultra-right –which we understand as Mudde does (2021), characterized by its anti-system attitude and hostility to liberal democracy– are striking. Álvarez-Benavides (2019) postulates that one of the three main elements that characterize the so-called “the third millennium fascism” (Lazaridis et al., 2016, p. 21) would be precisely the use of social networks, a space where, as these authors point out, “the extreme right has landed with force” (Ibid.), and from which they deploy their activities, many of them countercultural in appearance. In that regard, the intense and coordinated use of social networks and digital platforms has been a characteristic of campaigns such as those of Bolsonaro in Brazil, Le Pen in France, Trump in the United States, or VOX in Spain (Guerrero-Solé et al., 2019). Twitter, for example, served Trump to bypass the traditional press and speak to his constituents directly, also taking advantage of that channel “to delegitimize critical media” (Hernández & Fernández, 2019, p. 35). In this context, the deployment of marketing techniques and resources such as astroturfing, which makes a paid message appear natural, the creation of troll communities, the massive use of fake news, among others, are considered by different authors as characteristics of the far-right in their digital-communicative performance (Flores-Savaglia et al., 2018; Lazer et al., 2018; Rodríguez-Serrano et al., 2019).

Some authors have drawn attention to how far-right positions benefit globally from the social networks’ recommendation algorithms. Within the framework of the so-called attention economy (Gallego, 2013; Peirano, 2019), an entire industry has developed whose algorithms reward information with extremist content, as these are the ones that manage to capture the most attention from users (Tufekci, 2018; Rodríguez-Serrano et al., 2019). Some authors posit the existence of populist algorithms to favor the far-right within the framework of a globally coordinated communicative strategy (Conde et al., 2019). In that regard, algorithmic bias enables a techno-communicational affinity between certain political movements and social networks. Twitter itself admitted in 2021 that its recommendation algorithms amplify the discourse of the political right on its platform to a greater extent than that of other trends: “In six out of seven countries –all but Germany– tweets posted by accounts from the political right receive more algorithmic amplification than the political left when studied as a group” (Twitter, 2021).

This affinity is exploited politically and is especially evident during election periods.

This study argues that this occurred in Chile during the referendum campaign.

METHODOLOGY

From the first day of the social outburst, on October 18, 2019, social networks mirrored the strong discussion around these events that changed the national political agenda. On Twitter, for example, there was an explosive increase in participation that meant that the average number of 590 thousand daily tweets and retweets that were produced in Chile before that date increased to 2.8 million daily tweets (<https://analitic.cl/>). Changing the Constitution was not an issue considered in the agenda of President Piñera's government; however, after the social revolt it was quickly installed as a central issue. When the call for the referendum was announced on November 15, 2019, this research team immediately began to collect digital data related to that event, initially scheduled for April 26, 2020, and then postponed by the pandemic to October 25 of that year.

The analysis focused on Twitter, a network that –as the specialized literature shows– plays a prominent role during election time (Fábrega & Paredes, 2012; Larson & Moe, 2012), when it is particularly active, and during which tens of thousands, sometimes even millions of users give their daily and continuous opinions about the campaign, the candidates, the proposals, etc. This happens, moreover, in a public way, as Twitter is one of the most important digital spaces for public debate. In the words of Takikawa and Namayoshi (2017), “Twitter has more potential to be an open public space and well-suited for public dialogue than other social media, such as Facebook. Twitter has not only played an important role in political discussion online but also on *real world* politics” (p. 3,143).

Therefore, and given the possibility of accessing the data, this social network has been studied by various researchers when analyzing electoral processes, e.g., the Brexit and the general elections in Great Britain (Burnap et al., 2016), those of France or Spain (Ceron et al., 2014; Marcos-García et al., 2021), that of Asian countries (Jaidka et al., 2018), or Latin America (Bacallao-Pino, 2016; Bovet et al., 2018; Crespo & Rey, 2013; Santander, et al., 2017).

In this context, from November 15, 2019 until October 25, 2020 (day of the referendum), all tweets and retweets using the hashtags #Rechazo or #Apruebo were collected in accounts located in Chile. During that period, both words became semantically charged and began to acquire a crucial political relevance in the public debate, becoming symbols of two clearly identifiable antagonistic positions.

In total, the research team captured 6,143,536 tweets and retweets issued by 270,828 users. Given this research's inductive approach, this figure does not correspond to a sample of Chilean Twitter users, but to the total number of users who used the hashtags under study between the dates indicated. Thus, about 3.6 million mentions used the hashtag #Rechazo in their tweets, and about 2.4 million the #Apruebo (figures 1 and 2).

