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The political and mediatic elites on Twitter. An analysis of the accounts that the Spanish media, journalists, and members of the parliament started following

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Title	The political and mediatic elites on Twitter.
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Abstract

The advent of the Internet, as so many technologies, brought with it a renewed hope for social change. The technical capabilities offered by digital social platforms in terms of access to and dissemination of information meant that the power elites could no longer control and filter the public agenda as they did before, and citizens began to play a more active role in the informational and political arena. This brought along the idea that the digital sphere would help revitalize the political debate, which would become more democratic and transparent, resonating with the Habermasian vision of the public sphere. However, technology is both a driver and a mirror of human dynamics and transformations. New gatekeepers emerged; algorithms and their recommendations, which can tend to deepen polarization and generate filter bubbles. Likewise, previous studies show that the media, journalists, and politicians continue to have weight in the agenda-setting and may tend to reproduce homophilic behaviors, using social networks as echo chambers where those who already have power maintain it.

This doctoral thesis analyzes the accounts that Spanish mediatic and political elites began to follow on Twitter. Through an exploratory data analysis, this research seeks to detect patterns and trends that can contribute to the understanding of the dynamics between elites and citizens, in the context of social media and digital communication, with a gender perspective. Do Spanish media and political elites tend to follow each other, using Twitter as an echo chamber? Or do they give space to emerging citizen voices? What is the space that women have among the elites? An analysis of the Twitter accounts that four groups of elites began to follow was conducted to answer these questions. An artificial intelligence system was used for both sample generation and data extraction. By merging manual and computational methods and by using a digital data analysis quantitative methodology, a total of four elites composed of 233 journalists, media, and politicians, and the 464 Twitter accounts they started following were studied. The accounts were categorized according to type (politicians, media, or citizenship), geographic location, number of followers, and gender, after which, using data visualization methods, a search for trends and patterns was undertaken.

The results of this thesis suggest that Spanish media and political elites present homophilic patterns, primarily concerning account types and geographic location, as they started following mainly members of the political and mediatic elites in Spain. Likewise, the results show that homophilic tendencies intensified during the electoral period. Nevertheless, some trends can be identified in which elites began to follow accounts of populations traditionally marginalized from power groups, as in the case of the elites that began to follow balanced percentages of women and men, and higher percentages of citizenship. Previous studies have found results that support the theory of the use of digital social networks both as a public sphere and as elite´s echo chambers. This thesis transits through this dichotomy, from theory to results, evidencing that different behaviors coexist within and among the elites, revealing their complexity, opening new questions, and bringing to light the ways in which Spanish media and political elites link with each other and with the citizenry.

Resumen

La llegada de Internet, como de tantas tecnologías, trajo consigo una renovada esperanza de cambio social. Las posibilidades técnicas que ofrecen las plataformas sociales digitales en términos de acceso y difusión de la información hacen que las élites de poder ya no puedan controlar y filtrar la agenda pública como antes, y que la ciudadanía pase a tener un papel más activo en el escenario informativo y político. Esto trajo consigo la idea de que la esfera digital ayudaría a revitalizar el debate político, que pasaría a ser más democrático y transparente, resonando con la visión de esfera pública Habermasiana. Sin embargo, la tecnología es tanto un motor como un espejo de las dinámicas y transformaciones humanas. Surgieron nuevos gatekeepers; los algoritmos y sus recomendaciones, que pueden tender a profundizar la polarización y a generar filtros burbuja. Asimismo, estudios previos muestran que los medios, periodistas y políticos siguen teniendo peso en la fijación de la agenda pública, y que pueden tender a reproducir comportamientos homofílicos, utilizando las redes sociales como cámaras de eco en donde quienes ya tienen el poder, lo mantienen.

Esta tesis doctoral analiza las cuentas que las elites mediáticas y políticas españolas comenzaron a seguir en Twitter. Mediante un análisis de datos exploratorio, se ha buscado detectar patrones y tendencias que pudieran contribuir a la comprensión de las dinámicas entre las élites y la ciudadanía, en el contexto de los medios sociales y la comunicación digital, con una perspectiva de género. ¿Las élites mediáticas y políticas españolas tienden a seguirse entre ellas, utilizando Twitter como cámara de eco? ¿O le dan espacio a voces emergentes ciudadanas? ¿Cuál es el espacio que las mujeres tienen entre las elites? Para responder estas preguntas, se realizó el análisis de las cuentas de Twitter que comenzaron a seguir cuatro grupos de élites. Tanto para la generación de las muestras como para la extracción de datos, se utilizó un sistema de inteligencia artificial. Mediante la fusión de métodos manuales y computacionales, y utilizando una metodología cuantitativa de análisis de datos digitales, se estudiaron un total de cuatro élites compuestas por 233 periodistas, medios de comunicación y políticos, y las 464 cuentas de Twitter que empezaron a seguir. Las cuentas fueron categorizadas según el tipo (políticos, medios o ciudadanía), la ubicación geográfica, el número de seguidores y el género, tras lo cual, mediante la utilización de métodos de visualización de datos, se procedió a buscar tendencias y patrones.

Los resultados de esta tesis sugieren que las élites mediáticas y políticas españolas presentan patrones homófilos, primordialmente en relación con los tipos de cuenta y la ubicación geográfica, ya que empezaron a seguir mayormente a miembros de la élite política y mediática en España. Asimismo, los resultados muestran que las tendencias homófilas se intensificaron durante el periodo electoral. No obstante, se pueden identificar algunas tendencias en las que las élites comenzaron a seguir cuentas de poblaciones tradicionalmente marginadas de los grupos de poder, como en el caso de élites que comenzaron a seguir porcentajes equilibrados de mujeres y varones, y mayores porcentajes de ciudadanía. Estudios previos presentan resultados que apoyan la teoría del uso de las redes sociales tanto como esfera pública, como para perpetuar cámaras de eco. En esta tesis se transita a través de esta dicotomía, desde la teoría a los resultados, poniendo de manifiesto que coexisten diferentes comportamientos dentro y entre las élites, dejando entrever su complejidad, abriéndose nuevas preguntas, y trayendo a luz las formas en que las élites mediáticas y políticas españolas se vinculan entre ellas y con la ciudadanía.

Resum

L'arribada d'Internet, com de tantes altres tecnologies, va comportar una renovada esperança de canvi social. Les possibilitats tècniques que ofereixen les plataformes socials digitals en termes d'accés i difusió de la informació fan que les elits de poder ja no puguin controlar i filtrar l'agenda pública com abans, i que la ciutadania passi a tenir un paper més actiu en l'escenari informatiu i polític. Això va portar la idea que l'esfera digital ajudaria a revitalitzar el debat polític, que passaria a ser més democràtic i transparent, ressonant amb la visió Habermasiana d'esfera pública. No obstant això, la tecnologia és tant un motor com un mirall de les dinàmiques i transformacions humanes. Van sorgir nous gatekeepers; els algoritmes i recomanacions algorítmiques, que poden tendir a aprofundir la polarització i a generar filtres bombolla. Així mateix, estudis previs mostren que els mitjans, periodistes i polítics continuen tenint pes en la fixació de l'agenda pública, i que poden tendir a reproduir comportaments homofílicos, utilitzant les xarxes socials com a espais millor que cambres de ressò on els qui ja tenen el poder, el mantenen.

Aquesta tesi doctoral analitza els comptes que les elits mediàtiques i polítiques espanyoles van començar a seguir a Twitter. Mitjançant una anàlisi de dades exploratòria, s'ha buscat detectar patrons i tendències que poguessin contribuir a la comprensió de les dinàmiques entre les elits i la ciutadania, en el context dels mitjans socials i la comunicació digital, amb una perspectiva de gènere. Les elits mediàtiques i polítiques espanyoles tendeixen a seguir-se entre elles, fent servir Twitter com a cambra de ressò? O donen espai a veus emergents ciutadanes? Quin és l'espai que les dones tenen entre les elits? Per a respondre aquestes preguntes, es va fer un anàlisi dels comptes de Twitter que van començar a seguir quatre grups d'elits. Tant per a la generació de les mostres com per a l'extracció de dades, es va utilitzar un sistema d'intel·ligència artificial. Mitjançant la fusió de mètodes manuals i computacionals, i utilitzant una metodologia quantitativa d'anàlisi de dades digitals, es van estudiar un total de quatre elits formades per 233 periodistes, mitjans de comunicació i polítics, i els 464 comptes de Twitter que van començar a seguir. Els comptes van ser categoritzats segons el tipus (polítics, mitjans o ciutadania), la ubicació geogràfica, el nombre de seguidors i el gènere. Després de categoritzar-los imitjançant la utilització de mètodes de visualització de dades, es va procedir a buscar tendències i patrons. Els resultats d'aquesta tesi suggereixen que les elits mediàtiques i polítiques espanyoles presenten patrons homòfiles, primordialment en relació amb els tipus de compte i la ubicació geogràfica, ja que majoritàriament van començar a seguir a membres de l'elit política i mediàtica a Espanya. Així mateix, els resultats mostren que les tendències homófilas es van intensificar durant el període electoral. No obstant això, es poden identificar algunes tendències en les quals les elits van començar a seguir comptes de poblacions tradicionalment marginades dels grups de poder, com en el cas d'elits que van començar a seguir percentatges equilibrats de dones i homes. En estudis previs es troben resultats que donen suport a la teoria de l'ús de les xarxes socials tant com esfera pública, com per a perpetuar cambres de ressò per part de les elits. En aquesta tesi es transita a través d'aquesta dicotomia, des de la teoria als resultats, posant de manifest que coexisteixen diferents comportaments dins i entre les elits, deixant entreveure la seva complexitat, obrint-se noves preguntes, i portant a llum a les formes en què les elits mediàtiques i polítiques espanyoles es vinculen entre elles i amb la ciutadania.

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PART I. INTRODUCTION

There is a human tendency to welcome new technologies with the hope of social change (Steensen, 2011). The arrival of the Internet, and with it, of the new digital media, was greeted with hopefulness in many areas, including progress towards greater democracy, towards a more inclusive public debate, towards a desired public sphere. Media that enabled the possibility of connection and access to information seemed, to say the least, promising. Nonetheless, technology is often both a driver and a mirror of human transformation and dynamics.

The digital sphere disrupted the access to information. If knowledge is power (Bacon, 1597), the arrival of the Internet meant changes in the dynamics of influence, power and control. Digital media opened a gate for citizenship to access a variety and volume of information like never before. Contents that would have been either hard to reach, expensive to get, or directly filtered by power elites and gatekeepers (Mccombs, 2002; M. E. McCombs & Shaw, 1972), are now more easily available than ever before. Social media, blogs, and new digital media enable communicative spaces that facilitate dialogue and public debate. The Habermasian (1962) envisioned public sphere, understood as the construction of political will through the exchange of information and ideas, and through dialogue and public discussion (Colleoni, Rozza, & Arvidsson, 2014; Dahlgren, 2005; Jurguen Habermas, 1991; Terren & Borge, 2021), aligns with the new media capabilities and promise. Online media, social media platforms, political blogs, and a variety of digital new media are active players in the mediatic agenda (Camacho-Markina, Pastor, & Urrutia, 2019; Dang-Xuan, Stieglitz, Wladarsch, & Neuberger, 2013; Meraz, 2009, 2014; Soler & Micó Sanz, 2019; Vargo, 2018; Vargo & Guo, 2017; Weimann & Brosius, 2017). Moreover, they provide the means for the citizens to be more involved in the informational sphere (Feezell, 2018). The citizenship, now conceptualized not only as consumers of information, but also as *produsers* and *prosumers* (Deuze, 2011), have more access and play an active role in the selection of the contents they consume (Feezell, 2018), as well as in the access, dissemination, and even in the construction of the information itself (Dylko & Mccluskey, 2012; Feenstra & Casero-Ripollés, 2014). Today, any person that has the possibility to have a smart device and internet, can upload and share events, facts, and opinions that would have never seen the light of day, which are now part of the news scene without the possibility of being filtered by former gatekeepers (Mccombs, 2002; M. E. McCombs & Shaw, 1972).

Much has been researched and written about the potential of digital democracy and its ability to horizontalize hierarchies and generate greater transparency (Lasorsa, Lewis, & Holton, 2012). Digital media eases the acquisition of political information, reduces the cost of participation in the public political debate, makes it easier to organize political mobilization (Anduiza, Cantijoch, & Gallego, 2009; Casero-Ripollés, Andreu; Yeste, 2014), and facilitates accidental exposure to various points of view and beliefs from different people around the globe (Terren & Borge, 2021). This way, the political and informational ecosystem has been enriched by the emergence of new voices and players (Puigbò, Sánchez-Hernández, Casabayó, & Agell, 2014) who do not necessarily come from traditional elites, which is the case of the new figures of influencers, bloggers, activists, or ´techies´ (Ausserhofer & Maireder, 2013). These movements in the informational and political scene were the basis for the renewed hope for the emancipation of

former gatekeepers and power elites, and the construction of a more democratic public sphere (Colleoni et al., 2014; Shirky, 2008).

However, such emancipation encountered challenges. Traditional gatekeepers and agenda-setters have lost part of their capacity to filter and direct which contents are public and which concentrate the spotlight (Camacho-Markina et al., 2019; Dang-Xuan et al., 2013; Guo & Vargo, 2017; Meraz, 2009, 2014; Soler & Micó Sanz, 2019; Tran, 2014; Vargo, 2018). However, several studies have shown that they not only still impact the process of generating the media agenda and public debate (Harder, Sevenans, & Van Aelst, 2017; Soler & Micó Sanz, 2019; Tran, 2014), but also, new gatekeepers have entered the scene. An unexpected new actor is now part of the construction of the agenda: algorithms and algorithmic recommendations. Today, what is censored or what is viral falls in the hands of private companies, their development teams, and their very private algorithms (Bogost, 2015; Finn, 2018), with the promise of always serving the interests of users (Bogost, 2015; Finn, 2018; Lucidspark, 2022; Nick Babich, 2020; Rocío Belfiore, 2021), although repeatedly showing biases, prejudices, and the reproduction of mechanisms of social power, inequalities, racism and sexism (Beer, 2017; Bogost, 2015; Finn, 2018; O'Neil, 2017).

On social media, it has been detected that the members of classical elites, such as politicians and journalists, tend to interact and follow prominently colleagues and other opinion leaders (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; Fincham, 2019; McGregor & Molyneux, 2018; Molyneux, 2015; Usher, 2018). The principle of homophily, which states that similarity produces connections more easily and at higher rates (McPherson, Smith-Lovin, & Cook, 2001), has been observed in a variety of populations and applies to all types of relationships; from friendships and couples, to work associates (Bisgin et al., 2012; Kossinets & Watts, 2009; Lauw, Shafer, Agrawal, & Ntoulas, 2010; Rogers & Bhowmik, 1970). Moreover, when the elites follow this principle, they can lead to the generation or perpetuation of echo chambers, where those who have power are broadcasted and amplified by others who also have power (Bruns & Highfield, 2013; Colleoni et al., 2014; Fincham, 2019; Hanusch & Nölleke, 2019). This thesis seeks to analyze the behavior of the Spanish elites online in order to learn if they tend to reproduce homophilic tendencies that could lead to a stratified attention of those who hold power.

Moreover, previous research has postulated that male politicians and journalists tend to interact almost exclusively with other leaders and male peers (Hanusch & Nölleke, 2019; Usher, 2018). Taking this into account, added to the long-lasting patterns of media underrepresentation and stereotyping of women (Collins, 2011; De-Caso-Bausela, González-de-Garay, & Marcos-Ramos, 2020), and to the underrepresentation of women in power positions in general, in the media, in the political sphere, and in the elites (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Djerf-Pierre, 2007; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011), one of the focuses of this thesis is to analyze the space that women have among the Spanish elites. Digital social media helped to raise new voices (Coleman & Blumler, 2009), and among them, women and dissidences found a way for expression. But is this reflected among the accounts followed by the Spanish elites? Do media, journalists, and politicians behave in the same way in relation to women, or different behaviors towards women among the different elites can be found?

The present thesis studies the Spanish mediatic and political elites, understanding the elites from the perspective of those who hold stable positions at the top of the pyramid of hierarchical social and political institutions, and are, therefore, those who have the capacity to

make decisions that affect the rest of the population (Mills, 1956; Wedel, 2017). Are the Spanish media, journalists and politicians using social networks with an emancipatory perspective, giving space to the citizenship and new voices? Or are they using them as echo chambers? Do they portray the characteristics of old agenda-setting patterns in which journalists and politicians engage in a dialogical co-creation of the public and political debate?

In this thesis, four Spanish elites were analyzed, composed of the 50 most followed generalist media in Spain on Twitter, the 50 accounts of the most followed media directors in Spain on Twitter, the 36 media directed by the most followed media directors, and the 97 accounts of the deputies who coincided in the Spanish parliament between 2017 and 2020. The 50 accounts that each elite started following as a network every of the studied years was analyzed, studying a total of four elites, composed by 233 journalists, media and politicians, and the 464 Twitter accounts followed by these elites.

The accounts that users follow on a social network are determinant of both the content and information to which they are exposed, as well as the accounts that are algorithmically suggested to them (Gupta et al., 2013; Twitter, 2019a). Therefore, the accounts followed by elites are likely to be more frequently recommended to their followers. Considering that the elites analyzed in this thesis are composed of the most followed media, and journalists, and the elected deputies, the accounts followed by them will tend to have high visibility on the network. Reason why this thesis focuses on analyzing the accounts that the elites started following, an aspect that has not been previously explored among the Spanish political and mediatic elites.

This study analyzes data of the elites on the social media platform Twitter, as it is considered a political tool and network (Conway & Wang, 2015; Fernández Gómez et al., 2018; Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018), which has a major role in political communication campaigns (Alonso-Muñoz, Marcos-García, & Casero-Ripollés, 2016; Usher, 2018; Valera-Orda, Calvo, & López-García, 2018). It has also been described as a news source, an information service, and as an informational network (Kramer, 2010; Verweij, 2012). Twitter is not the most popular platform regarding active users, but it is the journalist´s preferred social media (Graham, Jackson, & Broersma, 2016; Harder et al., 2017; Hermida, 2010; Lasorsa et al., 2012; Soler & Micó Sanz, 2019), as it is the one where most world leaders and politicians can be found (Bengoechea, Muñoz, & Guardia, 2019; K. Smith, 2020). More specifically, more, than 90% of the Spanish deputies are users of the microblogging platform (Haman & Školník, 2021). The fact that the journalists and politician´s preferred social media platform (Alonso-Muñoz et al., 2016) is not where most of the citizen active users are, may be understood as a hint of whether the elites use Twitter in an homophilous way and as an echo chamber, or at least it proposes one of the bases for the hypothesis of this thesis.

1.1 Research goals

The present thesis aims to contribute to the understanding of the new dynamics in the relationships between the Spanish mediatic and political elites and the citizenship, in the context of social media and digital communication, with a gender perspective. The research seeks to find out whether the elites reproduce homophilic tendencies in the online sphere and therefore use social media, specifically Twitter, as an echo chamber of the elites, or if they use these networks to boost democratic debates and the public sphere, giving room to new voices, with a specific look at the space of women and dissidences.

This research is exploratory, meaning that data is extracted for analysis to search for patterns that may bring new insights into the types of accounts that elites began to follow and their characteristics. The aim is to find out whether the elites began to follow mainly members of the same or other elites, such as journalists, media and politicians, or if they started following citizenship accounts. The study also seeks to detect whether these accounts belong mostly to institutions and organizations or to individuals/citizens and to analyze the geographical location, to find out if they tend to follow co-terranean accounts, opting for geographical proximity. It also pursues to explore the number of followers of the accounts that the elites started to follow, as well as to identify whether the accounts they started to follow are gender balanced or if they mainly follow accounts of a specific gender.

1.2 Specific objectives

Specific objective 1
To comprehend the space that women and dissidences have among the accounts that the elites started following on Twitter in Spain.

Specific objective 2
To understand if the media managed by the most followed media directors on Twitter tend to reproduce their director´s behavior regarding the Twitter accounts they started to follow.

Specific objective 3
To understand whether the most followed Spanish generalist media on Twitter reproduce homophilic tendencies regarding the Twitter accounts they started to follow.

Specific objective 4
To understand if the most followed Spanish media directors on Twitter reproduce homophilic tendencies regarding the Twitter accounts they started to follow.

Specific objective 5
To understand if the members of the Spanish parliament reproduce homophilic tendencies regarding the Twitter accounts they started to follow on Twitter.

1.3 Research questions

What types of accounts did the media, journalists, and politicians begin to follow?
Do Spanish elites reproduce homophilic tendencies on Twitter?
Which countries do the accounts belong to? Do they start following accounts from outside of Spain?
What is the space of women and dissidences among the Spanish power elites on Twitter? Is there a gender balance in the accounts followed by the mediatic and political Spanish elites?

1.4 Hypothesis

The central hypothesis of this thesis is that the Spanish mediatic and political elites tend to homophily regarding the accounts they started following on Twitter. Even though the internet and digital social media enabled new dynamics between the elites and the citizenship, allowing new voices in the political sphere, as well as weakening traditional filters and gatekeepers, the elites tend to homophily by following accounts that are similar to their own, resulting in the use of Twitter as an echo chamber.

1.5 Main contribution and singularity of the research at hand

This thesis explores power elites in social networks with an eye on whether their use of digital social media goes in the direction of a more diverse, transparent and democratic public sphere, or whether, on the contrary, they engage in homophilic behaviors in which echo chambers are formed and reproduced online by those in positions of power. Previous studies have approached this thematic area from different perspectives (Casero-Ripollés, 2021; Cervi & Roca, 2017; Coesemans & De Cock, 2017; Guerrero-Solé & Perales-García, 2021; Suau-Gomila, Pont-Sorribes, & Pedraza-Jiménez, 2020). However, the analysis of the mediatic and political elites in Spain and in relation to the accounts that these elites began to follow on Twitter carried out in the present research, presents a new approach that contributes to the advancement of knowledge in the area.

        The methodology of this thesis also provides elements that make a contribution, given that on the one hand, communications research using big data and quantitative social media data analytics methods are still scarce, as opposed to the majority of mass media and communications studies that use methods like content analysis and surveys (Bail, 2014; Batrinca & Treleaven, 2015; Felt, 2016; Gandomi & Haider, 2015; S. C. Lewis, Zamith, & Hermida, 2013; Zeng, Chen, Lusch, & Li, 2010; Zimmer & Proferes, 2014). Moreover, a specific procedure and categories were developed for this research. Following the path traced by previous studies that used quantitative methodologies, and studies where methodologies that mix manual and computational methods can be found (Batrinca & Treleaven, 2015; Dodge, 2005; Dubois & Gaffney, 2014; Kwak, Lee, Park, & Moon, 2010; Mahrt & Scharkow, 2013; Pérez-Curiel & Limón Naharro, 2019; Vogt, Vogt, Gardner, & Haeffele, 2014), a specific methodology was developed, which was endorsed by peer reviewed indexed journals. The first article was sent to a scientific journal that was in the first quartile of Scopus and that was also in JCR, in order to have a solid endorsement to apply this methodology throughout the different chapters of the thesis. The first study, carried out with the

most followed generalist media on Twitter in Spain, was endorsed by the journal American Behavioral Scientist, which is first quartile of SJR in *Sociology and Political Science*, *Social Science (Miscellaneous), Cultural Studies* and second quartile in *Education and Social Psychology*, as well as second quartile in *Social Sciences, Interdisciplinary* and third quartile in *Psychology, Clinical* in the JCR ranking. In the case of the second study, conducted with the most followed media directors on Twitter in Spain, it was decided to send it to a peer-reviewed journal in the field of Information Technology, since the methodology involved the use of an artificial intelligence and machine learning system, so a strong endorsement in this field was also sought. The study was approved by Advances in Intelligent Systems and Computing, which is in the third quartile in *Computer Science (Miscellaneous*) and fourth quartile in *Engineering* in the SJR ranking.

In this thesis it was also sought to include a gender perspective by studying the space that women have in these elites and among the accounts that they began to follow. The non-binary gender dimension was also included, a dimension that is still scarce in many academic studies in various disciplines (Bittner & Goodyear-Grant, 2017; Medeiros, Forest, & Öhberg, 2020; Westbrook & Saperstein, 2015). Although there are more and more studies that include the gender perspective (Medeiros et al., 2020; Richards et al., 2016a; Shor, Van De Rijt, Miltsov, Kulkarni, & Skiena, 2015; A. N. Smith et al., 2013; Thelwall, Thelwall, & Fairclough, 2021; Tous-Rovirosa & Aran-Ramspott, 2017), there is still a long way to go in this area. In many cases, these are either studies on gender issues, or this dimension is left to one side. In this study, which is not a thesis on gender per se, this perspective was sought to be included transversally, taking into account that power issues cut across gender matters from the core, and therefore, when carrying out a study on elites, it is of vital importance to include this perspective and dimension.

1.6 Publications

Publication 1
Israel-Turim, V., Micó-Sanz, J. L., & Ordeix-Rigo, E. (2021). Who Did the Top Media From Spain Started Following on Twitter? An Exploratory Data Analysis Case Study. American Behavioral Scientist, 65(3). https://doi.org/10.1177/0002764220979784

The first publication of the thesis analyzes the accounts that the group of most followed generalist media from Spain began following on Twitter.

Abstract

The digital sphere and social media platforms have prompted new logics regarding information access and influence flows among media, politicians, and citizens. In this exploratory study, via a machine learning software and with data visualization methods, we analyzed social media data in order to find patterns that can contribute to comprehend the new dynamics of influence between the media, politicians, and citizenship in the context of social media and digital communication, specifically on Twitter. We analyzed who the top 50 Spanish generalist media with most followers started following in 2017, 2018, and 2019 on Twitter, the quintessential informational network. To do so, we melded data visualization computational and manual methods. We used an artificial intelligence big data analysis software to visualize the network of media from Spain in order to identify the sample. Afterward, we extracted the top followed accounts by the sample and categorized them in types of accounts, institution/citizenship, country, number of followers, and gender, to proceed with the data visualization to identify trends and patterns. The results show that these media accounts started following mainly accounts that belonged to male politicians from Spain. We could also spot among the years of the study an inversely proportional trend from the media that went from following mainly institutions to following a majority of citizens, and to start following more accounts with a smaller number of followers every year. The tendency to follow accounts from Spain that belong to men grew or remained a majority among the years of the study.

Quality index
Publisher: SAGE Publications Inc.
SJR. SCImago Journal & Country Rank
Q1 Sociology and Political Science
Q1 Social Science (Miscellaneous)
Q1 Cultural Studies
Q2 Education
Q2 Social Psychology
H-index: 108
Scopus cite rank: 3.2
JCR
Q2 Social Sciences, Interdisciplinary
Q3 Psychology, Clinical
Impact Factor: 2,558

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Software License: Josep Lluís Micó-Sanz;
Validation: Verónica Israel-Turim, Josep Lluís Micó-Sanz;
Formal Analysis: Verónica Israel-Turim;
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Visualization: Verónica Israel-Turim;
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Publication 2
Israel-Turim, V., & Micó-Sanz, J.-L. (2021). Who Are the Most Followed Following? A Data Analysis Case Study of the Accounts the Top Media Directors from Spain Started Following on Twitter. In Á. R. C. Ferrás & P. C. L.-L. T. Guarda (Eds.), Advances in Intelligent Systems and Computing 1331 Information Technology and Systems ICITS 2021, Volume 2 (Vol. 2, pp. 219–229). Cham, Switzerland: Springer.

The second publication of the thesis analyzes the accounts that the group of most followed media directors from Spain began following on Twitter.

Abstract
Social media is transforming Journalism, fading the traditional media and political information access monopoly. In order to discern the new dynamics among Media Directors in relation to other influence groups such as politicians, media and the Citizenship, we searched for patterns via a Machine Learning software to explore big data we then analyzed using data visualization methods. The accounts each user follows on Twitter play a fundamental role in the content to which they will be exposed. Reason why we analyzed who the top 50 followed Spanish Media Directors started following on Twitter from 2017 to 2019 and categorized the accounts in Types of accounts, Institution/Citizenship, Country, Number of followers and Gender. The results of this study show that the most followed Media Directors from Spain started following a majority of Spanish journalists and politicians, despite the fact that the Citizenship is thought to have acquired a more relevant role in the informational process due to digital platforms. On the other hand, results also indicate that Medium-Influencers are the trend among Media Directors, who also present a gender balanced pattern regarding the accounts they began to follow.

Quality index
Publisher: Springer Science and Business Media Deutschland GmbH
SJR. SCImago Journal & Country Rank
Q3 Computer Science (Miscellaneous)
Q4 Engineering
H-index: 48
Indexed in
zbMATH

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Publication 3
Israel-Turim, V. & Micó-Sanz, J. L. (2022). Media, politics and citizenry. The Twitter accounts that the Media and their Directors started to follow. Adcomunica.

The third publication of the thesis analyzes the accounts that the group of media directed by the most followed media directors from Spain, analyzed in the previous publication, began following on Twitter.

Abstract
Digital platforms have transformed the influence streams among media, journalists, politicians and the citizenship, as well as concerning gatekeeping and agenda setting (Casero-Ripollés, 2021; Guo & Vargo, 2017; Wallace, 2018). Nonetheless, homophilic tendencies among power groups continue to be reproduced online (Maares, Lind, & Greussing, 2021; McPherson et al., 2001). With the objective of contributing to the deepening of the understanding of the dynamics and influence flows online among power elites, we analyzed via a machine learning Software, the 50 accounts that the network of the most followed Media Directors in Spain began following and compared them with the accounts that the Media they manage started following. We categorized them in Types of accounts, Location and Gender, and analyzed the repetitions between the accounts they began to follow to subsequently work with data visualization methods in order to find trends and tendencies (Bail, 2014; Batrinca & Treleaven, 2015).
The results of this research indicate that some patterns of behavior differ between both networks, such as the gender and types of accounts they began following, whereas the location presented similar trends. The year where we can see the highest similarities corresponds to 2018, an electoral year in Spain, where both networks started following a majority of Spanish male politicians.

Quality index
Publisher: ASOC DESARROLLO COMUNICACION
Indexed in
Emerging Sources Citation Index, DOAJ, DIALNET
Evaluated in
LATINDEX. Catálogo v2.0 (2018)
Sello de calidad FECYT
Directory of Open Access Journals
ERIHPlus
LATINDEX. Catálogo v1.0 (2002 - 2017)
REDIB. Red Iberoamericana de Innovación y conocimiento científico

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Publication 4
Israel-Turim, V., Micó-Sanz, J. L., & Diez Bosch, M. (2022). Who Did Spanish Politicians Start Following on Twitter? Homophilic Tendencies among the Political Elite. *Social Sciences*, *11*(7), 292. https://doi.org/10.3390/socsci11070292

The fourth publication of the thesis analyzes the accounts that the group of members that coincided in the Spanish parliament began following on Twitter.

Abstract
Political communication has undergone transformations since the advent of digital networks. But do these new platforms promote interactivity and a public sphere with a more democratic political debate or do they function as echo chambers of the elites? In this research, we study the accounts that Spanish politicians started following on Twitter from 2017 to 2020, with the aim of understanding whether they reproduce patterns of homophilic tendencies or if they give space to new voices. To do so, we selected a sample with the deputies that coincided in the Spanish parliament during the four years of the study and through a big data and machine learning software, we identified the accounts they started following as a network and categorized them. We combined manual and computational data analysis methods and used data visualization techniques to look for patterns and trends. The results suggest that the Spanish political elites exhibit homophilic behaviors in terms of account types and geographic proximity and present a balance between female and male accounts. This study also suggests that the behavior of the political elite presented particularities during the electoral period, where we can observe an intensification of the homophilic patterns.

Quality index
Publisher: Multidisciplinary Digital Publishing Institute (MDPI)
SJR. SCImago Journal & Country Rank
Q2 Social Science (Miscellaneous)
H-index: 27
Scopus cite score: 3,4
Indexed in
Emerging Sources Citation Index, Scopus, DOAJ, Index Islamicus

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Data Curation: Verónica Israel-Turim;
Writing:
      Original Draft Preparation: Verónica Israel-Turim;
      Writing: Verónica Israel-Turim;

Review: Miriam Diez-Bosch and Josep Lluís Micó-Sanz;
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PART II. METHODOLOGY

The methodology utilized in this thesis is quantitative social media data analysis. This line of research has gained relevance in the past few years in several areas such as the private sector (Khamis, Ang, & Welling, 2017), Public health (Dredze, 2012; Jacobson, Gruzd, Kumar, & Mai, 2019; Merchant, South, & Lurie, 2021), the political sphere, and the Academia (Bail, 2014; Gandomi & Haider, 2015; Stieglitz & Dang-Xuan, 2013; Zeng et al., 2010). Within the latter, it has gained significance in the most diverse areas and specialties, ranging from psychology to physics, including sociology anthropology, marketing, computer science, mathematics, communications, and so forth (Gandomi & Haider, 2015). One of the reasons is the fact that social network data is considered one of the most powerful and real-time collections of evidence of human behavior (Batrinca & Treleaven, 2015). Within the scope of the quantitative social media data analysis, in this thesis a particular methodology was developed in order to analyze the accounts that different power elites began to follow as networks. The accounts that media and political elites began to follow on Twitter were analyzed and a categorization that allowed the visualization of different dimensions of homophily was developed to understand the dynamics among power elites, their relationship with citizens, and the dimensions in which they present more homophilic traits.

Twitter research

Twitter enables the access to large amounts of digital data (Williams, Terras, & Warwick, 2013; Zimmer & Proferes, 2014), which is one of the reasons for its popularity in many research fields, along with the fact that it has such a relevant role in political and informational processes (Conway & Wang, 2015; Fernández Gómez et al., 2018; Kramer, 2010; Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018; Verweij, 2012). Twitter research has grown in the past years (Felt, 2016; Zimmer & Proferes, 2014). To date, there is a wide range of Twitter and other social media quantitative data-based studies (Dubois & Gaffney, 2014; Kwak et al., 2010; Pérez-Curiel & Limón Naharro, 2019; Skogerbø, Krumsvik, Skogerbø, & Krumsvik, 2015). Nonetheless, research in Communications using quantitative social media data analytics methods is still limited, as most mass media and communications studies use methods like content analysis and surveys (Díaz Noci et al., 2009; Felt, 2016; Zimmer & Proferes, 2014). Several researchers argue that the use of big data and social network data analysis in social science and communication research, which is still infrequent, is of great relevance (Bail, 2014; Batrinca & Treleaven, 2015; Felt, 2016; Gandomi & Haider, 2015; S. C. Lewis et al., 2013; Zeng et al., 2010). This is so, as big data is data that by being collected, added, and crossed, allows the obtention of new data (Pérez-Soler & Micó-Sanz, 2015), which enables the creation of new knowledge. Its value relies on what can be extracted and learned from it (Mayer-Schönberger & Cukier, 2013; Provost & Fawcett, 2013), and by searching big scale patterns, tendencies can be found, which allow the generation of comprehensive information about the relationships among social actors (Bail, 2014; Felt, 2016).

Social network analysis, has also experienced a surge in popularity within Twitter research across a wide range of disciplines, as it provides explanations for social phenomena (Borgatti, Mehra, Brass, & Labianca, 2009; Cormode, Krishnamurthy, & Willinger, 2010; Jacobson et al., 2019; Williams et al., 2013). "Social network analysis is the analysis of systems of social relationships represented by networks" (Carrington, 2011) p.4. It constitutes a specific application

of the graph theory, which can be used to note the direction of the lines between nodes, influence flows, the strength of the links, or show asymmetric relations between people, organizations or any group of interest (Carrington, 2011; Dang-Xuan et al., 2013). In this thesis, an analysis of four networks corresponding to different power elites is conducted, as well as the analysis of influence flows in terms of the accounts they started following in the given periods between 2017 and 2019 in the case of the first three samples, and between 2017 and 2020 in the case of the fourth sample, with the aim of understanding if the accounts they follow show patterns of homophilic behavior.

Through a variety of methods that utilize digital trace and/or self-reported data, Twitter research on public sphere and echo chambers has mainly focused on content exposure and interactions (Terren & Borge, 2021). Echo chambers among elites were studied between Catalan politicians, analyzed through the perspective of their retweeting and mentions networks (Del Valle & Bravo, 2018), and Spanish elites have been studied via the analysis of the hyperlinks shared by media and politicians (Franch & Micó, 2021). Twitter studies have approached Political communication in different research areas like the use of the platform in socio-political events and the use that the public, political parties and politicians give to this network (Chamberlain, Spezzano, Kettler, & Dit, 2021; Jungherr, 2016). Other Twitter research in Spain include influence analysis, through the study of connections among politicians and media profiles (Suau-Gomila et al., 2020), or by the identification of digital authority and influential actors in the political sphere (Casero-Ripollés, 2021); the analysis of political leaders uses of the platform (Cervi & Roca, 2017); and the investigation of politicians´ self-referencing linguistic strategies (Coesemans & De Cock, 2017). Furthermore, previous studies on Twitter in Spain have researched gender gaps between politicians, presenting how there are differences between the attention and amplification received by Twitter´s political arena (Guerrero-Solé & Perales-García, 2021), the disparities in the language use between politicians of different genders (Beltran, Gallego, Huidobro, Romero, & Padró, 2021), and the variations that women and men from the different Spanish parties present when tweeting about feminist matters (Fernández-Rovira & Villegas-Simón, 2019).

This thesis focuses on the analysis of the accounts that different Spanish elites started to follow, with the aim of contributing to the understanding of the use that elites make of Twitter in Spain, with a gender perspective. As stated, elites on Twitter have been previously explored (Beltran et al., 2021; Borge Bravo & Esteve Del Valle, 2015; Casero-Ripollés, 2021; Cervi & Roca, 2017; Coesemans & De Cock, 2017; Del Valle & Bravo, 2018; Fernández-Rovira & Villegas-Simón, 2019; Jungherr, 2016; Stier, Bleier, Lietz, & Strohmaier, 2018; Suau-Gomila et al., 2020), though the dimension of homophily among elites on Twitter is still scarce (Esteve-del-valle, 2022). Moreover, the approach to this dimension through the analysis of the accounts that elites started to follow on Twitter has not been previously explored among the Spanish mediatic and political elites.

The samples of this research are constituted by diverse power groups, such as the media, the media directors, the media directed by the most followed media directors, and politicians, which comprise mediatic and political elites. Power elites are understood as the institutional hierarchies and decision makers that impact the citizenship (Larsen & Ellersgaard, 2017). The digital sphere opened the way for new voices to emerge, but traditional elites continue to exist, and this study looks into the behavior of these power groups to see if they give space to these up-and-coming citizen figures, to women and dissidences, or if they reproduce homophilic tendencies by following each other among peers and sustaining the power among those who traditionally had it.

There are three main methods to determine an elite in elite studies: the positional, the decisional and the reputational method (Best & Higley, 2017; Hoffmann-Lange, 1989), also categorized as reputational, structural, and the agency or decision-making approach (Scott, 1974). For pragmatic purposes, and considering theoretical reasons, it was decided to utilize the positional/structural path, as the positional method is one of the most broadly selected in the study of national elites (Best & Higley, 2017; Hoffmann-Lange, 1989; Larsen & Ellersgaard, 2017), and since the structural approach is considered one of the most robust approaches to research on power (Scott, 1974).

In this thesis different elites are studied, based on their position as an organization or within an organization. Every sample was selected according to the characteristics of the elite. For some of them, a combination of the positional and reputational models was employed (Best & Higley, 2017; Hoffmann-Lange, 1989). Every specific case is further explained in this same Methodology chapter. For future studies, it is suggested to extend these power groups to non-traditional influential elites, who do not have established positions, as these groups sometimes operate influencing diverse areas that impact the citizenry, and precisely because they do not have a hierarchical role conventionally associated with power, they lack public accountability (Wedel, 2017).

Method and data

The data used in this research was obtained through a machine learning big data analysis software developed for the project "Influencers in Political Communication in Spain. Analysis of the Relationships Between Opinion Leaders 2.0, Media, Parties, Institutions, and Audiences in the Digital Environment" called *Contexto.io*. The software allows to establish, search, and analyze contexts of information using Twitter user´s public digital footprints. A context in this software is considered to be a network composed of a group of interacting individuals and/or organizations operating as an ecosystem. Contexts are created with the Twitter accounts of their members. The system algorithmically organizes them by their relevance within the context. This machine learning system helped identify the different samples of elites using the traces they leave on the microblog and enabled the access to datasets containing Spanish media, media directors, and politicians' accounts on Twitter. In this software, there is a *Metrics* section that provides information on the number and variation of *followees*, *followers*, *tweets*, and *favorites* of the accounts of a context. Through this section, the accounts with the highest numbers of followers in each context can be identified. This section was utilized for the mediatic elites, where the most followed ones were extracted to create new contexts for each power group in order to analyze them as networks. These new contexts constitute the samples of each one of the publications of this thesis.

The resulting analyzed networks (samples) are the following:
1. 50 most followed generalist media from Spain
2. 50 most followed media directors
3. The media managed by the 50 most followed media directors
4. The elected politicians that coincided in the parliament between 2017 and 2020.

Sample 1: The 50 most followed generalist media from Spain

The first step was to explore a Spanish media context that contained a database with 290 media. The access to the data of the most followed ones was through the *Metrics* section of the *Contexto.io* software. These media were filtered, and the ones with generalist contents were selected. A manual double-check was performed to verify the number of followers of each Twitter profile. Both, traditional media accounts, as well as new digital media, compose this sample, as they all conform the ecosystem of the most followed generalist media from Spain on Twitter. Moreover, in accordance with the intermediate agenda setting theory, media influence media, especially prestigious media (Harder et al., 2017), which is why the most followed media was analyzed in this study, as the extent of their influence can reach, at least, other media and the general public, though they also affect the political actors, since it has been studied that journalists and politicians co-create public agendas and political debate (Davis, 2007). For the selection of this sample a combination of the positional and reputation methods (Best & Higley, 2017; Hoffmann-Lange, 1989) was selected, as they constitute the most followed generalist media organizations on Twitter in Spain.