To study these data, we used the Python Pandas library (version 1.4.2), which analyzes the data in its own structures called dataframe, allowing for more detailed manipulation and analysis. A Python library called Plotly (version 5.8.0) was also used to visualize the data graphically.

With this information, we designed a database stored on the team's servers, which included all the messages from users who mention these hashtags at least once and the respective metadata (user name; date of publication of the message; application used to generate the tweet; number of followers of the user).

Subsequently, this information was processed following both a selective approach, focused on volumetric measures, relevant users, hashtags, trends and tags, and an entire field approach, focused on the structural characteristics of the networks formed on Twitter by the two communities, identifying topology and their possible tendency to form echo chambers.

RESULTS AND DISCUSSION

Volumetric analysis: #Rechazo and its hegemony on Twitter

In descriptive terms, the data show that on Twitter the supporters of Rechazo achieved, almost without exception, a greater volumetric activity than their opponents, both in terms of trends, hashtags, retweets, etc. This is the aforementioned digital hegemony. This occurred throughout the campaign. Indeed, except for two days –March 8 and April 26, 2020– the volumetric activity of the #Rechazo hashtag was always higher than that of #Apruebo (figure 1).

The option #Apruebo (blue color) only prevailed on March 8, International Women's Day, date on which a massive social mobilization took place and was also reflected on Twitter, and on April 26 –which was the original date on which the referendum was to be held and which due to COVID-19 was postponed to October.

During the period in question, there were 3,685,878 mentions (tweets and retweets) using the hashtag #Rechazo and 2,457,658 mentions using the hashtag #Apruebo. I.e., almost 60% of the mentions had a hashtag identified with supporters of the 1980 Constitution (figure 2, next page) and only 40.2%, the opposite.

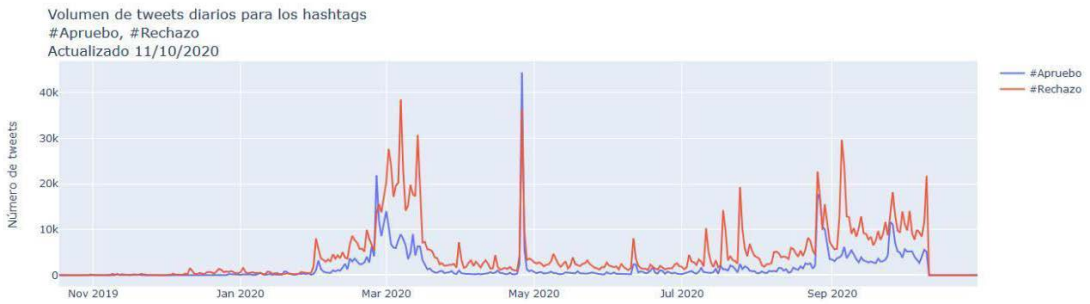


Figure 1. Volumetric activity #Rechazo and #Apruebo hashtags, November 15, 2019 to 25 October 2020

Source: Own elaboration.

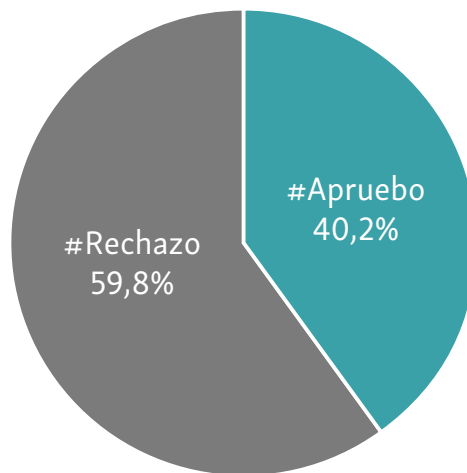


Figure 2. Percentage of total mentions for #Rechazo and #Apruebo

Source: Own elaboration.

To determine whether the difference in these percentages was significant, it was tested with a 2 proportions Z-test ($Z=486.1043$; $p>0.0001$), with an alpha of 0.05 and two-tailed test.

Although the hashtags #Rechazo and #Apruebo were the most used during this period, they were not the only ones. Several others also accounted for the electoral debate, all of which we monitored (figure 3). On Twitter, the three hashtags most employed by supporters of the Pinochet Constitution were #Rechazo, #RechazoCrece, and #YoVotoRechazo. These three hashtags generated a total of 2,521,620 retweets. On the other hand, the three most active hashtags for the *Apruebo* option were #Apruebo, #YoApruebo, and #NuevaConstitucionParaChile, totaling just over one million retweets. As we can see in figure 3, the hashtag #Rechazo, on its own, generated more digital activity than the three main hashtags in favor of a new Constitution.

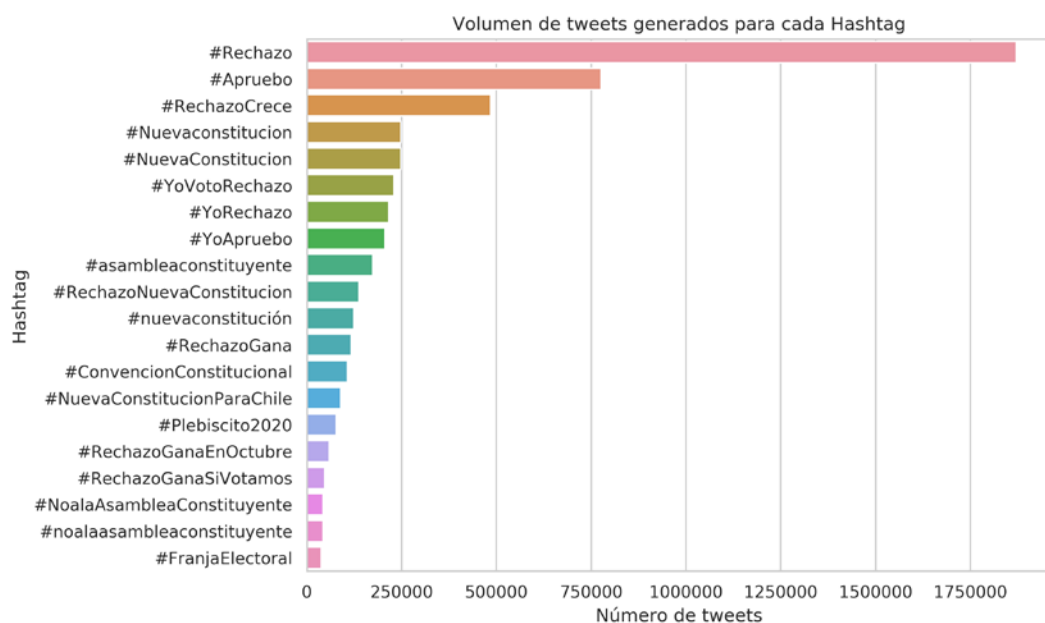


Figure 3. Volume of retweets produced by the main hashtags during the campaign for a new Constitution in Chile

Source: Own elaboration.

Continuing with the volumetric analysis, we identified the top ten users with the highest indegree using hashtags in favor or against a new Constitution, understood as nodes. It should be noted that every node has a certain number of connections or edges with others. In this regard, the measure called indegree accounts for the number of incoming edges to that node, and outdegree, to the number of outgoing edges; when understanding this measure as the total number of edges that affect a vertex, it is conceptualized as an indicator of prestige (Riquelme & González-Cantergiani, 2016).

In this regard, a node with a high indegree represents an actor with which many other users have direct links. Empirically, it is detected by measuring the volume of retweets, likes, and comments that a user generates with his/her post (figure 4).

As illustrated in the figure, six of the top 10 accounts with the highest indegree campaigned for maintaining Pinochet's Constitution. The first two (@melnicksergio and @carreragonzalo) are public figures of recognized far-right tendency. Their names will also play an important role in the structural analysis. The first, Sergio Melnick, was a minister during the Chilean civil-military dictatorship; the second, Gonzalo de la Carrera, is a well-known businessman and communicator, currently a deputy of the Partido Republicano. He is followed, in fourth place, by the leader and former presidential candidate of the far-right, José Antonio Kast; in sixth and seventh place are two tweeters identified with the far-right: the accounts @Franscis25830521 and @AlejandroMery.