Once a context is created, the software *Contexto.io* forms graphs by using different parameters to define the nodes sizes and distances, which are *Relations* between the accounts, *Communication, Common organizations* and *Predicted links*. The resulting sample network of the 50 most followed generalist Spanish media is the following:

Figure 1. Sample 1 - Most followed generalist media from Spain.
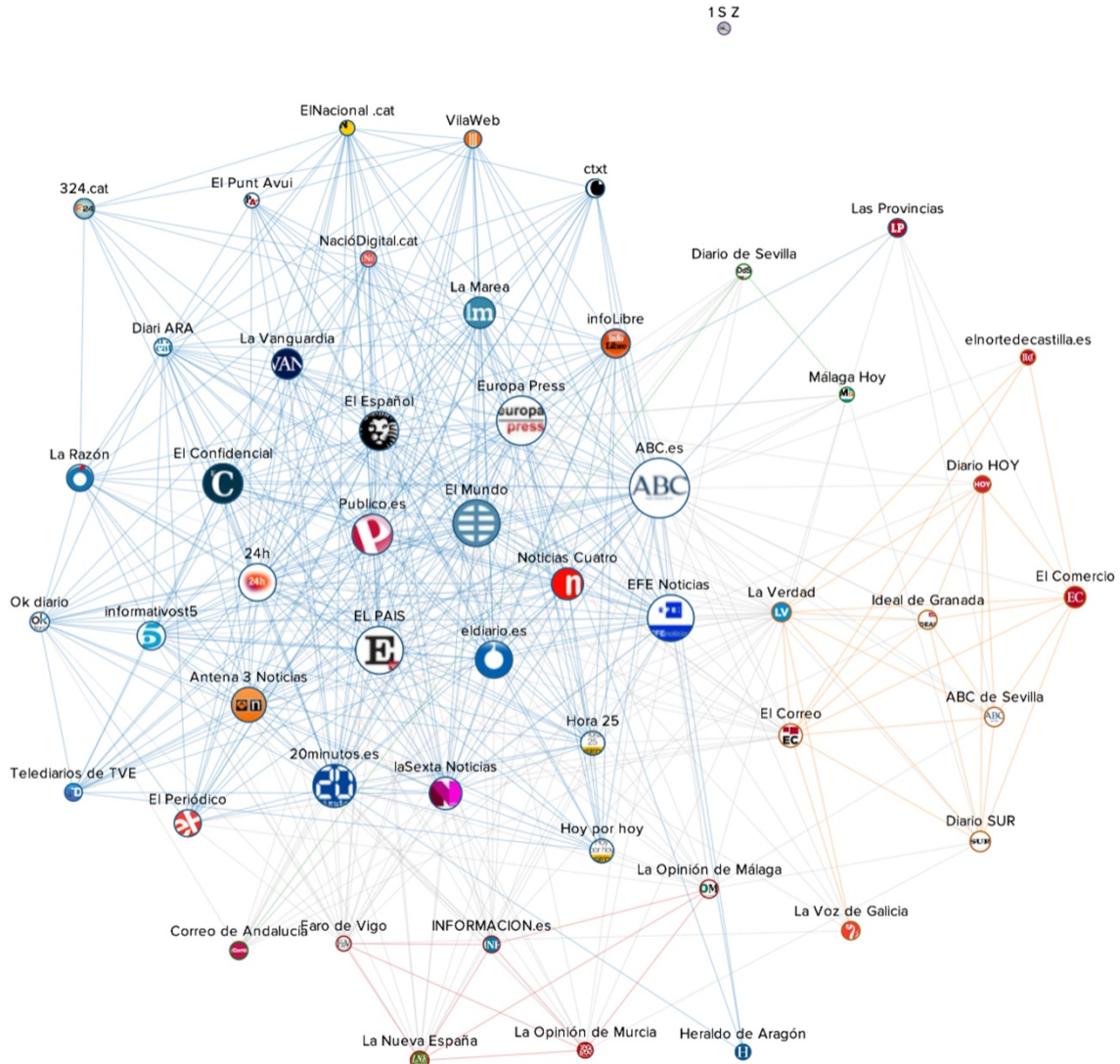
Sample 2: The 50 most followed media directors

For the second sample a media directors' context was used, integrated by 158 journalists and high media executives. The procedure carried out with Sample 1 was replicated. The *Metrics* section allowed the identification of the most followed accounts within the context, which were filtered and double-checked to verify the number of followers of each Twitter profile. The sample that corresponds to the group of most followed media directors in Spain on Twitter is constituted as follows:

The political and mediatic elites on Twitter

Figure 2. Sample 2 - Most followed media directors from Spain.
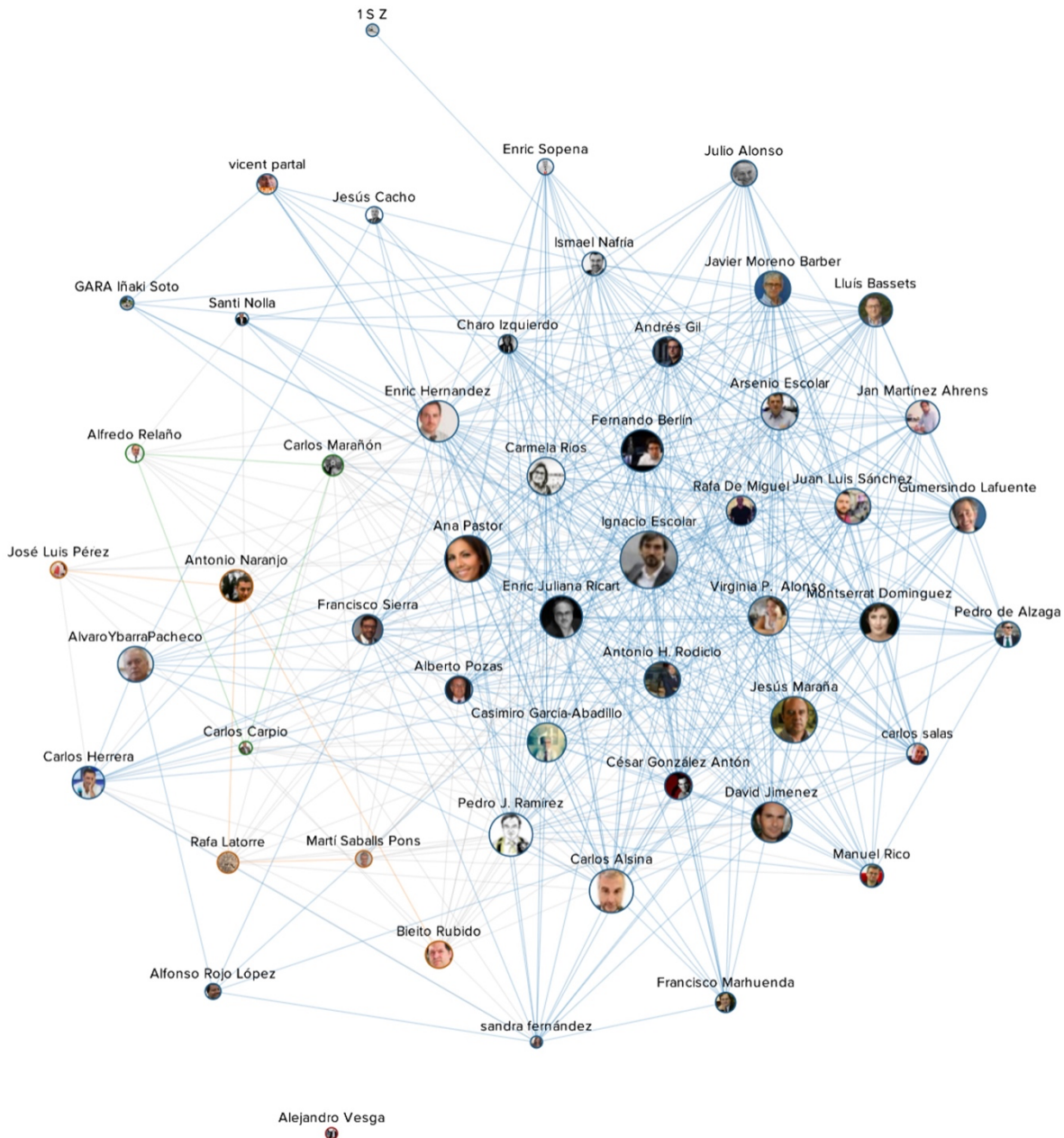
       The resulting sample is constituted by 10% women and 90% men. According to previous studies and reports, men hold more than a 70% of the managerial positions in media and news outlets, regardless of the fact that women hold higher levels of journalistic education (Byerly, 2011; De-Miguel, Hanitzsch, Parratt, & Berganza, 2017). This sample adds the level of being the most followed accounts by Twitter users, which does not necessarily represent the percentages of occupation of high positions. However, a correlation can be observed between the fact that traditionally the positions of media directors have been mostly occupied by men, and the fact that the most followed media directors on Twitter are predominantly men as well.

20

Sample 3: The media directed by the 50 most followed media directors

After analyzing the group of most followed media directors in Spain on Twitter, this research pursued the aim of comparing the accounts the group of media directors began to follow with the accounts of the media they manage, to comprehend if individual and organizational behaviors went in similar directions, giving a step deeper in the comprehension of the dynamics and influence flows among the media elites in Spain.

For this purpose, a new sample was constituted by the media institutions where these top 50 media directors work and have incidence. This new sample is composed by 36 media accounts, given that some of the previously analyzed media directors and executives work in the same media institutions. Once this new sample with the 36 media directed by the most followed media directors was determined, a new context was created using the software *Contexto.io*.

Figure 3. Sample 3 - Media managed by the most followed media directors in Spain.
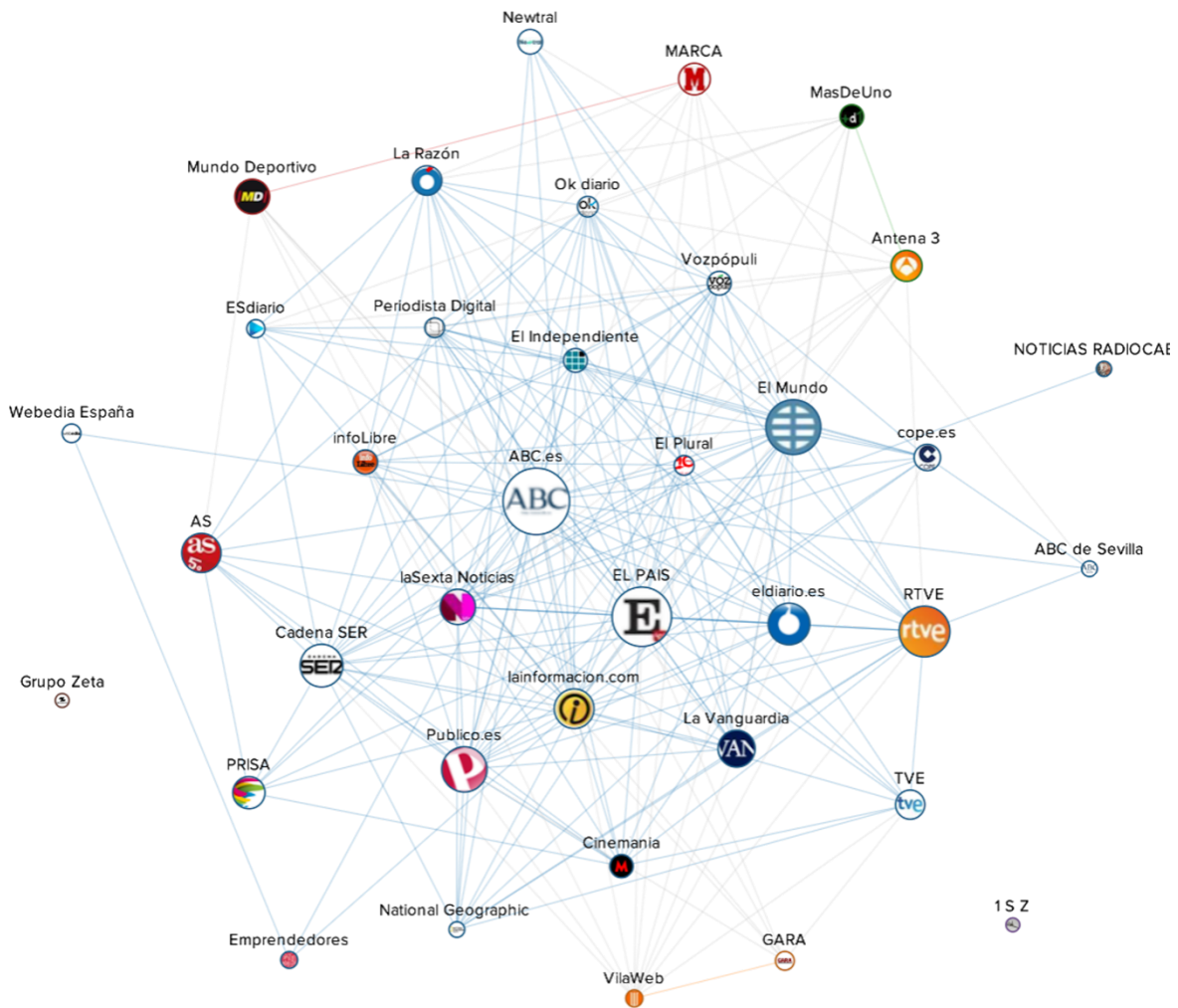
Sample 4: The members of the Spanish parliament

In the fourth sample, another power group traditionally related to the co-creation of the agenda along with the media elites was analyzed (M. E. McCombs & Shaw, 1972); the politicians. In order

to comprehend the behavior of the Spanish politicians on Twitter, regarding who they started following, a sample of deputies constituted by the ones that coincided in the parliament during the studied period, which covered the four years from 2017 to 2020, was created.

For the establishment of this sample, the positional/structural method was selected. Considering that this study is a first approach to the political homophilic tendencies regarding the accounts that the Spanish political elite began following, the most suitable methodological approach seems to be to select the sample taking into consideration its formal position of power in the society, which is the case the deputies that constitute the Spanish parliament. Consequently, this sample embodies an elite with a clear delimitation that can provide an approximation of the political elite in Spain. The advantage of selecting this method, is to have the ability to comprehend how the Spanish elite operates as a group, as the cluster of decision-makers that hold positions of high impact on citizens lives. The members of the parliament are heterogenous as they come from different political parties with diverse political ideologies, they identify with different genders, have various nationalities, and even speak different languages. However, the political elite´s diversity has been conceptualized by authors as more apparent matter than real, considering that they share the membership to an elite in charge of central policy decisions (Best & Higley, 2017). In this line, the methodological approach of diverse previous studies where the political elite is analyzed as such was followed (D'heer & Verdegem, 2014; Putnam, 1976; Sjöberg & Drottz-Sjöberg, 2008; Verweij, 2012).

To define this sample, a database with all the deputies that formed the parliament between 2017 and 2020 was created, and the ones that coincided during the four studied years were selected. All the deputies who were part of the parliament for a shorter period were excluded from the study. Therefore, those who shared the four years of parliamentary duty were the ones selected for the analysis. Afterwards, the *Contexto.io* software was utilized to create a new context with the selected Spanish deputies. To do so, a manual search of each of the deputy´s Twitter accounts was performed, as the contexts in this software are created from Twitter accounts. The resulting context was composed by the 97 Twitter accounts of the deputies who coincided in the Spanish parliament between 2017 and 2020.

Figure 4. Sample 4 - Spanish Deputies that coincided in the Parliament from 2017 to 2020.

Once each sample was determined and their contexts created in the *Contexto.io* software, the accounts that the elites started to follow as networks in the different studied periods were analyzed. To access to this data, the *Expand* section of the software was used, as this section enables the visualization of the accounts that the contexts started to follow as networks. The accounts that the networks began following are displayed in order of popularity, which is calculated based on the percentage of users that began following each account within the context, presenting a percentage of coincidence. Specific periods of time can be selected, as well as the possibility of choosing to include or exclude the members of the context among the accounts they started to follow, or to visualize only the accounts that the samples started to follow from outside of the context (sample). In this thesis, the 50 accounts that the samples began to follow were

analyzed in and out-of-network in one-year periods, considering 2017, 2018 and 2019 in the case of Sample 1, Sample 2 and Sample 3, and adding 2020 in the case of Sample 4. Fifty accounts they started following were analyzed, as this number provided sufficient accounts to work on a categorization that could yield data of interest, while at the same time taking care of dispersion, which was generated when analyzing more than 50 accounts.

It is relevant to clarify that in this thesis the analyzed accounts were the ones the elites started following in the mentioned periods, not all the accounts followed by the networks, as this was not within the technical capabilities, and therefore this data was not available, and considering that the users start following and unfollow accounts dynamically.

After collecting the data of the samples and of the accounts they started following, the accounts the samples began to follow were categorized in order to proceed with the analysis. The followed accounts were classified in Types of accounts, Institution/Person, Country/Location, Number of followers and Gender. The criteria used in each category is detailed as follows.

Analyzed categories

Types of accounts

The accounts were categorized in: Political, Media, and Citizenship. The Political accounts are composed by Politicians, Political parties, and public institutions. The public institutions are included in the political category given that they can operate as political devices (Thoenig, 2003). A variety of views can be found on whether public institutions influence policy, or if it is policy that influences public institutions. For instance, Historical Institutionalism discards the notion of a hands-off, unbiased state that works disconnected from the political sphere (Thoenig, 2003). In the context of this theory, public administration is understood as a part of politics, proposing that politicians and policies frame and shape public institutions and not vice versa. However, sociological institutionalism proposes that institutions can determine the conduct of politics, since they structure and frame its action, affirming that bureaucracy shapes how a social group perceives and understand things (Thoenig, 2003). But Public Institutions may work according to how they were created, hence conceived, and how they developed through the years, which depends on the frame of those who created, directed, and worked in them. On its part, the cognitive dissonance theory (Festinger, 1957) postulates that people have the tendency to avoid the information they disagree with (Shaw, McCombs, Weaver, & Hamm, 1999), reason why it may be thought that when a social media user decides to follow (or not to follow) the different public institutions, it may imply their political position. This is why it has been observed a polarization on online social media, as users tend to have homophilic behaviors, engaging with content and other users that reinforce their prior opinions and beliefs (Christakis & Fowler, 2009; Katz, Lazer, Arrow, & Contractor, 2004; Lazarsfeld & Merton, 1954; Mcpherson & Smith-Lovin, 1987; McPherson et al., 2001; Perl, Wagner, Kunegis, & Staab, 2015). Nevertheless, a user or organization may decide to follow public institutions on social media, or any account they do not agree with, in order to monitor them or keep up to date with what they communicate. This might be particularly the case of power elites such as media and politicians, as they could follow accounts for informational or public relations reasons. Studying how the elites choose the accounts they start following on social media constitutes and interesting line for future research.

The Media category contains journalists and media institutions.

The Citizenship category is composed by Users (which comprise entrepreneurs, influencers, academics, specialists, artists, celebrities, activists, etc.), and Civil institutions (which include corporations, NGOs, civilian associations, etc.).

Institution/Person

The accounts were also categorized regarding if they belong to people or institutions. In the first papers this category was named "Institutions or citizens" but given the fact that there are many people not considered as citizens (Lewin-Epstein & Levanon, 2005), which is a phenomenon that impacts people living in Spain, among other countries (Maas, 2006), the name of this category was changed for the next publications, in order to include all human beings, regardless of political and bureaucratic definitions. Nonetheless, it can be suspected that the power elites do not tend to follow people that are not considered citizens. This line was not included in this investigation, but it is an interesting notion to further explore in future research.

Country/Location

The location is the place or precedence of the accounts expressed in each Twitter user account.

Number of followers

The number of followers of the accounts were categorized in five ranges. To create these categories, a search of previous literature was carried out, and then concepts proposed by several authors were merged, as a unanimous categorization could not be found. Some writers postulate that the accounts that have between 1.000 and 5.000 followers are nano-influencers, which they believe are growing in relevance (Agrawal, 2019; Maheshwari, 2018; Stokel-Walker, 2019). Others believe that accounts that have between 10,000 and 100,000 followers correspond to Micro influencers (Tankovska, 2020), and others believe this category covert the accounts with between 10,0000 and 50,000 followers (Lieber, 2018). Agrawal (2019) on his part, catalogues influencers in nano-influencers for those with between 1,000-5,000 followers; micro-influencers for the ones with 5,000-20,000 followers; midtier (20,000-100,000 followers); Macro for the accounts that have between 100,000 and 1,000,000 followers and mega-influencers for those with more than 1.000.000. Macro influencers have also been categorized as those with between 100,000 followers and 1,000,000 by Tankovska (2020), who introduced the term "icon" influencers for those with more than one million followers. Taking the aforementioned classifications into consideration, and taking into account that there are some points of agreement but not unanimity over the accurate number of followers that imply each category of influence on social media, the following classification was created:

Table 1. Number of followers categorization.

Non-influencers	<1000
Micro-influencers	1.001-10.000
Mid-influencers	10.001 – 100.000
Macro-influencers	100.001 – 1.000.000
Icon-influencers	>1.000.000

Source: self-elaboration.

The number of followers used in the analysis of this thesis corresponds to the time at which each study was conducted, not to the number of followers that the accounts had when the sample started to follow them, as this data was not accessible.

Gender

The accounts were categorized in Women, Non-binary and Men (Butler, 1988; Richards et al., 2016b), in order to understand whether the accounts the elites started to follow were gender-balanced, taking into account that women and dissidents endure a long tradition of underrepresentation in power positions and in media representations (Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Madsen & Andrade, 2018; Painter-Morland, 2011). This study aims to comprehend if the elites persisted in long-lasting patterns of inequality in the attention they provide women, such as the registered disproportional use of men as sources in comparison to the usage of female ones (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro, Corell-Doménech, & Camaño-Puig, 2019; Zoch & Van Slyke Turk, 1998), or the unequal representation in favor of men over women in the news and in the media (Armstrong, 2004; Armstrong & Gao, 2011; Caro González, García Gordillo, & Bezunartea Valencia, 2014; Len-Ríos, Rodgers, Thorson, & Yoon, 2005; López González, 2002; Shor et al., 2015).

Both sex and gender, which do not measure the same (Bittner & Goodyear-Grant, 2017), are commonly perceived as binary categories despite research showing that they are not. There is a percentage of the population that is born intersex or third sex (Carpenter, 2018), which is estimated to be close to the 1,7% (Amnesty, 2018), although since it is not yet measured in many studies it is difficult to determine the totality of this population. In the same vein, there are more gender identities other than men and women, such as genderqueer and non-binary (Richards et al., 2016b). In this thesis, following previous research that included identities that do not identify as women or men in a binary way, the accounts were classified in Women, Men, and Non-binary (Medeiros et al., 2020).

To perform this categorization, the gender with which the accounts in the sample identify themselves was used. To do this, it was analyzed how they describe themselves in their Twitter bios and if they did not make it clear, more information was sought online that clearly indicated how they identify themselves. Most of the analyzed accounts belong to Spanish or Catalan-speaking users, and these languages present gender differentiation. In this sense, it was easier to find out how they identify themselves, as the accounts where users described themselves with an adjective, whether it was their professional title, position in an institution, community of origin, or any other adjective used to describe themselves, was indicative of the gender with which the person identifies.

Table 2. Analyzed categories and subcategories.

Type of account	Political	Political Party
		Politician
		Public Institutions
	Media	Media Institutions
		Journalists
	Citizenship	Civil Institutions
		Users
Gender	Women	
	Men	
	Non-Binary	
Location	Spanish	
	Non-Spanish	
Number of followers	Non-influencers (<1000)	
	Micro-influencers (1.001-10.000)	
	Mid-influencers (10.001 – 100.000)	
	Macro-influencers (100.001 – 1.000.000)	
	Icon-influencers (>1.000.000)	

The members of each simple, as well as the categorization of the accounts they started following, can be found in Annex I where the datasheet with the members of each sample, and a categorization of them, can be found. In the case of Sample 1 and Sample 3, the categorization includes the name of the media, the Twitter user, number of followers range, the type of media they are, and the status. In the case of Sample 2 the categorization includes the media director name, the Twitter user, the number of followers range, their gender, and the status. Lastly, in the case of sample 4, the categorization includes the name of the politician, the Twitter user, the number of followers range, their gender, and the status of the accounts. It is relevant to clarify that some of the accounts studied were active or public at the time of the analysis, but at the date of the submission of the thesis they had changed their status. The status column in each table of the samples indicates the status of the account at the time of the submission of the thesis, with the clarification that all the analyzed accounts were active at the time of each analysis.

In Annex I the accounts that the samples began following can also be found. For the presentation of the accounts that the samples began following, a criterion of anonymization was employed, given that although the members of the analyzed samples are media and politicians, and therefore public figures, the accounts they began to follow are not necessarily so, and in order to respect their privacy an anonymization of the users was instrumented, making a numbered labeling that indicates whether the same account was followed in different years or by different samples. The categorization found in the datasheets of the accounts they started following is account (numbered and anonymized), number of followers range, category (political, media or

citizenship), subcategory, location, person/institution, gender, and year (which corresponds to the year in which the sample began following the account).

Once the accounts that each sample started following were categorized, graphics were generated in order to visualize possible patterns. Quantitative analysis was applied to the extracted data, which was crossed to work in data visualization in order to answer the research questions by exploring and identifying trends, patterns, and relationships (Batrinca & Treleaven, 2015; Dodge, 2005; Mahrt & Scharkow, 2013; Vogt et al., 2014).

Lewis et al. (2013) argue that blending computational and manual methods and melding different data analysis techniques may be the key to taking advantage of data without losing contextual implications (S. C. Lewis et al., 2013; Vogt et al., 2014), reason why the data of this research is analyzed by melding computational and manual analysis and by using data visualization to explore patterns that could help to view possible trends among the Spanish mediatic and political elites.

PART III. THEORETICAL FRAMEWORK

In this section, the conceptual framework of this thesis and the state of the art of research in the areas of knowledge that fall within the scope of this investigation are analyzed. This exploratory thesis focuses on analyzing the influence flows among power elites by searching and categorizing the accounts that these elites began to follow on Twitter. But why explore this specific research area? The following pages will seek to answer this question, considering as a starting point the premise that the advent of the Internet, the media, and social networks have impacted a wide range of social interactions. Digital culture is characterized by attributes such as globalization and the digital sphere, its social media platforms and new media, immediacy, and constant connection. All these transformations have impacted social relationships and, therefore, influence and power dynamics. The relationship between media, politicians and citizens has changed in the last decades due to digital disruption, web 2.0, the use of big data, and artificial intelligence. New hybrid media logics are emerging in relation to the flows of influence between politicians, the media, and the citizenry and in relation to the role that power elites traditionally had in gatekeeping and agenda-setting (Chadwick, 2017; Graham et al., 2016; Jenkins, 2008; Meraz, 2014; Stieglitz & Dang-Xuan, 2013; Vargo & Guo, 2017; Wallace, 2018; Weimann & Brosius, 2017). In this framework, the advancement of knowledge in the areas related to digital disruption, new media, the digital public sphere, and the different actors and their roles in these spheres will be explored.

Technology, media and social practices

With the internet and digital media, there is a technological convergence that breaks with the traditional boundaries between media, telecommunications, and information technology, which now converge in the Information and Communication Technology (ICT) sector (Albornoz & García Leiva, 2017). Communication was not a foresaw area related to computation devices. However, computers and software systems have become essential for nearly all types of personal and mass media communication (Fang, 1997) in such a way that they are referred to as "Computer-mediated communications" (Dankasa, 2016). Digital media differ substantially from traditional media. A vitally important point that is often overlooked is that most digital media are computational systems composed of data and algorithms, so software-based media can be conceptualized as algorithms and a data structure. Therefore, even though media and content have been understood as separated from data and informational software systems, it seems relevant to conceptualize them as a continuous dimension (Manovich, 2013). ICTs can be considered an object of study for social sciences and humanities, which analyze the uses and significances that people give to these technologies as well as the changes they facilitate or impulse in social, inter, and intrapersonal dynamics (Ardèvol, Estalella, & Domínguez, 2008). In this line, the advent of the internet and new digital media was received with a renewed hope for the regeneration and improvement of democracy, a more transparent public debate, and a revitalized public sphere. "This envisioned "digital democracy" would flatten old hierarchies, remove barriers to public input, and encourage greater transparency and accountability" (Lasorsa et al., 2012) p. 3. This type of hype could be observed in other communication innovations (Steensen, 2011), especially through the lens of technological and media determinism. If "the

media is the message" (McLuhan & Fiore, 2005), the new media that offered the possibility for every person to be connected and to have access to any information and content around the globe seemed promising.

Nonetheless, both the belief that technology determines the ways in which people act and the belief that technology mirrors social dynamics coexist. Technological determinism confers technology the ability to establish social behaviors. As a counterweight, there is the consideration that the agent of change is not the technology itself but the uses people make of it and the meaning they confer to them (Christine. Hine, 2004). The technological capabilities offered by different media enable a diversity of uses and, therefore, different social practices. At the same time, the discourse on digital media creation and design is to always have the users' practices and needs in mind (Lucidspark, 2022; Nick Babich, 2020; Rocío Belfiore, 2021), so there seems to be a dialogue between media and uses, adding functionalities when these become popular in other platforms, or removing them if they do not show user´s interest or interaction.

For example, cultural consumption has changed extensively since the digital disruption, which seemed to be liberated with new digital media and technologies. It is no longer the media that programs which songs, series, movies, or audiovisual content people should consume and when, but rather each person can choose what they want from among immense catalogs available at all times on streaming video-on-demand platforms. Access to an immense amount of content of all sorts and genres is now more accessible and cheaper, which can provide the possibility of getting in touch with content that users would never have reached before (Veronica Israel-Turim, 2018). In the same way, the digital sphere disrupted the relationship with information. Citizens can now access information and content that probably would have been filtered by media and power elites in the past. New media, such as social media platforms, online media, and political blogs, among others, have gained power and play a role in the media agenda (Camacho-Markina et al., 2019; Dang-Xuan et al., 2013; Meraz, 2009, 2014; Soler & Micó Sanz, 2019; Vargo, 2018; Vargo & Guo, 2017; Weimann & Brosius, 2017), and facilitate a setting where citizens can play an active role in the contents and information they consume (Feezell, 2018). Audiences, or the media receptors, even in the pre-digital mass media era, were understood as capable of criticizing and reading into content (Canclini, 1991; Morley, 1992). Moreover, with the advent of new digital media that enable more interactive functionalities, users are reconceptualized as *produsers* and *prosumers* (Deuze, 2011). Digital media facilitates an environment where users can have a more active role in the selection of the information they consume (Feezell, 2018), in its propagation, and in the production of the information itself. Nowadays, most people have a smartphone that allows them to record and spread through their social media accounts any event they witness. Therefore, information that perhaps a few decades ago would have never gotten published can now become public and viral without the filter of either the politicians or the mass media. Nevertheless, has the Internet really helped to improve the political debate and the public sphere? Have the traditional gatekeepers lost power in the agenda-setting process?

The online Public Sphere

The public sphere, as described by Habermas (1962) and reinterpreted by various authors a posteriori, is understood as a communicative space that allows for dialogue and public debate and the exchange of information and ideas, leading to the formation of political will (Colleoni et al., 2014; Dahlgren, 2005; Jurguen Habermas, 1991; Terren & Borge, 2021).

Digital media enable citizens to participate in a different manner in the political and public debate (Casero-Ripollés, Andreu; Yeste, 2014; Feenstra & Casero-Ripollés, 2014). Due to its characteristics, the Internet facilitates acquiring political information while reducing the cost of participation in the political debate, for example, by allowing anonymous participation (Anduiza et al., 2009). These platforms provide technical and technological bases that enable the population the ability to produce and generate information as well as consume it (Dylko & Mccluskey, 2012; Feenstra & Casero-Ripollés, 2014). Some aspects proposed by these new media can be considered optimistic regarding a diverse, participative, and democratic online public sphere, such as the way in which they enable access or accidental exposure to varied and diverse opinions and points of view from people all around the world, or the disruption of the elites´ control on the public debate and democratic dialogue (Terren & Borge, 2021). The increased contact to political discussion (Colleoni et al., 2014) led authors to restore their hope in the emancipation of the citizenship from traditional gatekeepers and the construction of a more democratic public sphere (Shirky, 2008). Moreover, the internet has also constituted a new space for political mobilization as it presents lower costs compared to other forms of organization, dissolves geographical boundaries, and decentralizes convocation to participate (Anduiza et al., 2009). Therefore, new figures of influence and new voices have emerged (Puigbò et al., 2014). These new figures do not necessarily belong to the classical elites and are now part of the informational and political ecosystem, such as influencers, bloggers, activists, and ´techies´ (Ausserhofer & Maireder, 2013).

Nonetheless, other aspects which are not as positive concerning a diverse public sphere have emerged. Some authors claim that digital media can lead to filter bubbles (Pariser, 2011), homophilic echo chambers (Bruns & Highfield, 2013; Del Valle & Bravo, 2018; McPherson et al., 2001), and polarization (Schuliaquer & Vommaro, 2020; Terren & Borge, 2021). Numerous authors devote their research to understanding whether indeed the online sphere and digital media support the development of a diversified and egalitarian public sphere or whether it works in the opposite direction (Borge Bravo & Esteve Del Valle, 2015; Bruns & Highfield, 2013; Colleoni et al., 2014; Del Valle & Bravo, 2018; Papacharissi, 2002; Terren & Borge, 2021). Authors claim that online, the communities aggregate themselves based on shared interests, whereas real-world interactions, based on geographical proximity, may force the encounter with diversity (Cass R. Sunstein, 2001). Nonetheless, on the one hand, polarization can also be observed regarding geography, as cities are becoming increasingly polarized, being neighborhoods on many occasions, a form of delimitation of social class, and even nationality, ethnicity, or race (Modai-Snir & van Ham, 2018). On the other hand, it has been shown that Twitter users tend to participate in geographically local networks (Ausserhofer & Maireder, 2013). Moreover, the proximity to the center of political power has been identified as an element that conditions the structure of the digital political debate (Casero-Ripollés, 2021).

Digital social media enables a more free space for information and communication between the citizenship, which aligns with the Habermasian (1962) public sphere vision. However, in order to really reach its potential, the exchange of dissimilar opinions should be more frequent, along with an ongoing healthy debate (Jürgen Habermas, 1962; Terren & Borge, 2021). And even though the digital realm has supported the public dialogue, there are many aspects where pre-existing power dynamics still prevail (Ausserhofer & Maireder, 2013). It seems like digital social networks tend to promote both a democratic and diverse public sphere, and the reinforcement of homophilic groups. Therefore, it can be said that they can be conceptualized as mutually a public sphere and echo chamber, depending on the use, as authors claim that, for example, on Twitter,

higher levels of homophily can be observed when used as a social medium. In contrast, when used as a news outlet notwithstanding social connections, they found lower levels of homophily and, therefore, a public sphere type of setting (Colleoni et al., 2014)**.**

Homophily

"Similarity breeds connection" (McPherson et al., 2001). According to the principle of homophily, connections between similar people occur at higher rates than connections among those who do not share common characteristics. (McPherson et al., 2001).

Homophilic behaviors have been observed in all sorts of relationships, from casual acquaintances to marriage and work partners (Bisgin et al., 2012; Kossinets & Watts, 2009; Lauw et al., 2010; Rogers & Bhowmik, 1970), and in the most diverse fields of human, and even animal interaction (Fu, Nowak, Christakis, & Fowler, 2012). Even though many studies researched this principle in offline connections, it has also been studied in the digital sphere (Bisgin et al., 2012), and research show that it applies as well to digital social media connections (Aiello et al., 2012; Bisgin et al., 2012; Dankasa, 2016; Lauw et al., 2010; Thelwall, 2009). According to some authors, in digital social networks, this phenomenon even gains strength as it is easy for users to find like-minded people beyond physical distances, enabling and enhancing communities that share ideologies or beliefs even if they are geographically disseminated (Cass R. Sunstein, 2001), which results in users following accounts and creating connections with those who are aligned with their perspectives and interests (Christakis & Fowler, 2009; Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001; Perl et al., 2015). This is explained by the theories of cognitive dissonance and selective exposure (Festinger, 1957), that claim that people tend to search and choose content aligned with their pre-existing opinions and beliefs instead of getting in touch with different or new perspectives (Christakis & Fowler, 2009; Himelboim, Mccreery, & Smith, 2013; Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001; Perl et al., 2015). Exposure to opposite viewpoints prompts political reasoning (Muradova, 2021), and confrontation can result in deliberation (Terren & Borge, 2021). However, it has been studied that people feel uncomfortable and stressed when exposed to divergent opinions and views. Meanwhile, they feel positive sensations when exposed to information that confirms their beliefs, reason why they tend to choose to expose themselves to content and people they agree with (Cass R. Sunstein, 2001; Lazarsfeld & Merton, 1954).

For instance, when the principle of homophily is applied in the political sphere, and people are selectively exposed to political and partisan content, it has been studied that this leads to polarization (Stroud, 2010). Likewise, when the elites perpetuate this principle on social media, it can lead to the production of echo chambers, where the voices of powerful users are amplified, increasing their power (Bruns & Highfield, 2013; Colleoni et al., 2014; Fincham, 2019; Hanusch & Nölleke, 2019). Indeed, it has been shown that politicians tend to dialogue among themselves (Ausserhofer & Maireder, 2013), and political journalists have shown a tendency to interact with other political journalists (Fincham, 2019), as well as politicians and journalists (Ausserhofer & Maireder, 2013; McGregor & Molyneux, 2018; Molyneux, 2015; Usher, 2018). Homophilic echo chambers have been found in several parliaments, including the Catalan parliament (Del Valle & Bravo, 2018). Nonetheless, the studies of homophily among online mediatic and political elites are still scarce (Esteve-del-valle, 2022), and there is a lack of knowledge regarding the behavior of these Spanish elites on Twitter.

On social media, it has been observed that members of the elites, such as journalists and politicians, tend to interact and follow almost exclusively with other opinion leaders, politicians, and journalists (Bruns & Highfield, 2013). In this context, the present research seeks to understand the case of the Spanish media and political elites on Twitter. Are the Spanish deputies, media, and most followed journalists interacting with the citizenship online, or do they tend to follow each other?

There are many possible dimensions of homophily, such as geographical location, age, social class, sex, gender, race, sexual orientation, ethnicity, religion, network position, or beliefs (Lazarsfeld & Merton, 1954; McPherson et al., 2001). This thesis analyzes whether the Spanish elites started following mainly political and media accounts, which represent others with the same socio-political status or role in the society (Mcpherson & Smith-Lovin, 1987), or if they began to follow citizenship accounts, as previous research has stated that the political and mediatic elites have presented a tendency to interact with colleagues and members of other elites (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; Hanusch & Nölleke, 2019; McGregor & Molyneux, 2018; Molyneux, 2015). Whether they started following accounts from diverse geographical areas was also considered, as geographical proximity is a recognized form of homophily, shown to be replicated in online connections (Ausserhofer & Maireder, 2013; Casero-Ripollés, 2021). This thesis also seeks to understand if there is a gender balance among the accounts the elites began to follow, as there is a vast amount of bibliography accounting the persistent off and on-line gender inequalities in politics and the media (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011).

The elites

"The study of elites is the study of power and inequality" (Rahman Khan, 2012) p. 361. From Plato and Machiavelli, many thinkers and theorists have raised the issue of power elites within society over the centuries. Nonetheless, the emergence of the term elite is located in France in the seventeenth century, where it was used to refer to products that were exquisite or premium. Later, its use was extended to refer to the belonging to a social group that has a quality of superiority, and in the social sciences, the term began to be used in the 19th century (Korom & Planck, 2015).

There are a vast number of definitions and delimitations of the power and political elites (Zuckerman, 1977). Classical elite theorists sustain that societies are ruled by a minority, and that social change relies on these elites, not in the majorities or masses (Korom & Planck, 2015). Mosca (1939) proposed that there are two classes of people; the ones that rule and those who are ruled. Following Mosca´s line of a minority that rules the majority, Pareto describes the elites as those who hold the highest ranking within their social activity (Pareto & Vilfredo, 1935).

For more than a century, based on Weber´s model, elites have been conceptualized from the perspective of stable positions at the top of the hierarchical institutions and spheres, constituted by fixed groups that reproduced or recruited their members based on wealth, contacts, education, family or social class (Wedel, 2017). Power elites have been defined as people with the position to make decisions that impact other persons´ lives by being in command of the most relevant social hierarchies and organizations (Mills, 1956). They have also been outlined regarding their access to resources, as "those with vastly disproportionate control over or access to a resource" (Rahman Khan, 2012) p. 361. Therefore, elites can be understood as the small

groups that rule the larger society (Rahman Khan, 2012), the ones who have a distinguished political influence (Roberts, 1971).

Elites can also be conceptualized under Meisel´s (1958) theory of the 3Cs, which stand for group consciousness, coherence and conspiracy amongst those who integrate a power group (Korom & Planck, 2015; Meisel, 1958; Zuckerman, 1977). Elites can be heterogeneous in terms of party affiliation, gender, age, origin, among other variables, but are homogeneous in terms of the social role they occupy. The plurality and diversity of the individuals and groups that make up the elites is considered more apparent than real in terms of the common denominator that runs through them, which is the group of individuals or organizations that concentrate power and decision-making (Best & Higley, 2017).

The agenda setting

The agenda-setting notion was elaborated in its beginning concerning mass media when Maxwell McCombs and Donald Shaw developed the agenda-setting function of mass media (M. E. McCombs & Shaw, 1972). These authors claimed that media and news actors play a significant role in shaping the political reality as they assign relevance to certain topics over others through their selection, the time devoted to each one, and the voices and sources chosen. This theory has evolved in the past decades and has developed several levels (Mccombs, 2002). With the introduction of new devices such as smartphones and new media such as blogs and social platforms, the digital world transformed the most diverse aspects of human interactions. Since its emergence, multiple researchers have been writing about its effects on different socio-cultural issues, such as the new media logics and influence flows between the media, politicians and the citizenship (Chadwick, 2017; Jenkins, 2008; Wallace, 2018).

New media and social platforms provide the infrastructure that facilitates citizens to participate like never before in various fields and go from having a passive role to being even co-creators of the informational, political, and even religious processes (Camacho-Markina et al., 2019; H. A. Campbell, 2012; Feezell, 2018; Lasorsa et al., 2012). Therefore, citizens can access information that in the past would have been filtered by media and power elites (M. E. McCombs & Shaw, 1972), as well as be informers (Feezell, 2018) and creators of contents. New media and social networks have reduced the incidence of old gatekeepers such as the media, religious institutions, and politicians (Meraz, 2009). Nonetheless, mainstream media still plays a role in the agenda-setting process (Harder et al., 2017; Soler & Micó Sanz, 2019; Tran, 2014). Moreover, the intermediate agenda setting theory states that media influence other media, especially highly regarded media (Harder et al., 2017). Previous research found that more than 85% of Twitter´s trending topics were news headlines which, on some occasions, could be found first on news media accounts, and others were trending topics first, covered by the media afterwards (Kwak et al., 2010). In the present thesis, the media and political elites are analyzed with the aim of understanding if their interactions present the characteristics of old agenda-setting patterns where media and politicians have a dialogical relation as co-creators of the public and political debate (M. E. McCombs & Shaw, 1972; M. E. McCombs, Shaw, & Weaver, 2014; Tran, 2014; Verweij, 2012).

The digital purity myth and the new gatekeepers

It can be said that traditional gatekeepers have seen their incidence reduced with the advent of digital new media. However, new forms of gatekeepers and filters have emerged: the algorithms. There is a huge volume of information on the Internet. With the aim of helping users to find what they are looking for; sites create algorithms that sort and prioritize this information. Google describes algorithms as processes and formulas by which computers take user queries and turn them into answers (Google, 2018). Algorithms encode the desire to find an answer (Finn, 2018). In 1998, the algorithm "PageRank" was developed for Google, which evaluates the quality of links and content on sites (Beer, 2017; Mager, 2012). This algorithm, has the ability to find "a needle in a haystack", by finding the content that responds to a user´s search among all the information on the web (MacCormick, 2013). Using "authority" models, it ranks and prioritizes information based on the user's search terms (Beer, 2017). But how and who determines what is relevant for each person? Even though the purpose of these algorithms is to help every user to quickly find what they are looking for, they select and prioritize the information. Therefore, computational systems function as an actor capable of influencing users' practices and experiences on the web (Bucher, 2012). Computer systems generate massive data collection resulting from tracking user behavior, statistical calculations to analyze those behaviors, and generate resulting actions, recommendations, and interfaces. These processes, while seeming highly technical, involve a high degree of "cultural processing" (Finn, 2018).

"Algorithms are opinions embedded in codes" (O'Neil, 2017). Algorithms are created to solve problems. But every problem is solved according to the intellectual capabilities of the person solving it, as well as their ways of conceiving the problem, what they see as a problem, and their creativity when solving it (Finn, 2018). The human factor of the algorithm, although often invisible, exists and to a large extent. Moreover, algorithms have a potential role in social processes (Beer, 2017), as they shape the reality of each person -some authors even consider that they dominate it (Sandvig, Hamilton, Karahalios, & Langbort, 2014)-, since they order and prioritize what each person is exposed to, by selecting and assigning relevance to the information (Saurwein, Just, & Latzer, 2015). What is more, algorithms are being used to determine whether a person accesses to a loan or a scholarship, if they are the right candidate for a job, and even how much prison time a person gets (Axios, 2018; TRTWorld, 2018). Therefore, the use of algorithms may not only reproduce certain pre-existing biases and inequalities, but also potentiate them. Some of the effects introduced in the social dynamics that have been observed include the filter bubble effect (Pariser, 2011), the reproduction of discriminatory biases (Gangadharan, Eubanks, & Barocas, 2014; Saurwein et al., 2015) or even the insertion of ideological interests (Mager, 2012). Entities and companies are choosing what information is allowed in the digital platforms, what contents each person is exposed to, in a personalized manner, and what services and social benefits each person has. Meanwhile, the mechanisms to make those decisions, or to create those algorithms, are secret, not audited and belong to each company or media platform. However, people become intimate with the systems to the point that their most private matters can pass through their smartphones or computers, following algorithmic recommendations on varied topics that can range from love to the choice of a career. People have a faith relationship with algorithmic culture and its recommendations (Bogost, 2015; Finn, 2018) in which people believe in the purity of an

algorithm. However, "once you start looking at them closely, every algorithm betrays the myth of unitary simplicity and computational purity" (Bogost, 2015).

In the past, the media was conceived as unbiased, which was the same that happened with advertising. Advertisements from the 1940s can be found in which doctors and dentists recommended smoking as a healthy habit (Gardner & Brandt, 2011; Witkowski, 2012). People used to have more trust in news media, a trust that has been showing a decay in the past few decades (Strömbäck et al., 2020). Today, after several decades of communication research with various authors and different actors questioning the veracity and objectiveness of Mass Media, people assume that the media have political affiliations and interests, biases, and that fake news can be broadcasted. It seems like the society has re-lived this process with digital new media, social media and algorithmic recommendations, which are conceived as a pure mirror of a quantified calculated reality, when it also portrays biases and the potential to reproduce inequalities and intensify polarization, filter bubbles and echo chambers (Bozdag, 2013; Darcy, 2019; Finn, 2017; Mager, 2012; O'Neil, 2017; Pariser, 2011; Saurwein et al., 2015).

Twitter

Twitter is considered the central social media platform for the analysis and discussion of politics online (Chamberlain et al., 2021). The microblogging platform is not the most popular network in terms of active users. In fact, a recent ranking positioned the microblogging network as number 15 regarding the active monthly users, with 436 million. Whereas Instagram, TikTok, Youtube and Facebook have more than double (Statista, 2022a). Nonetheless, there is a significant number of opinion leaders who are active users of the platform (Bengoechea et al., 2019). More than 80% of the world leaders are on this platform (K. Smith, 2020), and more than the 90% of the Spanish deputies are Twitter users (Haman & Školník, 2021). This responds to the fact that Twitter is considered a political tool (Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018), and a political network (Conway & Wang, 2015; Fernández Gómez et al., 2018) that plays a key role in political communication campaigns (Alonso-Muñoz et al., 2016; Usher, 2018; Valera-Orda et al., 2018). Moreover, it has been shown to be one of the preferred social media platforms by political parties and politicians (Alonso-Muñoz et al., 2016). It is interesting, and a clue towards answering the question of whether elites use Twitter as an echo chamber, the fact that most world leaders use a social network that is not the most popular among active citizen users.

Regarding the uses that the leading political actors and political institutions give to Twitter, previous research show that they mainly employ it for campaigning and self-promotion, for political debate, to spread and broadcast their messages and to interact with other relevant actors (Ausserhofer & Maireder, 2013; Graham, Broersma, Hazelhoff, & van 't Haar, 2013), generally other politicians, leaders or journalists (Alonso-Muñoz et al., 2016), rather than to promote engagement with the citizenship (Ausserhofer & Maireder, 2013). In the same line, the main receptors of the politician´s messages and tweets, are other politicians or the media (Bruns & Highfield, 2013).

Given the fact that it is largely used by opinion leaders (Bengoechea et al., 2019; K. Smith, 2020), Twitter has also been described as a news source and an information service (Verweij, 2012). The platform was defined as an informational network by its own earlier CEO, Evan Williams, (Kramer, 2010). For this reason, journalists are also widely using this social platform (Graham et al., 2016; Harder et al., 2017; Hermida, 2010; Lasorsa et al., 2012; Soler & Micó Sanz,

2019). The purposes most journalists use Twitter are mainly for work (Lawrence, Molyneux, Coddington, & Holton, 2013; Molyneux, 2015) and for personal branding to broadcast their content and those of their colleagues (Artwick, 2013; Ausserhofer & Maireder, 2013; Holcomb, Gross, & Mitchell, 2011; Molyneux, 2015; Soler & Micó Sanz, 2019). Further studies show that Twitter is also used by journalists and the media as a platform to find informational sources, given that the users share incidents and events they witness, becoming on the spot sources of relevant socio-political events (Artwick, 2013; Broersma & Graham, 2013; Felt, 2016; Suárez Villegas & Cruz Álvarez, 2016; Verweij, 2012; Zimmer & Proferes, 2014). Nonetheless previous studies show that the official Twitter accounts of the news Media, mainly use the platform to broadcast their own content and lead users to their websites (Armstrong & Fangfang Gao, 2010), while journalists use their accounts in a more interactive way (Ausserhofer & Maireder, 2013).

The use journalists do of Twitter is believed to affect whose voices get included and/or highlighted in the news (McGregor & Molyneux, 2018). Moreover, it affects what other users read, as people give journalists the role of curators on Twitter (Molyneux, 2015). However, as stated by previous research, most journalists tend to interact with other journalists (Hanusch & Nölleke, 2019; Molyneux, 2015; Molyneux & Mourão, 2019) or leaders and elites (McGregor & Molyneux, 2018), following the principle of homophily (Christakis & Fowler, 2009; Halberstam & Knight, 2016; Katz et al., 2004; Kwak et al., 2010; Lazarsfeld & Merton, 1954; McPherson et al., 2001; Wu, Hofman, Mason, & Watts, 2011), which has been proven to be also intersected by the gender dimension, resulting in male journalists echo chambers (Usher, 2018). Likewise, politicians and media tend to be the principal receptor of politicians´ messages, reason why some authors claim that social media, and specifically Twitter, operate as an echo chamber of power elites (Bruns & Highfield, 2013) where messages of those who hold power like media and politicians are amplified, perpetuating the capitalistic trait of stratified attention (Dubois & Gaffney, 2014; Fuchs, 2017).

As well as politicians and journalists, citizens also use Twitter for political and informational purposes. They use it to express their political views, share their experiences and opinions of different events (Ausserhofer & Maireder, 2013), organize political mobilizations or protests (Anduiza et al., 2009), share information, and report news (Hermida, 2010). Moreover, citizens have become the ones who usually share the first images and videos of newsworthy unexpected events (Hermida, 2010), as they are the ones that happen to be where things occur, something that would be a remarkable coincidence in the case of a journalist. Moreover, this possibility has helped to diminish traditional gatekeeping (Guo & Vargo, 2017; Meraz, 2009). As a digital platform, Twitter has been conceived as emancipating and a freedom enhancer (Shirky, 2008). Nonetheless, the democratization in the access to information should not be comprehended as a democratization at a political or social level (Morozov, 2011). There has been a great belief that Twitter is democratizing because of its role in the dissemination of news and political discussions, while many studies show that it also promotes filter bubbles (Pariser, 2011) and polarization (Terren & Borge, 2021).

Why who the elites follow?

"Twitter is only as good as the people you follow" (Hawley, 2019). The accounts a user follows have a relevant place in the online sphere. There are numerous lists, blog posts, and web entries

suggesting who to follow (Hawley, 2019; Lacy, 2019; Wix Blog, 2019), and on social media, there are algorithms that personalize recommendations about accounts to start following (Gupta et al., 2013; Hutchinson, 2017; Twitter, 2019a). This is because who a user follows is a determinant of their experience in user-generated social media platforms, such as Twitter. The content the users see in their feeds and the recommendations they receive depend on the accounts they start and are following, combined with the contents they read or watch and the posts they interact with by liking, commenting, or sharing. Moreover, previous studies show that the information a user sees on their social media feeds, has an effect on their perceived relevance of these issues (Feezell, 2018), which can be understood as the effect of the agenda-setting, but on social media. In the past, journalists and elites determined the contents and actors in the news and their time in the media, and this reached the entire population. Now, in addition to the diminished gatekeeping power of the traditional agenda-setters, the information is ordered and prioritized in a personalized way for each user through an analysis of the information of each person's use of the platform (Finn, 2018) and possibly other web pages.

Does it matter who the elites follow? The Twitter algorithm creates recommendations of who to follow based on several possible criteria, such as shared connections, similar interests (Gupta et al., 2013), and who the users you follow are following (Twitter, 2019a). Therefore, the algorithmic recommendations tend to suggest accounts followed by those whom the user follows. This research analyzes different elites, including the most followed generalist media, the most followed media directors, and the network of most voted political representatives in Spain. Given the fact that they represent the most followed elites, it can be considered, based on Twitter's description of how they create their algorithmic recommendations (Twitter, 2019a), that the accounts these networks follow may be more frequently suggested on the platform to their followers. As a result, they might get more visibility among the rest of Twitter users. By analyzing the accounts that the elites started following, it can be understood which accounts the media, journalists, and politicians publicly show they follow and, therefore, which accounts are likely to be more recommended by Twitter's recommendation algorithm to other users, at least among their followers.

Online influence

Social Media Influencers (SMIs) are emerging figures on digital social platforms as they play a relevant role within networks, a role linked to their influence, as evidenced by the name. They are characterized as users that have a strategic location in a network (Tanase, Tessone, & Algesheimer, 2018), either because they have the most connections in a network or because they are the ones who link nodes that otherwise would not be related and therefore are the ones who link clusters (Joshi, 2020). SMIs impersonate specific values, beliefs, skills, and competencies (Tanase et al., 2018) and are conceived as content creators that have large audiences based on the number of followers yet are felt by their followers as more accessible and believable than celebrities (De Veirman, Cauberghe, & Hudders, 2017). They can get large amounts of money to create branded content as they are understood to influence on their audience´s opinions or behaviors, being perceived as "third party endorsers" (Freberg, Graham, McGaughey, & Freberg, 2011) p.1.

The topic of how the influence should be measured online represents an ongoing discussion among scholars and professionals in the matter. One very frequently used parameter

is the number of followers (Dubois & Gaffney, 2014; Freberg et al., 2011; Nebot, Rangel, Berlanga, & Rosso, 2018), as it represents the potential audience of an account and, therefore, its prospective reach and popularity (Casaló, Flavián, & Ibáñez-Sánchez, 2020; De Veirman et al., 2017; Esteve Del Valle & Borge Bravo, 2018; Kwak et al., 2010). The number of followers of an account is one of the measures to represent the size of a node in network visualization, therefore, considered a measure of influence by some authors (De Veirman et al., 2017). A large number of followers can contribute to higher perceived importance by other users, which in turn can generate a higher perceived influence capacity (Cresci, Di Pietro, Petrocchi, Spognardi, & Tesconi, 2015). While some studies have found a clear connection between the number of followers and the ability to influence and opinion leadership (Feng, 2016; Hwang, 2015), others postulate that the number of followers can be considered a popularity parameter that does not necessarily indicate an impact on influence (Cha, Haddadi, Benevenuto, & Gummadi, 2010).

There is a vast number of blog posts and articles online that propose scales to determine who is an influencer on social media, and many of them propose the number of followers as the way to measure it. Moreover, many propose economical retributions per post based on these number of followers scales (Agrawal, 2019; Espinosa, 2018; Maheshwari, 2018).

There are other proposed metrics to measure influence online, based on social engagement, reach, and interactions (Cha et al., 2010; Dubois & Gaffney, 2014; Ritvars, 2020). Some authors claim that it is challenging to label a person as someone who influences others, given that there is still a scarcity of tools and strategies to determine who is really influential (Dubois & Gaffney, 2014)

Women and dissidences in power elites

"The power elite is composed of men whose positions enable them to transcend the ordinary environments of ordinary men and women; they are in positions to make decisions having major consequences" (Mills, 1956) p.4. It can be observed in Mills' definition of power elites, the differentiation between men as possible occupants of such places of privilege and women and men as possible recipients of the consequences of the elites' actions. At the beginning of the definition, it might be thought that he is using "men" as an all-encompassing category since, in several languages, the masculine is used to refer to women and men, a disputed concept (Masson, 2012; Noriega, 2004). However, the fact that he then differentiates between women and men indicates that he did not mean to include them. It can be comprehended that this corresponds to a text written in 1956 and hopefully renewed definitions can be found nowadays. Nonetheless, it was only 66 years ago and was written by the author that is considered by many as "the past century's most influential elite theorist" (Wedel, 2017) p. 155.

Women have been historically marginalized and underrepresented in power positions and power elites (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Djerf-Pierre, 2007; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011), and it has been stated that even when they are in power positions, they can remain outsiders in the elites' inner circle (Moore, 1988).

In recent years, digital social networks have enabled new voices to be raised (Coleman & Blumler, 2009), and among them, women and dissidents have found a space for expression. However, this does not mean that social media are inherently feminist. On a technological level, they provide the platforms for feminist voices to reach people everywhere. However, their

algorithms have shown to contain sexist biases. One example, among many others, is the case of Instagram and its censorship of women´s nipples images as opposed to men ones that are allowed to be posted on the platform (Faust, 2017; Gerrard, 2020), which even led to a breast self-examination campaign for the prevention of breast cancer in women to be carried out with a man (MACMA, 2018).

At a discursive and narrative level, both feminist and chauvinist views can be found on social media platforms (Willem & Tortajada, 2021). There are many users and influencers who find in social media the means to spread ideas, knowledge, and experiences about women's and dissidence's oppression. As the author, Kira Cochrane expressed: "It's brought thousands of new writers to the fore, and in the process, feminist issues have moved from the margins into the mainstream." (Cochrane, 2013) p. 67. This is so, that nowadays, being labeled as a feminist in Spain is no longer a stigma (Araüna, Tortajada, & Willem, 2021) but rather a mainstream desirable identity. With this shift in which feminist issues have become mainstream, many companies, politicians, and media content seek to position themselves among the feminist public, but they do so by trivializing the issues and reproducing gender stereotypes. Moreover, there are also many influencers who propose a reinforcement of the traditional male gaze, reinforcing gender stereotypes and reproducing violent gender-based discourses. "While making feminism much more visible, the internet has also brought to light deep strains of misogyny, a vicious opposition to female advancement" (Cochrane, 2013) p. 70. Since the advent of the internet, verbal attacks on women can be publicly seen. The internet admits the anonymity that allows extreme voices to post violent comments. Nonetheless, it also enables women to raise their voices. It has been observed in the past few years, that women have started to openly expose the abuse they receive when addressing feminist matters (Cochrane, 2013). As in many ideological and political arenas, polarization can also be observed regarding gender matters in the online sphere.

Taking these new dynamics into account, this thesis seeks to understand what is the space that women have among the accounts that the Spanish elites started to follow. In order to better understand the results of this research in relation to the space that women and dissidences have, the place that women have had and still partake in these elites will be reviewed.

Women in the Media
"Never before in history have media played such a major role in the socialisation of human beings and become such an integral and constant part of people's everyday lives. (…) They are not simply mirrors of the world; they are active shapers of perceptions and ideas" (Sarikakis, 2013) p.5. The gender mediatic representations not only embody a social reality where there are gender inequalities, but they also magnify them with mis and underrepresentations (Armstrong & Gao, 2011), as media not only presents reality, but also play a role in its construction through their symbolic representation (Maruenda-Batalle, Palau-Sampio, & Taboada, 2021). They contribute to maintain gender inequalities, and also enlarge them, as "Media attention has significant consequences in social stratification" (Shor et al., 2015) p. 960, being active reinforcers of the symbolic annihilation of women (Tuchman, 1978, 2000).

There are long-lasting patterns of media behavior in relation to gender. Previous research shows an imbalance in the representation of women, queer people and men, that privileges men and masculine traits by sexualizing, subordinating and stereotyping gender roles (Collins, 2011; De-Caso-Bausela et al., 2020). These inequalities can be seen across different media content types, such as the news, fiction, and advertising (López González, 2002), and at various levels,

such as in the frequency in which women and men appear, and also in the roles in which they are presented and placed (Armstrong, 2004; Armstrong & Gao, 2011; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998). For example, women have been found to be less likely to be news subjects, especially when the topic was politics, economy, or governmental matters. On the contrary, they were more likely to be selected as a subject when it came to news about social issues, health or art (Armstrong & Gao, 2011). Many studies have shown that there is a disproportion in the use of male sources over female ones (Armstrong, 2004; Armstrong & Gao, 2011; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998). Even when there are women experts in the areas consulted, whether in the Academia, Business, Science, Politics, the media tend to consult them less than their men counterparts (Caro González et al., 2014). Likewise, this reinforces the masculine association with leadership and authority (Armstrong, 2004; Armstrong & Gao, 2011). Furthermore, women are not represented as leaders in fiction either. For example, previous research has shown that in political fiction series, women are not usually the main characters. Male characters tend to be portrayed as independent and powerful, while female characters are often represented as emotional, and male dominated. They also tend to be physically hegemonic and sometimes even objectified. In addition, they tend to continue to be depicted closer to the intimate sphere rather than the public sphere (Tous-Rovirosa & Aran-Ramspott, 2017). However, this misrepresentation transcends the political fiction. There are many studies that highlight the stereotyping of women in fiction in general, reproducing gender roles, such as body image, motherhood traits, association with care and household tasks, hypersexualization, and the lack of women as leaders, heroines and positive authority figures (Fouts & Burggraf, 1999; Galán Fajardo, 2007; García-Muñoz, Fedele, & Gómez-Díaz, 2012; Geraghty, 1991).

Besides looking at these representations, it is relevant to consider the space that women have in Journalism, as journalists are the creators and portrayers of these representations. There are many documented gender inequalities among journalists such as the underrepresentation in media companies, wage gaps where women receive lower salaries than men, glass ceilings and career barriers for women, and the fact that men hold more than 70% of the managerial positions, even though women journalists hold higher levels of education (Byerly, 2011; De-Miguel et al., 2017). Though in the past decades, there has been an increase in women publishers and journalists (Caro González et al., 2014) and in the access they have to positions in the media (Djerf-Pierre, 2007). On social media, previous research has identified inbreeding behaviors among male journalists regarding the interaction among peers of the same gender (Hanusch & Nölleke, 2019; Usher, 2018), while this pattern was not identified among women journalists (Maares et al., 2021).

Women in the political sphere

"State elites are the preserve of men, with a very few exceptions. The state arms men and disarms women" (Connell, 1987) p. 126. State decisions affect the entire population in the most diverse areas of each person's life. There are many factors that determine the decisions and policies of a state, which have to do, among others, with the composition of the state, such as political party, ideological orientation, whether there is a religious component or majority, or the gender of the governors. Moreover, the state works and influences many issues related to sex and gender. Most Statal decisions may affect gender matters, though some are more notorious, as in the case of

fertility and birth control in countries where there are female infanticide policies (Connell, 1987; Lee, 1981), or regarding abortion regulation. It has been shown that the countries where there are fewer restrictions or penalties coincide with the countries where there are higher percentages of women senators (Medoff, 2002).

There is a wide range of gender-sensitive studies that have focused on the matter of political representation both on a quantitative and a qualitative level, the first referring to the number of women in political parties, elected and decision-making positions, and the second referring to women´s interests' representation in public policy (Lombardo, 2008; Lovenduski, 2002; Norris & Lovenduski, 1995). Although according to many authors gender representation is an important factor, having at least an equal number of women representatives in the government does not necessarily mean that there will be a better qualitative representation (Lombardo, 2008). More than biological sex or gender identification, feminist consciousness seems to be relevant when it comes to representing the common interest of women (Tremblay, 2000), as feminist women in parliaments may be the ones "who will promote justice for women other than themselves" (Sawer, 2000) p. 363.

The structural obstacles that women face to gain political representation are the tradition of being a men dominated field, institutional constraints, absence of resources and domestic impositions and restrictions associated with the female role as caregivers (Lombardo, 2008; Norris & Lovenduski, 1995).

Globally, the Political Empowerment remains as one of the areas with the widest gender gaps. According to the World Economic Forum´s Global gender gap report, in 2021, only the 26,1% of parliament seats were held by women among the 156 countries studied by the index, and there are two countries where there are no women in the parliament. Likewise, women represent only the 22% of ministerial positions, and the countries where there are the same number of women ministers as men represent only the top fifth percentile. Moreover, nine countries have no women ministers at all. When searching for the countries that have experienced having a woman head of state, it can be observed how 81 countries remain without ever having a woman in this position, which is the case of Spain (World Economic Forum, 2021), the country analyzed in this thesis. As for the composition of the Spanish Senate, it has had a distribution of about 60-40 male and female senators, with a majority of men. This distribution has been maintained in the last five legislatures (Senado, 2020).

Taking the abovementioned into account, this thesis puts one of the main focuses on understanding the space that women and dissidences have among the Spanish mediatic and political elites, and in the accounts that the elites started to follow on Twitter.

PART IV. DISCUSSION

In this section, the accepted and published articles of this thesis are exposed, and the results and discussions of them all are interwound, as even though they each constitute an investigation on their own, they compose the line of research of the thesis. They each represent a different elite, reason why the union of them allows us to elaborate a conceptualization of the behavior of the Spanish power elites on Twitter in Spain. In this section the accepted pre-prints will be exposed and the published articles that offer the permission will be available in Annex II.

Publication 1
Israel-Turim, V., Micó-Sanz, J. L., & Ordeix-Rigo, E. (2021). Who Did the Top Media From Spain Started Following on Twitter? An Exploratory Data Analysis Case Study. American Behavioral Scientist, 65(3). https://doi.org/10.1177/0002764220979784

Publication 2
Israel-Turim, V., & Micó-Sanz, J.-L. (2021). Who Are the Most Followed Following? A Data Analysis Case Study of the Accounts the Top Media Directors from Spain Started Following on Twitter. In Á. R. C. Ferrás & P. C. L.-L. T. Guarda (Eds.), Advances in Intelligent Systems and Computing 1331 Information Information Technology and Systems ICITS 2021, Volume 2 (Vol. 2, pp. 219–229). Cham, Switzerland: Springer.

Publication 3
Israel-Turim, V. & Micó-Sanz, J. L. (2022). Media, politics and citizenry. The Twitter accounts that the Media and their Directors started to follow. Adcomunica.

Publication 4
Israel-Turim, V., Micó-Sanz, J. L., & Diez Bosch, M. (2022). Who Did Spanish Politicians Start Following on Twitter? Homophilic Tendencies among the Political Elite. *Social Sciences*, *11*(7), 292. https://doi.org/10.3390/socsci11070292

1. Who Did the Top Media From Spain Started Following on Twitter? An Exploratory Data Analysis Case Study

Abstract

The digital sphere and social media platforms have prompted new logics regarding information access and influence flows among media, politicians, and citizens. In this exploratory study, via a machine learning software and with data visualization methods, we analyzed social media data in order to find patterns that can contribute to comprehend the new dynamics of influence between the media, politicians, and citizenship in the context of social media and digital communication, specifically on Twitter. We analyzed who the top 50 Spanish generalist media with most followers started following in 2017, 2018, and 2019 on Twitter, the quintessential informational network. To do so, we melded data visualization computational and manual methods. We used an artificial intelligence big data analysis software to visualize the network of media from Spain in order to identify the sample. Afterward, we extracted the top followed accounts by the sample and categorized them in types of accounts, institution/citizenship, country, number of followers, and gender, to proceed with the data visualization to identify trends and patterns. The results show that these media accounts started following mainly accounts that belonged to male politicians from Spain. We could also spot among the years of the study an inversely proportional trend from the media that went from following mainly institutions to following a majority of citizens, and to start following more accounts with a smaller number of followers every year. The tendency to follow accounts from Spain that belong to men grew or remained a majority among the years of the study.

Keywords

social media, social media data analysis, media trends, Twitter, media, politicians, citizenship

Introduction

New technologies and the web 2.0 gave way to a new hybrid media logic between traditional media and new media, and among mass media, politicians and citizens (Chadwick, 2017; Jenkins, 2006; Weimann & Brosius, 2017). The mainstream media still exercises power in the agenda setting process (Harder et al., 2017; Soler & Micó Sanz, 2019; Tran, 2014), but they are not the only ones anymore due to the fact that social media, online media, political blogs and many other types of online channels have gained weight and are becoming initiators or shapers of the media agenda (Camacho-Markina et al., 2019; Dang-Xuan et al., 2013; Guo & Vargo, 2017; Meraz, 2009, 2014; Soler & Micó Sanz, 2019; Tran, 2014; Vargo, 2018).

On the other hand, citizens have become a less passive audience than ever, and if in the past they could be critical and read into the contents (Canclini, 1991; Morley, 1992), they are now co-creators (Lasorsa et al., 2012), *produsers* and/or *prosumers* (Deuze, 2011), taking news, media and information in their own hands (Camacho-Markina et al., 2019; Tran, 2014) in a citizen journalism context (Hermida, 2010). Digital media enables the environment for them to have a more active role in the selection of the information they consume (Feezell, 2018), as well as in its dissemination and in the production of the information itself. Nowadays, most people have a

smartphone that allows them to record and spread through their social media accounts any event they witness. Therefore, information that perhaps a few decades ago would have never get published, today can become public and viral, without the filter of either the politicians or the mass media (M. E. McCombs & Shaw, 1972). Nonetheless, a new filter has emerged with digital platforms: interfaces and algorithms (Finn, 2017; Finn, Golbeck, & Bogost, 2016; Golbeck, Grimes, & Rogers, 2010; Martínez Figuerola & Marzo, 2016), characterized as the gatekeepers of the XXI century (Wallace, 2018), a notion we recommend to further explore in future research in the matter.

However, even though traditional media has lost part of the power they used to have in comparison to the pre-digital networks world, they still have influence and relevance in reference to selecting the topics of public interest (Harder et al., 2017; Martin, 2014; Soler & Micó Sanz, 2019), and "journalists and politicians, whether in conflict, regular dialogue, or working in coalitions, contribute to issue agendas and policy debate" (Davis, 2007 p.184). Hence, who influences who in this new logic? How are the new dynamics in the relations between media, politicians and citizens regarding information flows?

The information network

Twitter has been described as an information network by its own former CEO, Evan Williams, (Kramer, 2010), and as a news source or an information service more than a social network (Verweij, 2012). This microblog, is also understood as a political tool (Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018) or even as a political network (Conway & Wang, 2015; Fernández Gómez et al., 2018) with a significant use by opinion leaders (Bengoechea et al., 2019); 83% of the world´s leaders are estimated to be on Twitter (K. Smith, 2020).

As a digital platform, it has received the emancipating attribute of enhancing freedom (Shirky, 2008). However, some authors claim that the democratization of access to information and tools for dissemination should not be misunderstood as democratization on a society level (Morozov, 2011). Previous research indicates that the main receptors of the messages of politicians are other politicians or the media, which has led to interpret Twitter as an echo chamber of the elites (Bruns & Highfield, 2013). In the same line of thought, some authors claim that the platform emulates the social dynamic of stratified attention characteristic of the capitalist culture, concentrating the message and amplifying power in a few users, where those who hold power like media and politicians, sustain it (Dubois & Gaffney, 2014; Fuchs, 2017).

Twitter has acquired an increasingly relevant role in political communication campaigns (Alonso-Muñoz et al., 2016) and in journalism (Hermida, 2010; Lasorsa et al., 2012; Soler & Micó Sanz, 2019). The main political actors use it for political debate, to spread their messages and interact with other key actors (Ausserhofer & Maireder, 2013). Whereas regarding the use of Twitter in Journalism, previous research suggests that journalists and mass media use it mainly to share their contents (Ausserhofer & Maireder, 2013; Holcomb et al., 2011; Soler & Micó Sanz, 2019). Other studies show that Twitter has become an information source for journalists and media, as users upload the events they witness, becoming on-site sources of many relevant socio-political events (Artwick, 2013; Felt, 2016; Suárez Villegas & Cruz Álvarez, 2016; Verweij, 2012; Zimmer & Proferes, 2014).

The influence

A new relevant figure has emerged in social platforms in the past few years: the Social Media Influencers (SMIs). The name itself brings the influential role into account. They have been

characterized as people that combine a personification of values, preferences or beliefs, specific competences or skills and in occasions, a strategic location in a network (Tanase et al., 2018). Moreover, they have been described as content creators that have accumulated a large amount of followers and as more accessible, believable and intimate than celebrities (De Veirman et al., 2017). Other definitions and authors describe SMIs as "third party endorsers" who form audience´s opinions through the use of social media platforms and tools (Freberg et al., 2011).

There is a discussion regarding how to measure influence. For instance, in social media, the number of followers has been used as a measure or at least as one of the parameters to measure influence (Dubois & Gaffney, 2014; Freberg et al., 2011; Nebot et al., 2018) as it is considered to reflect the size of the audience of an account. Moreover, the number of followers can be thought as the size in a network, which besides of being considered as a measure of influence by itself (De Veirman et al., 2017), it can represent popularity and the possibility of a larger reach (Casaló, Flavián, & Ibáñez-Sánchez, 2018; De Veirman et al., 2017; Esteve Del Valle & Borge Bravo, 2018; Kwak et al., 2010). In like manner, a large number of followers generates the perception of importance to other users, and therefore an increased perceived influential capacity (Cresci et al., 2015). Some studies imply a clear connection between the number of followers and opinion influence and leadership (Feng, 2016; Hwang, 2015) whereas others consider that the number of followers is a parameter of popularity but does not necessarily indicate influence (Cha et al., 2010). We can also find a vast amount of articles that come from mass media and the business environment in which they write about the number of followers that determine if a person is an influencer in social media networks, and even categories of economic remuneration per post depending on the number of followers (Agrawal, 2019; Espinosa, 2018; Maheshwari, 2018). In like manner, the engagement rate is also considered as relevant to determine possible revenue from an influencer (Ritvars, 2020).

Other aspects of social media influence measurement include the amount of retweets and mentions a user receives (Cha et al., 2010), which relates to the engagement rate, and who follows the user (Dubois & Gaffney, 2014). Some authors argue that it Is problematic to describe someone as influential due to the lack of tools, strategies and unique social connections structures to determine who is influential (Dubois & Gaffney, 2014).

The following

"Twitter is only as good as the people you follow" (Hawley, 2019). Not only can we find numerous lists, posts and web entries talking about who to follow (Hawley, 2019; Lacy, 2019; Wix Blog, 2019), but also, Twitter has an algorithm to recommend their users accounts to start following (Gupta et al., 2013; Hutchinson, 2017; Twitter, 2019a). Who the users follow, is central in the experience they have in this (and most) user generated social media platforms. Previous research shows that the information the users see on their feeds on social media platforms has an impact on their perceived relevance of these issues (Feezell, 2018).

Does it matter who the media follow? When the Twitter algorithm suggests a user who to follow, it does it responding to many possible criterion, which includes shared connections, common interests (Gupta et al., 2013) and who the people you follow are following (Twitter, 2019a), meaning it recommends the accounts followed by the accounts a user follows. Given the fact that we are studying the most followed media, we can consider that the accounts followed by them may appear suggested more frequently. Therefore, they may receive more visibility among other Twitter users, becoming more relevant in the network. By analyzing who the Media started following, we are able to comprehend which accounts the media shows publicly they believe is

worth following or which accounts will be more likely recommended by Twitter´s recommendation algorithm.

Objectives

In this complex new communicational scenario in which we can see new power and influence flows, this study seeks to analyze data in order to find patterns that can contribute to comprehend the new dynamics in the relations between media, politicians and citizens in the context of social media and digital communication, specifically on Twitter as it is considered to be the quintessential informational network (Pérez-Soler, 2018).

This is an exploratory research where we aimed to analyze data from the social network in order to obtain trends and be able to answer our research questions.

We aim to understand what types of accounts the media began to follow. We seek to find out if they tended to start following other media, politicians, and if they followed accounts that belong to citizens. We pursue to identify if the accounts that the media began to follow belong mainly to institutions/organizations or to people/citizens. And in the case of the latter, we want to know if they follow mostly accounts from women, men or non-binary. We intend to explore to which countries the accounts that the media began to follow belong, as well as understand whether the accounts they started following are large in number of followers.

Methodology

In order to analyze who the media started following, we determined a sample of 50 accounts that belong to the top most followed generalist media from Spain. The sample includes both traditional mass media accounts and smaller, newer digital media, as both types constitute the map of the most followed Spanish generalist media accounts on Twitter.

According to the intermediate agenda setting theory and with previous research, media influence other media, especially highly regarded media (Harder et al., 2017). Reason why we analyzed the most followed media, as we believe the scope of their influence can reach, at least, citizens and smaller media.

We analyzed the 50 accounts the sample started to follow in 2017, 2018 and 2019. We considered 50 in order to have significant data to analyze but taking into account that analyzing more accounts than that would add up to a high dispersion.

In order to access to the data, we used an artificial intelligence big data analysis software from where we were able to identify the sample and from where we extracted the most followed accounts by the accounts of this sample as a network.

In this software that processes big data, we worked with a dataset that contained most Spanish Media accounts on Twitter. Via this software we could access and visualize the social network and the relation between the accounts. We could see which are the central nodes and who follows who within the context. From this graph we were able to extract the most followed media. We then categorized these media and filtered them selecting only the ones with generalist Spanish contents. We double-checked the number of followers in each of the accounts´ Twitter profiles.

Afterwards we created a new context with these 50 media, in order to visualize only the sample´s data. In this new context we consulted the data regarding who the accounts started to follow in three different periods: 2017, 2018 and 2019. This was the data we then proceeded to analyze in order to find trends.

Once we collected the data, we categorized it in:

Types of accounts

We divided the accounts in three categories: Political, Media and Citizenship.

Political accounts include politicians, political parties and public institutions. Public institutions were included in the political category as "Public institutions are political devices" (Thoenig, 2003) p. 134. There are different theories regarding whether public institutions influence politics or vice versa. Historical Institutionalism rejects the idea of a hands-off, neutral state that functions separated from the political scenery (Thoenig, 2003). According to this theory, public administration is a part of politics postulating that politics and policies shape public institutions and not the other way around. Nevertheless, and according to sociological institutionalism, institutions can also shape the conduct of politics as they shape and frame their action stating that bureaucracy models how things are perceived and understood by a social group (Thoenig, 2003). However, the way the public institutions work may respond to the political frameworks in which they were created and developed among the years. For a user to choose whether to follow or not determined public institutions may imply a political position as, according with the theory of cognitive dissonance (Festinger, 1957) people tend to avoid information they do not agree with (Shaw et al., 1999). Moreover, online social networks could polarize people as they tend to homophily, searching to reinforce their opinions instead of searching or following accounts that could provide new or different points of view (Christakis & Fowler, 2009; Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001; Perl et al., 2015). Nonetheless, users can choose to follow accounts they don´t agree with in order to monitor them or be informed about what they say. This could be especially the case of the Media, as they may choose to follow an account for public relations or informational purposes -we propose to study how the media chooses who to follow in Twitter for further research.

The media category included journalists and media institutions.

The citizenship category included the rest of accounts, which we categorized in: Users (which include, among others, entrepreneurs, Influencers, scholars, artists, celebrities, activists, etc.) and civil institutions (which include, among others, companies, NGOs, civilian associations, etc.).

Institution/citizenship

We divided the accounts the media started following in Institutions and citizens, regarding whether the account belongs to a person or an institution/organization.

Country

We analyzed from which countries are the accounts the media started to follow.

Number of followers

We divided the number of followers into five categories in order to analyze if we could find trends related to the number of followers of the accounts the media started to follow. To create these categories, we merged concepts from a variety of authors. Some are talking about the rise of *nano-influencers* to refer accounts with a 1.000 to 5.000 followers (Agrawal, 2019; Maheshwari, 2018; Stokel-Walker, 2019). Micro-influencers have been classified as accounts that have between 10.000 and 100.000 followers (Tankovska, 2020) and also as accounts with a number between 10.0000 and 50.000 followers (Lieber, 2018). Agrawal (2019) classifies influencers in Nano-influencers (1K−5K followers); Micro (5K−20K); Mid-Tier (20K-100K); Macro (100K-1M) and Mega (more than 1M) (Agrawal, 2019). Macro influencers have also been classified as those with between 100 thousand followers and one million by Tankovska (2020), who also introduced the name of "icon" influencers for those with above the million followers (Tankovska, 2020).

Taking these classifications into account and considering that there are some points of agreements but not a total consensus over the exact amount of number of followers that imply different categories of influence on social media, we will categorize the number of followers in five segments: less than one thousand followers, between 1.001 and 10.000, between 10.001 and 100.000, between 100.001 and one million and more than one million followers.

Table 3. Influencer categorization by number of followers.

Non-influencers	<1000
Micro-influencers	1.001-10.000
Mid-influencers	10.001 − 100.000
Macro-influencers	100.001 − 1.000.000
Icon-influencers	>1.000.000

1. Gender

We analyzed whether the accounts that belonged to citizens (not institutions) were from Men, Women or non-binary citizens (Butler, 1988; Richards et al., 2016b), in order to understand whether the accounts the Media began to follow are gender-balanced or if they respond to other long-lasting patterns of media behavior in relation to gender, such as the disproportion in the use of male sources over female ones (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998), or the unbalanced representation of men over women in the news and in the media (Armstrong, 2004; Armstrong & Gao, 2011; Caro González et al., 2014; Len-Ríos et al., 2005; López González, 2002; Shor et al., 2015), which could be related to the underrepresentation of women in power positions (Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Madsen & Andrade, 2018; Painter-Morland, 2011). We also crossed this data with the types of accounts and with the number of followers.

Once we categorized the data, we proceeded to create graphics in order to visualize possible patterns. The methodology used in this research to analyze the data was quantitative social media data analysis. We applied a quantitative analysis to the data we extracted, we crossed it and worked in data visualization in order to answer our research questions by exploring and identifying trends, patterns and relationships (Batrinca & Treleaven, 2015; Dodge, 2005; Mahrt & Scharkow, 2013; Vogt et al., 2014).

Lewis, Zamith, & Hermida (2013) argue that blending computational and manual methods, as well as melding different data analysis techniques may be the key to take advantage of data without losing contextual implications (S. C. Lewis et al., 2013; Vogt et al., 2014).

Social media analytics and social media research are gaining relevance as social media data is considered the "largest, richest and most dynamic evidence base of human behavior" (Batrinca & Treleaven, 2015 p.90). Social media data is being studied from a diverse range of specialties from sociology to physics, going through Anthropology, Communications, Marketing, Mathematics, Computer Science, etc. Moreover, it has gained relevance in various spheres such as in the Academia, Politics and Business (Bail, 2014; Gandomi & Haider, 2015; Stieglitz & Dang-Xuan, 2013; Zeng et al., 2010).

There has been an interest in the past few years in Twitter-based researches (Felt, 2016; Zimmer & Proferes, 2014). We can find many quantitative data based researches about Twitter (Dubois &

Gaffney, 2014; Kwak et al., 2010; Pérez-Curiel & Limón Naharro, 2019), as well as other social media data analysis researches (Skogerbø et al., 2015). However, previous research using quantitative social media data analytics methods in communications are still scarce. According to Felt (2016), most communications and mass media researches employ traditional methods like surveys and content analysis and the communications researches that utilize quantitative social media analytics are the minority (Felt, 2016; Zimmer & Proferes, 2014). Most of the Twitter studies focus on content analysis and social network analysis (Cormode et al., 2010; Felt, 2016; Greer & Ferguson, 2011; Pérez-Curiel & Limón Naharro, 2019; Williams et al., 2013). Many researchers argue the importance of including big data analysis and social media data analytics in social and communications research (Bail, 2014; Batrinca & Treleaven, 2015; Felt, 2016; Gandomi & Haider, 2015; S. C. Lewis et al., 2013; Zeng et al., 2010). Big Data is Data that by being collected, added and crossed, allows us to obtain other Data (Pérez, 2015). It can bring comprehensive information about the relationships amongst social actors (Bail, 2014; Felt, 2016). By searching big scale patterns, we can find tendencies. It is Data that allows us to create new knowledge and its value relies on what we can extract and learn from it (Mayer-Schönberger & Cukier, 2013; Provost & Fawcett, 2013).

Results

Types of accounts

The type of account that the 50 generalist Spanish Media with the most followers on Twitter started to follow, if we add the three years we are studying, corresponds to political accounts.

Figure 5. Percentages of the types of accounts the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
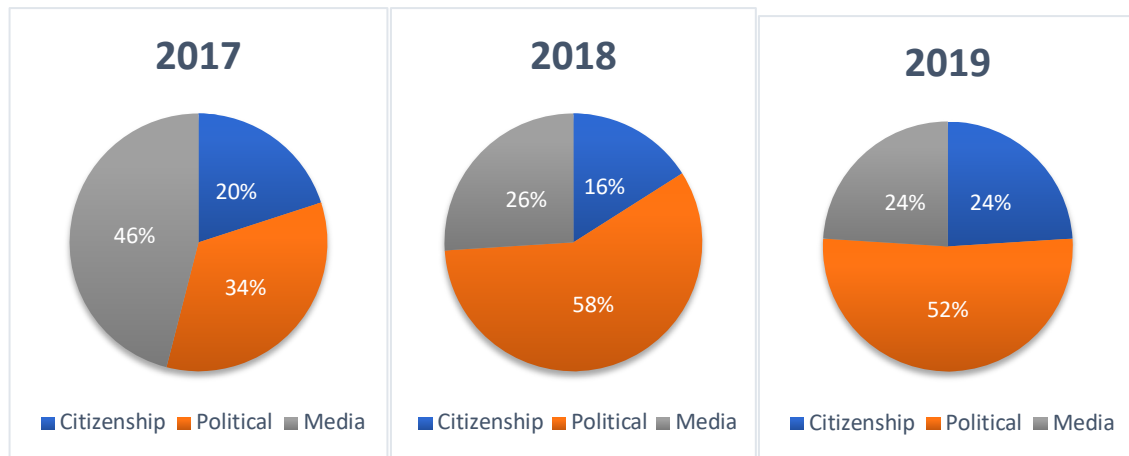
Except in 2017, most of the accounts the Media started following were political accounts, being this the most followed category by the media with around and above 50% in both 2018 and 2019. In 2017 the most followed type of account were other Media. However, the tendency to follow other Media dropped in 2018 and in 2019, reaching by 2019 the 24% of the accounts, the same percentage of Citizenship accounts, which used to be the least type of account that the Media started to follow the previous years. One of the reasons could be the saturation of the accounts as there is not an infinite number of Media or political accounts. However, it can also be explained by

a growing tendency from the users to follow influencer accounts, who are becoming more and more relevant in the digital sphere.

Figure 6 .Tendencies of the types of accounts the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
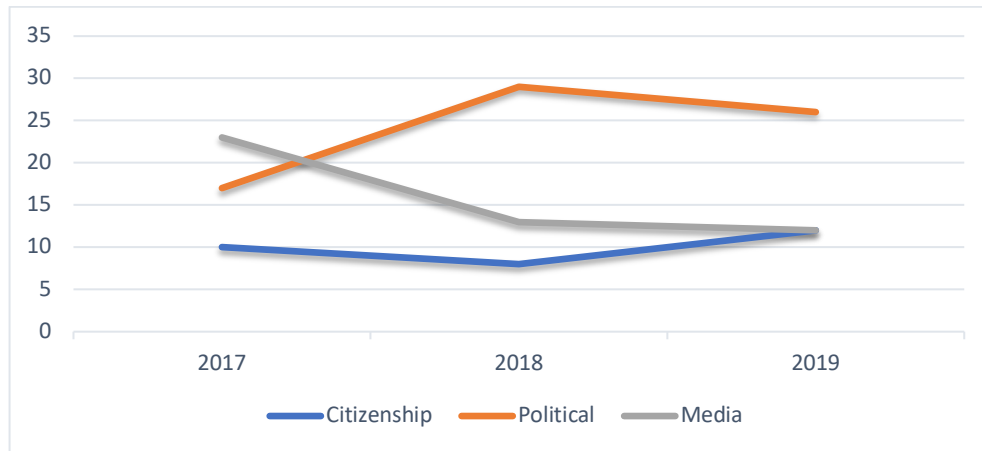
Political Subcategories

In 2017, the majority of the political accounts that the Media we are studying started following, belonged to Public institutions. When analyzing the Public Institutions they started to follow that year, we can find the White House, possibly related to the fact that there were elections in the United States of America. They also started following accounts related to the Congress and Spain´s Government, and accounts related to the Spanish Police and the UK Police. We could think that this is a result of the terrorist attacks perpetuated in Europe, specifically in the UK, in that same year.