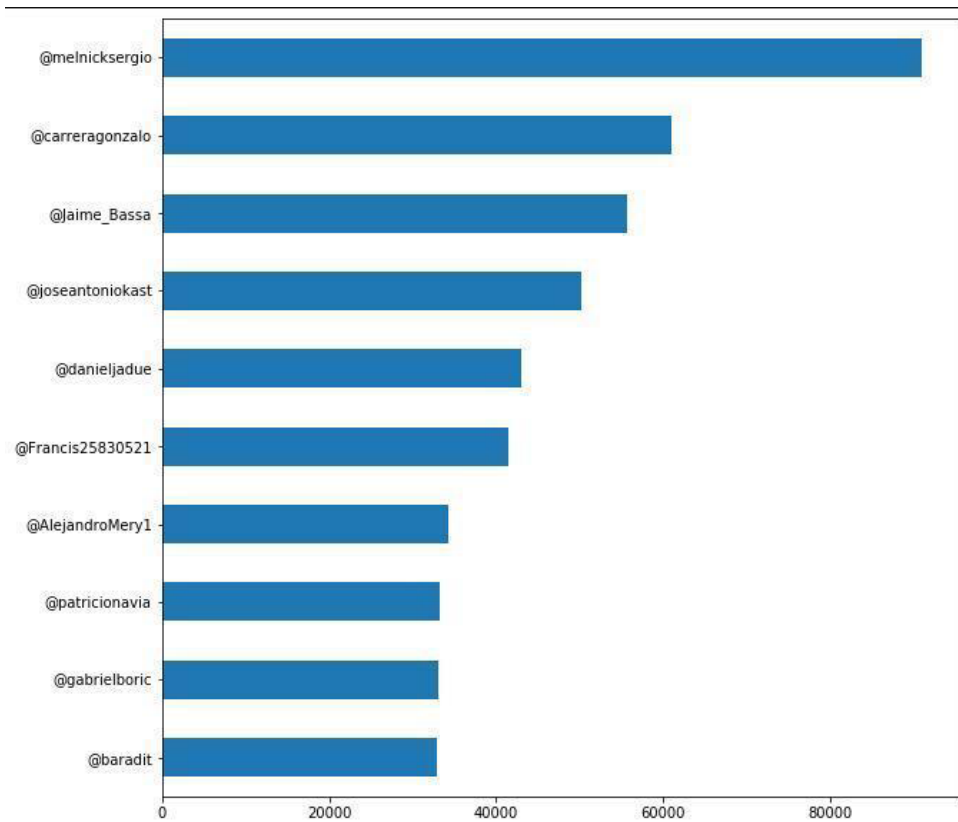


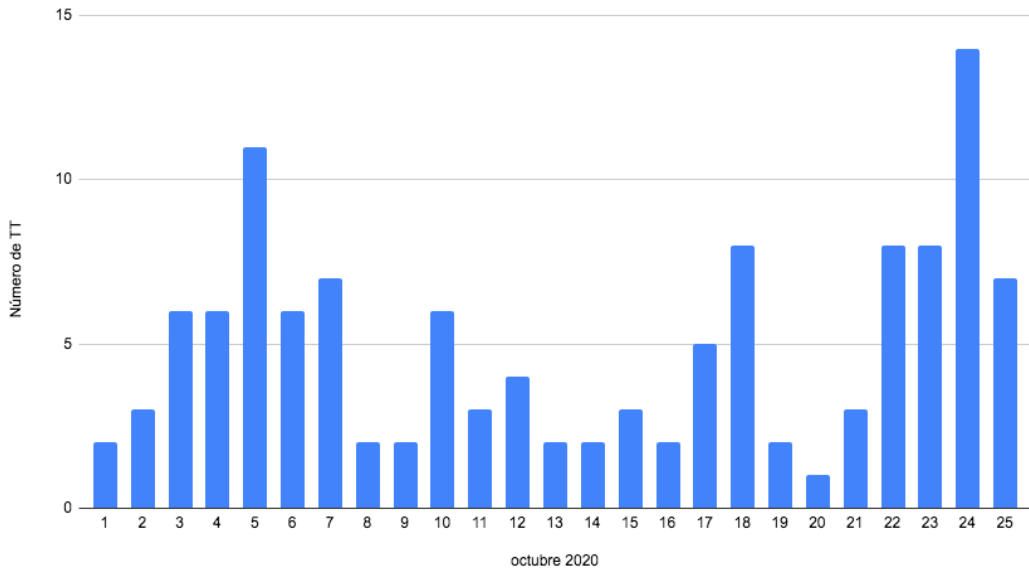
Figure 4. Users supporting Apruebo and Rechazo with the highest indegree

Source: Own elaboration.

Additionally, by using the Trendinalia platform (www.trendinalia.com), which allows exploring the hashtags that have been trending on Twitter by country, day, and time, we reviewed the trending topics (TT) that the Rechazo supporters managed to position during October, and contrasted them with the opposing political option. TTs play an important role in political communication deployed in electoral campaigns (Jivkova-Semova et al., 2017), and even influence users' web search behaviors (Ricci & Tolosa, 2013).

Supporters of the status quo were very active in this area and there was not a single day in October in which they did not manage to trend. In total, 123 TTs were posted with the hashtag #Rechazo. The penultimate day –October 24– stood out, with 14 in favor of maintaining Pinochet's Constitution (figure 5).

The trending topics behavior with the hashtag #Apruebo was more irregular (figure 6); in fact, there are 11 days in which no hashtags in favor of a new Constitution were trending. However, on the last day –October 25– a real explosion occurs: 39 trends call for a new Constitution, i.e., #Apruebo is trending practically the whole day. #Rechazo, on the other hand, had a more uniform behavior and during October it dominated the trends. The supporters of this option showed a constant behavior in their digital action, unlike those of #Apruebo.