Figure 7. Political subcategories the Top 50 generalist Spanish media with the most followers on Twitter started following in 2017, 2018 and 2019.
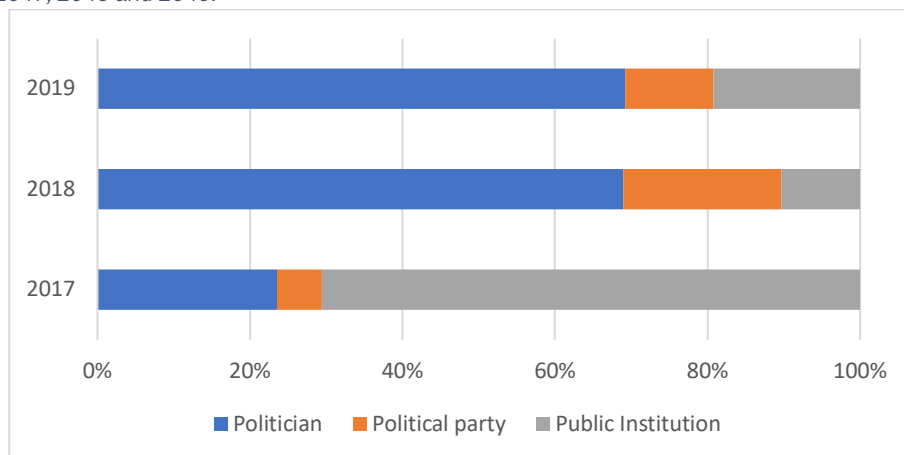
In 2018 and 2019 the Media we are studying started following mainly politicians. One possible explanation may be that there are more accounts of politicians than those of political parties as there are many politicians per party. In the same line of thought, there are also fewer Public

Institutions than Politicians. However, there is also a tendency regarding whether to follow institutions or people that has changed over the years we are studying, as will be explained in the Institutions Vs Citizens section.

Media subcategories

The Media category included Journalists and Media accounts. In this segment we analyze the percentage in which the media started following these subcategories. We can see how in 2017 the media started following a far higher percentage of media institutions; 21,7% versus 78,3%. In 2018 the percentage of journalist accounts the media started following augmented. However, it remained lower than the media institutions they started following (38,5% versus 61,5%). By 2019 the percentage of journalist's accounts had grown higher than the one of the media institutions; reaching the 58,3%.

Among the three years the difference decreased, and the media presented an inverse tendency in percentage terms, going from following more media institutions to following more journalists accounts.

Figure 8. Percentage of Media subcategories the Top 50 generalist Spanish media with the most followers on Twitter started following in 2017, 2018 and 2019.
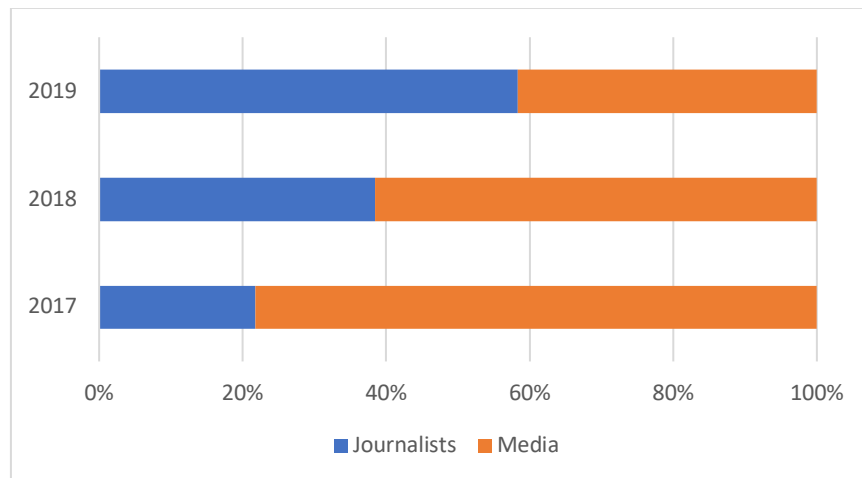
Citizenship subcategories

The Citizenship category included the subcategories: Users and Civil Institutions. These categories include entrepreneurs, Influencers, scholars, artists, celebrities, activists, etc. for the Users; and companies, NGOs, civilian associations for the Civil Institutions.

The political and mediatic elites on Twitter
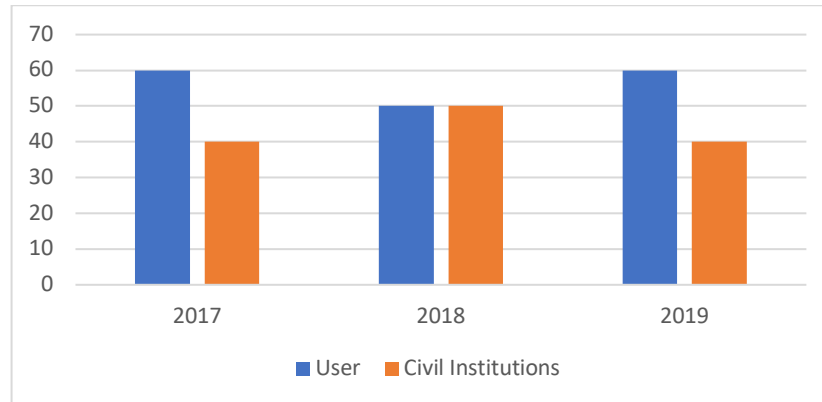
The years 2017 and 2019 presented the same percentages, there being a relationship of 60-40 percent more Users than Civil Institutions. In 2018 the distribution was half and half. In this subcategory Users are equally or more followed than the Civil Institutions.

Institutions vs Citizens

At the beginning of the period this study covers, 70% of the accounts the Media started following belonged to Institutions. This number decreased to 36% in 2018 and kept decreasing to 34% in 2019.
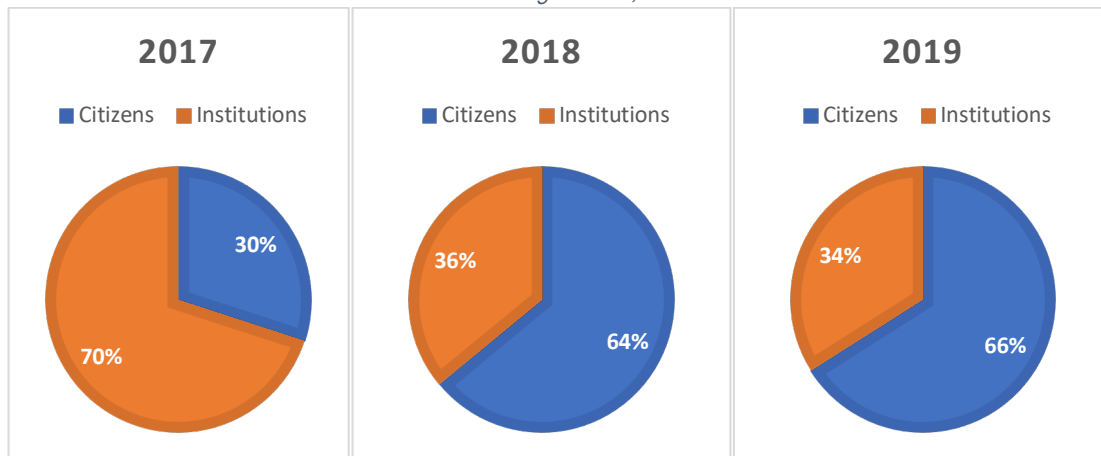
There has been an inversely proportional tendency regarding whether the accounts the media started following corresponded to Institutions or Citizens accounts.

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Figure 11. Tendency to follow institutions or people´s accounts by the Top 50 generalist Spanish media with the most followers on Twitter in 2017, 2018 and 2019.
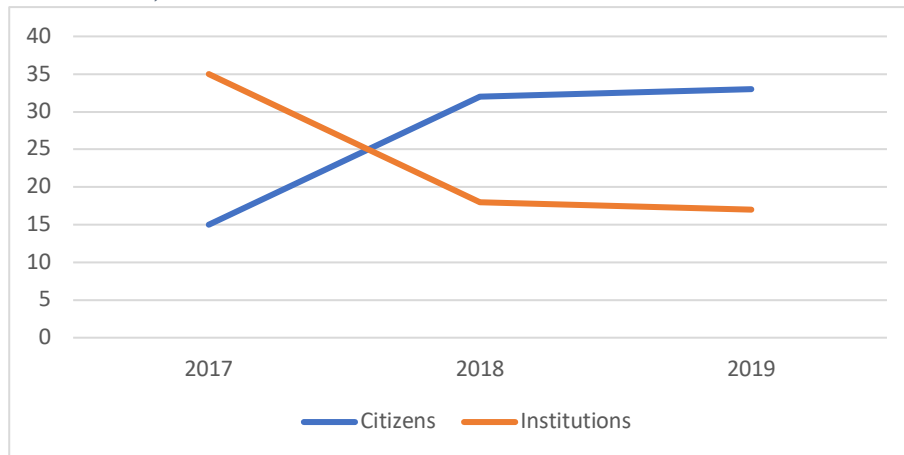
We can ask ourselves whether there are no more institutions to follow, or if the relevance or belief in institutions is decaying. Why are institutions being less followed? Is this a trend only among the Media or is the Media reflecting a more general trend? Could this represent a change in the role or trust that different social actors are giving to institutions?

Country

Spanish Media started to follow mainly Spanish accounts in all the years we are studying. Moreover, the tendency is to follow a higher percentage of Spanish accounts every year.

Figure 12. Tendency to follow Spanish accounts or from other countries by the Top 50 generalist Spanish media with the most followers on Twitter.
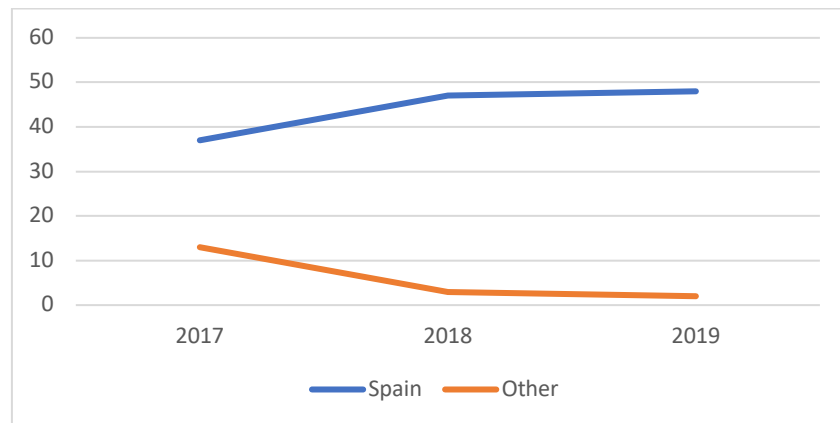
Figure 13. Country of origin of the accounts that the Top 50 Spanish generalist media began to follow in 2017, 2018 and 2019.
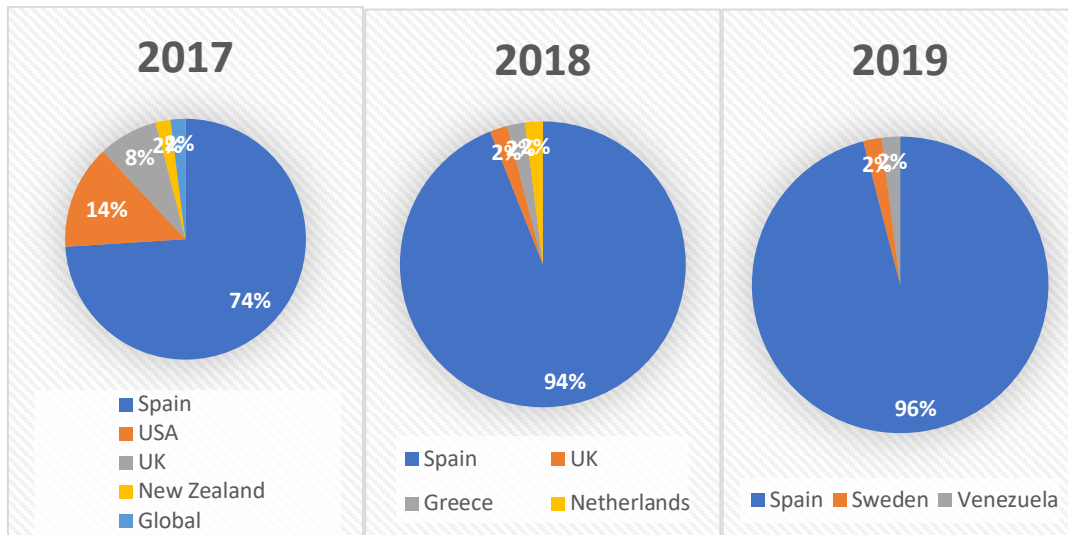
During 2017, the accounts the top 50 Spanish generalist media started to follow belonged to accounts from five different origins, Spanish accounts representing the 74% of the accounts. The second most followed origin of accounts were from the United States of America, being this the year when Donald Trump started his presidential term. We can assume this is the reason why the Spanish Media started following accounts from USA, as more than half of the accounts they started to follow from this country correspond to the White House and Donald Trump. The other half belong to media accounts and a scholar. Besides, in the other years of this study, they did not start following any account from the USA. The third origin with more accounts followed in 2017 was the United Kingdom, from where the Spanish media started to follow two accounts related to security, which we can relate to the terrorist attacks that took place in that year in the UK. Media also started following a Media account and a User. In the same period, they started following one account from New Zealand, which belongs to a User, and one account tagged as global, that belongs to a Civil Institution.

In 2018, the 94% of the accounts the media started to follow were from Spain. Only three accounts were from other countries; a Politician from Greece, a User from the UK and a User from the Netherlands.

We can find a similar percentage in 2019, though it kept showing a growth, with a 96% of Spanish accounts, one account from Venezuela which belonged to a Politician and one account from Sweden which belongs to a User, an environmental activist.

From the accounts the Top 50 Spanish generalist media started to follow from origins that were not Spain, a 43,75% belong to men and 43,75% to institutions, and they all have more than 100.000 followers. The only exceptions are an account from a female scholar with 48.000 followers from the USA and from a female environmental activist from Sweden that has over 4.000.000 followers.

Number of followers

The number of followers that the accounts the media started following have, has also presented some variations among the years we are studying. It is important to clarify that the number of

followers we are analyzing corresponds to the moment this paper was being written, meaning it does not correspond to the number of followers the accounts had at the moment the media started following them, as this is data we cannot access to.

Figure 14. Number of followers of the accounts the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
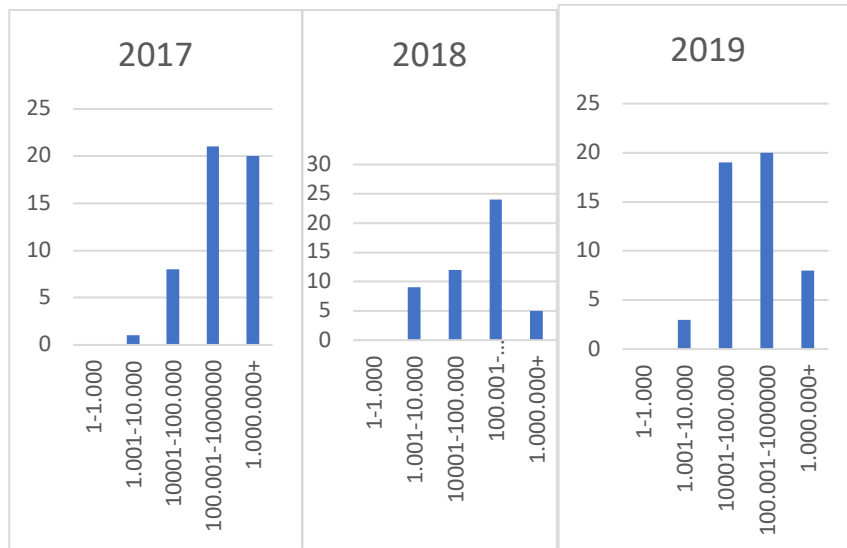
In 2017 the majority of the accounts the Media started to follow had between 100.000 and one million followers, or more than one million followers, considered the segments of Macro and Icon-influencers. In 2018, the majority also belonged to accounts that had between 100.001 and 1.000.000 followers, but the rest of the accounts they started to follow were more distributed between accounts with more than one million followers and accounts with less than 100.000 or even less than 10.000 followers. In 2019 the most followed type of account by the media was the middle segment which corresponds to the Mid and Macro influencers; accounts with 10.001 to 100.000 followers and with 100.001 to one million followers. There seems to be a tendency from the Media to start following accounts with a smaller number of followers, to switch the attention from the largest accounts in terms of number of followers or Icon-influencers to the Mid and Macro-influencers. However, the smallest accounts in numerical terms did not get followed by the Media. We cannot find accounts with less than a thousand followers among the accounts the media started to follow from 2017 to 2019. 2018 was the year where the Micro-influencers were more followed, and the year were the Icon-influencers were the less followed.

Figure 15. Percentage of the number of followers of the accounts the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
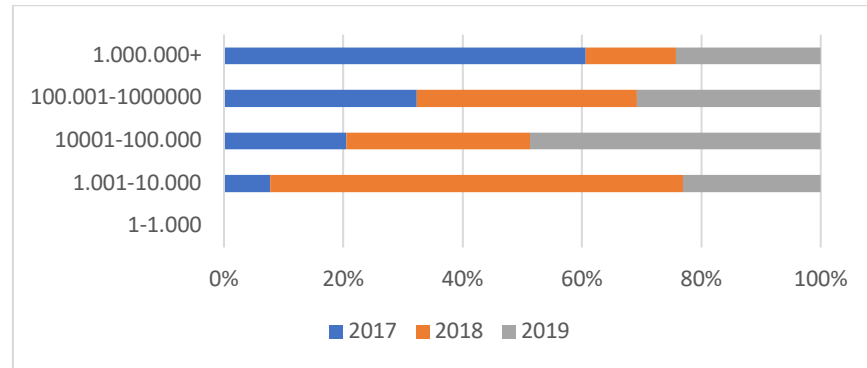
Gender

Men represent around 70% of the accounts the media started following from the accounts that belong to Citizenship (as opposed to Institutions) in all the three years of this study. This percentage presented an increase of a 5% between 2017 and 2018 and a 2% decrease in the following year. According to Statista (Fernandez, 2019), the percentage distribution by gender of Twitter users in Spain in 2019 is 50% of women and 50% of men, and 62% men and 38% women worldwide (Clement, 2020). It is important to express that this numbers do not include non-binary (Butler, 1988; Richards et al., 2016b) accounts. Nonetheless, as we can see, a 50-50 distribution of men and women accounts is clearly not represented in the 70-30 of the accounts the media started to follow between 2017 and 2019. Moreover, given that the majority of the accounts the media began to follow corresponded to politicians, we must take into account the fact that the Spanish senate is composed of 38% of women senators and 62% of men, and has had a similar distribution in the past five legislatures (Senado, 2020).

Figure 16. Gender type percentage in the Citizenship accounts the Top 50 generalist Spanish Media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
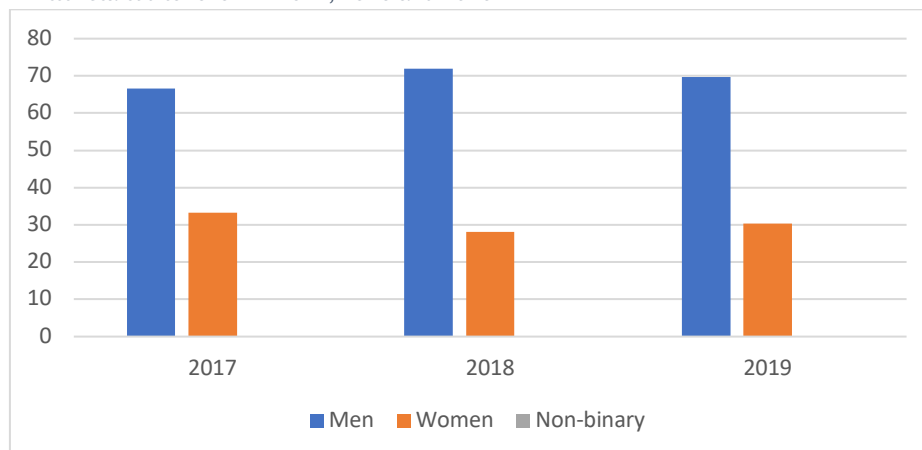
In the visualized tendency, regarding the gender of the owners of the accounts the Media started to follow, the gender gap is not getting closer. Moreover, the difference has shown a tendency first to grow and then decrease, but in a smaller proportion than at the beginning of the studied period.

Figure 17. Gender tendency in the people accounts the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.
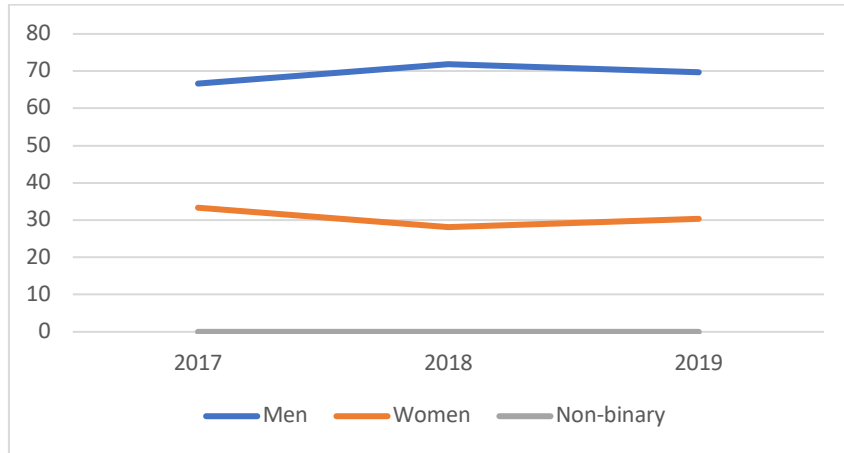
*Figure 18. Gender per categories the Top 50 generalist Spanish media with the most followers on Twitter started to follow in 2017, 2018 and 2019.*
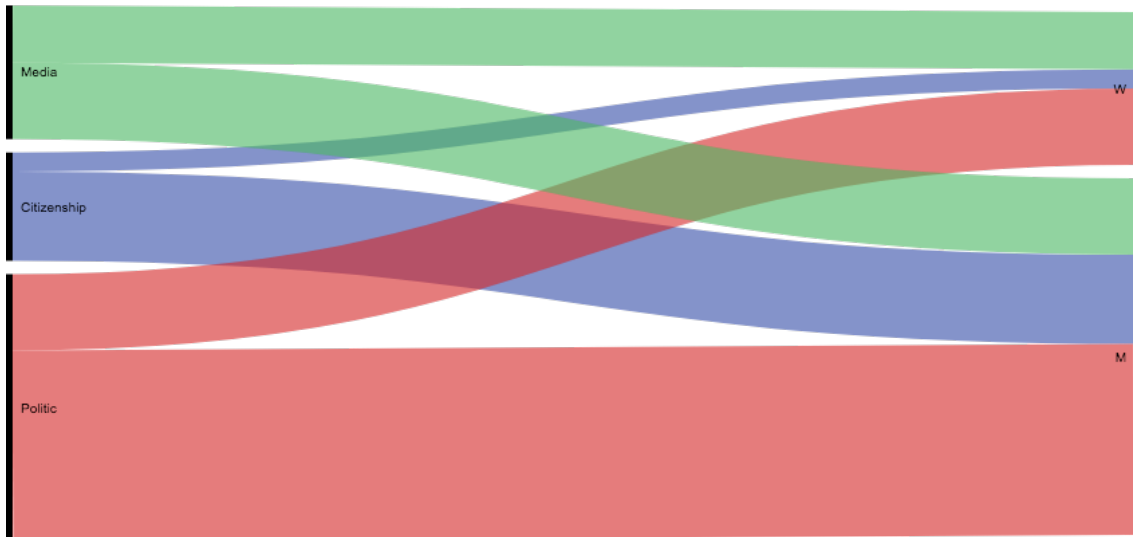
Figure 19. Percentage of subcategories per gender that the Top 50 generalist Spanish media with the most followers on Twitter started to follow.
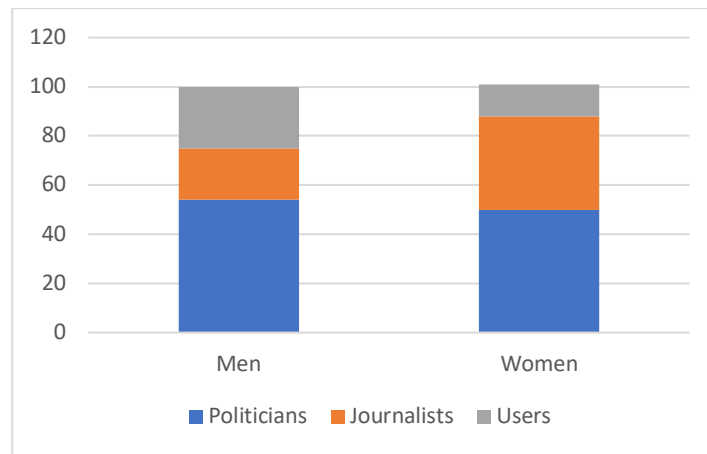
The accounts that belong to Women generally correspond to Politicians or Journalists, as opposed to accounts that belong to Men, where we can find besides these sub-categories, more User type accounts which include entrepreneurs, celebrities, influencers and scholars. This could mean that for women to be followed by the Media, they have to have an established political or media role, or due to the fact that there are less women in leadership and power positions (Carli & Eagly, 2002; Connell, 1987; Painter-Morland, 2011), or that the Media perpetuates gender underrepresentation of women (Armstrong, 2004; Len-Ríos et al., 2005; Shor et al., 2015).

Figure 20. Percentage of number of followers per gender that the Top 50 generalist Spanish media with the most followers on Twitter started to follow.
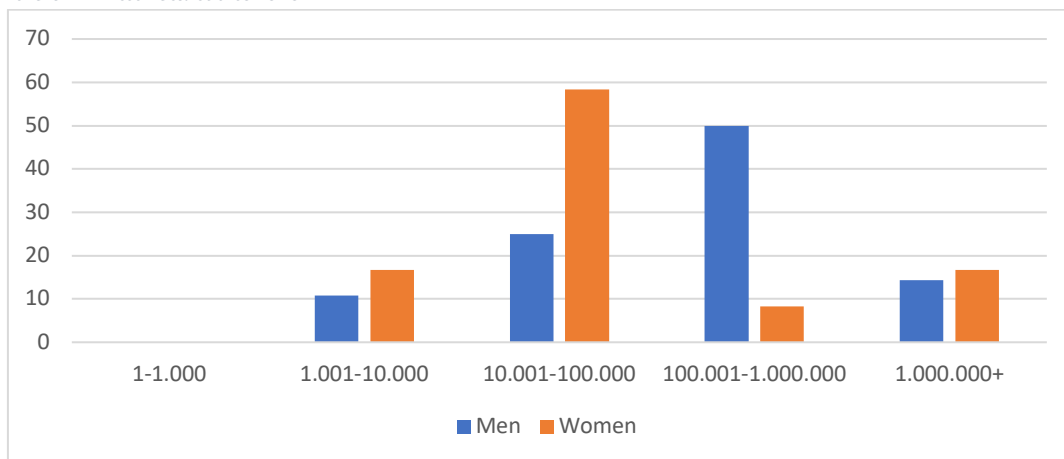
The women the media started to follow tended to have a lower percentage of number of followers than the accounts they started to follow that belonged to men. We can find more women´s accounts in the segments from 1001 to 10.000 and from 10.001 to 100.000 followers, whereas we find a higher percentage of men´s accounts in the segment from 100.001 and 1 million followers. Nevertheless, we can find a higher percentage of women´s accounts with more than a million followers.

Conclusions/Discussion

The question about the relationship between the media and politicians and their correlation to the agenda setting (Aruguete, 2017; Davis, 2007; Parmelee, 2014) is not a new one. Likewise, arises the issue about this relationship with the changes introduced by new technologies, such as the internet 2.0, social networks and Twitter in particular (Bengoechea et al., 2019; Gómez, Hernández-Santaolalla, & Sanz-Marcos, 2018; Kramer, 2010; Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018; Verweij, 2012) as online media has changed the dynamics and flows of influence and power between Politicians, the Media and the Citizenship (Chadwick, 2017; Dang-Xuan et al., 2013; Guo & Vargo, 2017; Jenkins, 2006; Meraz, 2009, 2014; Soler & Micó Sanz, 2019; Vargo, 2018).

In the present study we found that the most followed generalist Media from Spain started to follow a majority of Political accounts during the years 2017 to 2019 as visualized in Figure 6, representing more than the 50% of the accounts that the sample began to follow in 2018 and 2019 (see Figure 5). We cannot asseverate that this means that the political sphere setts the agenda, but we do believe it constitutes an element with which further explore this notion in the digital sphere. Otherwise, the tendency to follow other media accounts decreased from 2017 to 2019, going from a 46% to a 24% in the studied period. The tendency to follow accounts that belong to the citizenship slightly increased in this same period, representing a 20% in 2017 and a 24% in 2019.

One of the trends that we were able to observe in most of the categories and subcategories that we studied is the passage from following Institutions to Citizens. The tendency to follow accounts that belonged to either Citizens or Institutions was inversely proportional as we can observe in Figure 11, going from a majority of Institutions in 2017 to a majority of Citizens in 2019. This can be observed in all the categories we analyzed with the exception of the Citizenship ones, where Users accounts were already a majority at the beginning of the studied period. By 2019, over the 60% of the political accounts the Media started to follow belonged to Politicians in contraposition to Political Parties and Public Institutions, and as opposed to the beginning of the studied period, when Politicians represented less than the 30% (See Figure 7). Likewise, 58% of the Media accounts belonged to Journalists by 2019, as opposed to a 42% of Media Institution accounts, and in contrast with 2017, when only the 21.7% of the accounts the Media began to follow corresponded to Journalists (Figure 8). On the other hand, within the Citizenship category, Users represented between 50 and 60% in all three years of the study, in contraposition to Civil Institutions (Figure 9).

We wonder if this trend to follow more Citizens than Institutions every year responds to a practical reason such as the fact that there are more citizens than institutions, bearing in mind that for each institution there are likely to be several people, or if it answers to a deeper matter. Perchance it suggests a shift in the role of institutions in public opinion, the agenda setting and/or in leadership. We wonder if this trend may be shedding to light a more active role of the citizenship (Deuze, 2011) as co-creators of the news and agenda (Lasorsa et al., 2012) and even as influencers (De Veirman et al., 2017). Is this a trend only among the Spanish Media or is it a more comprehensive tendency? We suggest deepening this angle in future research.

The Spanish Media we studied tended to follow a majority of Spanish accounts as exposed in Figure 12. Moreover, the tendency grew every year, going from the 74% in 2017 to the 96% in

2019, showing an inbreeding behavior regarding the precedence country of the accounts they started to follow.

The analyzed media showed a variation in the tendency to follow accounts with larger number of followers to accounts with less followers. They went from following mainly Icon and Macro-influencers to following predominantly Macro and Mid-influencers (Agrawal, 2019; Lieber, 2018; Maheshwari, 2018; Stokel-Walker, 2019; Tankovska, 2020). The number of followers of the accounts the Media started to follow that remained more stable during the years of this study, was the one corresponding to the Macro-influencers (between 100,000 and 1 million followers) and the range that grew every year is that of the Mid-influencers (accounts that have between 10,000 and 100,000 followers). We could relate this tendency to the one of Institutions vs Citizens in a way. The attention seems to be shifting focus from the established, the institutions, the large-scale referents, to people that even though have a large number of followers, they are not the ones with the greatest number of followers. We can see in Figure 13 how accounts with larger number of followers were the most followed in 2017 and how these segments reduced their percentage versus the segments in the middle which grew in proportion. There seems to be a shift from following big institutional accounts and very relevant people´s accounts, to following a wider variety of types of accounts that include more citizens with a smaller number of followers. Could this be read as a search to hear other voices? The emergence of the figure of the Social Media Influencer could be interpreted as an analogous process, manifesting a social disposition towards listening to new, less institutional, less famous voices, more relatable to the citizenship (De Veirman et al., 2017). More people, less well-known, seem to be becoming more relevant.

The majority of the accounts the Media started following belong to Men. The tendency to follow Men grew in 2018 and slightly decreased in 2019, with a ratio close to 70-30% in all the three years we analyzed (Figure 16). This seems to be in line with the fact that men tend to be more represented and have more presence in the media and the news (Armstrong, 2004; Armstrong & Gao, 2011; Caro González et al., 2014; Len-Ríos et al., 2005; López González, 2002; Shor et al., 2015), and in line with the fact that most of the sources used by the media tend to belong to men (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Bruin, 2014; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998).

From the accounts that belong to women, most correspond to Politicians (50%) and Journalists (38%), whereas in the men accounts, even though the Politicians accounts represent the 54% of the male citizens accounts, we can find a 25% of Users compared to the 13% of Users among Women, as presented in Figure 19. Users include entrepreneurs, celebrities, influencers and scholars among others. We can interpret this in relation to the fact that women may need to have a more established role to be followed by the Media, while men may be followed for accomplishments in a broader range of areas, or it responds to the fact that women are underrepresented in power positions (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011), and media may follow the ones in power positions. Nonetheless, it has been pointed that the Media not only responds to and represents social and gender inequalities, but magnify them with their mis- and under representations (Armstrong & Gao, 2011), perpetuating a symbolic annihilation of women (Tuchman, 1978, 2000). Moreover, contributing to maintain or even enlarge the inequalities as "Media attention has significant consequences in social stratification" (Shor et al., 2015 p.960). These results also show concordance with previous research where it was found that despite the existence of a vast number of women experts in

different areas (Academia, Business, Science), they are usually much less consulted as experts or as sources than men (Caro González et al., 2014). There are many studies that demonstrate the fact that the media and journalists have predominantly used male sources over female sources over the years, which in turn has reinforced the male role in leadership and authority (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998), as well as the mentioned overrepresentation of men in the core content of the news (Armstrong & Gao, 2011; Caro González et al., 2014; López González, 2002; Shor et al., 2015). In recent years there has been an increase in female publishers and journalists (Caro González et al., 2014), however, in our study we see how the media began to follow more Men than Women every year. We wonder who decides which accounts to follow in the media. Is it the Media Directors? The Journalists or the intern on duty? Is it a strategic or an intuitive decision? Do they follow Twitter´s algorithmic recommendations? Does the gender of the person that decide who to follow affect who the Media starts following?

In conclusion, between 2017 and 2019, the Generalist Media from Spain with the most followers on Twitter began to follow mostly Political accounts from Spain and predominantly owned by Men. An inversely proportional trend could be found between the following of accounts that belong to Citizens or Institutions, the latter representing the majority at the beginning of the studied period, whereas by 2019 we could see how the Media began to follow a majority of Citizenship accounts. Congruently, the analyzed media mostly followed Macro-influencers, and showed a tendency to follow less Icon-influencers or accounts with more than a million followers, and to start following more accounts in the Mid-influencers segment by the end of the studied period.

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2. Who are the most followed following? A data analysis case study of the accounts the Top Media Directors from Spain started following on Twitter

Abstract

Social media is transforming Journalism, fading the traditional media and political information access monopoly. In order to discern the new dynamics among Media Directors in relation to other influence groups such as politicians, media and the citizenship, we searched for patterns via a Machine Learning software to explore big data we then analyzed using data visualization methods (Mahrt & Scharkow, 2013; Provost & Fawcett, 2013). The accounts each user follows on Twitter play a fundamental role in the content to which they will be exposed (Gupta et al., 2013; Twitter, 2019a). Reason why we analyzed who the top 50 followed Spanish Media Directors started following on Twitter from 2017 to 2019 and categorized the accounts in Types of accounts, Institution/Citizenship, Country, Number of followers and Gender. The results of this study show that the most followed Media Directors from Spain started following a majority of Spanish journalists and politicians, despite the fact that the Citizenship is thought to have acquired a more relevant role in the informational process due to digital platforms (Broersma & Graham, 2016). On the other hand, results also indicate that Medium-Influencers are the trend among Media Directors, who also present a gender-balanced pattern regarding the accounts they began to follow.

Keywords

Digital journalism, Twitter, Social Media Data Analysis, Influencers.

Introduction

The relationship between Media, Politicians and the Citizenship has changed in the past decades due to the digital disruption and the web 2.0. New hybrid media logics are taking place in relation to the influence flows among these social actors, and regarding the role the power elites traditionally had in gatekeeping and agenda setting (Broersma & Graham, 2016; Chadwick, 2017; Vargo & Guo, 2017). New media provide structures and spaces that citizens have used to increase their participation and empowerment in relation to the news (Lippmann, 1998; McGregor & Molyneux, 2018). Terms like *produsers* and *prosumers* have surged (Deuze, 2011), evidencing the new more active role of the citizenship in the selection, spreading and production of the information that circulates in digital channels (Feezell, 2018). But do these changes reflect on Journalists´ behavior online?

Power relations, agenda setting and gatekeeping

Digital platforms have been given an emancipatory role, as well as conceived as freedom enhancers (Shirky, 2008). Nevertheless, the democratization of access to news and information is not the same as a social-wise democratization (Morozov, 2011). Gatekeeping, traditionally controlled by the media, politics and elites (M. E. McCombs & Shaw, 1972) has also experienced

transformations due to online media dynamics as online media now play a role in the media agenda (Meraz, 2009; Vargo & Guo, 2017). Information that would have possibly never reached the citizenship, can now be accessible without the traditional mediatic or political filters (M. E. McCombs & Shaw, 1972). In this context, journalists' role has been reconceptualized as gatewatchers (Bruns, 2005) and digital platforms became this century´s gatekeepers (Wallace, 2018) with policies, interfaces, algorithms and data usage that operate as filters and shapers of the contents and information each person accesses to (Finn, 2017). However, traditional and online mainstream media and journalists, still have power and influence the agenda setting development (Harder et al., 2017).

Journalists´ Social Media

Twitter is broadly used in the political and journalistic sphere (Broersma & Graham, 2013, 2016; Harder et al., 2017) and widely used by opinion leaders (Bengoechea et al., 2019). It has been described as a news source and an information service (Verweij, 2012), and even as a political tool or political network (Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018). The purposes most journalists use Twitter is mainly for work (Molyneux, 2015), personal branding to broadcast their content or those of their colleagues (Molyneux, 2015) and to find informational sources (Broersma & Graham, 2013; Felt, 2016; Verweij, 2012). Previous research shows that, following the principle of homophily where similarity plays a fundamental role in connection and interaction (Kwak et al., 2010; Lazarsfeld & Merton, 1954; McPherson et al., 2001), most journalists tend to interact with other journalists (Molyneux, 2015) or leaders and elites (McGregor & Molyneux, 2018). Furthermore, some studies state that male journalists tend to amplify and interact almost exclusively with other male colleagues (Bruns & Highfield, 2013). Likewise, politicians and media tend to be the principal receptor of politicians´ messages, reason why some authors claim that social media, and specifically Twitter, operate as an echo chamber of power elites (Bruns & Highfield, 2013) perpetuating the capitalistic trait of stratified attention (Dubois & Gaffney, 2014; Fuchs, 2017). The use journalists do of Twitter is believed to affect whose voices get highlighted by the news (McGregor & Molyneux, 2018) and what other users read, as people give journalists the role of curators (Molyneux, 2015).

Influence and Influencers

There are different visions regarding how to measure influence on social networks. While some authors believe we lack the tools to measure it in a precise manner (Dubois & Gaffney, 2014), others base influence on social engagement (Cha et al., 2010) and on number of followers (Dubois & Gaffney, 2014; Freberg et al., 2011) considered a popularity indicator that may be reflected in a higher reach (De Veirman et al., 2017; Kwak et al., 2010). Previous research show a link between this number and opinion leadership (Hwang, 2015), though some authors argue it does not have to be an indicator of influence (Cha et al., 2010).

The Social Media Influencer (SMI) is a new figure that has arisen in the past few years. They are users that create content and gather high numbers of followers and enjoy a relevant position in a network (Tanase et al., 2018). The number of followers appears as a strong indicator when measuring their influence. This is so, that we can even find categories of monetary compensation depending on this number (Agrawal, 2019; Maheshwari, 2018). Some authors define SMIs as "third party endorsers" as they play a role in forming their audience's opinions (Freberg et al.,

2011), an aspect interesting to further study to understand if Influencers operate as a new player in the agenda setting processes on Social Media.

Who to follow?
Each user´ social media is different as the contents they see depend on who they follow and their interests, which are picked up by the social media platforms to customize suggested contents and accounts via recommendation algorithms (Finn, 2017; Langlois & Elmer, 2013). Therefore, who each user follows becomes central in their experience on the social platform (Hawley, 2019). Besides customizing the contents, Twitter (as most social media) has a specific algorithm to suggest accounts to follow, based on interests in common and shared connections (Gupta et al., 2013), and in who the accounts a user follows started following (Twitter, 2019a). Reason why we believe relevant to study who the most followed Media Directors started following.

Objectives
We aim to analyze who the Twitter´s most followed Media Directors from Spain started following in order to find trends that can help us understand the new influence flows and relations between Journalists, Media, the political sphere and the citizenship.

Methodology
In this exploratory study we melded social media quantitative data analysis techniques and blended manual and computational methods in order to gain as much information and knowledge from the data as possible, taking care of keeping contextual implications (S. C. Lewis et al., 2013; Vogt et al., 2014). Numerous researchers maintain that it is important to incorporate Social Media analytics and Big Data analysis in Communications (Batrinca & Treleaven, 2015; Felt, 2016; S. C. Lewis et al., 2013), as most Twitter-based research in Communication employ traditional mass media methods (Felt, 2016; Pérez-Curiel & Limón Naharro, 2019) and even though we can find research in this field using quantitative methods, they are still scarce (Dubois & Gaffney, 2014; Kwak et al., 2010; Pérez-Curiel & Limón Naharro, 2019).

With the objective of analyzing who the Media Directors began to follow, we selected the 50 most followed Media Directors from Spain. We then studied the 50 accounts the sample started to follow from 2017 to 2019. We contemplated analyzing 50 in order to count with substantial data but considering that more accounts could lead to a high dispersion. Both mentioned data were extracted from a Machine Learning software through which we explored big data and visualized the network of Spanish Media Directors. We extracted the most followed ones by analyzing the biggest nodes on the graph and double-checking the number of followers manually. We proceeded to create a new network with them and via this same software we could obtain the accounts the sample started following as a network. We then classified the accounts. After analyzing and categorizing the data, we worked on data visualization (Mahrt & Scharkow, 2013; Provost & Fawcett, 2013) in the search for possible repetitions that could signify patterns or trends (Batrinca & Treleaven, 2015; Mahrt & Scharkow, 2013; Vogt et al., 2014). We classified the accounts as follows:

Types of accounts. We sorted the accounts in: Political, Media and Citizenship.
Institution/Citizenship. It refers to whether the accounts belong to Citizens (people) or to institutions (organizations of any kind).