**Figure 5. Daily number of trends placed by Rechazo supporters.
October 1 to 25, 2020.**

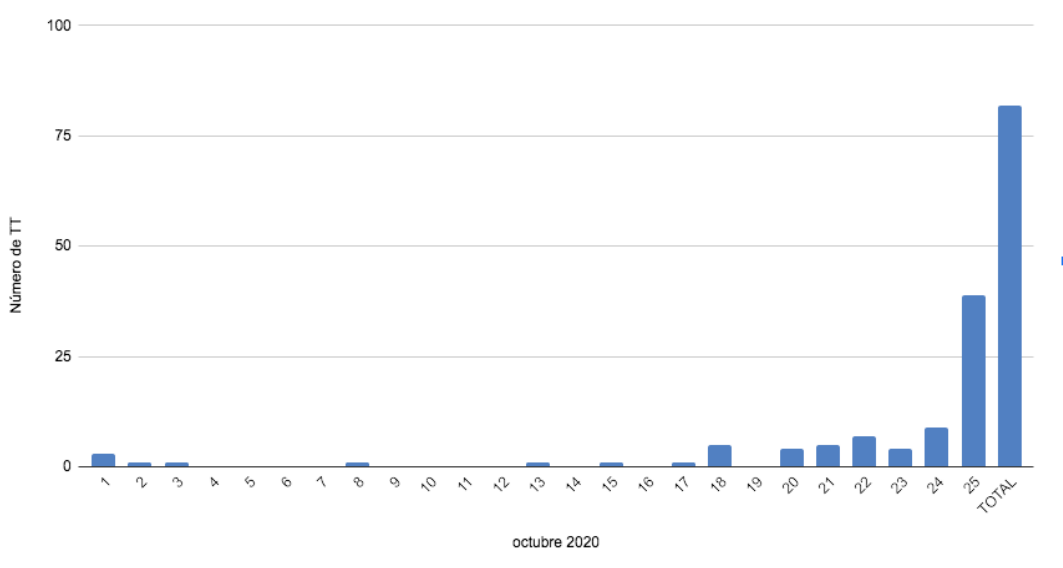
Source: Own elaboration.

From volumetric analysis to the network structure of Rechazo supporters: from hegemony to homophily

The volumetric analysis allowed us to identify a digital superiority of the right-wing in the campaign. This is what we call digital hegemony. It is a behavior that occurs on the surface of the network and, consequently, is more visible. The same does not happen with the topological structure which, like any deep structure, requires a more complex analysis to be appreciated, as well as a large volume of information of different dimensions. On this necessary distinction between the visible and the underlying, volumetric success can generate a false perception of hegemony and, therefore, structural contrast is required for a more complete vision.

As we have seen, the hashtag #Rechazo was the most prominent of all, and among the top 10 most influential users (according to indegree) most were supporters of *Rechazo* (figure 4). The relevant number of trending topics they managed to install in the last three weeks of the campaign is added to this (figure 5). From this perspective, their digital hegemony was obvious.

Nevertheless, the observation of the trending topics of *Apruebo* and *Rechazo*, especially what happened on the day of the election, gave the first clues that the two groups had different digital functioning logics. The *Rechazo* had a clearly more constant and orderly behavior when it came to digitally promoting messages favorable to their option; therefore, their actions could be considered as more militant. The network structure that was configured can be seen in figure 7.



**Figure 6. Daily number of trends placed by Apruebo supporters.
October 1 to 24, 2020**

Source: Own elaboration.

Assortativity and disassortative

To further analyze this structure (figure 7), we wanted to explore the network of relationships that emerges from the messages shared by its users, as well as the nodes present in the topology they formed. To this end, we used assortativity and connectivity coefficients. We understand that in a network there is assortativity when there is a preference of the nodes to join others similar; therefore, there is assortativity if a significant fraction of links is established between nodes of the same type. Some authors conceptualize this as a linkage bias (Newmann, 2003). The notion of disassortative points to the opposite; i.e., when a significant fraction of links is established between nodes of different types. Therefore, positive coefficients between 0 and 1 indicate assortativity, while negative coefficients between 0 and -1 indicate disassortative.