Country. We divided the accounts based on the origin or location of the account.

Number of followers. We could not find a total consensus over how many followers signify which influence categories on social media, so we combined views from different authors (Agrawal, 2019; Maheshwari, 2018; Tankovska, 2020), merging concepts to classify the accounts as follows:

Table 4. Influencer categories based on the number of followers.

No-influencers	<1000
Nano-influencers	1.001-10.000
Medium-influencers	10.001 – 100.000
Mega-influencers	100.001 – 1.000.000
Famous-influencers	>1.000.000

Gender. We subcategorized the accounts that belonged to Citizenship (as opposed to Institutions) in Men, Women and non-binary (Butler, 1988) to understand if there were any trends and/or differences as there have been enduring patterns of gender disbalance coming from the Media (Armstrong & Gao, 2011; Usher, 2018; Zoch & Van Slyke Turk, 1998).

Results

Types of accounts

The top 50 Media Directors from Spain started to follow mainly, in the three years we studied combined, Media and Political accounts.

Figure 21. Percentages of the Types of accounts.
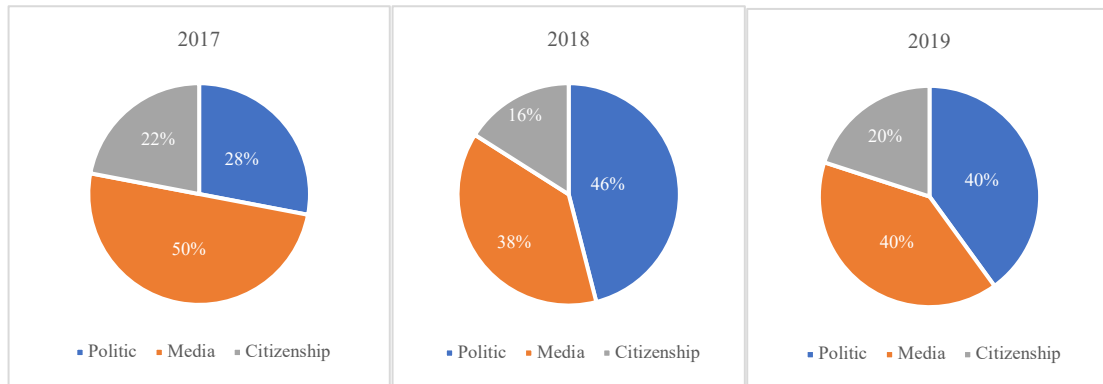
In 2017, the 50% of the accounts that the Media Directors started to follow, corresponded to other Media. In this same year, political and citizenship accounts where began to be followed in similar percentages, with a 6% difference in favor to political accounts. In 2018, the percentage of Media and citizenship accounts decayed, and the political accounts increased into being the new majority with a 46%. A very plausible reason is that it was an electoral year, so the Media Directors could have chosen to start following the political relevant actors of the moment. In 2019, Media and Political accounts had an equal percentage, 40 and 40 each, and citizenship accounts grew into the 20%. Political and Media accounts disputed the majority, being Media accounts the most followed in 2017, Political in 2018 and both types of accounts equally followed in 2019. If we add up the three years of the study, Media accounts received a slighter higher percentage of follows. Media and Political accounts had almost an inversely proportional tendency, whereas citizenship accounts first decreased and then grew, remaining the minority all three years of the study.

Institutions/Citizens

In the first years, 84% and 88% of the accounts the Media started following belonged to Citizens. This number decreased to 76% in 2019. The tendency from the sample is to follow a majority of Citizenship accounts. However, this showed a decline in 2019.

Figure 22. Percentage of accounts that belong to institutions or citizens.
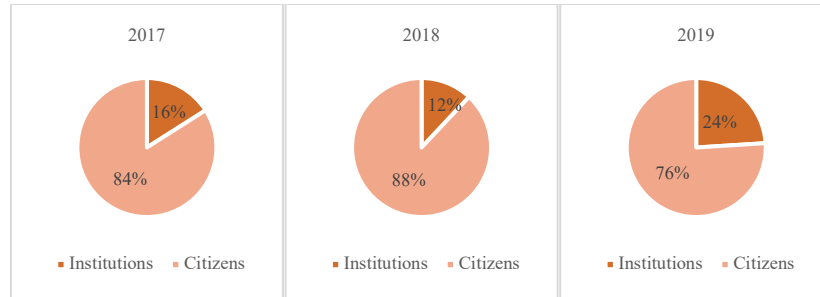
Country

The analyzed Media Directors from Spain started to follow mainly Spanish accounts. In 2017 there was an 80-20 relationship between Spanish accounts and those from other countries. In 2018 the percentage of Spanish accounts they started to follow increased to 92%. In 2019 the Spanish accounts were the 88%. The overall tendency of the Media Directors was to follow a majority of Spanish accounts that increased through the years of the study.

Figure 23. Tendency to follow Spanish accounts.
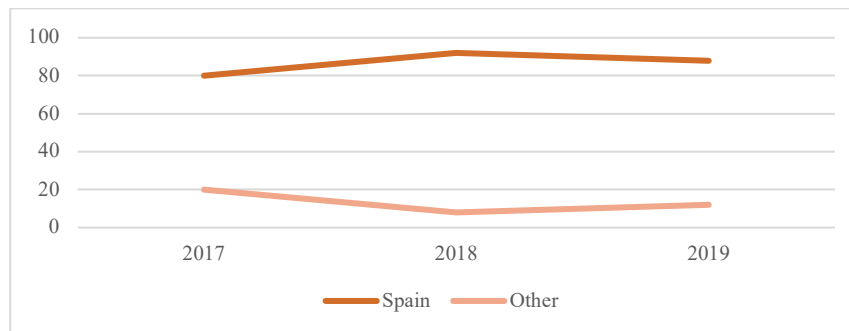
From these accounts that the Top 50 Media Directors started to follow from outside Spain, 35% belong to men and 45% to women, and a 20% we do not know the gender. No accounts were tagged as non-binary. 45% of the non-Spanish accounts belong to Political accounts, 40% to Media accounts and 15 to the Citizenship, whereas 80% of the accounts belong to citizens and 20% to institutions. 40% of the accounts have more than a million followers, 30% between 100.001 and a million, 25% between 10.001 and 5% between 1.001 and 10.000. Not one account has less than a thousand followers.

Number of followers

The number of followers of the accounts that the Media Directors started following show a predominance of Medium-influencers. In 2017 and 2018 the second most followed range where

the Mega-influencers accounts, and the third the Nano-influencers, whereas in 2019 this trend got inverted, being the Nano-influencers the second most followed type of account in number of followers. Accounts with more than a million followers where in the fourth place during the three years of the study, and no accounts with less than a thousand followers were followed.

We must explain that the number of followers we analyzed relates to the period in which the paper was being written, not the number of followers the accounts had when the Media Directors started following each account, as we do not access to this data.

Figure 24. Number of followers of the accounts.
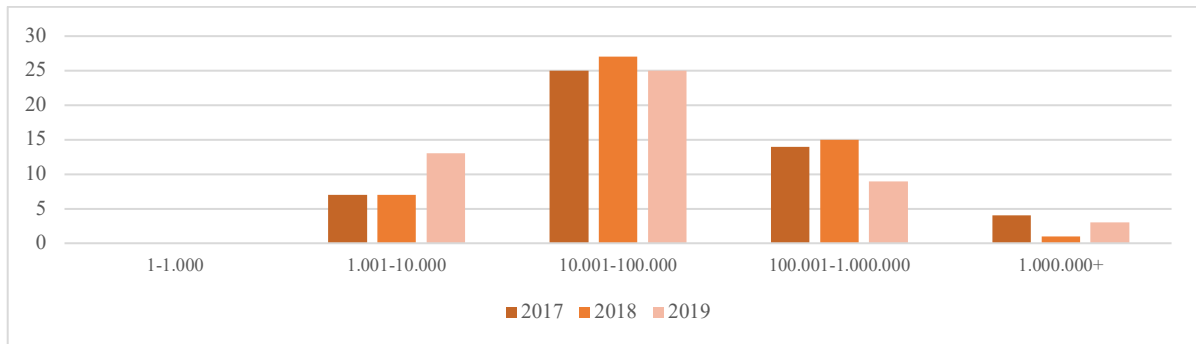
Gender

The Media Directors presented a balanced gender-wise percentage in the accounts they began to follow. In the first year of the study, the Media Directors began to follow a 50-50 percentage of Men and Women. Non-binary accounts were not identified among the accounts the Media Directors began to follow during the period of this study. In the second year there was a slight growth in the percentage of women they began to follow, that increased to 52% and in the third year Men represented the 53% of the accounts. These numbers go in accordance to the gender distribution presented by Statista regarding Spanish users on Twitter, which in 2019 presented a 50-50 distribution between men and women (Fernandez, 2019). The figures presented by Statista do not appear to take into account non-binary and dissident identities (Butler, 1988).

Figure 25. Percentage of men and women.
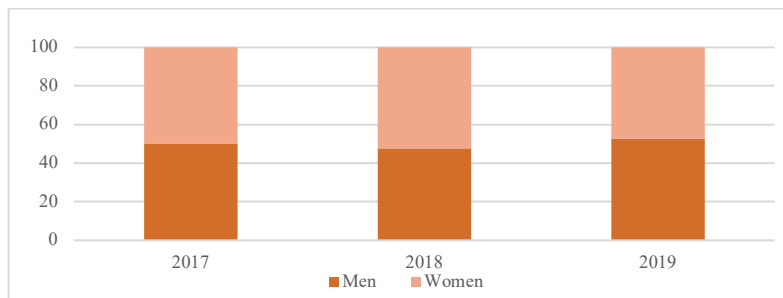
Conclusions/Discussion

The 50 most followed Media Directors from Spain started following mainly other Media and Politicians between 2017 and 2019. The Citizenship category was the least type of account

followed by them. Despite the fact that the citizenship has acquired a more active role within the informational digital context (Feezell, 2018; Lasorsa et al., 2012) (Deuze, 2011), the Top Media Directors from Spain started following an average of 20% of citizenship and an 80% of Media and Political accounts (See Figure 21). They seem to remain attached to a prior scheme where politicians and Media were the sources and agenda setters (Harder et al., 2017; M. E. McCombs & Shaw, 1972). Or, to a very current scheme where even though we conceptualize Twitter as an emancipating tool (Shirky, 2008), stratified attention is mimicked, perpetuating the dynamics of a capitalist society where those who possess power, accumulate it (Dubois & Gaffney, 2014; Fuchs, 2017) operating as an echo chamber of the political and mediatic elites (Bruns & Highfield, 2013). The results of the present study provide evidence to support this theory. We do not know whether they strategically choose who to follow, or if it responds to personal relationships, or if it is done by a community manager. We believe the question of how they choose who to follow is relevant and we suggest to further study this matter.

The majority of the accounts belonged to citizens as opposed to Institutions, with a close to an 80-20 percent relation. This suggests that Media Directors may use Twitter to enhance or develop personal/work relationships, and maybe the institutional accounts are followed by the accounts of the Media they manage.

The studied Directors started following a majority of accounts with Spanish locations or origins (Figure 23). There is a visible difference between the accounts they began to follow from Spain and from other countries. While the whole group of accounts they started following present a predominance of Medium-influencers, the accounts that do not belong to Spain present a majority of Famous-influencers. This result suggests that they follow accounts from outside Spain when the user is a very relevant figure.

The analyzed Directors showed a tendency to follow mainly Medium-Influencers accounts (10.001 to 100.000 followers) as shown in Figure 24. The second type of account they began to follow the most in the first two years of the study were the Mega-Influencers, while in 2019 they were the Nano-influencers. This supports the trend mentioned by various writers related to the rise of the nano/micro-influencers (Agrawal, 2019; Maheshwari, 2018).

Regarding the gender of the users that the Media Directors began to follow, we can see a balance between women and men accounts. This was an unexpected result, as studies show that men tend to be overrepresented in the news and in Media (Armstrong & Gao, 2011), most sources are men (Armstrong & Gao, 2011; Zoch & Van Slyke Turk, 1998), and even that male journalists tend to amplify and interact almost exclusively with other male journalists (Usher, 2018). Nonetheless, the most followed Spanish Media Directors, who are 90% men and 10% women, started following a close to a 50-50 distribution in men and women accounts (See Figure 25).

In conclusion, the results of this study show that the Top followed Spanish Media Directors on Twitter tend to follow mainly Spanish accounts that belong to either other Media/Journalists or Politicians, responding to a homophilic behavior (Kwak et al., 2010; Lazarsfeld & Merton, 1954; McPherson et al., 2001) and reinforcing old agenda-setting patterns (M. E. McCombs & Shaw, 1972). On the other hand, they showed a tendency to follow figures with fewer followers than in the past, adhering to a general trend related to the figure of the Influencers (De Veirman et al., 2017). In this same line, they began following a gender balanced amount of accounts that belong to women and men, cutting with traditional gender disbalance in Media representations (Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Connell, 1987; Zoch & Van Slyke Turk, 1998). It seems that some patterns respond to old journalistic dynamics in which they seek to

maintain the voice of power elites (Bruns & Highfield, 2013), mostly male journalists and politicians, while other trends show an openness to new models where new voices are beginning to matter, such as women and people with fewer followers.

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3. Citizenship or political? The Twitter accounts that the Media and their Directors started to follow

Título del artículo

Medios, política y ciudadanía. Las cuentas de Twitter que los medios y sus directores comenzaron a seguir

Palabras clave

Periodismo digital; Twitter; influencia; redes sociales; métodos cuantitativos; big data.

Resumen en castellano

Las plataformas digitales han introducido nuevas lógicas en las relaciones y en los flujos de influencia entre los medios, periodistas, políticos y la ciudadanía, así como en lo que respecta al *gatekeeping* y el establecimiento de la agenda político-mediática (Casero-Ripollés, 2021; Guo & Vargo, 2017; Wallace, 2018). No obstante, los grupos de poder siguen reproduciendo tendencias homofílicas en el mundo digital (Maares et al., 2021; McPherson et al., 2001). Con el objetivo de contribuir con la profundización de la comprensión de las dinámicas y flujos de influencia online entre las élites de poder, analizamos a través de un software de *machine learning*, las 50 cuentas que la red de los directores de medios más seguidos en España comenzó a seguir, y las comparamos con las cuentas que comenzaron a seguir los medios que dirigen. Las categorizamos en tipos de cuentas, ubicación y género, y analizamos las repeticiones entre las cuentas que comenzaron a seguir, para luego trabajar con métodos de visualización de datos en busca de tendencias y patrones (Bail, 2014; Batrinca & Treleaven, 2015)

Los resultados de esta investigación indican que algunos patrones de comportamiento difieren entre ambas redes, como el género y los tipos de cuentas que comenzaron a seguir, mientras que presentaron tendencias similares con respecto a la ubicación de las cuentas. El año en el que se aprecian mayores similitudes corresponde a 2018, año electoral en España, donde ambas redes comenzaron a seguir mayoritariamente a políticos españoles varones.

Title

Media, politics and citizenry. The Twitter accounts that the Media and their Directors started to follow

Keywords

digital journalism; twitter; media influence; social networks; quantitative research; big data.

Abstract

Digital platforms have transformed the influence streams among media, journalists, politicians and the citizenship, as well as concerning gatekeeping and agenda setting (Casero-Ripollés, 2021; Guo & Vargo, 2017; Wallace, 2018). Nonetheless, homophilic tendencies among power groups continue to be reproduced online (Maares et al., 2021; McPherson et al., 2001). With the objective of contributing to the deepening of the understanding of the dynamics and influence flows online among power elites, we analyzed via a machine learning Software, the 50 accounts that the network of the most followed Media Directors in Spain began following and compared them with the accounts that the Media they manage started following. We categorized them in Types of accounts, Location and Gender, and analyzed the repetitions between the accounts they

began to follow to subsequently work with data visualization methods in order to find trends and tendencies (Bail, 2014; Batrinca & Treleaven, 2015).

The results of this research indicate that some patterns of behavior differ between both networks, such as the gender and types of accounts they began following, whereas the location presented similar trends. The year where we can see the highest similarities corresponds to 2018, an electoral year in Spain, where both networks started following a majority of Spanish male politicians.

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Introduction and theoretical background

Along with the emergence of digital and social platforms came various views about the impact of these new media in power dynamics and influence streams between the media, politicians and citizens (Casero-Ripollés, 2021; Guo & Vargo, 2017; Meraz, 2009; Tran, 2014). On one hand, numerous researchers state that these platforms offer technological infrastructures that empower the citizenship to have a more active role regarding the information they access to and their involvement in the online news setting (Feezell, 2018; Tran, 2014). This is so, that authors introduced the terms produsers and prosumers (García Galera & Valdivia, 2014) to describe the new role of the citizenship in selecting, sharing and even producing information (Feezell, 2018). What is more, some authors conceptualize Social Media as emancipatory tools that can be understood as freedom enhancers (Shirky, 2008). However, Morozov (2011) points out that having a more democratic access to the news and information, does not imply a social-wise democratization.

Contrastingly, other studies show how politicians and media, who were traditionally the main agenda-setters (M. E. McCombs & Shaw, 1972) still have power and influence the agenda setting development (Harder et al., 2017; Tran, 2014). Furthermore, previous research indicate that social media (specially Twitter) operate as an echo chamber of those in power positions and the elites (Bruns & Highfield, 2013) as politicians and media show a tendency to be the main receptors of politicians´ messages, reproducing the characteristic stratified attention of the capitalist society (Dubois & Gaffney, 2014). Individuals´ social networks tend to homophily, being similarity one of the main connectors between people (McPherson et al., 2001). This behavior seems to be replicated on social media and digital networks (Colleoni et al., 2014), where users may choose contents that reinforce their beliefs as opposed to consuming contents that could postulate new perspectives. Moreover, the attention is homophilic among the elites (Maares et al., 2021; Wu et al., 2011). Studies show how journalists tend to interact with colleagues (Molyneux, 2015) or leaders (McGregor & Molyneux, 2018), and what is more, male journalists present a tendency to interact with, and broadcast, nearly solely other male journalists (Usher, 2018).

In this same line, media research has documented a long tradition of media's misrepresentation, trivialization and stereotyping of women in media contents and news (Shor et al., 2015). Previous research show that journalists and media have also used more men as sources than women, which reinforces men as leaders and authority figures (Armstrong & Gao, 2011; Zoch & Van Slyke Turk, 1998), all of which impacts in women's symbolic annihilation (Tuchman, 1978).

Gatekeeping, which used to be exercised by media, politicians and power elites (M. E. McCombs & Shaw, 1972) has also undergone changes with digital platforms and online media (Meraz, 2009) as these provide the infrastructure for converting any person with a smart device and internet into

an informer, and any content has the potential to reach other citizens and even becoming viral, without the traditional mediatic filters (M. E. McCombs & Shaw, 1972). However, digital platforms are software systems, that introduce changes with their own policies, interfaces, algorithms and data usage, which operate as filters and shapers impacting the contents and information each person accesses to (Finn, 2017; Martínez Figuerola & Marzo, 2016). This has led some researchers to characterize social media and digital platforms as the gatekeepers of the XXI century (Wallace, 2018).

Twitter is considered the most relevant informational and political network (Colleoni et al., 2014; Harder et al., 2017; Hu & Kearney, 2020; Verweij, 2012). It is widely used by opinion leaders (K. Smith, 2020), as well as by the media, who use it to disseminate information (Engesser & Humprecht, 2015). Journalists are also considered heavy users of this platform and use it mainly with work purposes to interact with other journalists, to broadcast their own work and their colleagues´ contents (Arrabal & Aguilera Moyano, 2016; Molyneux, 2015), as well as to find informational sources (Verweij, 2012). Journalists´ use of Twitter is considered to have an effect on the voices and messages that become part of the social discussion and the news agenda (McGregor & Molyneux, 2018). It has an effect on the contents and news that other users read, as Twitter journalists are considered curators (Molyneux, 2015). Who each user follows on their social media is determinant on the contents they will be exposed to (Hawley, 2019), as social media platforms tailor the contents and accounts they suggest via recommendation algorithms (Finn, 2017; Gupta et al., 2013; Twitter, 2019a). In this research, we are focusing on who the Media Directors and the Media they manage started following as who elites follow have an impact on the rest of the users, especially when we are talking about the most followed Media accounts. On one hand, this is due to the fact that Media and journalists are considered curators as stated above (Molyneux, 2015), but also, because Twitter´s algorithmic recommendations of who to follow tend to recommend accounts followed by the accounts you follow (Twitter, 2019a). This means that the accounts that the most followed elites start following tend to be more suggested to other users by Twitter´s algorithm. In addition to pursuing to identify the accounts followed by two media elites, the most followed media directors in Spain and the media they manage, in this study we seek to know whether the media and their directors tend to follow the same accounts, which would reinforce the echo chamber effect in case there were indeed similarities in the accounts that both networks began to follow.

Objective

In this context, we ask ourselves who the most followed Media Directors from Spain began to follow and who did the Media they manage, seeking to understand if we can see the characteristics of the digital environment reflected in these accounts and at the same time comprehend if the organizational behavior of the media is related to the behavior of their directors in terms of the characteristics of the accounts they started to follow.

Methodology

This research is the culmination of a study in which we analyze the behavior and influence flows among journalists, media, politicians and the citizenship. In a previous phase we analyzed the group of Spanish media executives with the most followers on Twitter. In this final instance, we seek to compare the accounts the group of Media Directors began to follow, with the accounts of

the Media they manage, in order to understand whether individual and organizational behaviors go in similar directions, and to understand the online influence dynamics among the media elites. In the first stage of the research we studied the 50 most followed Media Directors from Spain and analyzed the 50 accounts they started to follow as a network, from 2017 to 2019 (Veronica Israel-Turim & Micó-Sanz, 2021). We categorized these accounts and proceeded to do a quantitative data analysis as we crossed different variables of the data we collected and used visualization tools in the search for possible repetitions that could signify patterns or trends (Bail, 2014; Batrinca & Treleaven, 2015; Mahrt & Scharkow, 2013). We melded data analysis techniques combining computational and manual methods to preserve contextual implications while obtaining as much information and knowledge from the data (S. C. Lewis et al., 2013). The results of this analysis are the ones to be contrasted in this final phase.

In the present study we created a new sample constituted by the media institutions where these top 50 media directors work and have incidence. This new sample is constituted by 36 media, as some of the Media Directors and executives work in the same media organizations. Once the sample of this study was determined, we created a new context to extract the top 50 accounts they began following as a group. We analyzed 50 accounts as this number provides substantial data without generating a high dispersion.

The data, which includes the top 50 media directors accounts from Spain with more followers on Twitter, the group of media they manage and the 50 accounts both networks started to follow from 2017 to 2019, was extracted from a big data analysis software developed for the project "Influencers in Political Communication in Spain. Analysis of the Relationships Between Opinion Leaders 2.0, Media, Parties, Institutions, and Audiences in the Digital Environment" named *Contexto.io*. This software organizes contexts of information around Twitter accounts using their digital public footprints. The composition of a context consists of a group of people and/or organizations that interact creating an ecosystem. They are created with a selection of Twitter accounts that are algorithmically sorted by the software taking into account their relevance in the context by analyzing the accounts digital trace. In order to determine the sample we worked with datasets that contained the Spanish Media and Media Directors accounts on Twitter. The software contains a section named *Metrics* where we could visualize information regarding the number and variation of *followees*, *followers*, *tweets* and *favorites* of the accounts of a context. In this section we searched for the Media Director´s accounts with the highest numbers of followers. We extracted the most followed ones and created a new context, in order to analyze them as network. Afterwards, we searched for the media institutions they direct and created a new context with these media, which was constituted by 36 media, as some of the Media Directors had high directive positions in the same media. Therefore, we created two new contexts, one with the most followed Media Directors in Spain, and another one with the 36 media accounts they managed, in order to proceed to their comparison. The software organizes the accounts into graphs utilizing a set of parameters in order to determine the nodes sizes and distances, such as Relations between the accounts, Communication, Common organizations and Predicted links. The resulting networks were the following:

Figure 26. Samples networks: Media Directors and the Media they manage

Once we had the two samples, we proceeded to search for the 50 accounts each network started to follow in 2017, 2018 and 2019. To do so, we also worked with the *Contexto.io* software, as through a section named *Expand* we could visualize the accounts that the contexts started to follow as groups. This section provides the possibility of selecting specific periods to analyze, the capability of including or excluding the members of the samples and it presents the accounts that the networks started following in order of popularity, calculated by the percentage of the sample´s members that started following those accounts. For the present research, we selected to visualize the accounts that the sample began to follow taking into account the ones in- and out-of-network. After collecting the data of the samples and of the accounts they started following, we categorized the accounts the sample began to follow in the same way as in the previous phase which is: Types of accounts, Location and Gender; and added a new category that analyses whether the accounts the networks began to follow are the exact same ones. The categories are defined as follows:

Types of accounts

We categorized the accounts in three types: Political, Media and Citizenship.

The Political accounts include politicians, political parties and public institutions. Public institutions have been considered political devices (Thoenig, 2003), reason why we integrated Public institutions in this category. The way a public institution works might answer to political agendas. Therefore, a user deciding to follow or not a public institution may denote a certain political opinion or preference taking into account both, the cognitive dissonance theory (Festinger, 1957) which states that individuals tend to elude news and information that is not in line with their beliefs, and homophily on social media, through which users choose contents that reinforce their beliefs (McPherson et al., 2001). However, users, and specially media, journalists and popular users can decide to follow accounts beyond whether it aligns with their beliefs for public relations purposes.

The media category is composed by Media institutions and Journalists and the citizenship category contains Users (entrepreneurs, scholars, artists, celebrities, activists, etc.) and Civil Institutions (companies, NGOs, civilian associations, among others).

Accounts repetition

We analyzed if the exact accounts the sample started following every year were also began to be followed by the network of top media directors in that same period.

Location

We labeled the accounts according to the precedence or location of the Twitter account, taken from the user´s Twitter location or their bio, and in case this information has not been detailed by the account, we searched for the person/institution to find it.

Gender

Within the accounts that did not belong to Institutions, we categorized the accounts in Men, Women and Non-binary (Butler, 1988) in order to analyze possible gender balance trends, as media studies have shown a tradition of gender disbalances in media representations (Armstrong & Gao, 2011; Zoch & Van Slyke Turk, 1998), which has been related to the fact that men are also over-represented in power positions (Carli & Eagly, 2002; Kubu, 2017). The way to determine the gender of the accounts was by analyzing the Twitter profiles. Firstly, through the users' "bio", taking as a reference the way in which each user refers to themselves. In cases where there was no bio nor self-gender references, we used the name and image of the user and added a search of web pages, interviews, etc. where information about the gender identification of that person could be found.

Results

4.1 Types of accounts

In 2017 the analyzed media began to follow a clear majority of citizenship accounts, while the Media Directors began to follow a minority of this type of account; 42% in the case of the Media they manage and 22% the Media Directors. In that same year, the percentage of political accounts was similar between both samples, with a 4% difference, whereas there was a higher difference in the Media accounts as the Media Directors began to follow a 50% of Media, while the Media they manage, a 34% of this type of account.

The year 2018 is the one in which we can find the most similar behavior among the networks in terms of the types of accounts they started following. Both samples started to follow a majority of political accounts and the percentage distribution by category was similar: Political accounts (46% the Media Directors and 42% the Media they manage), Media (38-32%) and Citizenship (16-26%).

In 2019 we can see how the Media began to follow relatively similar percentages of each type of account: 38% Media, 32% citizenship and 30% political, while the Media directors began to follow equal numbers of Political and Media accounts and a minority of Citizenship (20%).

Figure 27. Types of accounts the Media Directors and the Media they manage started following.
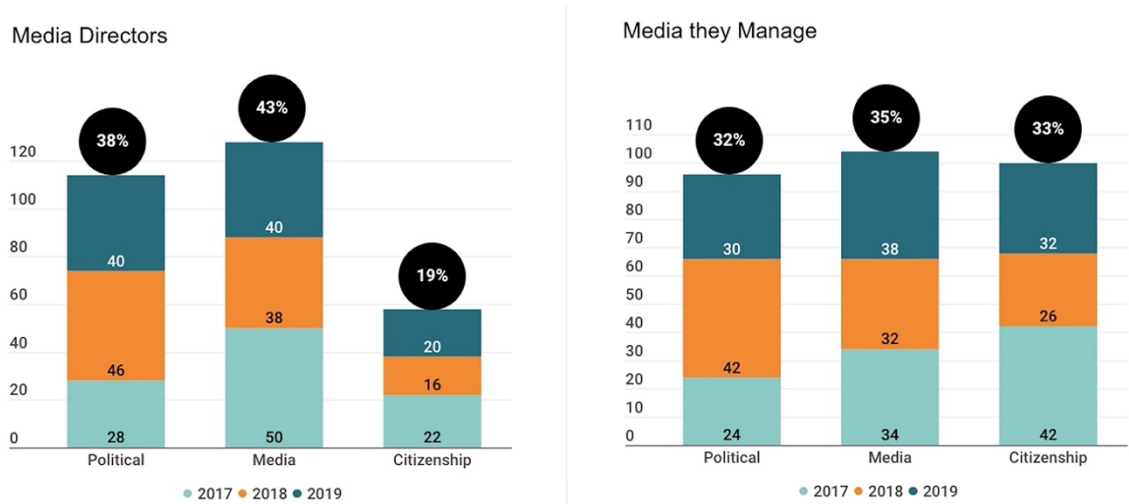
Overall, the analyzed media presented a similar distribution between the categories over the years, while their directors began to follow a majority of Media accounts and Political accounts in second place, and a smaller percentage of Citizenship accounts.

4.2 Accounts repetition

During the first year of this study, only 8% of the accounts were followed by the analyzed media and the Media Directors. In 2018 the number of accounts followed by both networks increased to its highest point with the 36% of the accounts and in 2019 it decreased but to the 34%.

Figure 28. Percentage of repetition of the accounts that the Media Directors and the Media they manage started following.
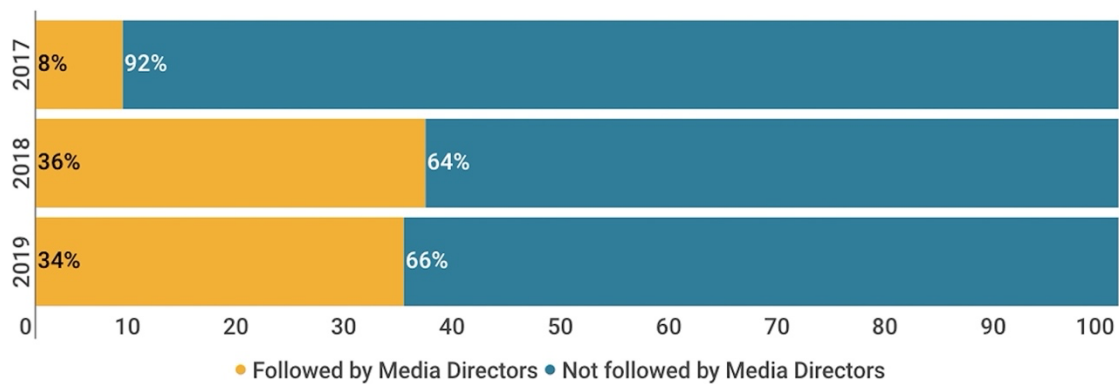
Figure 29. Percentage of types of accounts within the repeated accounts.
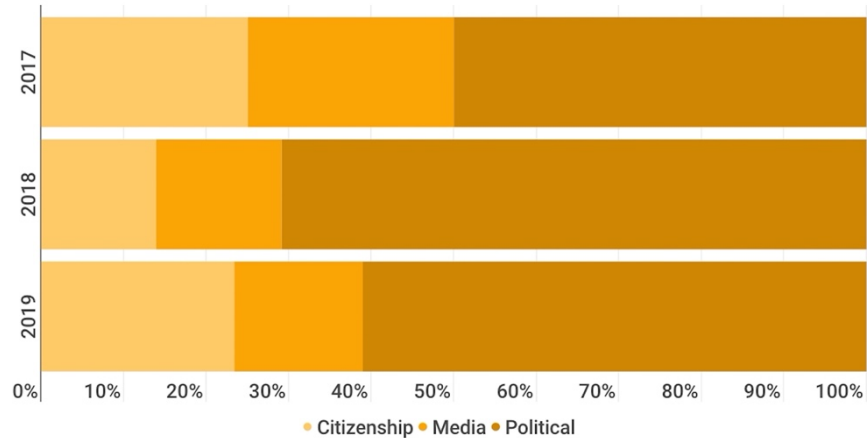
● Citizenship ● Media ● Political

When analyzing the percentages of types of accounts within the accounts that both networks started following, we can see how the majority of coincidences happen in the political sphere. This percentage was higher in 2018, a fact that we can associate with the electoral context of the country, as 2018 was an electoral year in Spain.

4.3 Location

The overall tendency regarding the location of the accounts they began to follow is similar in terms of maintaining a majority of Spanish accounts the three years of the study, and also in the patterns´ variations.

Figure 30. Location of the accounts that the Media Directors and the Media they manage started following.

The first year of this study was in both cases the year where they began to follow a smaller percentage of Spanish accounts, 80% the Media Directors and 74% the Media they manage. 2018 was in both cases the year with the highest percentages of Spanish accounts, 92% in the case of the Media Directors and 98% the Media they manage. The third analyzed year presented a descensus in the Spanish location percentage, which was still higher than the first year, corresponding to 88% and 80% of the accounts.

Both networks presented differences regarding the rest of the countries of the accounts they began following. In 2017, the Media directors began to follow only accounts from the United States, being an election year in that country, and in particular the year in which Donald Trump assumed the presidency. Once again, the political context seems to influence the accounts that the Media Directors decide to follow on Twitter. Meanwhile,

the Media they manage began to follow accounts from several countries including, in addition to the United States, the United Kingdom, New Zealand, France and global accounts. Among the accounts of the UK, we can find The Metropolitan Police and Greater Manchester Police. We believe this finds its root in the fact that Manchester and Barcelona were the setting of two terrorist attacks in Europe that year (Statista, 2017). In 2018, the year in which both networks began following the highest percentages of Spanish accounts, we can observe how the Media Directors began following accounts from three more countries: United States of America, Greece and Colombia, whereas the Media they manage only began following one account from USA. In 2019, repeating the pattern of 2017, the Media began following accounts from a wider variety of locations in comparison to their directors. Nonetheless, both networks began to follow accounts from the same countries: Venezuela, Sweden and the United States.

Figure 31. Number of followers percentage comparison of Spanish and non-Spanish accounts.

When we compare the Spanish and non-Spanish accounts, we can see how both networks have a different behavior regarding the number of followers of the accounts they began following. When following Spanish accounts, Media Directors began following a majority of accounts with 10-100K followers, while the Media they manage a majority of 100K-1 million followers. Meanwhile, the accounts they began following from other countries are majorly accounts with more than a million followers in the case of both analyzed groups. It seems that when following accounts from outside of their own country,

they choose to follow those accounts that present a high relevance in terms of reach/number of followers, public figures and accounts followed by many other users.

4.4 Gender

While the Media Directors presented a men-women balanced percentage in the accounts they started following, we can observe how the Media they manage began to follow more accounts that belong to men. 2017 was the year in which the gap was larger, with a close to a 70-30 distribution. The difference decreased every year, arriving at 63-37% in 2019. We could not identify any non-binary accounts amongst the accounts any of the networks began to follow and there was one account where the gender was unknown.

Figure 32. Gender of the users of the accounts the Media Directors and the Media they manage started following.
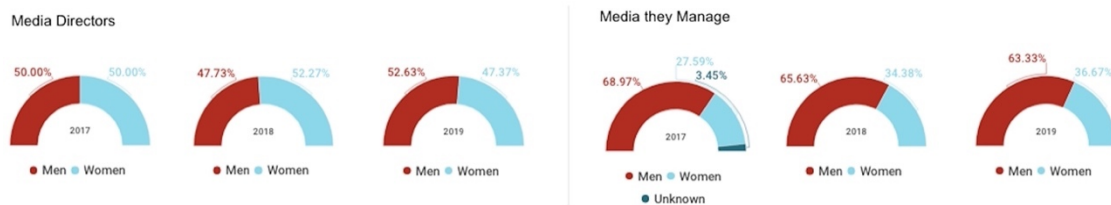
Figure 33. Percentage of types of accounts per gender.

In the case of the types of accounts they began following per gender, the Media Directors and the Media they manage presented different patterns. In the case of the Media Directors, where there was a more gender balanced distribution between men and women, there also was a more gender balance distribution per category. They started following more women politicians and more men journalists, but in similar percentages, and the users were the least followed type of account for both genders. Meanwhile, the Media they managed presented an inverse tendency by following a majority of female politicians with a 47%, a 33% of female journalists and a 20% of female users. Contrarily, they began following a majority of male users, a 37%, a 36% of journalists and minority of male politicians. It seems like the gender disbalance in the case of the analyzed media is not

only in a distribution level between gender, but also regarding the roles they have. The fact that the accounts that the media began following that belong to women corresponded mainly to politicians or journalists, contrasting to the accounts that belong to men that were mainly from users, which include entrepreneurs, scholars, celebrities, and influencers among others, could show that the media chooses to follow women's accounts when they have a recognized political or media role. These results provide evidence for the documented gender disbalanced representations perpetuated by the media (Armstrong, 2004; Shor et al., 2015).

Discussion

The Media Directors and the Media they Managed presented both similarities and differences between the accounts they began following on Twitter from 2017 to 2019. Regarding the types of accounts, the media directed by the 50 most followed media directors on Twitter in Spain started to follow similar percentages of Media, Citizenship and Political accounts (close to 33% each when adding the three years of the study). This was not the case among their Media Directors, who began following a majority of Media accounts (43%) and Political accounts (38%), while they started following the Citizenship to a lesser extent (19%). Both networks shared the fact that the most followed type of accounts were those of the Media. Nonetheless, in the case of the Media Directors it was a more pronounced majority than in the Media they manage, where we can appreciate a similar distribution between all the categories (Figure 27). These results seem to provide support for theories about homophily in social networks (Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001) and particularly in power groups (Colleoni et al., 2014). We can see how both, the Media Directors, who are mainly journalists, and the Media they manage, tended to follow mostly accounts of other media and journalists, and in the case of the Media Directors, accounts of politicians in the second place. These results highlight a tendency from the analyzed media and their directors to use Twitter as a platform for peer-to-peer exchange among those who have traditionally been the agenda-setters (M. E. McCombs & Shaw, 1972). Various authors have dedicated their research to understanding if social and digital media encourage the development of a diversified and democratic public sphere, or whether it operates in the other way, deepening filter bubbles (Pariser, 2011), homophilic echo chambers (Bruns & Highfield, 2013; Colleoni et al., 2014; McPherson et al., 2001) and polarization (Terren & Borge, 2021). Even though digital media have been conceived as platforms that enable the citizenship to partake in a more active way in the public debate (Feenstra & Casero-Ripollés, 2014), the analyzed mediatic elites have shown the tendency to interact with other members of the media and political elite, reinforcing the theories that conceptualize Twitter as an echo chamber among the power elites (Bruns & Highfield, 2013; Molyneux & Mourão, 2019), where politicians and media are the main sources, agenda setters and receptors of each other (Harder et al., 2017; M. E. McCombs & Shaw, 1972; Tran, 2014), as opposed to theories that conceptualize social media platforms as emancipators from long standing power dynamics (Shirky, 2008). Social media does provide the possibility of a space where information and communication between the citizenship is freer and more accessible, which would go in line with the Habermasian (1962) public sphere vision, but for this potential to be reached, there should be an exchange of diverse opinions and an ongoing healthy debate (Terren & Borge, 2021). "While the Internet has facilitated broader public discussion, in many regards its 'virtual public sphere' still mirrors existing social structures" (Ausserhofer & Maireder, 2013) p. 292. So, what does it imply that the media elite has begun to follow more media and political accounts than those of the citizenry? We can interpret that they

do not seek to use social media networks to promote social discussion and public debate, but rather to interact with other elites, co-creating the political debate from an agenda-setting perspective (Amaral, Zamora, Del Mar Grandío, & Noguera, 2016; M. McCombs, 2006). We consider that it would be interesting to delve into other types of digital interactions by the analyzed elites in future research, for example by analyzing what types of accounts they tend to endorse (through likes and retweets).

The analyzed Media started following in 2017 more than a 90% of accounts different from the ones followed that same year by their directors, while in 2018 and 2019 more than 30% of the accounts coincided with the accounts followed by the Media Directors. 2018 is also the year in which these directors started following a higher percentage of accounts identical to the Media they manage (Figure 28), with Political accounts being the most repeated accounts both in that year and in all the studied periods Figure 29. We wonder if they began to follow the same political accounts as they were the most relevant at the time and in the context, accounts that became relevant on Twitter at the time, or if it could elucidate that the media follow the political lines of their directors. We believe this could constitute a relevant aspect to investigate in future research.

The studied Media started following a majority of Spanish accounts in the three years of the study, in the same line with their Directors, presenting homophilous tendencies regarding their location, supporting theories that postulate the tendency of Twitter users to follow accounts from the same or close regions (Shiori Hironaka; Mitsuo Yoshida; Kyoji Umemura, 2021). Twitter´s platform has a global scale, and one of the reasons why it has been considered as a democratization enhancer (Shirky, 2008) is that it dissolves geographical boundaries (Anduiza et al., 2009). Nonetheless, the vast majority of the accounts that the analyzed media elites started following were national, showing that proximity at the geographic level plays a role in the connections also online. There are many studies that show that even on digital platforms, users tend to share and interact in geographically local networks (Ausserhofer & Maireder, 2013), and that proximity to the center of political power conditions the structure of the digital political debate (Casero-Ripollés, 2021). In line with these postulates, in this study we can see how the homophilic dimension of geographic proximity is reproduced by the analyzed elites.

The variations in the percentages of Spanish and other origins varied in a similar way every year, as observed in Figure 30, being 2017 the year with the lowest percentages, which still represented over 70% of the accounts. 2018 was the year with the highest percentage of Spanish accounts in both studies that even presented similar numbers; 92% from the Media Directors and 98% from the Media they manage. The accounts that both networks started following that are from outside Spain present the particularity that they are mostly accounts with more than one million followers, unlike the accounts located in Spain (Figure 31). The most followed Spanish media directors and the Media they manage seem to opt to follow accounts from outside Spain when these have a massive number of followers. This could respond to their online popularity (Cha et al., 2010), algorithmic authority (H. Campbell, 2011) or responding to the social platforms automated recommendations (Gupta et al., 2013). We believe this constitutes an interesting line to investigate in future research.

The year 2018 which was an electoral year in Spain, presented peculiarities such as being the year in which both groups started following a majority of Political accounts, the year with more Spanish accounts and the one in which more accounts coincided. The results of this exploratory study indicate that the political context has an impact on the accounts followed by the Media and their Directors. There seems to be a correlation between the political setting and the actions of

the media elite on social platforms, specifically on Twitter, a concept we consider relevant to further explore in future investigations.