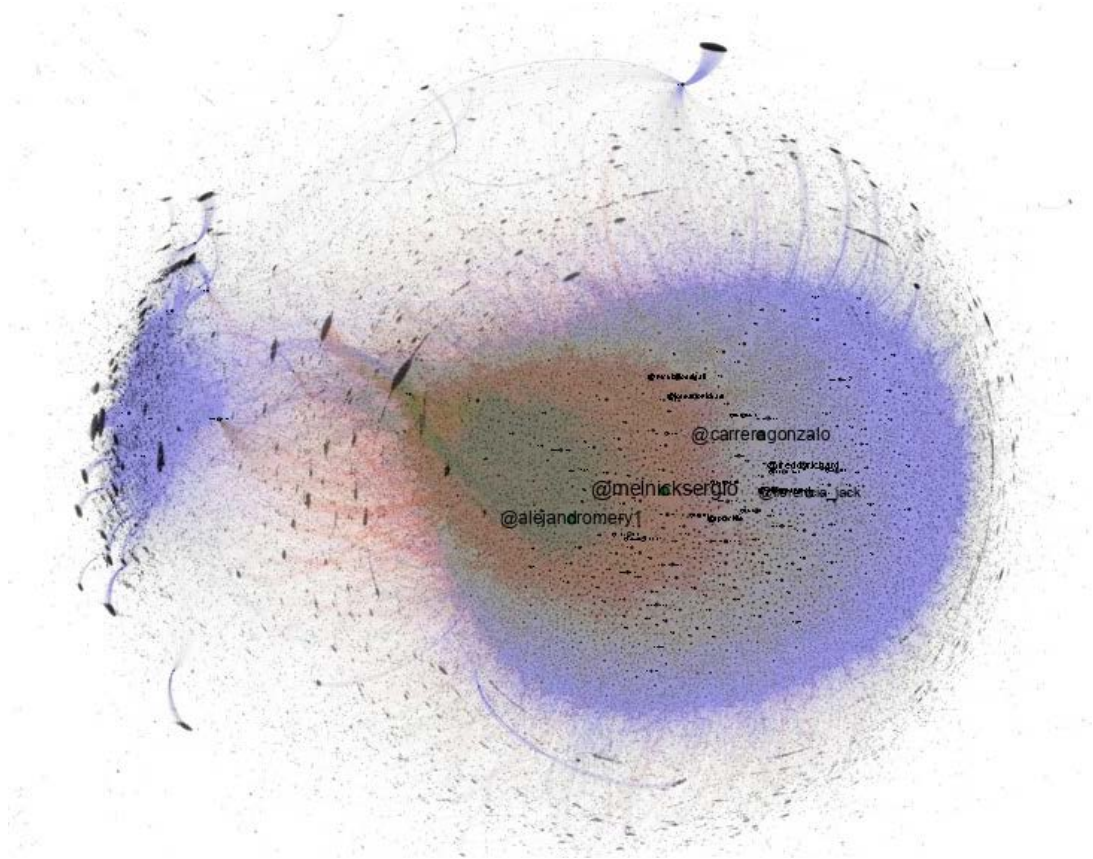


Figure 7. Network structure of Rejection supporters (Gephi software). Blue indicates retweets, green indicates mentions, and orange indicates replies to other users

Source: Own elaboration.

The coefficient of assortativity is mathematically defined as²:

$$r = \frac{\sum_{(i,j) \in E} (f(i) - \bar{f}_1)(f(j) - \bar{f}_2)}{\sqrt{\sum_{(i,j) \in E} (f(j) - \bar{f}_2)} \sqrt{\sum_{(i,j) \in E} (f(j) - \bar{f}_2)^2}}$$

2. The assortativity coefficient is a Pearson correlation coefficient of some f node property between pairs of connected nodes. If the measured property is a node degree (i.e., $f = \text{deg}$), it is called an assortativity degree coefficient. For directed networks, each of f_1 and f_2 can be either input or output degree, so there are four different kinds of degrees that it can measure: input-input, input-output, output-input, and output-output.

where E is the set of directed connections and

$$\bar{f}_1 = \frac{\sum_{i,j} \epsilon E f(i)}{|E|}, \quad \bar{f}_2 = \frac{\sum_{i,j} \epsilon E f(j)}{|E|}.$$

The analysis of the topology of the *Rechazo* and *Apruebo* network shows that both have negative measures; one, however, more than the other. The measures are -0.23 ($p < 0.01$) for the *Apruebo* network and -0.19 for the *Rechazo* network ($p < 0.01$). The latter shows a measure closer to 1 and is less disassortative; therefore, it is more assortative than that of supporters of constitutional change. I.e., its node connections with nodes of different types are smaller than that of its opponents. To test this difference, we compared correlation magnitudes for independent samples, which indicated a statistically significant difference ($z = 50.821$; $p < 0.0$). In that regard, the *Rechazo* network shows a greater tendency to what is known as network homophily than the *Apruebo* network (Boutyline & Willer, 2016; Takikawa & Nagayoshi, 2017; Valera-Ordaz et al., 2018), and allows us to appreciate that the structure of the *Rechazo* community is closer to an echo chamber than the *Apruebo* network.

Such a “homophilic tendency” (Takikawa & Nagayoshi, 2017, p. 3145) is greater in the network of the supporters of the status quo than in that of its opponents. This propensity, which begins to become incipiently evident with the correlation coefficient, is seen more clearly when exploring the structures of both communities according to another measure, that of betweenness centrality.

Betweenness centrality

There are several proposals to explore the degrees of influence of an actor (Castillo et al., 2011; Riquelme & González-Cantergiani, 2016). One of them is known as betweenness centrality (BC, hereafter). This is a dimension that seeks to explore the relative importance of an actor within a network structure. BC is mathematically defined as

$$g(v) = \sum_{s \neq v \neq t} \frac{\sigma_{st}(v)}{\sigma_{st}}$$

where σ_{st} is the total number of shortest paths from node s to node t , and $\sigma_{st}(v)$ is the number of those paths that pass through v . Degree centrality therefore involves detecting those nodes that occupy such a place in the network that they mean to take the shortest path between two nodes.

| Id | Label | betweenness |
|-------|------------------|---------------|
| 38536 | @melnicksergio | 0,03898685132 |
| 9080 | @carreragonzalo | 0,03769011493 |
| 30889 | @karolcariola | 0,03426898869 |
| 20810 | @florencia_jack | 0,03363960975 |
| 21505 | @FreddyRichard | 0,02319567007 |
| 38350 | @mcubillosgall | 0,02172720592 |
| 56273 | @vagoilustrado | 0,02158010382 |
| 19939 | @felipebraun1 | 0,02135109961 |
| 29378 | @jovinomas | 0,02042693779 |
| 47923 | @radio19deabril | 0,01680123964 |
| 28957 | @joseantoniokast | 0,01397563126 |
| 4727 | @aprachile | 0,01286203996 |
| 39452 | @mirnaschindler | 0,01270318283 |
| 17488 | @eljorgearanci | 0,01189977332 |
| 8111 | @carabdechile | 0,01141502136 |

Figure 8. Measures of centrality, *Rechazo* network. In red, *Apruebo* supporters

Source: Own elaboration.

We chose this measure over other centrality measures such as eigenvector centrality, since the aim of this analysis was not to determine the topology of the Twitter user network based on the connections between its users/accounts, but to determine the structure of the network generated by the flow of information, i.e., the messages that circulate. Thus, in the context of an electoral campaign, we first determined the total number of links that a node/message had with the others, and then we ranked from the one with the most links to the one with the least. By establishing this node/message ranking, we were able to characterize the actors that play a role of greater to lesser importance in the dissemination of messages to other users.

As detected in the previous assortativity analysis, the centrality measure also shows that the *Rechazo* network is more closed and conformed to a greater extent among equals -homophilia- than the *Apruebo* network. If we look at the top 15 users with the highest BC in both networks, we see that in the network that is structured with users who used the *Rechazo* hashtag, five users, i.e., one third, are supporters of *Apruebo* (figure 8, in red).

What does this mean? That those five users in favor of changing the Constitution -among whom there are well-known public figures, such as the communist congresswoman Karol Cariola- referred to and even used the hashtag #Rechazo on several occasions. It is equally important to note that the two nodes with the highest BC are the same ones that showed the highest indegree (figure 4).

| Id | Label | betweeness |
|-------|------------------|---------------|
| 26333 | @elapruebot | 0,06162354799 |
| 70142 | @piensaprensa | 0,03241510177 |
| 36682 | @hectormorals | 0,0275228436 |
| 30558 | @felipeparadam | 0,02280234091 |
| 12956 | @carlinandress | 0,02233501685 |
| 80695 | @soyelponi | 0,02155853797 |
| 54306 | @marcatuvoto | 0,01940517411 |
| 40129 | @jaime_bassa | 0,01858244704 |
| 72171 | @quechiledecida_ | 0,01849689792 |
| 36333 | @halunkevalnor | 0,01847290394 |
| 30377 | @felipebraun1 | 0,01733013267 |
| 21937 | @danieljadue | 0,01687226094 |
| 33542 | @gabrielboric | 0,01611212399 |
| 74705 | @ro_saavedram | 0,01578329025 |
| 57605 | @mcubillosgall | 0,01555849506 |

Figure 9. Centrality measures, *Apruebo* network.
In red the only *Rechazo* supporter present in the network.

Source: Own elaboration.