Regarding the gender of the accounts they began to follow, the Media Directors presented a men-women balance in the accounts they began following. This results propose, at least regarding followship, a difference with previous research that stated that male journalists tend to interact almost exclusively with other male journalists (Usher, 2018). Meanwhile, the Media they manage began following a majority of men, as presented in Figure 32, following long known patterns of mis and underrepresentation of women in Media (Armstrong & Gao, 2011; Zoch & Van Slyke Turk, 1998). Moreover, the gender imbalance observed in the analyzed media shows two levels: on the one hand, the number of accounts that belong to women and men, on the other, the type of accounts, and therefore the social roles from those women and men. As can be perceived in Figure 33, the analyzed media tended to follow more women politicians and journalists, and more male users (entrepreneurs, scholars, celebrities, etc.). This fact could indicate that, similarly to the case of the accounts that are not from Spain, which presented the characteristic of having a much higher number of followers, the media follows women's accounts when they have a recognizable political or mediatic position, which may propose that the media elites reproduce patterns of gender inequality when following women on Twitter outside of the political and media elites. The women the analyzed elites started following earned their reputation because of institutional political or mediatic positions, meaning they themselves where part of these elites, as they had an established role in relevant institutions (Wedel, 2017), being in the position to make decisions of social impact (Mills, 1956). Therefore, the most followed Spanish media directors on Twitter, as well as the media they manage, chose to follow women when they were in positions that make up the traditional elites, and not so much women for their online relevance or algorithmic authority (H. A. Campbell, 2020; Cheong, 2013), not giving the same space to citizen women voices as they gave to citizen men, following the media tradition of making a biased representation of women (Armstrong, 2004; Armstrong & Nelson, 2005; Shor et al., 2015; Tuchman, 2000; Zoch & Van Slyke Turk, 1998). However, we highlight that the Media Directors started to follow a balanced percentage of women and men, even taking into account that they were women in positions within the elites, considering that the sample itself is constituted by 90% men and 10% women, and previous studies had shown that male journalists tended to interact almost exclusively with other male journalists (Usher, 2018). None of the analyzed media networks began following any non-binary accounts, which constitutes more evidence of the disbalanced representations perpetuated by the media in relation to gender roles (Armstrong, 2004; Shor et al., 2015).

In conclusion, the elite of most followed media directors in Spain and the media they manage presented both, similarities and differences regarding the accounts they started following between 2017 and 2019. Both networks presented a homophilic behavior (McPherson et al., 2001) by starting to follow a majority of accounts that belong, like them, to the Media and located in Spain. Nonetheless, the Media Directors began following a higher percentage of Media accounts, along with Political accounts, suggesting a use of Twitter as an echo chamber of the power elites (Bruns & Highfield, 2013), whereas the Media they manage presented similar percentages of Media, Political and Citizenship accounts.

The period in which we can find more similitudes was during the year 2018, year in which there were parliamentary elections in Spain. During this period, the greatest coincidences were found in the exact accounts they started following, as well as in the distribution of the type of accounts they started to follow. Moreover, most of the accounts that both networks began following that

year were political accounts from Spain. The political context seems to influence the behavior of the media elites regarding the accounts they follow on social networks.

Meanwhile, the analyzed networks presented differences in terms of the gender of the accounts they started following. The Media Directors presented a men-women balance in the accounts they began to follow, while the Media they manage began to follow a majority of men, and none of the networks started following non-binary accounts, perpetuating gender disbalances in media representations (Armstrong, 2004; Shor et al., 2015).

The fact that there were differences is interesting because although at some points, the media elites seem to use Twitter in an homophilous way, which can be interpreted as them using it as an echo chamber, the fact that we can observe some differences shows that the media directives do not have such a preponderant influence on the accounts the media they manage follow, giving space for the media to have their own profiles, and therefore the media elite as a whole does not appear as such an homogeneous block. This could give space to diverse voices within the media-politicians-citizenship ecosystem on Twitter. We believe that it would be relevant to delve deeper into this issue in future research, for example through a qualitative analysis of the discourse of media directors and of the people who manage the media accounts, in order to understand in greater depth the dynamics between them.

Analyzing different previous studies on social media and public sphere we can see how on digital social networks both, the promotion of public debate (Anduiza et al., 2009; Ausserhofer & Maireder, 2013; Puigbò et al., 2014; Terren & Borge, 2021), as well as the strengthening of homophilic groups (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; Colleoni et al., 2014; McPherson et al., 2001) coexist. Hence, it can be said that digital social media may be understood within this duality. The present research shows how this dichotomy can be observed regarding the analyzed Spanish media elite, as they presented both homophilic behaviors, as in the case of the types of accounts they followed, mostly media and political in the case of the Media Directors, following mostly Spanish accounts, behavior observed in both samples, or in the fact of the intensification of the account repetition during the electoral period. On the other hand, we found trends where they followed different accounts, and gave space to populations traditionally relegated by the media, as in the case of citizenship in the media sample and the case of women by the media directors.

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4. Who did the politicians start following on Twitter? The homophilic tendencies among the political elite

Abstract: Political communication has undergone transformations since the advent of digital networks, but do these new platforms promote interactivity and a public sphere with a more democratic political debate or do they function as echo chambers of the elites? In this research, we study the accounts that Spanish politicians started following on Twitter from 2017 to 2020, with the aim of understanding whether they reproduce patterns of homophilic tendencies or if they give space to new voices. To do so, we selected a sample from the deputies that were in the Spanish parliament during the four years of the study and through a big data and machine learning software, we identified the accounts they started following as a network and categorized them. We combined manual and computational data analysis methods and used data visualization techniques to look for patterns and trends. The results suggest that the Spanish political elites exhibit homophilic behaviors in terms of account types and geographic proximity and present a gender balance among the accounts. This study also suggests that the behavior of the political elite presented particularities during the electoral period, where we can observe an intensification of the homophilic patterns.

Keywords: Political communication; Twitter; Homophily; Social network analysis; Social Media; Power elites; Data visualization; Echo chambers; Digital communication; Digital social networks

1. Introduction

1.1. Echo chambers or enhanced public sphere?

The way in which political communication is understood has changed since the advent of digital social networks (Alonso-Muñoz et al., 2016). These platforms have impacted the ways in which people interact, setting new dynamics of influence among members of power elites and in relation to the citizenry (Chadwick, 2017; Jenkins, 2008; Wallace, 2018). Previous studies have pursued the objective of understanding if digital social media support the development of a diverse and inclusive public sphere where democratic discussion is promoted (Ausserhofer & Maireder, 2013; Colleoni et al., 2014), given that they operate as an impulse for political activism (Feenstra & Casero-Ripollés, 2014), habilitating new political actors and voices in the conversation (McGregor & Mourão, 2016). Likewise, many authors claim that the digital realm helps the promotion of transparency and interactivity (Deuze, 2011; Feenstra & Casero-Ripollés, 2014; Shirky, 2008), eliminating physical barriers (Ausserhofer & Maireder, 2013) and traditional political and media gatekeeping filters (M. E. McCombs & Shaw, 1972; Meraz, 2009; Vargo, 2018).

However, further studies show that instead of promoting such democratic participation, in the digital sphere people strengthen their prior points of view (Ausserhofer & Maireder, 2013) as they see the contents of those who they choose to follow, and due to algorithmically recommended content, which also tends to be in line with their sights and opinions as they are based on search history and users´ past activity (Finn, 2017; Mayer-Schönberger & Cukier, 2013; Terren & Borge, 2021). This has led authors to speak about the internet as a space that deepens filter bubbles (Pariser, 2011) and political polarization (Kubin & von Sikorski, 2021; Terren & Borge, 2021). The

platforms can mimic the capitalist dynamic of stratified attention amplifying the messages of those who hold power (Casero-Ripollés, 2021; Dubois & Gaffney, 2014; Fuchs, 2017), and previous studies show that the main recipients of politicians´ messages on social media are either politicians or the media, being homophily one of the reasons why they have been conceptualized as echo chambers of the elites (Bruns & Highfield, 2013; Colleoni et al., 2014).

1.2. Homophily

"Similarity breeds connection" (McPherson et al., 2001) p. 415. The principle of Homophily suggests that connections between similar people happen at higher rates than connection between people that present differences (McPherson et al., 2001), and that people tend to connect and create relationships with those who present similar characteristics to their own (Christakis & Fowler, 2009; Katz et al., 2004; Kossinets & Watts, 2009; Lauw et al., 2010; Lazarsfeld & Merton, 1954; Mcpherson & Smith-Lovin, 1987; McPherson et al., 2001; Perl et al., 2015). Moreover, people tend to strengthen their opinions by reading contents and following users aligned with their preexisting beliefs, instead of contacting with new or different perspectives (Christakis & Fowler, 2009; Huber & Malhotra, 2017; Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001; Perl et al., 2015; Valera-Orda et al., 2018). When the principle of homophily is followed by the elites on social media, it can lead to create echo chambers where the messages of those who already have power are amplified, gaining even more power (Bruns & Highfield, 2013). It has been studied that the members of the elites such as politicians and journalists tend to follow and interact almost exclusively with other politicians and journalists (Bruns & Highfield, 2013). In this framework, we wonder what is the case of Spanish politicians on Twitter. Do they interact with each other, or do they give space to the citizenship?

There is no consensus when referring to the concept of political elite (Zuckerman, 1977). Nonetheless, taking into account different definitions of the concept, such as an elite that has a preeminent political influence (Roberts, 1971); the Weberian model of elite power understood in terms of those who are in stable positions at the top of relevant social institutions (Wedel, 2017); the concept of the elites as those who are in the position to make decisions that impact other individuals´ lives by being in most relevant social hierarchies and institutions (Mills, 1956); or as the minority that rules the society (Rahman Khan, 2012). Moreover, elites can be understood under Meisel´s umbrella of the 3Cs, where there is group consciousness, coherence and conspiracy among the members of a power group (Korom & Planck, 2015; Meisel, 1958; Zuckerman, 1977). Therefore, in the present research we study the Spanish political elite from the perspective of a power group that exercises high influence and that can be analyzed as a cluster representing those who were in a hierarchical position in one of the most influential institutions, the Parliament, enabling them to make decisions that affect the rest of the members of the society, as they are all the deputies who integrated the parliament from 2017 to 2020, contemplating exclusively those who shared the entire period analyzed, with the purpose of generating a first approximation to their behavior regarding the type of accounts they began following. They are heterogeneous in terms of party affiliation, gender, age, origin, among other variables, but are homogeneous in terms of the social role they occupied in the studied period, and therefore homophily can be measured in terms of similarity to the determined sample. We believe there are lines to further explore in future research by subcategorizing this elite in different periods, by political party or by gender. In the present research we study the Spanish political elite as a group, taking into account the positional method of elite studies (Best & Higley, 2017; Hoffmann-Lange, 1989) that states that political power and influence in societies is conferred by

formal institutional positions in the main organizations where decisions that affect the citizenship are taken, as well as the institutions responsible for the resources social distribution (Best & Higley, 2017). The elite structure is pluralistic, nonetheless "theorists acknowledge that modern democracies are organizationally diverse, they claim that the diversity of organizations and interests they embody are not reflected in the elite structure. They assume that power is more concentrated in a small power elite than exponents of pluralism believe, so that participation in crucial policy decisions is limited to a small circle or knot of actors with common social backgrounds and interests that are concealed by a diversity of organizations and interests that, in terms of decisive power, is more apparent than real" (Best & Higley, 2017) p.80.

Homophily can be driven by different dimensions, such as geographical position, race, ethnicity, religion, sex, gender, age, network position, and beliefs, among others (Lazarsfeld & Merton, 1954; McPherson et al., 2001). In this research we focused on analyzing whether the Spanish deputies started to follow mostly political and media accounts, or if they started to follow citizenship accounts, taking into account the tendency that politicians and media have shown to have to follow and interact with each other, as found in previous research (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; McGregor & Molyneux, 2018; Molyneux, 2015). We also studied the location of the accounts they started following, as the geographical position is a well stated form of homophily found to be reproduced also in online connections (Ausserhofer & Maireder, 2013; Casero-Ripollés, 2021). We also focused on understanding if the accounts they started to follow present a balance between women and men, since we can find an exhaustive number of previous research that accounts the long lasting patterns of misrepresentations of women in political elites and power positions in general (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011), and even when being in power positions, can remain as outcasts of the inner circles of the elites (Moore, 1988). Moreover, even when having balanced gender representation, an equal number of women representatives in the government does not necessarily mean that there will be a qualitative representation of women interests (Lombardo, 2008). Regarding social media interactions, it has been stated in previous research how men journalists and politicians tend to interact with a majority of male peers (Colleoni et al., 2014; Usher, 2018), whereas such inbreeding homophily has not been found among women journalists (Maares et al., 2021). Given the persistent evidence of off and on-line gender inequalities in politics, this research also seeks to examine how gender dynamics impact the way Spanish politicians relate to each other regarding the accounts that the Spanish parliament start following on Twitter.

1.3. Twitter, the political network?

"Twitter is the de facto social media platform for discussing politics online" (Chamberlain et al., 2021) p. 1:2. Twitter has been described as a political tool (Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018) and as a political network (Conway & Wang, 2015; Fernández Gómez et al., 2018) as it represents a significant role in political communication campaigns (Alonso-Muñoz et al., 2016; Usher, 2018). Previous research shows that it is one of the preferred social platforms by politicians and political parties (Alonso-Muñoz et al., 2016). More than 80% of opinion leaders are on Twitter (González Bengoechea, Fernández Muñoz, & García Guardia, 2019; K. Smith, 2020), and in Spain, previous research has found that more than 90% of the deputies are users of this platform (Haman & Školník, 2021). Political actors use this platform to broadcast their messages and for political debate, as well as to interact with opinion leaders and key actors

(Ausserhofer & Maireder, 2013; Broersma & Graham, 2013). Nonetheless, as mentioned above, this interaction tends to be with other politicians and journalists, not with the citizenship (Alonso-Muñoz et al., 2016; Cervi & Roca, 2017).

Twitter research became very popular in the past few years as Twitter provides access to large amounts of available digital data (Williams et al., 2013; Zimmer & Proferes, 2014). Previous literature states that most Twitter studies focus on content analysis (Zimmer & Proferes, 2014). Twitter research on echo chambers has focused on interactions and content exposure, and the methods can vary, using digital trace data and self-reported data (Terren & Borge, 2021). Political communication has been approached in Twitter studies in different research areas such as the use of the platform in determined events, its use by the public, and the use that political parties and politicians do of the microblogging network (Chamberlain et al., 2021; Jungherr, 2016).

In Spain, Twitter research has focused on the identification of influential actors in the political conversation using big data to detect digital authority (Casero-Ripollés 2021), and the use that Spanish political leaders make of the social platform analyzed from different perspectives such as in comparison to politicians from different political systems such as the United Stated of America and Norway (Cervi and Roca 2017), to detect the influence degree and the types of strategic communications tactics that the Spanish leaders use on Twitter, as well as analyzing the interconnection between the politicians' Twitter and media profiles (Suau-Gomila et al. 2020), or regarding the linguistic strategies that politicians use in self-referencing (Coesemans and De Cock 2017). Moreover, previous research on Twitter in Spain has focused on gender gaps among politicians, showing how there are still differences between the attention and amplification that women receive in the political Twitter sphere (Guerrero-Solé and Perales-García 2021), the differences in the language used between men and women politicians (Beltran et al. 2021), as well as the differences between women and men politicians from different Spanish parties when tweeting about feminist issues (Fernández-Rovira and Villegas-Simón 2019). In this research we focused on analyzing the accounts that Spanish politicians began following, with the aim of contributing in the research of the use that political actors do of Twitter in Spain with a gender perspective, which even though has been previously explored (Beltran et al., 2021; Casero-Ripollés, 2021; Cervi & Roca, 2017; Coesemans & De Cock, 2017; Fernández-Rovira & Villegas-Simón, 2019; Jungherr, 2016; Stier et al., 2018; Suau-Gomila et al., 2020), still lacks the consideration of homophily among Spanish political elites on Twitter. Moreover, research on following flows on Twitter in Spain among politicians is practically non-existent.

1.4. Followership

Why are we analyzing who the politicians follow? On the one hand, the accounts users´ follow on social networks determine their experience on that network by defining the content to which they are exposed. Earlier studies show that the content users see on their social media feeds influences their perception of the relevance of these topics (Feezell, 2018). But also, depending on the accounts they follow, the algorithmic recommendations they receive from the network (Gupta et al., 2013; Hutchinson, 2017; Twitter, 2019b). One of the criterions used by Twitter´s algorithm to create recommendations is to suggest the accounts followed by the accounts each user follows (Twitter, 2019b), which means that the accounts followed by relevant users and influencers usually gain more visibility on digital platforms as they tend to be more algorithmically recommended to other users (Twitter, 2019a). Therefore, the accounts that the Spanish deputies follow, may be recommended more frequently to the users that follow them, gaining more visibility, influencing the whole network.

2. Materials and Methods

With the aim of understanding the behavior of the Spanish politicians regarding who they started following on Twitter, we created a sample of deputies. This sample was composed by the deputies that coincided in the parliament during the studied period, which covered the years 2017 to 2020. To define the sample, we made a database with all deputies who integrated the parliament between 2017 and 2020 and then proceeded to select those who coincided during these four years. This means that all those deputies who were only during a shorter period within those years and not the whole period, were removed. This way, we were left with those who shared the four years of parliamentary duty.

We manually checked the number of followers, location and gender of the members of the sample and once we identified it, we proceeded to create a network, understood as such according to social network analysis (Barnes & Harary, 1983; Casero-Ripollés, 2021; Grandjean, 2016; Tang & Liu, 2010), in order to analyze them. Utilizing a machine learning software named *Contexto.io*, which was developed as part of the project "Influencers in Political Communication in Spain. Analysis of the Relationships Between Opinion Leaders 2.0, Media, Parties, Institutions, and Audiences in the Digital Environment". This software can organize, explore and analyze contexts of information around people using their public digital footprints. A context is composed by a group of people and/or organizations that interact forming an ecosystem. They are created by using their Twitter accounts which are then algorithmically sorted by their relevance within the context taking into account their digital trace. Therefore, we performed a manual search of each of the deputies on Twitter to identify their user accounts. Utilizing the above-mentioned software we created a new group and manually added each Twitter user and thus created the network with the 97 Twitter accounts of the deputies who coincided in the Spanish parliament between 2017 and 2020. Once the network is created, this software organizes the accounts in a graph regarding different possible parameters such as Relations, Communication, Common organizations and Predicted links, which is the categorizations we selected for present the sample. The resulting network was composed by 97 deputies, 54 men and 43 women, was the following:

Figure 34. Network of Spanish Deputies Sample Graph.
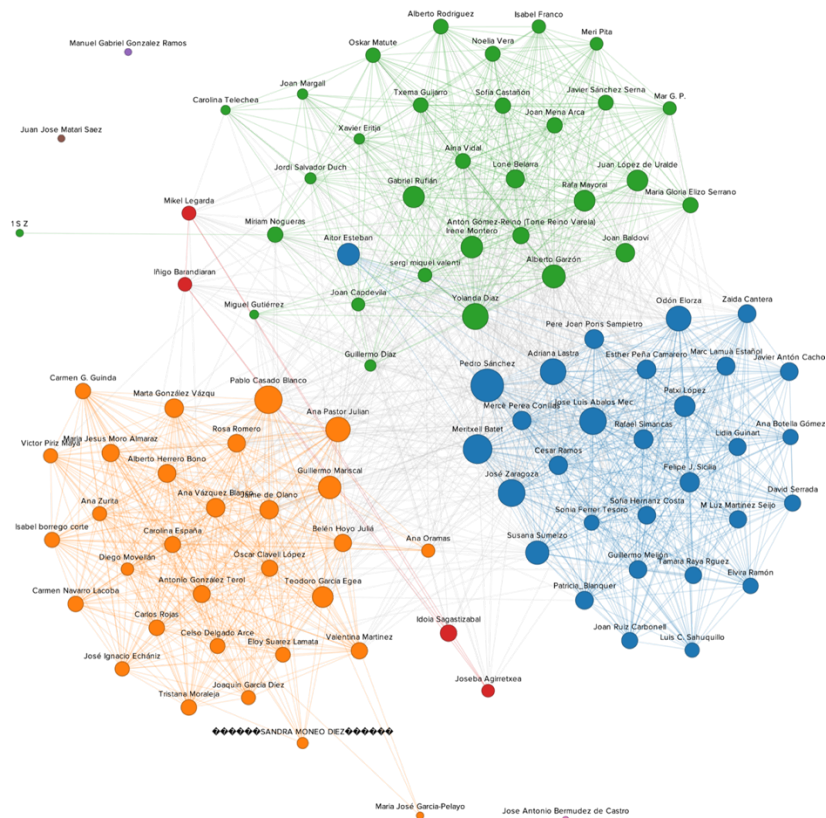
.

Once we created the sample, we consulted the data regarding who they started to follow in different periods. The sample, composed by all the deputies that coincided in the Spanish Parliament from 2017 to 2020 is understood as one possible cut to define the stable political elite of those years, in order to have a sample with sufficient members to analyze as a conjunct. We could have categorized the sample in many ways, taking into account the politicians' gender, race, origin, political affiliation, religious affiliation, and analyze homophilic tendencies from these possible different categories (McPherson et al., 2001). The present study represents a specific case study on Spanish politicians on Twitter, so we decided to make an approximation to the homophilic behaviors of the whole political class that composed the Parliament during four years, making an approximation to the macro category as politicians in power, to see if they started to follow the citizenry or if they started to follow mainly other politicians and media, as stated in previous research on echo chambers and homophily on Twitter (Bruns & Highfield, 2013; Colleoni et al., 2014). Methodologically, in elite studies, there are three main ways of determining an elite for its study: positional, decisional and reputational (Best & Higley, 2017; Hoffmann-Lange, 1989), also categorized as reputational, structural, and the agency or decision-making approach (Scott, 1974). In the present study, we have taken the positional/structural path, since, as Scott states: "the structural approach has the most to offer to researchers on power and that it provides a basis for incorporating the insights of the rival approaches" (Scott, 1974) p.84. Taking into account theoretical and pragmatic reasons, the positional method is one of the most widely used in the study of national elites (Best & Higley, 2017; Hoffmann-Lange, 1989; Larsen & Ellersgaard, 2017) p.53. Given that the present study is a first approach to the political homophilic tendencies

regarding the accounts that the Spanish political elite began following, we believe that the best methodological approach is to select the sample according to its formal position of power in society, in this case the set of deputies that conform the Spanish parliament. Structural approaches to power are centered on the aspects of strategic positions in the main institutions of a society. Positions that are the at the core of the resource's distribution and control, which are the main centers of power, and therefore, those who occupy these positions are understood as main actors in the exercise of power. Therefore, the sample represents an elite with a clear cut that seeks to provide an approximation of the political elite in Spain. Like any method and methodological decision, it has advantages and disadvantages. The advantage in this case is to be able to understand how the Spanish elite operates as a whole, as a group of decision-makers, as a cluster of people with positions of high impact on citizens lives. The limitation of this approach is to leave aside the differences among them, such as gender, political orientation, nationality, language they speak. We believe it would be interesting to deepen into the abovementioned subcategories in future research, subsequently to the present one that aims to analyze the parliamentary Spanish elite as a group, as even they are heterogenous, the political elite´s diversity has been presented by authors as more apparent than real, taking into account that they share the involvement in central policy decisions (Best & Higley, 2017). Moreover, we follow the methodological approach of several previous studies where the political elite is analyzed as such, leaving aside the differences among them, such as their political affiliation or gender (D'heer & Verdegem, 2014; Putnam, 1976; Sjöberg & Drottz-Sjöberg, 2008; Verweij, 2012).

We were also able to access the data of the accounts they started following through the *Contexto.io* software, which has a section called *Expand* where it is possible to visualize the accounts that the context started to follow, with possibility of selecting specific periods to analyze. This section provides the option to select whether to display the accounts that the group started to follow including those belonging to the context or excluding them or to display only those that are outsiders of the network. The software thus provides a list in order of popularity within the network, measured by the percentage of users in the group that started following each account. For this study, we chose to visualize the accounts that the sample started to follow both, in-network and out-of-network. We studied the 50 accounts that the sample began to follow in highest percentages in 2017, 2018, 2019 and 2020. We considered 50 as more accounts generated a high dispersion. These accounts were manually catalogued in order to proceed to search for patterns and trends (Batrinca & Treleaven, 2015; Dodge, 2005; Mahrt & Scharkow, 2013; Vogt et al., 2014) that could help us understand the relationships and influence flows of the analyzed politicians and other groups such as the media and the citizenship, and to be able to comprehend the space women have in the politicians cybersphere. The categories used to analyze the accounts the sample started to follow were:

2.1. Type of account: Political, Media or Citizenship

The political accounts were sub-categorized in Political Parties, Politicians and Public Institutions. Public institutions are included in this category as they can be considered political devices that may operate according to the political framework (Thoenig, 2003). The Media accounts were divided in Media Institutions and Journalists. The Citizenship accounts were classified in Civil Institutions (constituted by NGOs, civil organizations, companies, entrepreneurships, etc.) and Users (including scholars, entrepreneurs, influencers, celebrities, artists, activists, etc.).

2.2. Person/Institution

We categorized the accounts considering whether they belonged to a person or an institution.

2.3. Location

The location is the place or precedence of the accounts the Deputies started following expressed in their Twitter user accounts.

The data we analyze in this research correspond to the accounts that the sample started following between 2017 and 2020, not the set of accounts followed by the network since it is not possible to access this data, taking into account that users start following and unfollow accounts dynamically.

2.4. Number of followers

The number of followers of the accounts was categorized in five levels defined in previous research:

Table 5. Number of followers categorization.

Influencer category	Number of followers
Non-Influencers	<1.000
Micro-Influencers	1.001-10.000
Mid-Influencers	10.001-100.000
Macro-Influencers	100.001-1.000.000
Icon-Influencers	>1.000.000

Source: (Authors, 2021).

The number of followers used in the analysis corresponds to the moment in which the study was being carried out, not to the number of followers the accounts had when the sample started following them, as we cannot access to this data.

2.5. Gender

From the accounts that belonged to people we categorized them according to the gender they identify themselves with or by analyzing the profile (description and picture). To do this, we took into account how they described themselves in their bios and if their bios didn't make it clear, we looked for more information online about each user to find out how they defined themselves. Since most of them use Spanish and Catalan, which are languages that contain gender differentiation in most of the words, it was easier to identify how they call themselves, since by putting for example "deputy" in their bios, which would be "diputada" or "diputado" or "diputade" in Spanish, we can already know how they identify gender-wise, as "a" is used for women, "o" for men and "e" for non-binaries. Another example is an account who´s bio was "Un socialista vasco", which translates as "A basque socialist". This phrase in Spanish clarifies the gender the user identifies with, as the pronoun is masculine. The Gender subcategories were Women, Non-binary and Men (Butler, 1988; Richards et al., 2016b), aiming to explore gender balance (or dis-balance) trends, as women and dissidences have a long-lasting tradition of being underrepresented in power positions (Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Madsen & Andrade, 2018; Painter-Morland, 2011). Previous research has shown a problematic confusion between sex and gender, which tend to be presented as interchangeable categories, when sex has been defined as a biological phenomenon whereas gender is understood as a cultural dimension (Bittner & Goodyear-Grant, 2017). Both, sex and gender, tend to be understood as binary categories, male and female in the case of sex, and men and women in the case of gender, whereas research has proven that both are not. There is a percentage of the population that is born as intersex or third-sex (Carpenter, 2018), estimated to be around the 1,7% (Amnesty, 2018), and as there are other gender identities such as genderqueer and non-binary (Richards et al., 2016b). In this study,

following previous research where identities who do not identify themselves in a binary way as women or men are taken into account, we categorized the accounts in Women, Men and Non-binary (Medeiros et al., 2020).

The analysis of political ideology is a limitation of the present research, in which we decided to focus on the types of accounts, number of followers, geographic location, and gender. We consider it is relevant to delve into more variables of analysis in future research, such as political ideology.

3. Results

3.1. Types of accounts

The Spanish deputies that coincided in the parliament in the four years of this study started to follow a majority of Political accounts, with more than 50% every year, presenting a homophilic behavior regarding the type of account they began to follow (Colleoni et al., 2014; McPherson et al., 2001).

Figure 35. Percentages of the types of accounts the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
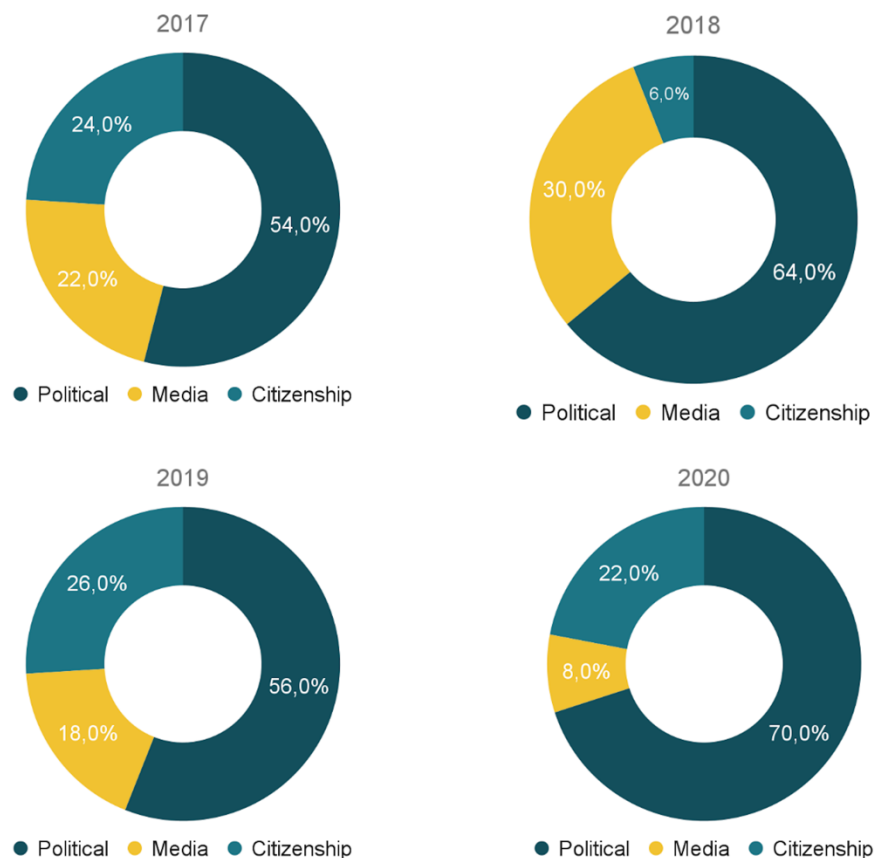
The years in which we can find a higher percentage of political accounts were 2018, an electoral year in Spain, and 2020. During the electoral year, the Media accounts that the sample started to follow increased, presenting this year the highest percentage of Media accounts, with a 30%. The

rest of the years, the sample began following more Citizenship accounts than Media ones, though in average, they started to follow the exact same percentages of Media and Citizenship accounts. The year with the lowest percentage of Media accounts was 2020, which was not a predictable result, as it was the year in which the pandemic of the Covid-19 began and the digital and social media consumption increased notably (Singh et al., 2020). The fact that they began following more than a 20% of Citizenship accounts every year, except in 2018, can be understood as a shy openness of the elites to listen to voices outside of the media and political elites, and may also be explained by the raise of the influencers figures, who are gaining relevance in the online sphere (Fernández Gómez et al., 2018; Pérez-Curiel & Limón Naharro, 2019).

3.1.1. Political subcategories

The vast majority of the political subcategories that the sample began following were other politicians. The year in which they began following less politicians was 2018, the electoral year in Spain, where the politicians accounts still represented the 66% of the political accounts they began following. This year was the year in which they began following more Public Institutions, which included several ministries, the Moncloa account and the European Parliament.

Figure 36. Percentages political subcategories that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
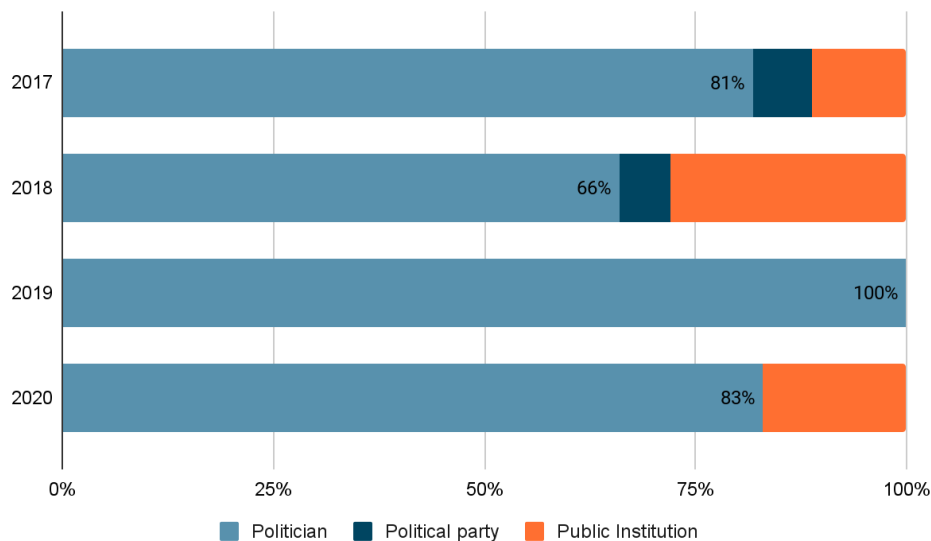
The political parties accounts were the less followed subcategory by the politician´s network. An explanation for this may be that there are less political parties than politicians, as there are many politicians per party. Another possible justification is that they already followed the political parties accounts, but another motive could be the fact that this network is constituted by deputies from different political parties, and they do not coincide in following them. We believe analyzing whether the politicians follow the accounts from the political parties that they do not belong to, and who follows each political party constitutes an interesting line for future research.

3.2. Institution or person

Figure 37. Institutions vs people percentages that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
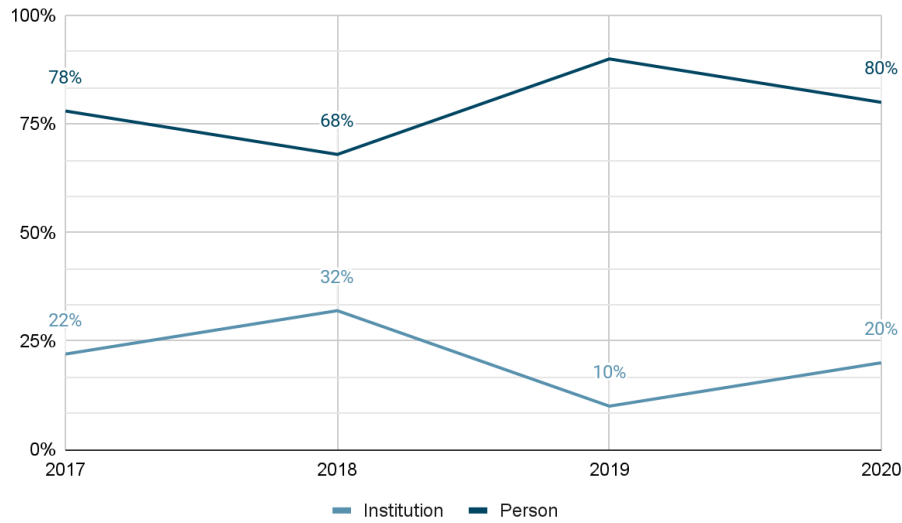
The percentages of accounts that belong to individuals and institutions are very similar to the percentages presented in the accounts of the political subcategories, which makes sense, since an average of the 60% of the accounts that they started to follow were political. The tendency of Spanish politicians is to follow accounts belonging to individuals as opposed to institutional accounts. The analyzed politicians seem to give more space to people than to institutions among the accounts they started following on Twitter. From the institutional accounts they began following, the majority are political institutions (public institutions or political parties), media institutions in second place, and the civil institutions were the least followed. The year in which they started to follow more institutions was 2018, when they started following a 32% of institutional accounts, from which 69% were political institutions and 31% were media institutions. It was the only year in which they did not start to follow any civil organization.

Figure 38. Percentage of the types of institutions that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
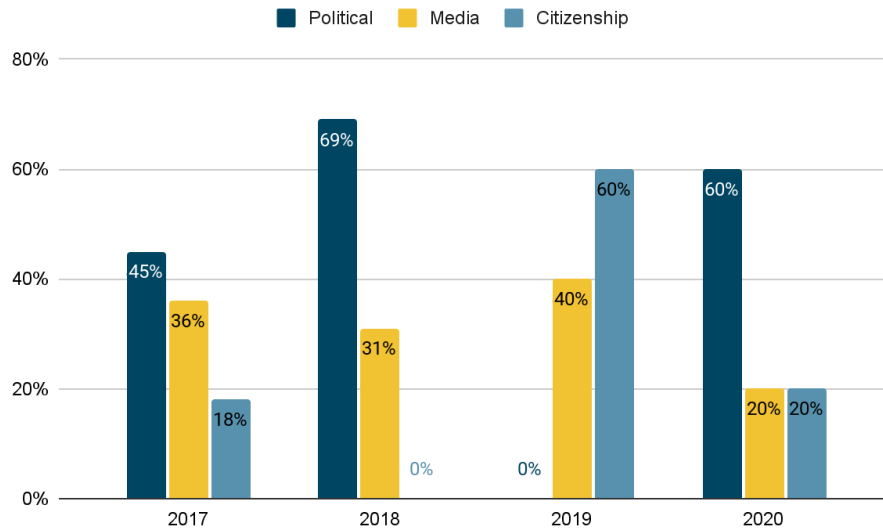
3.3. Location

Figure 39. Percentage of Spanish accounts or from other countries that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
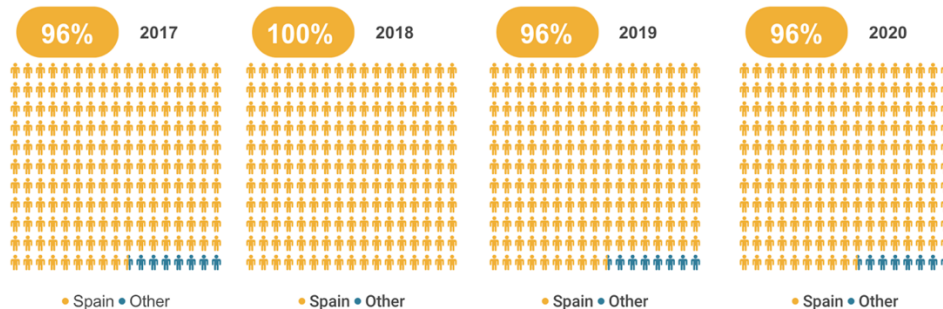
Once again, the year 2018 presents differences in comparison to the rest of the years of the study, as the sample did not start to follow accounts from any country other than Spain. The rest of the years, only a 4% of the accounts belonged to other countries. The countries from where the sample began following accounts were the United States of America, England, Sweden, and Belgium, countries that belong to the global north. We could not find any accounts from countries of the global south, defined as the countries that tend to be marginalized in the political sphere (Medie & Kang, 2018). This result also supports evidence of a homophilic behavior (McPherson et al., 2001).

3.4. Number of followers

Most of the accounts that the analyzed Spanish deputies began following, have between 10.001 and 100.000 followers, categorized as Mid-influencers. This trend was especially high in 2018 and

the pattern in all the years of the study, except in 2017, when we can find almost the same amount of Micro and Mid influencers, with one more account of Micro-influencers.

Figure 40. Aggregated number of followers of the accounts that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
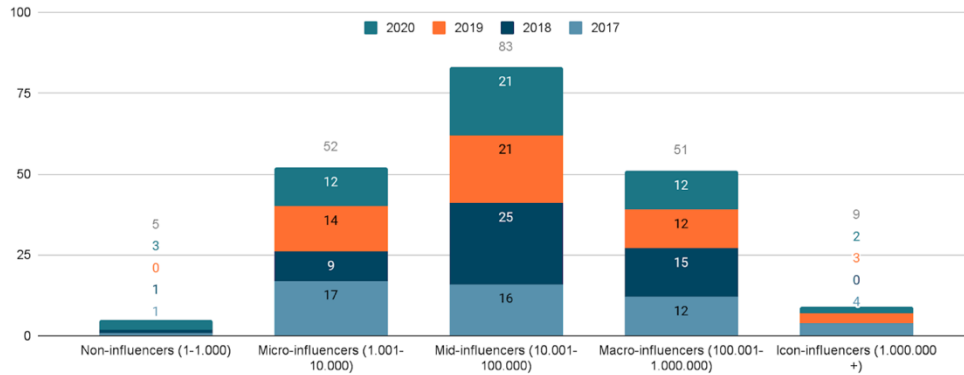
The Spanish deputies began following a similar quantity of accounts from Micro and Macro influencers, with one more account in favor to the Micro influencers. In the fourth place, they began following Icon-influencers and the non-influencers were the least followed group by the sample.

In order to comprehend whether this result implies an homophilic behavior, we analyzed the number of followers of the accounts in the sample.

Figure 41. Sample´s accounts number of followers of the accounts.
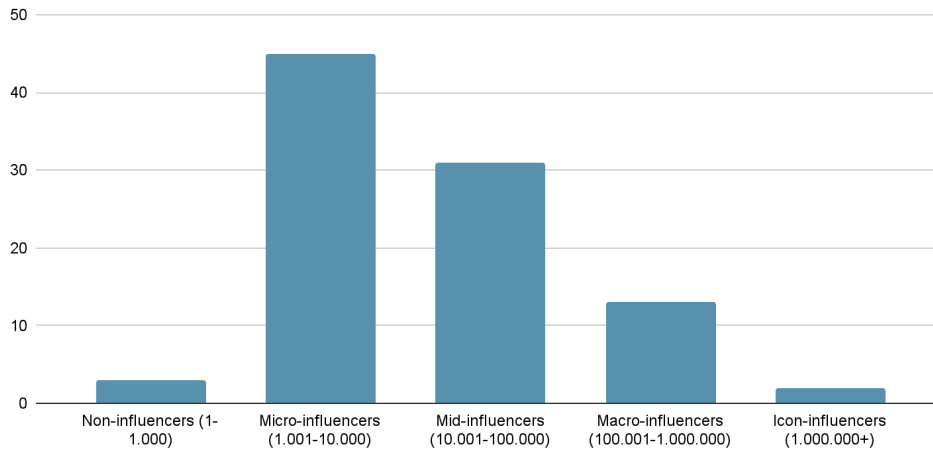
As we can observe, the distribution of the number of followers in the sample is not the same to the accounts they started following. While the accounts they began following were a majority of mid influencers in the first place and micro and macro influencers in very close second and third place, the sample is constituted by accounts that are mainly micro influencers in the first place, mid-influencers in second and macro-influencers in third place. While this could be understood as a difference between the composition of the sample and the accounts they followed, and therefore

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a non-homophilic behavior, most of the accounts in both networks remain between micro, mid and macro influencers. And in both cases, we can see that non-influencers and icon-influencers are the types of accounts that have the least presence. From this point of view, we can say that the behavior of the sample was to follow accounts similar to their own in terms of number of followers.

3.5. Gender

Figure 42. Gender of the accounts that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
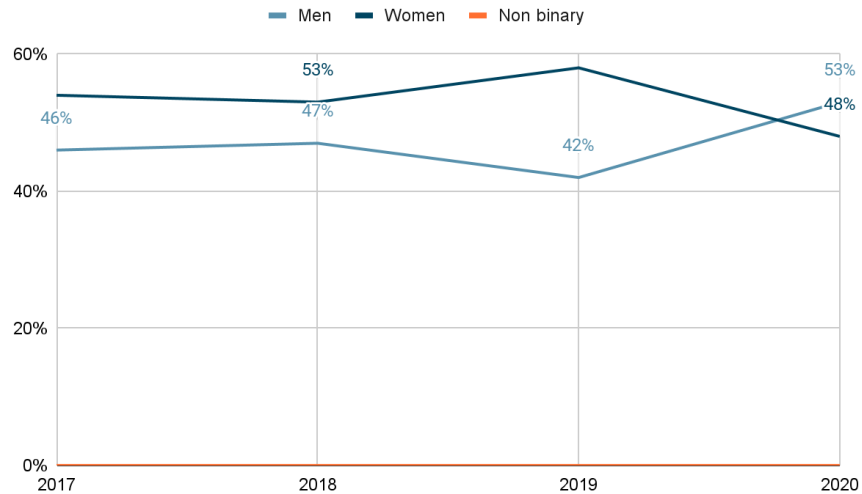
During the first three years of this study, the Spanish deputies started following more women than men. 2020 was the only year in which they began following more men than women. The Spanish senate in its whole is composed by a 62% of men and 38% of women senators, and has presented a similar distribution for the past five legislatures (Senado, 2020). The sample of the present study is constituted by a 56% of men and a 44% of women, which represents a more balanced network, especially considering the long lasting underrepresentation of women in power positions (Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Madsen & Andrade, 2018; Painter-Morland, 2011).

Figure 43. Gender per category of the accounts that the sample of Spanish Deputies started to follow in 2017, 2018, 2019 and 2020.
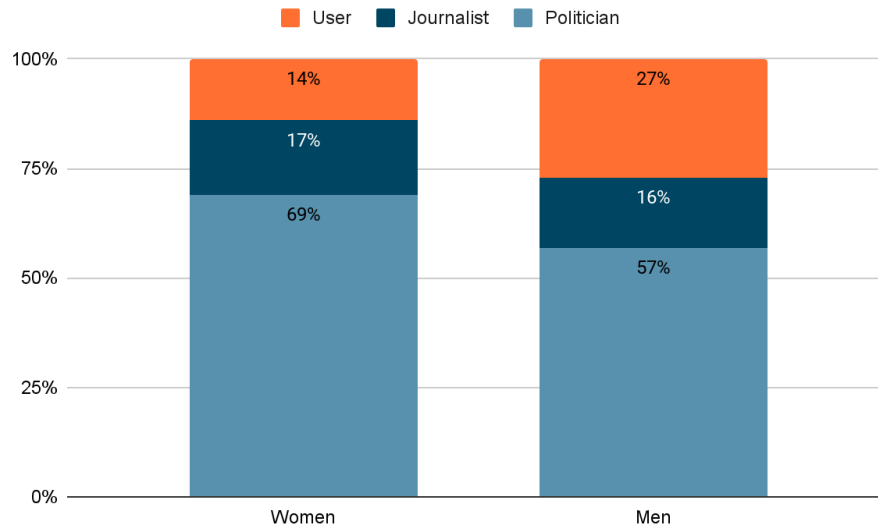
When analyzing the gender per category, we can observe how the sample of analyzed Spanish politicians started following a higher percentage of female politicians (69%) than of male politicians (57%), similar percentages of women and men in accounts belonging to journalists (17% and 16% correspondingly), and a higher percentage of male users (27%) over female users (14%). The user category includes entrepreneurs, scholars, celebrities, athletes, activists. We wonder the reason for following more male users than female ones. May it reflect a tendency to follow women only when they have a very clear established position, such as a political role?

4. Discussion

In this research we analyzed the accounts that the deputies that coincided in the Spanish Parliament from 2017 to 2020 began following as a group, with the aim of searching for patterns and trends (Batrinca & Treleaven, 2015) that could help us understand the influence flows between politicians, other power groups like journalists and media, and citizens. Moreover, we sought to comprehend if they reproduce an homophilic behavior on Twitter (McPherson et al., 2001) by starting to follow members of other power groups such as other politicians or the Media, and therefore conceive it as an echo chamber of the elites (Bruns & Highfield, 2013), or if they give space to the citizenry promoting a democratic and inclusive political debate and public sphere (Ausserhofer & Maireder, 2013; Colleoni et al., 2014).

The analyzed Spanish deputies, who corresponded to the ones that coincided in the parliament between 2017 and 2020, started following a majority of political accounts. More than half of the accounts they began following every year were political and among these, the majority corresponded to other politicians. Given the fact that choosing to follow accounts that present the same characteristics as their own, in this case other politicians, which would constitute the dimension of others that share their own socio-political status, working sphere and role in the society (Mcpherson & Smith-Lovin, 1987), we can consider that the present results provide evidence to support the theory of homophilic behavior among the political Spanish elite (Colleoni et al., 2014; McPherson et al., 2001), considering that the politicians started following mainly other

politicians. Nonetheless, the pattern of following other power elites only applied to the political elite, as the sample did not begin to follow more Media accounts than Citizenship. In fact, in average, they began following the same percentages of Media and Citizenship accounts, though the distribution differed. During 2017, 2019 and 2020, the network of Spanish politicians began following more Citizenship accounts than Media ones. They began following between a 22 and a 26% of citizen accounts, which may imply that a part of politician's attention goes to interacting and seeing contents of the citizenship. This result goes in line with studies that state that the figure of the influencers, which has emerged in the past few years (Fernández Gómez et al., 2018; Pérez-Curiel & Limón Naharro, 2019) is giving room for new voices in different areas, including the political sphere, redefining social influence towards a gradual redistribution of power (Casero-Ripollés, 2021). However, in 2018 the sample only started following 6% of citizenship accounts, which means that during the electoral period is when Spanish deputies opted to start following fewer citizenship accounts. In this year, they began following 64% of political accounts and a 30% of Media accounts. This result is aligned with the studied link between politicians and journalists and their dialogical co-creation of the public and political agenda (Barberá et al., 2019; Davis, 2007; Harder et al., 2017; Martin, 2014; M. E. McCombs & Shaw, 1972). Contrarily, 2020 was the year in which they began following the lowest percentage of Media accounts, which seems unforeseen taking into account the fact that this year the Covid-19 pandemic began, and the media and information consumption increased considerably, being Media considered a fundamental tool for the health emergency management (Casero-Ripollés, 2020; Singh et al., 2020). We may think that the politicians already followed the Media accounts, so when the pandemic started, they already had the accounts among the ones they followed, reason why they did not start following them that year. However, further research would be needed to answer this matter, as one of the limitations of this study is that we analyze the accounts they began following, as we could not access the data of the accounts they were already following. Other hypothesis for this result is that they accessed the pandemic information in a more direct way in the parliament, and therefore they did not need to follow media accounts for this purpose.

Regarding whether they started to follow institutions or individuals, the trend among the analyzed accounts is to follow less institutional accounts and more personal ones. Among the institutional accounts they followed, most were political (public institutions or political parties). In second place they followed media institutions, and the type of institutions they started following to a lesser extent were civil institutions. The year in which we can find more institutional accounts was 2018. It seems like the analyzed deputies preferred creating new connections with users like them, and during the electoral year they displayed a different behavior, following more institutional accounts. Moreover 2018 was the only year when they did not start following any civil organization accounts. Most of the accounts that the Spanish deputies started following were Spanish accounts, once again presenting a homophilic behavior, this time concerning the geographical proximity (Katz et al., 2004; McPherson et al., 2001). Moreover, the accounts they began following from other countries were all from the global north, which can also be understood as a homophilic behavior and as the use of Twitter as an echo chamber of the elites (Bruns & Highfield, 2013; Colleoni et al., 2014; Meraz, 2009), given that it represents a perpetuation of the North-South global geopolitics hierarchy (Medie & Kang, 2018), where "the voices representing the developing world are hardly heard" (Vu, Do, Seo, & Liu, 2020) p. 460.

Regarding the gender of the accounts that the Spanish deputies started following, we found that they began following more women than men during the first three years of the study, and in the

fourth year of the study the difference was of 5% more men. This result defies long lasting patterns of misrepresentations of women in political elites and power positions in general (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011). The fact that the sample is constituted by a 56% of men and a 44% of women may be one of the reasons for this result. Nonetheless we believe it is important to further explore this issue, given that there may be other aspects that influence this outcome, such as the fact that perhaps the sample already followed male politicians and during the years of the study, from 2017 to 2020, the feminist movement in Spain gained relevance (Willem & Tortajada, 2021) which may have influenced politicians to start following more women. It is also important to keep in mind that the constitution of the analyzed sample contains different political parties that may have greater or lesser affiliation with feminist ideas. We consider that it would be relevant to study in future research whether this balanced percentage between men and women is maintained when studying each political party separately. The sample started following similar percentages of women and men journalists (17 and 16% respectively) but started following more women politicians than men politicians (69 and 57%), and more men users than women users (27 and 14%). The category of users includes businessmen, celebrities, influencers and academics, among others. Men are given space in various and different roles and are often taken as referents and leaders in different fields, as there is a long-lasting association of masculinity and leadership (Aaldering & Van Der Pas, 2018). Evidence of this is the media´s gender bias in the use of a higher number of men sources in the most diverse areas, regardless of whether there are women leaders in the areas being consulted (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998). The results of this study propose the idea that women begin to be followed when they have an established role such as a political office, and men are taken as referents in a wider variety of fields.

During the year 2018, which was an electoral year in Spain, we observe a few particularities. It is the year in which the sample began following more media accounts. This makes sense in an electoral context, as media and journalists are relevant actors of influence on political agendas (Davis, 2007). This same year, they began following more political institutions within the political accounts, and it is the year with the highest percentage of institutions in general. Although the general trend concerning the location of the accounts was to start following a vast majority of Spanish accounts with more than the 90% every year, the only year in which there were no accounts from other countries was 2018. These results suggest that the electoral year impacts the behavior of the political elite on Twitter in relation to who they start following. Although the Spanish politicians analyzed showed homophilic behavior in terms of the accounts they began to follow during the entire period studied, we can observe an intensification during the electoral year, being the year in which they began to follow more media accounts, more institutional accounts, more public political institutions and more accounts from Spain, and one of the years in which they began to follow fewer women. Therefore, we can conclude that the Spanish deputies showed a homophilic behavior during the period from 2017 to 2020 regarding the accounts they started to follow in terms of type of accounts (political, media or citizenship) and per gender, the number of followers and geographical location, and that this homophilic behavior presented variations and an intensification during the electoral period.

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Cross paper discussion

In this section the results of the four publications are analyzed crossing the data in order to understand the behavior of the elites compared to each other, highlighting the salient points that could be observed when analyzing the four chapters collectively. For this purpose, the comparison took into account the years studied in all the publications, which are 2017, 2018 and 2019.

Types of accounts

Previous research show that elites tend to interact with other elites on social media (Molyneux, 2015; Molyneux & Mourão, 2019; Usher, 2018). The present thesis analyzed the type of accounts different media and political elites started following, with the aim of contributing to the understanding of the behavior of the Spanish elites on Twitter regarding this specific type of interaction, which as has been discussed in the theoretical frame, has an incidence in the contents and algorithmic recommendations of accounts on the digital platform (Gupta et al., 2013; Hutchinson, 2017; Twitter, 2019a), and is a dimension that was not previously explored among the Spanish elites on Twitter. Moreover, it is one of the categories where the four samples of this thesis presented homophilic tendencies.

The results of this thesis suggest that the Spanish elites tend to follow other elites, supporting previous research that found elites tend to interact with each other (Molyneux, 2015; Molyneux & Mourão, 2019; Usher, 2018; Wu et al., 2011). In 2017 the top generalist media from Spain started following a majority of media accounts, with a 46%, political accounts in the second place with a 34%, and citizenship accounts in the last place with a 20% of the accounts they started following (Figure 5). Something similar happened that same year with the media directors' sample, which started to follow a 50% of media accounts, a 28% of political accounts, and a 22% of citizenship accounts (Figure 21). Meanwhile, the media directed by the top 50 most followed media directors, started following a majority of citizenship in 2017, with a 42% corresponding to this type of account, a 34% of media, and a 24% of political accounts (Figure 27). In the case of sample 4, the analyzed political elite started following a 54% of political accounts, a 22% of media and a 24% of citizenship accounts (Figure 35). Therefore, during 2017, the first two analyzed mediatic elites started following a majority of media accounts, and the analyzed political elite, a majority of political accounts. These three samples presented homophilic tendencies (McPherson et al., 2001) regarding the accounts they began following in 2017. The only sample that presented a different behavior this year was the group of media directed by the most followed media directors, who started to follow a majority of citizenship that year, being the only elite and the only year in which this happened.

In 2018, all the elites started following a majority of political accounts. The most followed generalist media started following a 58% of political accounts, the most followed media directors a 46%, the media directed by the most followed media directors a 42%, and the members of the parliament a 64%. 2018 was an electoral year in Spain. The results show that this year the focus of the media and political elites swung to the political accounts. This can also be interpreted as an homophilical behavior, as even though it is not the same type of account as their own in the case of the mediatic elites, it still constitutes the following of another elite, and an elite that has always been associated with the co-construction of the agenda setting and public debate (Aruguete, 2017; Davis, 2007; M. E. McCombs & Shaw, 1972). In this same line, in 2018 the second most

followed type of account were the media accounts in the case of all the analyzed media and political elites; the most followed generalist media started following a 26% of media accounts, the most followed media directors a 38%, the media they manage a 32%, and the members of the parliament a 30%. These results provide further evidence to understand the elite´s use of Twitter as an echo chamber (Bruns & Highfield, 2013), considering as a particular contribution, the evidence of the intensification of the inbreeding behavior among elites during the period of parliamentary elections.

In 2019, the most followed generalist media continued to follow a majority of political accounts (52%) and started following equal percentages of media and citizenship accounts (24%). The most followed media directors started following equal percentages of political and media accounts (40%), and a minority of citizenship accounts (20%), the media directed by them started following a majority of media accounts (38%), followed by a 32% of citizenship accounts, and a 30% of political accounts. Lastly, the analyzed Spanish deputies started following a majority of political accounts (56%), followed by a 26% of citizenship accounts, and an 18% of media accounts. Once again, all the elites started following in the first place another elite. However, the citizenship accounts percentages increased during this year in all the cases in relation to the previous (electoral) year, which brings the question if there is starting to be an openness to emerging citizen´s figures, something worth studying in future research.

Figure 44. Average type of accounts the samples started following aggregated.
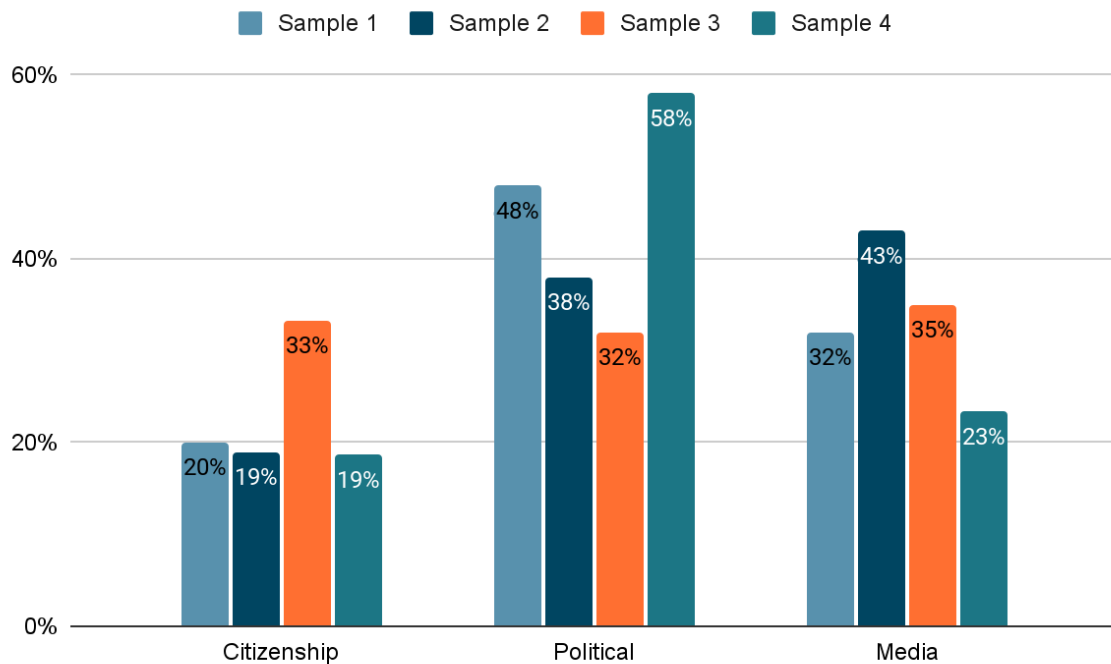
When analyzing the average percentages of the types of accounts that the samples started following, it can be visualized how the type of account they started following the most were the political accounts, followed by the media accounts, being the citizenship accounts the ones the samples started to follow the least.

Location

Another prominent trend that could be found among the four studied samples was the tendency to follow accounts from the same geographical region as their own. One of the hypes of digital social networks was their capacity to dissolve geographic borders (Anduiza et al., 2009). Nonetheless, the propensity of users to interact in local networks and with accounts from their own or close regions (Shiori Hironaka; Mitsuo Yoshida; Kyoji Umemura, 2021), has been a tendency found in previous research that show that geographic proximity has an incidence in online connections. Moreover, the geographical location is a well-known form of homophily that has been observed to be replicated online (Ausserhofer & Maireder, 2013; Casero-Ripollés, 2021).

Figure 45. Average Spanish accounts the samples started following aggregated.
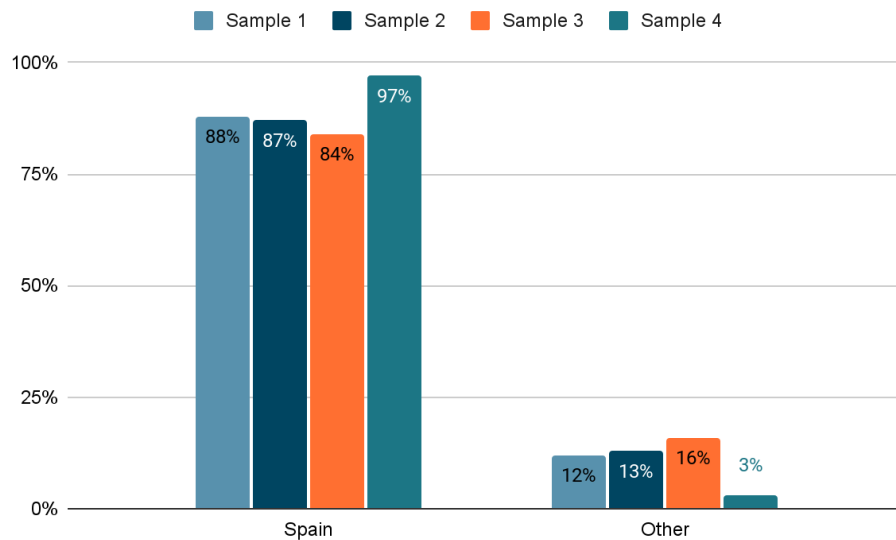
In the case of sample 1, they began following more Spanish accounts every year, going from 74% to the 96% of the accounts belonging to the same territory of their own. Sample 2 began following more than 80% of Spanish accounts the three years, being 2018 the year in which they began following more accounts from this location (92%), 2017 the year in which they began following less (80%), and they started following an 88% in 2019. This same trend was observed in sample 3, the media managed by the members of sample 2, who started following 74% of Spanish accounts in 2017, 98% in 2018, and 80% in 2019. Sample 4 also presented its highest percentage of Spanish accounts in 2018, when they began following a 100% of accounts from this location, and in 2017 and 2019 this percentage was 96%. All the samples started following more than a 90% of Spanish accounts during the electoral year 2018, and in the case of the last three, they coincided also in this being the year they started following the highest percentage. The inbreeding tendency regarding geographical location is clear among the studied mediatic and political Spanish elites (see Figures 12, 23, 30 and 39).

Gender

Different behaviors in relation to the gender of the accounts that the different elites started following can be observed. Nonetheless, before diving into them, there is a trend that can be pointed out that was homogeneous in all the studied samples and in all the years of the study. We did not find a single account belonging to a non-binary person among the accounts that the elites started following on Twitter. It can be observed that the elites reproduce an invisibilization of non-binary users. The invisibility of the non-binary population is a broad issue that can be seen even in the methodological designs of various stats, research and social surveys that do not include this variable, and therefore this dimension (Bittner & Goodyear-Grant, 2017; Medeiros et al., 2020; Westbrook & Saperstein, 2015). For instance, the statistics presented by Statista on the gender of active Twitter users, does not include the non-binary and dissident identities (Fernandez, 2019). These studies divide users with a binary logic, though on some occasions by Gender, into women and men (Statista, 2022c), and on others by sex, into male and female (Statista, 2022b). It would be interesting to know whether they understand the difference, and which is the way they choose to determine the categories. Nonetheless, some research where the non-binary dimension is included in the methodological design can be found (Thelwall et al., 2021).

As for the question of the place that women had in the accounts that the elites started following, there were some differences mainly between the institutional accounts and the personal accounts of the members of the elites. For instance, the most followed generalist media from Spain started following around 70% of men and 30% of women (see Figure 16). In the same line, the media directed by the most followed media directors (Sample 3) started following an average of 66% of men and 33% of women (there is a slight percentage that corresponds to unknown gender in the case of accounts that presented no gender identification). Meanwhile, the most followed media directors, presented a balanced percentage of men and women among all the years of the study with a 50-50 relation of women and men. In the same line, the Spanish deputies, also began following a close to a fifty-fifty relation between men and women. Moreover, they started following a 55% of women and 45% of men in average.

Figure 46. Average gender distribution percentage of the accounts the different elites started following.
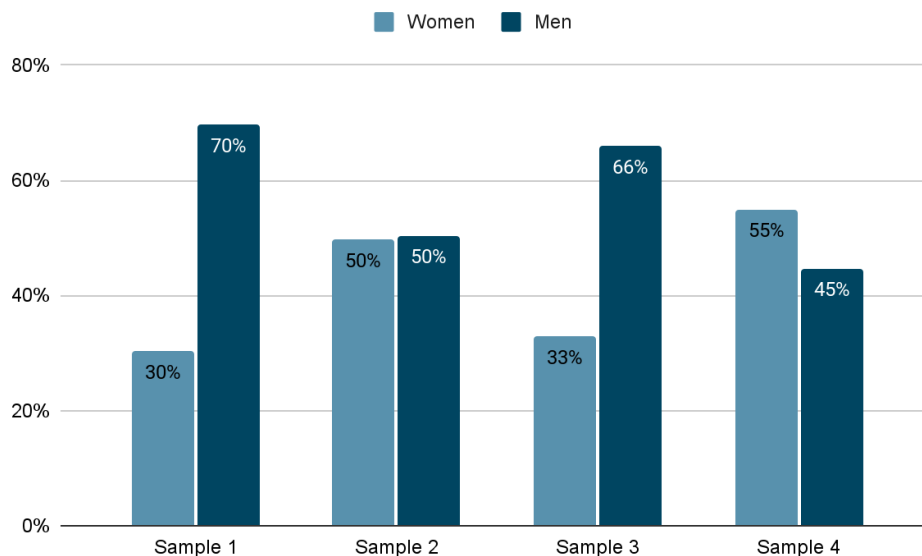
One of the first lines of thought to analyze this result is consulting the distribution between men and women among Twitter active users, which according to Statista, was of around a 50-50 distribution in 2018 (Fernandez, 2019). Therefore, the percentages of women and men followed by the media directors and the deputies go in line with the gender distribution among the Twitter users in Spain. However, the men´s majority portrayed by the media institutions samples (Sample 1 and 3) do not, and can be interpreted as the reproduction of well-known patterns of symbolic obliteration (Tuchman, 1978, 2000) and gender stereotyping and disbalances perpetuated by the media along decades, both in offline mass media and in online media (Armstrong, 2004; Armstrong & Gao, 2011; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998).

Another line of thought to interpret these results is analyzing the sample´s gender composition. It could be inferred that if there are more women, they can modify this tendency following the principle of homophily, choosing to follow a higher percentage of accounts from women. Nonetheless, previous research has shown that the inbreeding behavior of male journalists to interact mainly among themselves, was not detected among women journalists (Maares et al., 2021; Usher, 2018). However, the media directors´ sample, composed by the media directors with more followers on Twitter, is 90% men and 10% women, so the reason for choosing to follow a balanced percentage of women cannot be attributed to the sample´s composition.

PART V. CONCLUSIONS

Specific objective 1
To comprehend the space that women and dissidences have among the accounts that the elites started following on Twitter in Spain.

Conclusion 1

Considering that women and dissidents have traditionally been marginalized or underrepresented among the power elites, both as members of these elites and in the representation and place they have in them (Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Madsen & Andrade, 2018; Painter-Morland, 2011), as in the case of stereotyping and symbolic annihilation carried out by the media (Armstrong, 2004; Armstrong & Gao, 2011; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Tuchman, 1978, 2000; Zoch & Van Slyke Turk, 1998), the place that women have in the samples of the elites was analyzed, and also among the accounts that these samples of elites began to follow.

On the one hand, it is possible to analyze women's space in the Spanish elites by considering the percentage of women in the studied elites. Of the four samples analyzed in the four studies, two corresponded to samples integrated by institutions (sample 1, composed by the most followed generalist media, and sample 3, composed by the media directed by the most followed media directors), and two of the samples were composed of people belonging to the elites: sample 2 composed by the most followed media directors, and sample 4 constituted by the deputies who coincided in the Spanish parliament. The sample of the most followed media directors on Twitter in Spain is comprised by 90% men and 10% women (Table 8) and the sample of the Spanish political elite was composed of 56% men and 44% women (Table 12). These data show that in the elite corresponding to positions of power in media institutions (sample 2), which was also determined by the number of followers on Twitter, there is a large majority of men, while in the political elite (sample 4), whose members were voted by citizens and related to state laws, there is more gender balance, though with a majority of men.

Regarding the place that women have among the accounts that the elites began to follow, this thesis shows that the elites composed of media institutions on Twitter tended to perpetuate gender media imbalances, following a ratio of 70-30 with a majority of men over women accounts, while the analyzed elites belonging to individuals (media directors and politicians), began to follow women and men in similar proportions, even with a small majority of women in the case of the sample of politicians (see Figure 46). Therefore, No clear correlation can be observed between the gender composition of the samples and the accounts they started following when analyzing the space that women have among the elites. Even though previous research has stated that male journalists and politicians tend to interact with a vast majority of male colleagues (Colleoni et al., 2014; Hanusch & Nölleke, 2019; Usher, 2018), inbreeding pattern that was found among the women of this elite (Maares et al., 2021), in the present thesis, the media directors were mostly men and started following similar percentages of women and men. In a similar line, the analyzed politicians have a balanced gender ratio with a majority of men, and also started following a balanced ratio of accounts, but with a slight majority of female accounts. This indicates that with

respect to women, the elites did not show such a clear homophilic pattern. In any case, several clarifications are in order here. On the one hand, the data regarding who decides which accounts to follow within the analyzed media institutions was not available in the present study. Therefore, it is unknown if in these cases, the gender of the person that decides who these institutional accounts follow, plays a role in the selection, which constitutes an interesting and relevant line of future research to further deepen the knowledge of the homophilic behavior of Spanish media elites. Secondly, it should be noted that none of the samples is constituted by any non-binary members, nor did they begin to follow any account with this gender identification. Therefore, by analyzing this category, a clear homophilic pattern can be found, as well as the reproduction of patterns of invisibilization of the non-binary population (Bittner & Goodyear-Grant, 2017; Medeiros et al., 2020; Thelwall et al., 2021; Westbrook & Saperstein, 2015). A third clarification is regarding the subcategories of the accounts that the samples started following per gender, as most of the accounts that the elites followed from women, correspond to either journalists and politicians, in the case of the most followed media and the media managed by the most followed directors, or to politicians in the case of the analyzed Spanish deputies. The accounts that belong to women are majorly from politicians or journalists, whereas the accounts that belong to men, are composed also by users, which comprise entrepreneurs, celebrities, influencers, and scholars. It could be interpreted that women need to have an established political or media role, in order to be followed by the media and political Spanish elites. Men hold space within diverse roles and are considered leaders and referents in most arenas, as there is an enduring connection of masculinity and leadership (Aaldering & Van Der Pas, 2018). This gender bias has also been detected in traditional media that tend to select more men as experts and sources in the news, even when there are women experts in the areas consulted (Armstrong, 2004; Armstrong & Gao, 2011; Armstrong & Nelson, 2005; Bustamante, 1994; De Swert & Hooghe, 2010; Moreno-Castro et al., 2019; Zoch & Van Slyke Turk, 1998). This thesis presents results where it can be identified that the Spanish elites started following women when they have a clear mediatic or political position, whereas men seem to be taken as referents in a broader variety of fields. Therefore, although it can be observed that at least two of the samples began to follow balanced percentages of women and men, their social roles are not as balanced. They denote a cross-homophilic tendency, since they follow women when they can be considered as peers at least in terms of having an explicit social position within the elites to which the samples belong to (Mcpherson & Smith-Lovin, 1987).

The distribution between men and women among Twitter active users, according to Statista, was of around a 50-50 distribution in 2018 (Fernandez, 2019). The percentages of women and men followed by the media directors and the deputies go in line with the gender distribution among the Twitter users in Spain. However, the men´s majority portrayed by the two media samples (sample 1 and sample 3) does not, which can be interpreted as the reproduction of long-lasting patterns of women´s symbolic obliteration (Tuchman, 1978, 2000) and the gender disbalances perpetuated by the media among decades, both in offline mass media and in online media (Armstrong, 2004; De Swert & Hooghe, 2010; Zoch & Van Slyke Turk, 1998), and in the promotion of gender stereotypes (Armstrong & Gao, 2011).

In conclusion, it can be observed that, on the one hand, women have more space among the analyzed parliamentary elite (sample 4) than among the elite constituted by the most followed media directors in Spain (sample 2). On the other hand, when analyzing the accounts that the elites began to follow, it can be observed that the elites composed of media institutions (samples 1 and 3) began to follow more men than women. In contrast, the elites composed of media

directors and politicians began to follow similar percentages of women and men. It seems like the institutional mediatic elites tend to reproduce patterns of gender biases, stereotyping and underrepresentation of women (Armstrong, 2004; Armstrong & Gao, 2011; De Swert & Hooghe, 2010; Zoch & Van Slyke Turk, 1998), whereas the journalist and political elites presented a gender balanced behavior, despite their own composition, which provides evidence that go in the opposite direction of previous studies that state that male journalists and male politicians tend to interact almost exclusively with other male peers (Usher, 2018). The present research shows that this does not apply to the dimension of the accounts that the Spanish elites started following. Nonetheless, none of the elites began to follow any non-binary accounts, and most of the accounts that all the elites started following that belong to women are from journalists and politicians, which means that they correspond to women who are members of the elites.

Specific objective 2
To understand if the media managed by the most followed media directors on Twitter tend to reproduce their director´s behavior regarding the Twitter accounts they started to follow.

Conclusion 2

The media managed by the most followed media directors presented both similarities and differences with the accounts they began following on Twitter from 2017 to 2019 in comparison to their directors.

Both networks started following a higher percentage of other media accounts, which are constituted by media organizations and journalists. These results constitute evidence to support theories that state that mediatic elites reproduce homophilic behaviors (Katz et al., 2004; Lazarsfeld & Merton, 1954; McPherson et al., 2001), using the digital social platform for peer-to-peer engagement (Molyneux, 2015; Molyneux & Mourão, 2019; Usher, 2018). Nonetheless, the media directed by the 50 most followed media directors presented a balanced distribution between the types of accounts, which was not the case of their directors, who began following a majority of media accounts (43%) and political accounts (38%), following the citizenship in a lower percentage (19%), whereas the sample of the 36 media analyzed in the third publication started following similar percentages of media, citizenship, and political accounts (almost a 33% each if adding all the years of the study).

The analyzed media coincided in the exact accounts they and their directors started following mainly in 2018 and 2019. In 2017 more than 90% of the accounts they started following were different from the ones of their directors, whereas in the last two years of the study this percentage decreased, when more than 30% of the accounts coincided between the two networks (Figure 28). Furthermore, most of the accounts that coincided were political accounts, and this happened in an electoral year in Spain. This result opens questions that we believe would constitute interesting lines for future research, as we wonder whether this increment in the coincidences during an electoral year elucidates that the media follow the political line of their directors, or if it responds to contextual matters, such as new relevant actors in the political scene.

The gender of the accounts is a dimension where the analyzed sample behaved differently from their directors, who started following a balanced number of accounts from men and women, while the analyzed media started following a majority of accounts from men, reproducing media patterns of underrepresenting women (Armstrong & Gao, 2011; Zoch & Van Slyke Turk, 1998).

The dimension where the homophilic behavior, and in which both networks presented high levels of similarity, is the geographic location, as the two samples started following more than 70% of accounts from their same country, Spain (see Figure 30). This result provides evidence to support previous research findings that state that even though digital social media have the capacity to dissolve geographical boundaries (Anduiza et al., 2009), users form connections with other users from similar and close regions, being geographical proximity a factor in connections (Ausserhofer & Maireder, 2013; Shiori Hironaka; Mitsuo Yoshida; Kyoji Umemura, 2021).

During 2018, an electoral year in Spain, the sample of the media directed by the most followed media directors, presented particularities that manifest the incidence of the political context in the accounts that the mediatic elites follow, where the inbreeding tendencies were intensified. In this year, they started following a majority of accounts that belong to the political elite, the highest levels of geographically close accounts, and it was the year in which they

followed more accounts that coincided with the accounts followed by the context of their directors. During this year, both networks started following a majority of political accounts from Spain.

In conclusion, the analyzed sample presented similarities and differences with their directors regarding the accounts they started to follow. The dimensions in which they coincided the most where the types of accounts, as both samples started following a majority of media accounts, and the geographic location, as they both started following a majority of accounts located in Spain. They presented differences though, regarding the proportions in which they started following the different types of accounts, as the analyzed media started following similar percentages of media, political and citizenship accounts, while their directors presented a more homophilic behavior by starting to follow a higher percentage of media and political accounts. On the other hand, regarding the gender of the accounts that these samples started following, the media that constituted sample 3, started following a majority of men, while their directors presented a men-women balance in the accounts they started to follow. Though, both networks coincided in not having started to follow any non-binary accounts. The coincidences and similarities between the accounts that the media and their directors started following were intensified during the electoral year, when both networks began following a majority of political accounts from Spain. These results indicate that media directors may have an impact on the type of accounts that the media they manage begin to follow, although this research analyzes which accounts they started following, and not how the media decide who to follow. We suggest analyzing the motives and selection mechanisms in future research. What can be seen with these results is that the similarities are not as preponderant as could have been hypothesized, since they presented differences that could indicate that the media elite does not operate as a homogeneous group. This could give room to think their use of Twitter as a space where there is certain heterogeneity that may open way to different voices in the political and mediatic ecosystem (Ausserhofer & Maireder, 2013; Shirky, 2008; Terren & Borge, 2021). Nonetheless, this sample still presented some homophilic behaviors that must be taken into account, and that also manifest that their use of the platform presents dynamics that tend to perpetuate echo chambers among the elites (Bruns & Highfield, 2013; Colleoni et al., 2014; McPherson et al., 2001).

Specific objective 3
To understand whether the most followed Spanish generalist media on Twitter reproduce homophilic tendencies regarding the Twitter accounts they started to follow.

Conclusion 3

The studied generalist media from Spain, began to follow on Twitter, mostly accounts owned by Spanish male politicians. Therefore, the Spanish generalist media presented a homophilic behavior regarding the type of accounts they started following, as well as in the geographical location, and the gender of the accounts.

The issue of the media's relationship with politicians and its impact on agenda-setting (Aruguete, 2017; Davis, 2007; Parmelee, 2014) is not new. Similarly, there is a question regarding how this connection has changed as a result of new technologies like the internet, digital social networks, and Twitter in particular, since online media has altered the dynamics and flows of power and influence between politicians, the media, and citizens (Bengoechea et al., 2019; Chadwick, 2017; Dang-Xuan et al., 2013; Gómez et al., 2018; Guo & Vargo, 2017; Jenkins, 2006; Kramer, 2010; Meraz, 2009, 2014; Pérez-Curiel & Limón Naharro, 2019; Redek & Godnov, 2018; Soler & Micó Sanz, 2019; Vargo, 2018; Verweij, 2012).

The current study presents results that indicate that the most followed generalist media from Spain began following a majority of political accounts from 2017 to 2019, accounting for over half of the accounts this sample began to follow in 2018 and 2019. This alone does not propose the capability to asseverate that the political sphere sets the agenda, but it constitutes an interesting factor to consider when researching this aspect in the digital sphere in future research. The tendency of the sample to start following other media accounts declined, falling from 46% to 24% over the studied period. During the same time span, the tendency to follow accounts that belonged to citizens increased, though it stayed the same averagely.

Regarding whether the accounts they started following belonged to people or institutions, an inversely proportional trend could be found, with institutions representing the majority at the beginning of the studied period, whereas by 2019, this sample began to follow a majority of people´s accounts. The transition from following Institutions to citizens is one of the patterns that can be noticed in most of the studied categories and subcategories of the accounts that the most followed media started following, with the exception of the citizenship accounts, where users already constituted a majority at the beginning of the studied period. The analyzed media mostly followed macro-influencers, presenting a tendency to follow less icon-influencers or accounts with more than a million followers, and to start following more accounts in the mid-influencers segment by 2019.

The most followed generalist media from Spain did start following a majority of politicians, who are men and from Spain. This may represent an inbreeding, homophilic behavior (McPherson et al., 2001) regarding the type of accounts, the location and the gender of the users they began to follow, which can lead to understand their use of Twitter as an echo chamber of the elites (Bruns & Highfield, 2013; Colleoni et al., 2014), where politicians and the media reproduce old agenda-setting patterns by co-creating the public agenda (M. E. McCombs & Shaw, 1972; M. E. McCombs et al., 2014; Tran, 2014; Verweij, 2012). Nonetheless, they also presented a tendency that seems to show how their attention may be shifting focus from the established, the institutions and the

large-scale referents, to start following smaller accounts from citizens, a trend that can be linked to the rise of the Social Media Influencers figure (De Veirman et al., 2017), and to the use of Twitter as a space where citizens are taken into account in the public debate (Feenstra & Casero-Ripollés, 2014), where new figures who do not necessarily belong to the classical elites such as influencers, bloggers, or ´techies´, are earning space in the informational and political ecosystem (Ausserhofer & Maireder, 2013).

Specific objective 4
To understand if the most followed Spanish media directors on Twitter reproduce homophilic tendencies regarding the Twitter accounts they started to follow.

Conclusion 4

The most followed media directors from Spain on Twitter presented homophilic tendencies regarding the types of accounts they started following, as they followed a majority of media and politicians, and regarding the geographical location of the accounts, as they were mainly located in Spain. Nonetheless, they did not present a homophilic behavior regarding the gender of the accounts they began following, as the sample, composed by a 90% of men and a 10% of women, began following a close to a 50-50% of men and women. They did not start to follow any non-binary accounts though.

On the most followed Spanish media directors on Twitter presented homophilic tendencies by starting to follow mainly Spanish politicians and Spanish media and journalists. The use that journalists do of Twitter has an impact in the voices that are amplified on the news sphere. It has been exposed that journalists often interact and embed the contents posted by the elites and leaders (McGregor & Molyneux, 2018). This had always been the case (Bennett, 1990), and Twitter provides an easier faster way for journalists to access to the elites (McGregor & Molyneux, 2018). Even though this also means they have an easier access to any person, and therefore to the citizenship (Hermida, Lewis, & Zamith, 2012), citizens are not featured as frequently on the news (J. Lewis, Inthorn, & Wahl.Jorgensen, 2005). These dynamics can be observed in the Spanish media directors analyzed in this thesis, who seem to be attached to a scheme where politicians and media were the main cited sources or agenda setters (Harder et al., 2017; M. E. McCombs & Shaw, 1972), prolonging the stratified attention of the elites (Dubois & Gaffney, 2014; Fuchs, 2017).

On another note, the studied media directors, them being accounts that belonged to people as opposed to institutions, started to follow a majority of other persons´ accounts, with an 80-20 relation. This aspect could also be understood as homophilic, as they started following accounts alike to those of their own.

The present thesis provides evidence to support theories that state that journalists tend to interact with other journalists on Twitter (Molyneux, 2015; Molyneux & Mourão, 2019), or with leaders and elite members (McGregor & Molyneux, 2018). Nonetheless, the Spanish case does not sustain the postulate that male journalists tend to interact predominantly with each other (Hanusch & Nölleke, 2019; Usher, 2018). The results of this thesis provide evidence to refute this model on the Spanish media directors. However, it is relevant to clarify that the present research measures the interaction related to the action of starting to follow. It would be interesting to amplify the scope in future research to other forms of interactions such as mentions, likes and private messages, and compare if the same tendencies can be observed. Moreover, in this thesis the way each sample chooses who to follow was not explored, therefore, it would be interesting to investigate whether they choose who to follow in a strategic manner, if they do it responding to personal relationships, or if it is the job of a community manager.

The top followed Spanish media directors on Twitter tended to follow mainly Spanish accounts that belong to either other media/journalists or politicians, responding to a homophilic behavior (Hanusch & Nölleke, 2019; McPherson et al., 2001) and reinforcing old agenda-setting

patterns (Mccombs, 2002; M. E. McCombs et al., 2014), reproducing a behavior that has been identified in previous research where geographical proximity has an incidence on digital interactions (Ausserhofer & Maireder, 2013; Casero-Ripollés, 2021).

On the other hand, they showed a tendency to follow medium influencers, which are figures with fewer followers than in the past. In this same line, they began following a gender balanced number of accounts, which brings hope regarding the media´s tradition of underrepresenting women (Armstrong & Nelson, 2005). It would be interesting to analyze in future research whether this trend is effectively reflected in the contents of the tweets posted by these accounts.

It seems that some patterns respond to old journalistic dynamics in which they seek to maintain the voice of power elites (Bruns & Highfield, 2013; M. E. McCombs & Shaw, 1972), mostly journalists and politicians, while other trends show an openness to new models where new voices are beginning to matter (Ausserhofer & Maireder, 2013; Puigbò et al., 2014), such as women and accounts with lower number of followers.

Specific objective 5
To understand if the members of the Spanish parliament reproduce homophilic tendencies regarding the Twitter accounts they started to follow on Twitter.

Conclusion 5

The analyzed political elite, which corresponds to the politicians that coincided in the parliament from 2017 to 2020, presented homophilous behaviors mainly regarding the types of accounts they started following as well as on the geographical location of these accounts, as they started following a majority of Spanish politicians. The fact that they started to follow more than a 50% of other politicians every year, which corresponds to the dimension of those who share their same socio-political role, working sphere and status in the society (Mcpherson & Smith-Lovin, 1987), provides evidence to back that the theory of homophilic behavior among the political elites regarding the accounts they started following on Twitter, applies to the Spanish case (Colleoni et al., 2014; McPherson et al., 2001).

This sample did not start following media in the second place, which would correspond to following members of another elite, as they started following more citizen accounts than media ones in 2017 and 2019. Part of the politician's network focus seems to go into following accounts from the citizenship, which could propose alignment with previous studies that sustain that influencers are gaining a relevant place in the digital sphere (Fernández Gómez et al., 2018; Pérez-Curiel & Limón Naharro, 2019), where new voices that do not come from traditional elites are gaining space in the political conversation (Casero-Ripollés, 2021). Nonetheless, a different scenario was observed during the electoral year, 2018, when the Spanish deputies started following a 64% of political accounts and a 30% of media accounts, and therefore only a 6% of citizenship accounts. This result shows that homophilic tendencies and the use of Twitter as an echo chamber of the elites are heightened during electoral processes, confirming the vastly studied link between politicians and journalists and their co-creation of the political and public agenda (Barberá et al., 2019; Davis, 2007; Harder et al., 2017; Martin, 2014; M. E. McCombs & Shaw, 1972).