On the contrary, in the network formed by the mentions of the *Apruebo* option, we only find one supporter of the *Rechazo* among the first 15 most central nodes (figure 9, in red). This is Marcela Cubillos, former Minister of Education in the government of President Piñera and one of the spokespersons of the *Rechazo* option. I.e., while the *Apruebo* supporters conversed more with their opponents, made reference to them, and even used their labels, the *Rechazo* ones did not refer to them and closed in their network, forming an echo chamber tendency (Boutyline & Willer, 2016; Ochigame & Holston, 2016 NLR), in which “the echoes of their own voices” (Thaler & Sunstein, 2003, p. 65) are heard. In that regard, both this measure –BC– and the one in the previous item – assortativity– show the right-wing trend toward a homophilic digital behavior.

FINAL REMARKS: MAJORITY ILLUSION

The propensity to associate with peers in the digital space is a well-established feature on the Internet (Boutyline & Willer, 2016; Faris et al., 2017; Valera-Ordaz et al., 2018). Users neither perceive nor are aware that the homophilic ties they create with their own interactions are “the building blocks of echo chambers” (Takikawa & Nagayoshi, 2017, p. 3143), and that they tend toward potential isolation (Guerrero Solé et al., 2021).

Our analysis explored both the volumetric action of a community and its network structure to better understand the mechanisms that build an echo chamber. Exploring only one measure, e.g., volume alone, does not allow to visualize the picture in a more holistic way. Only by contrasting the relationship between various measures can the gap between network behavior and constituency behavior be better explained; not seeing it that way can lead users to an illusion.

In this regard, the network topology described allowed us to understand how the supporters of maintaining the Constitution in force formed what in the theory of graphs and complex networks is known as Majority Illusion (Lerman et al., 2016). This occurs in a network when a phenomenon that is not a majority is perceived as such by the majority of network members. The nodes connection is key for this to occur and, according to the data, we can hypothesize that it is most likely that the majority of pro-*Rechazo* users had this perception, given their large number of trending topics, tweets volume, retweets, etc. This would be an example of how, thanks to the distribution of network nodes, a minority political option can appear to be hegemonic in the digital environment, as happened with *Rechazo* in Chile.

The dynamic around a few very active nodes, which became very influential, was key in this construction, possibly generating a bias in the perception of the political reality among their followers. Our analysis detected that two accounts of prominent spokespersons of Pinochetism in Chile played a central role in this regard.

The metrics we applied that measure influence in different areas indicate the weight of these characters in the far-right network; they also show that the more both gained influence, the more homophilic the network became. This is a complex paradox, given that what is visible can be misleading if the rest of the network is not observed in a complex way, exploring it structurally and knowing its topological design.

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ABOUT THE AUTHORS

PEDRO SANTANDER, Ph.D. in Linguistics from the Pontificia Universidad Católica de Valparaíso, he holds a degree in Social Communication from the Universidad de Chile. Professor at the School of Journalism of the Pontificia Universidad Católica de Valparaíso. His lines of research are political communication in the digital context and discourse analysis. He leads the interdisciplinary research group, composed of linguists, engineers and communicologists, Demoscopía Electrónica del Espacio Público (DEEP-PUCV), which analyzes political campaigns and hate speech in social networks.

 <https://orcid.org/000-0002-5629>.

PEDRO ALFARO-FACCIO, DEEP PUCV researcher. Ph.D. in Linguistics, master in Hispanic Philology, holds a degree in Hispanic Language and Literature. Professor at the Institute of Literature and Language Sciences, PUCV-Chile. He researches on language processing from a psycholinguistic and discursive perspective, with experimental and computational techniques, areas in which he has directed and participated in several national and international projects. Disciplinary Editor of Revista Signos. Studies in Linguistics.

 <https://orcid.org/0000-0003>.

CLAUDIO ELÓRTEGUI-GÓMEZ, data analytics researcher at DEEP PUCV and Núcleo, Ph.D. in Journalism and Communication Sciences, Universidad Autónoma de Barcelona. Professor and Academic Secretary of the PUCV School of Journalism. His line of research is political communication, applied to electoral processes and political journalism. He is executive member of the Latin American Association of Researchers in Electoral Campaigns (ALICE, by its Spanish acronym).

 <https://orcid.org/0000-0002>

HÉCTOR ALLENDE-CID, PUCV researcher. Ph.D. in Computer Engineering. Professor at the School of Computer Engineering of PUCV-Chile. His research interests are Natural Language Processing and Machine Learning. Former president of the Chilean Association of Pattern Recognition.

 <https://orcid.org/0000-0003-3047-8817>.

SEBASTIÁN RODRÍGUEZ, DEEP PUCV researcher, student of the Computer Engineering Sciences program at Universidad Técnica Federico Santa María. His areas of interest are Machine Learning and Natural Language Processing.

 <https://orcid.org/0000-0002-0765-1303>.