The analyzed politicians started following a vast majority of accounts from their same geographical location, Spain, with more than a 95% of the accounts they started following every year. This result provides clear evidence of a homophilic pattern among the political elite regarding the geographical proximity (Katz et al., 2004; McPherson et al., 2001).

The members of the fourth sample started following a 55-45 ratio of women to men, which represents a gender balance in the accounts they started following, even presenting a majority for women. This represents a result that runs against a long tradition of exclusion of women in power spheres (Aaldering & Van Der Pas, 2018; Bode, 2016; Carli & Eagly, 2002; Connell, 1987; Kubu, 2017; Lombardo, 2008; Lovenduski, 2005; Madsen & Andrade, 2018; Painter-Morland, 2011). There may be many factors that could have caused this result, which is at least encouraging. Perhaps, women are gaining space among power elites and in society in general, and their voices are beginning to be heard more. However, this result could also be explained by the possibility that the sample was already following the accounts of male politicians and prominent figures, and this, in conjunction with a relevant feminist wave during the years of the study (Willem & Tortajada, 2021), resulted in the political elite following more women. It would be interesting in future research to complement with a comparative study between the analyzed dimension of account

following, with other types of interactions, since the political elite may be following women but not interacting with them, or they may be interacting in a negative way. The studied political elite started following mostly female politicians, which means following women in positions of power, while most of the citizenship accounts they started following belonged to men. This result shows that in order to follow a woman, she has to have a relevant position within an elite, something that does not seem to apply to men, with whom their position as leaders in the most diverse areas is perpetuated (Aaldering & Van Der Pas, 2018). In any case, authors have stated that women, even in the elites, can be left as outsiders (Moore, 1988), and the result of this research shows that at least women with positions of power do have a space within the accounts followed by the Spanish political elite.

In conclusion, the analyzed Spanish political elite presented higher homophilic tendencies regarding the type of accounts and their geographic location. Gender-wise, they started following a balanced percentage of women and men, even presenting a majority for women, but it is relevant to keep in mind that most of the women they followed have an established political position. The homophilous patterns presented an intensification during the electoral year 2018 when they started following the highest percentage of political accounts. Moreover, 2018 was the year in which they started following the highest percentage of media accounts, which may be considered as evidence to support the conceptualization of a link between politicians and journalists in the co-creation of the public and political agenda (Barberá et al., 2019; Davis, 2007; Harder et al., 2017; Martin, 2014; M. E. McCombs & Shaw, 1972).

General conclusion

Digital social media were welcomed with a new hope in the emancipation of the citizenship from traditional gatekeepers and the construction of a more democratic public sphere and public debate (Colleoni et al., 2014; Shirky, 2008). Numerous authors have dedicated their research to determining whether social and digital media promote the development of a diverse and democratic public sphere, or whether it works in the opposite direction, deepening polarization (Terren & Borge, 2021), generating filter bubbles (Pariser, 2011), and if they are driven by homophilous behavior that perpetuate echo chambers (Bruns & Highfield, 2013; Colleoni et al., 2014; McPherson et al., 2001). Despite the fact that digital media have been conceived as platforms that allow citizens to participate more actively in public debate (Feenstra & Casero-Ripollés, 2014), the analyzed elites demonstrated a proclivity to interact with other members of the media and political elites, reinforcing theories that view Twitter as an echo chamber among power elites (Bruns & Highfield, 2013; Molyneux & Mourão, 2019), where media, journalists and politicians are the primary sources, agenda setters, and receptors of the elite messages (Harder et al., 2017; M. E. McCombs & Shaw, 1972; Tran, 2014), in contrast to theories that see social media platforms as possible liberators from enduring power dynamics (Shirky, 2008). Even though digital social media platforms provide the capabilities for information and communication to be freer and more accessible, which aligns with the Habermasian (1962) public sphere concept, this potential seems to fail, as for having a democratic public sphere there should be an exchange of various and different opinions and an ongoing healthy debate (Terren & Borge, 2021), and while a broader public discussion can be found thanks to these platforms, many aspects of old social and power structures can be observed in the digital public sphere (Ausserhofer & Maireder, 2013).

The results of this thesis postulate that the Spanish elites present a tendency to use Twitter as a platform for peer-to-peer exchange among those who have traditionally been associated as agenda-setters and in power positions, the media and the political sphere (Davis, 2007; M. E. McCombs & Shaw, 1972). This research offers data that shows that the analyzed Spanish elites behaved in a homophilous manner in terms of the type of accounts they began to follow (Figure 44), as they started following mainly politicians, journalists, and media accounts, which represent members of the elites they belong to. Another clear homophilic pattern was found in terms of the geographic location of the accounts, given that all the elites started following a large majority of accounts located in Spain (Figure 45). Therefore, this thesis presents evidence to support theories of the use of Twitter as an echo chamber of elites (Colleoni et al., 2014; Molyneux & Mourão, 2019; Terren & Borge, 2021), where elites interact by reproducing homophilic dynamics as they interact with members who share their role and social status (McPherson et al., 2001), and form connections with those who are geographically proximate (Katz et al., 2004; McPherson et al., 2001)..

Certain circumstances were detected that seem to increase homophily among the elites. The first one is related to the parliamentary elections period. All the analyzed elites presented a deepening of their homophilic patterns during 2018, an electoral year in Spain. It was the year in which the samples started to follow more members of the media and political elites, more accounts from Spain, fewer women, and more accounts in common in the case of media directors and the media they manage. Previous research found a reinforcement of homophilic patterns among members of the parliament during electoral periods (Nuernbergk & Conrad, 2016), and

the present thesis provides data to sustain that this is the case for mediatic and political elites in Spain, with respect to the accounts that they started to follow.

On the other hand, some trends could be detected among the elites, where behaviors associated with populations traditionally excluded from the power groups could be identified. The analyzed elites started following around a 20% of citizenship in average, and in the case of Sample 3, this percentage was of the 33% of the accounts (Figure 44). Although they still represent the least followed type of account, citizen accounts occupied around a fifth of the accounts that elites began to follow, which could be interpreted as evidence of the emergence of relevant citizen figures within the political conversation and in the information sphere (Casero-Ripollés, 2021; Fernández Gómez et al., 2018; Pérez-Curiel & Limón Naharro, 2019). A similar situation can be seen in the case of the samples 2 and 4, that started to follow 50% or more of women accounts, who have traditionally been relegated from the power elites, both political and mediatic (Armstrong, 2004; Armstrong & Gao, 2011; Bustamante, 1994; Carli & Eagly, 2002; Connell, 1987; De Swert & Hooghe, 2010; Kubu, 2017; Madsen & Andrade, 2018; Moreno-Castro et al., 2019; Painter-Morland, 2011; Tuchman, 1978, 2000; Zoch & Van Slyke Turk, 1998). However, it should be noted that the women that the elites began to follow, also belong to elites, so it is a category that presents some chiaroscuros in regard to being categorized as homophilic or non-homophilic, presenting characteristics of both. A similar behavior can be observed when analyzing the accounts that are not from Spain that the Spanish elites began to follow, which tend to have higher number of followers. Among these trends associated with populations outside the categories understood as homophilic, some of the patterns of homophilous reinforcement could be observed, leaving evidence of intersectionality between categories. For the elites to follow accounts from women, they seem to have to belong to elites, and for elites to follow accounts from outside of Spain, they seem to have to display a high popularity in terms of number of followers.

Previous studies on social media and the public sphere have presented diverse conclusions. Results can be found that support both, theories that consider social networks as spaces for the promotion and construction of a more democratic public debate and public sphere (Anduiza et al., 2009; Ausserhofer & Maireder, 2013; Puigbò et al., 2014; Terren & Borge, 2021), as well as studies that show that in these platforms, elites are strengthened by homophilic tendencies that reinforce echo chambers (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; Colleoni et al., 2014; McPherson et al., 2001). Digital social media can be understood within this duality. The current thesis demonstrates how this dichotomy is present in the analyzed Spanish mediatic and political elite, as they displayed homophilic behaviors, such as the types of accounts they followed, the geographical location, and the intensification of homophily during the electoral period, but they also followed accounts from populations traditionally marginalized in power spheres, such as the citizenship and women.

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ANNEX I – Data bases

Sample 1

Table 6. Sample 1 datasheet and categorization.

Media	User	Number of followers	Type of Media	Status
El País	@el_pais	>1.000.000	Newspapers and magazines (generalist)	Public
El Mundo	@elmundoes	>1.000.000	Newspapers and magazines (generalist)	Public
Antena3Noticias	@A3Noticias	>1.000.000	Audiovisual news	Public
ABC.es	.@abc_es	>1.000.000	Newspapers and magazines (generalist)	Public
EFE Noticias	@EFEnoticias	>1.000.000	News Agency	Public
20minutos.es	@20m	>1.000.000	Newspapers and magazines (generalist)	Public
24h	@24h_tve	>1.000.000	Channel	Changed to @rtvenoticias
La Sexta Noticias	@sextaNoticias	>1.000.000	Audiovisual news	Public
Europapress	@europapress	>1.000.000	News Agency	Public
La Vanguardia	@LaVanguardia	>1.000.000	Newspapers and magazines (generalist)	Public
El Diario.es	.@eldiarioes	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Público	.@publico_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Noticias cuatro	.@noticias_cuatro	100.001-1.000.000	Audiovisual news	Public
El Confidencial	.@elconfidencial	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Informativos Telecinco	.@informativost5	100.001-1.000.000	Audiovisual news	Public
El Periódico	.@elperiodico	100.001-1.000.000	Newspapers and magazines (generalist)	Public
324.cat	.@324cat	100.001-1.000.000	Digital media (generalist)	Public
Diari ARA	.@diariARA	100.001-1.000.000	Newspapers and magazines (generalist)	Public
La Razón	.@larazon_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
La voz de Galicia	.@lavozdegalicia	100.001-1.000.000	Newspapers and magazines (generalist)	Public
El Español	_elespanolcom	100.001-1.000.000	Digital media (generalist)	Public
VilaWeb	.@vilaweb	100.001-1.000.000	Digital media (generalist)	Public
infoLibre	.@_infolibre	100.001-1.000.000	Digital media (generalist)	Public

Diario SUR	.@DiarioSUR	100.001-1.000.000	Newspapers and magazines (generalist)	Public
El Punt Avui	.@elpuntavui	100.001-1.000.000	Digital media (generalist)	Public
La Marea	.@lamarea_com	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Telediarios de TVE	@telediario_tve	100.001-1.000.000	Audiovisual news	Public
ABC de Sevilla	.@abcdesevilla	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Diario de Sevilla	.@diariosevilla	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Las Provincias	.@lasprovincias	100.001-1.000.000	Newspapers and magazines (generalist)	Public
NacióDigital	.@naciodigital	100.001-1.000.000	Digital media (generalist)	Public
Laverdad_ES	.@laverdad_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Hoy por hoy	.@HoyPorHoy	100.001-1.000.000	Audiovisual news	Public
Faro de Vigo	.@Farodevigo	100.001-1.000.000	Newspapers and magazines (generalist)	Public
La Nueva España	.@lanuevaespana	100.001-1.000.000	Newspapers and magazines (generalist)	Public
INFORMACION.es	.@informacion_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Heraldo de Aragón	.@heraldoes	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Correo de Andalucía	.@elCorreoWeb	100.001-1.000.000	Newspapers and magazines (generalist)	Public
El Correo	.@elcorreo_com	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Hora 25	@hora25	100.001-1.000.000	Audiovisual news	Public
OKDiario	@okdiario	100.001-1.000.000	Digital media (generalist)	Public
La opinión de Málaga	@opiniondemalaga	100.001-1.000.000	Newspapers and magazines (generalist)	Public
El Norte de Castilla	@nortecastilla	100.001-1.000.000	Newspapers and magazines (generalist)	Public
ctxt	@ctxt_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Diario HOY	@hoyextremadura	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Málaga hoy	@malagahoy_es	100.001-1.000.000	Newspapers and magazines (generalist)	Public
La opinión de Murcia	@diariolaopinion	100.001-1.000.000	Newspapers and magazines (generalist)	Public
Ideal Granada	@ideal_granada	100.001-1.000.000	Newspapers and magazines (generalist)	Public
El Comercio	@elcomerciodigit	100.001-1.000.000	Newspapers and magazines (generalist)	Public
ElNacional.cat	@elnacionalcat	100.001-1.000.000	Digital media (generalist)	Public

Table 7. Followed accounts by Sample 1 datasheet and categorization.

Account	Nº Followers	Category	Subcategory	Country	Person/ Institution	Gender	Year
Anonym 1	>1.000.000	Politic	Public Institution	USA	Institution	N/A	2017
Anonym 2	>1.000.000	Politic	Politician	USA	Citizen	Men	2017
Anonym 3	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 4	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 5	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 6	>1.000.000	Citizenship	Civil Institution	Global	Institution	N/A	2017
Anonym 7	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 8	>1.000.001	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 9	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 10	>1.000.000	Media	Media	UK	Institution	N/A	2017
Anonym 11	>1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 12	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 13	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 14	>1.000.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 15	>1.000.000	Politic	Public Institution	UK	Institution	N/A	2017
Anonym 16	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 17	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 18	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 19	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 20	100.001-1.000.000	Politic	Public Institution	USA	Institution	N/A	2017
Anonym 21	100.001-1.000.000	Citizenship	Civil Institution	New Zealand	Institution	N/A	2017
Anonym 22	>1.000.000	Media	Media	USA	Institution	N/A	2017
Anonym 23	100.001-1.000.000	Citizenship	User	UK	Citizen	Men	2017
Anonym 24	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 25	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2017

Anonym 26	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 27	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 28	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 29	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2017
Anonym 30	100.001-1.000.000	Politic	Public Institution	UK	Institution	N/A	2017
Anonym 31	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 32	>1.000.000	Politic	Politician	USA	Citizen	Men	2017
Anonym 33	10.001-100.000	Citizenship	User	USA	Citizen	Women	2017
Anonym 34	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2017
Anonym 35	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2017
Anonym 36	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 37	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 38	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 39	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 40	>1.000.000	Media	Media	USA	Institution	N/A	2017
Anonym 41	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 42	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 43	10.001-100.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 44	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 45	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 46	>1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 47	10.001-100.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 48	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 49	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 50	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 51	100.001-1.000.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 52	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018

Anonym 53	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 54	>1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 55	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 56	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 57	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 58	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 59	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 60	1.001-10.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 61	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 62	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 63	1.001-10.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 64	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 65	>1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 66	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 67	10.001-100.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 68	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 69	100.001-1.000.000	Politic	Politician	Greece	Citizen	Men	2018
Anonym 70	10.001-100.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 71	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 72	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 73	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2018
Anonym 74	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 75	>1.000.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 76	1.001-10.000	Media	Media	Spain	Institution	N/A	2018
Anonym 77	10.001-100.000	Media	Media	Spain	Institution	N/A	2018

Anonym 78	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 23	100.001-1.000.000	Citizenship	User	UK	Citizen	Men	2018
Anonym 79	1.001-10.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 80	>1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 81	1.001-10.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 82	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 83	100.001-1.000.000	Citizenship	User	Netherlands	Citizen	Men	2018
Anonym 84	>1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 29	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 85	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 86	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 87	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 88	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2018
Anonym 41	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 89	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2018
Anonym 90	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 91	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2018
Anonym 92	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 93	1.001-10.000	Media	Journalist	Spain	Citizen	Men	2018
Anonym 94	1.001-10.000	Citizenship	User	Spain	Citizen	Men	2018
Anonym 95	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 96	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 97	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2018
Anonym 53	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019

Anonym 98	100.001-1.000.000	Media	Journalist	Spain	Citizen	Men	2019
Anonym 99	100.001-1.000.000	Politic	Politician	Spain	Citizen	Women	2019
Anonym 100	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2019
Anonym 101	100.001-1.000.000	Media	Journalist	Spain	Citizen	Men	2019
Anonym 102	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2019
Anonym 78	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 103	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 104	10.001-100.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 105	>1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 106	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 107	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2019
Anonym 108	>1.000.000	Politic	Politician	Venezuela	Citizen	Men	2019
Anonym 38	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 54	>1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 109	10.001-100.000	Media	Journalist	Spain	Citizen	Women	2019
Anonym 110	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2019
Anonym 111	10.001-100.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 112	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 113	>1.000.000	Citizenship	User	Sweden	Citizen	Women	2019
Anonym 114	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 115	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2019
Anonym 56	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 41	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 116	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2019

Anonym 117	>1.000.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 118	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2019
Anonym 119	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 120	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2019
Anonym 121	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 122	10.001-100.000	Media	Journalist	Spain	Citizen	Women	2019
Anonym 123	>1.000.000	Citizenship	User	Spain	Citizen	Women	2019
Anonym 124	10.001-100.000	Politic	Politician	Spain	Citizen	Women	2019
Anonym 125	100.001-1.000.000	Politic	Politician	Spain	Citizen	Women	2019
Anonym 126	10.001-100.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 127	10.001-100.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 4	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 128	1.001-10.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 129	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 130	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 131	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2019
Anonym 132	1.001-10.000	Citizenship	User	Spain	Citizen	Men	2019
Anonym 133	>1.000.000	Media	Journalist	Spain	Citizen	Men	2019
Anonym 134	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2019
Anonym 135	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 11	>1.000.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 136	10.001-100.000	Politic	Politician	Spain	Citizen	Men	2019
Anonym 137	100.001-1.000.000	Media	Journalist	Spain	Citizen	Men	2019
Anonym 138	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019

Anonym 89	100.001-1.000.000	Politic	Politician	Spain	Citizen	Men	2019

Sample 2

Table 8. Sample 2 datasheet and categorization.

Media Director	User	Number of followers	Gender	Status
Ana Pastor	@_anapastor_	>1.000.000	Women	Public
Ignacio Escolar	iescolar	>1.000.000	Men	Public
Carlos Herrera	carlosherreracr	100.001-1.000.000	Men	Public
Pedro J. Ramirez	pedroj_ramirez	100.001-1.000.000	Men	Public
Jesus Maraña	jesusmarana	100.001-1.000.000	Men	Public
Carlos Alsina	carlos__alsina	100.001-1.000.000	Men	Public
Francisco Marhuenda	pacomarhuenda	100.001-1.000.000	Men	Public
Fernando Berlin	radiocable	100.001-1.000.000	Men	Public
Vicent Partal	vpartal	100.001-1.000.000	Men	Public
Alfredo Relaño	AS_Relano	100.001-1.000.000	Men	Public
Arsenio Escolar	arsenioescolar	100.001-1.000.000	Men	Public
Julio Alonso	JulioAlonso	100.001-1.000.000	Men	Public
Casimiro García-Abadillo	garcia_abadillo	100.001-1.000.000	Men	Public
Enric Juliana Ricart	EnricJuliana	100.001-1.000.000	Men	Public
David Jimenez	DavidJimenezTW	100.001-1.000.000	Men	Public
Montserrat Dominguez	MontDeMont	10.001-100.000	Women	Public
Juan Luis Sanchez	juanlusanchez	10.001-100.000	Men	Public
Manuel Rico	manuelrico	10.001-100.000	Men	Public
Alfonso Rojo Lopez	AlfonsoRojoPD	10.001-100.000	Men	Public
Antonio Naranjo	AntonioRNaranjo	10.001-100.000	Men	Public
Gumersindo Lafuente	sindolafuente	10.001-100.000	Men	Public
Virginia P. Alonso	Virginiapalonso	10.001-100.000	Women	Public
Javier Moreno Barber	morenobarber	10.001-100.000	Men	Public
Carmela Rios	CarmelaRios	10.001-100.000	Women	Public
Enric Hernandez	Enric_Hernandez	10.001-100.000	Men	Public
Bieito Rubido	bieitorubido	10.001-100.000	Men	Public
Santi Nolla	SantiNollaMD	10.001-100.000	Men	Public
Carlos Marañon	futbolycine	10.001-100.000	Men	Public
Charo Izquierdo	CharoIzquierdo	10.001-100.000	Men	Public
Carlos Carpio	Carpio_Marca	10.001-100.000	Men	Public
Lluís Bassets	lbassets	10.001-100.000	Men	Public
Jan Martinez Ahrens	jmahrens	10.001-100.000	Men	Public
Pedro de Alzaga	palzaga	10.001-100.000	Men	Public
Antonio H. Rodicio	AHRodicio	10.001-100.000	Men	Public
Alberto Pozas	AlbertoPozas	10.001-100.000	Men	Public

Alejandro Vesga	AlejandroVesga	10.001-100.000	Men	Suspended account
Alvaro Ybarra Pacheco	aybarrapacheco	10.001-100.000	Men	Public
Gara Iñaki Zoto	gara_isoto	10.001-100.000	Men	Public
Rafa de Miguel	demiguelr	10.001-100.000	Men	Public
Andres Gil	andresgil	10.001-100.000	Men	Public
Rafa Latorre	rlatorreg	10.001-100.000	Men	Public
Francisco Sierra	fsierra	10.001-100.000	Men	Public
Sandra Fernández	sfernandezh	10.001-100.000	Women	Does not exist anymore
César González Antón	CESAR_G_ANTON	10.001-100.000	Men	Public
Ismael Nafría	ismaelnafria	10.001-100.000	Men	Public
José Luis Pérez	Perez_go	10.001-100.000	Men	Public
Enric Sopena	enricsopena	10.001-100.000	Men	Public
Carlos Salas	ojomagico	10.001-100.000	Men	Public
Martí Saballs Pons	marti_saballs	10.001-100.000	Men	Public
Jesús Cacho	JCacho_Conlupa	10.001-100.000	Men	Public

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Table 9. Followed accounts by Sample 2 datasheet and categorization.

Account	Nº Followers	Category	Subcategory	Country	Person/ Institution	Gender	Year
Anonym 139	10.001-100.000	Media	Journalist	USA	Citizen	Man	2017
Anonym 2	>1.000.000	Politic	Politician	USA	Citizen	Man	2017
Anonym 3	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2017
Anonym 139	1.001-10.000	Citizenship	User	Spain	Citizen	Woman	2017
Anonym 140	>1.000.000	Politic	Public Institution	USA	Institution	N/A	2017
Anonym 4	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 141	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 142	1.001-10.000	Citizenship	User	Spain	Citizen	Woman	2017
Anonym 143	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 25	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2017
Anonym 144	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2017
Anonym 145	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2017
Anonym 70	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2017
Anonym 146	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2017
Anonym 147	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 148	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 149	10.001-100.000	Politic	Politician	USA	Citizen	Woman	2017
Anonym 150	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 151	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 32	>1.000.000	Politic	Politician	USA	Citizen	Man	2017
Anonym 34	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2017
Anonym 152	10.001-100.000	Media	Journalist	USA	Citizen	Woman	2017
Anonym 153	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2017

Anonym 154	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2017
Anonym 155	100.001-1.000.000	Citizenship	User	Spain	Citizen	Woman	2017
Anonym 156	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 157	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 158	100.001-1.000.000	Politic	Politician	Spain	Citizen	Woman	2017
Anonym 159	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 160	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 161	100.001-1.000.000	Citizenship	Civil Institution	USA	Institution	N/A	2017
Anonym 162	>1.000.000	Politic	Politician	USA	Citizen	Woman	2017
Anonym 163	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 164	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 165	100.001-1.000.000	Media	Journalist	USA	Citizen	Woman	2017
Anonym 166	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 167	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 168	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 169	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 170	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 171	10.001-100.000	Media	Journalist	USA	Citizen	Woman	2017
Anonym 172	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 173	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2017
Anonym 174	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2017
Anonym 175	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2017
Anonym 176	100.001-1.000.000	Citizenship	User	Spain	Citizen	Woman	2017
Anonym 177	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2017

Anonym 178	10.001-100.000	Media	Media	Spain	Institution	N/A	2017
Anonym 179	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2017
Anonym 180	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2017
Anonym 78	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 181	10.001-100.000	Citizenship	User	Spain	Citizen	Woman	2018
Anonym 51	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 182	100.001-1.000.000	Politic	Politician	Greece	Citizen	Man	2018
Anonym 89	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 52	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 183	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 53	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 184	>1.000.000	Politic	Politician	USA	Citizen	Woman	2018
Anonym 58	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 185	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 186	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 55	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 187	10.001-100.000	Citizenship	User	Spain	Citizen	Woman	2018
Anonym 188	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 97	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 59	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 61	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 189	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 190	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 68	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2018

Anonym 191	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 148	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 74	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 192	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 193	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 194	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 70	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 195	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 196	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 197	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 158	100.001-1.000.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 198	1.001-10.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 199	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 200	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 201	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 202	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 93	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 203	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 204	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 144	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 205	100.001-1.000.000	Media	Journalist	Colombia	Citizen	Man	2018
Anonym 206	1.001-10.000	Media	Journalist	USA	Citizen	Man	2018
Anonym 207	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 99	100.001-1.000.000	Politic	Politician	Spain	Citizen	Woman	2018

Anonym 208	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 209	1.001-10.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 210	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 211	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 212	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 102	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 101	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 213	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 214	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 142	1.001-10.000	Citizenship	User	Spain	Citizen	Woman	2019
Anonym 108	>1.000.000	Politic	Politician	Venezuela	Citizen	Man	2019
Anonym 215	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 184	>1.000.000	Politic	Politician	USA	Citizen	Woman	2019
Anonym 216	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 217	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 113	>1.000.000	Citizenship	User	Sweden	Citizen	Woman	2019
Anonym 138	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 100	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 109	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 218	100.001-1.000.000	Citizenship	User	Spain	Citizen	Woman	2019
Anonym 114	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 98	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 219	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 220	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 221	1.001-10.000	Politic	Politician	Spain	Citizen	Woman	2019

Anonym 222	100.001-1.000.000	Media	Journalist	Venezuela	Citizen	Woman	2019
Anonym 223	100.001-1.000.000	Citizenship	Civil Institution	Unknown	Institution	N/A	2019
Anonym 224	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 122	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 225	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 226	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 227	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 124	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 228	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 199	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 229	1.001-10.000	Media	Media	Spain	Institution	N/A	2019
Anonym 230	10.001-100.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 231	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 232	1.001-10.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 233	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 234	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 235	1.001-10.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 236	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 237	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 238	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 239	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 240	10.001-100.000	Media	Media	USA	Institution	N/A	2019
Anonym 241	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2019
Anonym 242	1.001-10.000	Citizenship	User	Spain	Citizen	Woman	2019

Anonym 243	1.001-10.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 244	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 245	1.001-10.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 130	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 104	10.001-100.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 135	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019

Sample 3

Table 10. Sample 3 datasheet and categorization.

Media	User	Number of followers	Type of Media	Status
ABC.es	abc_es	>1.000.000	Newspapers and magazines (Generalist)	Public
El País	el_pais	>1.000.000	Newspapers and magazines (Generalist)	Public
El Mundo	elmundoes	>1.000.000	Newspapers and magazines (Generalist)	Public
RTVE	rtve	>1.000.000	Newspapers and magazines (Generalist)	Public
Público	publico_es	100.001-1.000.000	Newspapers and magazines (Generalist)	Public
Cadena SER	La_SER	>1.000.000	Newspapers and magazines (Generalist)	Public
El Diario.es	eldiarioes	100.001-1.000.000	Newspapers and magazines (Generalist)	Public
La Información	la_informacion	100.001-1.000.000	Newspapers and magazines (Business & Economy)	Public
Diario AS	diarioas	>1.000.000	Newspapers and magazines (Sports)	Public
La Vanguardia	LaVanguardia	>1.000.000	Newspapers and magazines (Generalist)	Public
La Sexta Noticias	sextaNoticias	>1.000.000	News TV show	Public
Mundo Deportivo	mundodeportivo	>1.000.000	Newspapers and magazines (Sports)	Public
PRISA	PRISA	10.001-100-000	Group media	Public
MARCA	marca	>1.000.000	Newspapers and magazines (Sports)	Public
antena 3	antena3com	>1.000.000	Television network	Public
La Razón	larazon_es	100.001-1.000.000	Newspapers and magazines (Generalist)	Public
RTVE Play	rtveplay	100.001-1.000.000	Digital TV and Radio	Public
COPE	COPE	100.001-1.000.000	Radio (Generalist)	Public
Newtral	Newtral	100.001-1.000.000	Factchecking portal	Public
infoLibre	_infolibre	100.001-1.000.000	Digital media (Generalist)	Public
Vozpópuli	voz_populi	100.001-1.000.000	Digital media (Generalist)	Public
El Independiente	elindepcom	100.001-1.000.000	Generalist	Public
Más De Uno	MasDeUno	10.001-100-000	Radio show	Public

CINEMANIA_ES	CINEMANIA_ES	100.001-1.000.000	Newspapers and magazines (cinema)	Public
OKDiario	okdiario	100.001-1.000.000	Digital media (Generalist)	Public
Periodista Digital	periodistadigit	10.001-100-000	News agency and media	Public
El Plural	El_Plural	10.001-100-000	Digital media (Generalist)	Public
GARA	garanet	10.001-100-000	Newspapers and magazines (Generalist)	Public
Webedia España	WebediaES	10.001-100-000	Media group	Public
ESdiario	ESdiario_com	10.001-100-000	Digital media (Generalist)	Public
VilaWeb	vilaweb	100.001-1.000.000	Digital media (Generalist)	Public
Emprendedores	Emprendedores	100.001-1.000.000	Newspapers and magazines (Business & Economy)	Public
ABC de Sevilla	abcdesevilla	100.001-1.000.000	Newspapers and magazines (Generalist)	Public
National Geographic España	NatGeoEsp	100.001-1.000.000	TV channel, newspapers and magazines (Nature)	Public
NOTICIAS RADIOCABLE	radiocablecom	10.001-100-000	Radio	Public
Grupo Zeta	grupozeta	1.001-10.000	Group media	Public

Table 11. Followed accounts by Sample 3 datasheet and categorization.

Account	Nº Followers	Category	Subcategory	Country	Person/ Institution	Gender	Year
Anonym 246	>1.000.000	Political	Public Institution	USA	Institution	N/A	2017
Anonym 247	100.001-1.000.000	Political	Public Institution	USA	Institution	N/A	2017
Anonym 15	>1.000.000	Political	Public Institution	UK	Institution	N/A	2017
Anonym 18	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 248	100.001-1.000.000	Citizenship	Civil Institution	Worldwide	Institution	N/A	2017
Anonym 23	100.001-1.000.000	Citizenship	User	UK	Citizen	Men	2017
Anonym 249	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 250	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 49	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2017
Anonym 251	100.001-1.000.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 252	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 253	10.001-100.000	Media	Journalist	Spain	Citizen	N/A	2017
Anonym 254	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 255	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 256	100.001-1.000.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 257	10.001-100.000	Political	Politician	Spain	Citizen	Women	2017
Anonym 258	100.001-1.000.000	Media	Media institution	Spain	Institution	N/A	2017
Anonym 259	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 260	100.001-1.000.000	Political	Politician	France	Citizen	Men	2017
Anonym 168	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 6	10.001-100.000	Citizenship	Civil Institution	Worldwide	Institution	N/A	2017
Anonym 261	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2017

Anonym 262	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 21	100.001-1.000.000	Citizenship	Civil Institution	New Zealand	Institution	N/A	2017
Anonym 263	10.001-100.000	Political	Politician	Spain	Citizen	Women	2017
Anonym 264	1.001-10.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 10	>1.000.000	Media	Media institution	UK	Institution	N/A	2017
Anonym 265	1.001-10.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 266	>1.000.000	Citizenship	Civil Institution	Worldwide	Institution	N/A	2017
Anonym 267	10.001-100.000	Media	Media institution	Spain	Institution	N/A	2017
Anonym 268	10.001-100.000	Political	Politician	Spain	Citizen	Women	2017
Anonym 269	10.001-100.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 270	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 25	100.001-1.000.000	Political	Politician	Spain	Citizen	Men	2017
Anonym 271	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2017
Anonym 272	1.001-10.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 273	>1.000.000	Media	Media institution	Spain	Institution	N/A	2017
Anonym 274	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2017
Anonym 275	100.001-1.000.000	Citizenship	User	USA	Citizen	Men	2017
Anonym 276	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2017
Anonym 30	100.001-1.000.000	Political	Public Institution	UK	Institution	N/A	2017
Anonym 34	100.001-1.000.000	Political	Politician	Spain	Citizen	Men	2017
Anonym 277	100.001-1.000.000	Media	Media institution	Spain	Institution	N/A	2017
Anonym 278	100.001-1.000.000	Citizenship	User	Spain	Citizen	Men	2017
Anonym 279	100.001-1.000.000	Media	Journalist	Spain	Citizen	Men	2017
Anonym 280	1.001-10.000	Media	Journalist	Spain	Citizen	Men	2017
Anonym 281	10.001-100.000	Media	Journalist	Spain	Citizen	Men	2017

Anonym 282	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 283	1.001-10.000	Media	Journalist	USA	Citizen	Men	2017
Anonym 14	>1.000.000	Media	Journalist	Spain	Citizen	Women	2017
Anonym 51	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 185	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 52	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 59	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 181	10.001-100.000	Citizenship	User	Spain	Citizen	Woman	2018
Anonym 61	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 187	10.001-100.000	Citizenship	User	Spain	Citizen	Woman	2018
Anonym 70	10.001-100.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 58	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 284	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 19	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 183	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 285	<1.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 199	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 55	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 286	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 78	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 287	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 288	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 289	10.001-100.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 56	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 11	>1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018

Anonym 290	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 291	100.001-1.000.000	Citizenship	User	USA	Citizen	Man	2018
Anonym 292	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 41	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 54	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 293	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 68	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 294	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 295	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 296	1.001-10.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 297	<1.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 298	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 71	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 299	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 300	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2018
Anonym 97	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 301	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2018
Anonym 197	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2018
Anonym 302	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 303	>1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2018
Anonym 241	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 302	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2018
Anonym 303	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 53	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2018
Anonym 304	1.001-10.000	Media	Media	Spain	Institution	N/A	2018

Anonym 123	100.001-1.000.000	Citizenship	User	Spain	Citizen	Woman	2018
Anonym 74	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2018
Anonym 305	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2018
Anonym 101	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 102	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 213	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 99	100.001-1.000.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 53	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 123	>1.000.000	Citizenship	User	Spain	Citizen	Woman	2019
Anonym 109	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 98	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 306	100.001-1.000.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 113	100.001-1.000.000	Citizenship	User	Sweden	Citizen	Woman	2019
Anonym 307	10.001-100.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 308	100.001-1.000.000	Citizenship	Civil Institution	USA	Institution	N/A	2019
Anonym 309	100.001-1.000.000	Citizenship	User	USA	Citizen	Man	2019
Anonym 108	100.001-1.000.000	Politic	Politician	Venezuela	Citizen	Man	2019
Anonym 138	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 54	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 310	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 311	1.001-10.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 312	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2019
Anonym 184	100.001-1.000.000	Politic	Politician	USA	Citizen	Woman	2019
Anonym 313	10.001-100.000	Politic	Public Institution	Spain	Institution	N/A	2019

Anonym 314	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 106	100.001-1.000.000	Politic	Politician	Spain	Citizen	Man	2019
Anonym 315	10.001-100.000	Citizenship	User	Spain	Citizen	Man	2019
Anonym 316	100.001-1.000.000	Citizenship	User	Spain	Citizen	Man	2019
Anonym 317	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 124	10.001-100.000	Politic	Politician	Spain	Citizen	Woman	2019
Anonym 318	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 78	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 114	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 103	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 319	100.001-1.000.000	Media	Media	Germany	Institution	N/A	2019
Anonym 320	100.001-1.000.000	Media	Media	USA	Institution	N/A	2019
Anonym 321	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 133	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 322	100.001-1.000.000	Media	Media	Worldwide	Institution	N/A	2019
Anonym 323	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 324	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2019
Anonym 135	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 325	10.001-100.000	Media	Journalist	Spain	Citizen	Woman	2019
Anonym 84	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2019
Anonym 326	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 327	100.001-1.000.000	Media	Media	Germany	Institution	N/A	2019
Anonym 56	100.001-1.000.000	Politic	Political Party	Spain	Institution	N/A	2019
Anonym 11	100.001-1.000.000	Politic	Public Institution	Spain	Institution	N/A	2019

Anonym 328	100.001-1.000.000	Citizenship	User	Argentina	Citizen	Man	2019
Anonym 329	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 330	100.001-1.000.000	Citizenship	User	Spain	Citizen	Woman	2019
Anonym 137	100.001-1.000.000	Media	Journalist	Spain	Citizen	Man	2019
Anonym 331	10.001-100.000	Media	Journalist	Spain	Citizen	Man	2019

Sample 4

Table 12. Sample 4 datasheet and categorization.

Politician	User	Number of followers	Gender	Status
Ábalos Meco José Luis	@abalosmeco	10.001-100.000	Men	Public
Agirretxea Urresti Joseba Andoni	@jagirretxea	1.001-10.000	Men	Suspended
Antón Cacho Javier	@javieranton	1.001-10.000	Men	Public
Baldoví Roda Joan	@joanbaldovi	10.001-100.000	Men	Public
Barandiaran Benito Íñigo	@inibaran	<1.000	Men	Public
Batet Lamaña Meritxell	@meritxell_batet	10.001-100.000	Women	Public
Belarra Urteaga Ione	@ionebelarra	100.001-1.000.000	Women	Public
Bermúdez de Castro Fernández José Antonio		No info	Men	Eliminated
Blanquer Alcaraz Patricia	@Patri_Blanquer	1.001-10.000	Women	Public
Borrego Cortés Isabel María	@borrego_corte	100.001-1.000.000	Women	Public
Botella Gómez Ana María	@AnaBotellaPSOE	10.001-100.000	Women	Public
Cantera de Castro Zaida	@ZaidaCantera	10.001-100.000	Women	Public
Capdevila i Esteve Joan	@capdevilajoan	1.001-10.000	Men	Public
Casado Blanco Pablo	@pablocasado_	100.001-1.000.000	Men	Public
Clavell López Óscar	@OscarClavell	1.001-10.000	Men	Public
Delgado Arce Celso Luis	@CelsoDelgadoOU	1.001-10.000	Men	Public
Díaz Gómez Guillermo	@GuillermoDiazCs	10.001-100.000	Men	Public
Díaz Pérez Yolanda	@Yolanda_Diaz_	100.001-1.000.000	Women	Public
Echániz Salgado José Ignacio	@JIEchaniz	1.001-10.000	Men	Public
Elizo Serrano María Gloria	@GloriaElizo	100.001-1.000.000	Women	Public
Elorza González Odón	@odonelorza2011	10.001-100.000	Men	Public
Eritja Ciuró Francesc Xavier	@xavieritja	1.001-10.000	Men	Public

España Reina Carolina	@CarolinaEspanaR	1.001-10.000	Women	Public
Esteban Bravo Aitor	@AITOR_ESTEBAN	10.001-100.000	Men	Public
Fernández Castañón Sofía	@SofCastanon	10.001-100.000	Women	Public
Ferrer Tesoro Sonia	@soniafetesoro	1.001-10.000	Women	Public
Franco Carmona Isabel	@Isabel_Franco_	10.001-100.000	Women	Public
García Díez Joaquín María	@Quin1954	1.001-10.000	Men	Public
García Egea Teodoro	@TeoGarciaEgea	10.001-100.000	Men	Public
García Puig María del Mar	@margpuig	1.001-10.000	Women	Public
García-Pelayo Jurado María José	@MJGarciaPelayo	<1.000	Women	Public
Garzón Espinosa Alberto	@agarzon	>1.000.000	Men	Public
Gómez-Reino Varela Antonio	@AntonGomezReino	10.001-100.000	Men	Public
González Guinda María del Carmen	@CarmenGGuinda	1.001-10.000	Women	Public
González Ramos Manuel Gabriel		No info	Men	Eliminated
González Terol Antonio	@Aglezterol	10.001-100.000	Men	Public
González Vázquez Marta	@MartaGlezVzqz	1.001-10.000	Women	Public
Guijarro García Txema	@TxemaGuijarro	1.001-10.000	Men	Public
Guinart Moreno Lídia	@lidiaguinart	1.001-10.000	Women	Public
Gutiérrez Vivas Miguel Ángel	@MGutierrezCs	10.001-100.000	Men	Public
Hernanz Costa Sofía	@Hernanzsofia	1.001-10.000	Women	Public
Herrero Bono José Alberto	@herrerobono	1.001-10.000	Men	Public
Hoyo Juliá Belén	@BelenHoyo	10.001-100.000	Women	Public
Lamuà Estañol Marc	@MarcLamua	1.001-10.000	Men	Public
Lastra Fernández Adriana	@Adrilastra	100.001-1.000.000	Women	Public
Legarda Uriarte Mikel	@MikelLegarda	1.001-10.000	Men	Public
López Álvarez Patxi	@patxilopez	100.001-1.000.000	Men	Public
López de Uralde Garmendia Juan Antonio	@juralde	10.001-100.000	Men	Public
Margall Sastre Joan	@joanmargall	1.001-10.000	Men	Public

Mariscal Anaya Guillermo	@gmariscalanaya	1.001-10.000	Men	Public
Martínez Ferro María Valentina	@valentinam	1.001-10.000	Women	Public
Martínez Seijo María Luz	@luzseijo	1.001-10.000	Women	Public
Matarí Sáez Juan José		No info	Men	Eliminated
Matute García de Jalón Oskar	@OskarMatute	100.001-1.000.000	Men	Public
Mayoral Perales Rafael	@MayoralRafa	100.001-1.000.000	Men	Public
Meijón Couselo Guillermo Antonio	@guillermomeijon	1.001-10.000	Men	Public
Mena Arca Joan	@joanmena	10.001-100.000	Men	Public
Miquel i Valentí Sergi	@sergimiquel	1.001-10.000	Men	Public
Moneo Díez María Sandra	@DiezMoneo	1.001-10.000	Women	Public
Montero Gil Irene María	@IreneMontero	100.001-1.000.000	Women	Public
Moraleja Gómez Tristana María	@TristanaMg	1.001-10.000	Women	Public
Moro Almaraz María Jesús	@MoroMjesus	1.001-10.000	Women	Public
Movellán Lombilla Diego	@DiegoMovellan	1.001-10.000	Men	Public
Navarro Lacoba Carmen	@CnLacoba	1.001-10.000	Women	Public
Nogueras i Camero Míriam	@miriamnoguerasM	100.001-1.000.000	Women	Public
Olano Vela Jaime Eduardo de	@jaimedeolano	10.001-100.000	Men	Public
Oramas González-Moro Ana María	@anioramas	10.001-100.000	Women	Public
Pastor Julián Ana María	@anapastorjulian	100.001-1.000.000	Women	Public
Peña Camarero Esther	@estherpcamarero	1.001-10.000	Women	Public
Perea i Conillas María Mercè	@MercePerea	1.001-10.000	Women	Public
Píriz Maya Víctor Valentín	@vicpiriz1975	10.001-100.000	Men	Public
Pita Cárdenes María del Carmen	@meripita44	1.001-10.000	Women	Public
Pons Sampietro Pere Joan	@perejoanpons	1.001-10.000	Men	Public
Ramón Utrabo Elvira	@ElviraRamon	1.001-10.000	Women	Public
Ramos Esteban César Joaquín	@CesarJRamos	1.001-10.000	Men	Public
Raya Rodríguez María Tamara	@tamarayar	1.001-10.000	Women	Public
Rodríguez Rodríguez Alberto	@Alber_Canarias	10.001-100.000	Men	Public
Rojas García Carlos	@CarlosRojas_PPA	1.001-10.000	Men	Public

Romero Sánchez Rosa María	@rosaromerocr	10.001-100.000	Women	Public
Rufián Romero Gabriel	@gabrielrufian	100.001-1.000.000	Men	Public
Ruiz i Carbonell Joan	@jruizcarbonell	10.001-100.000	Men	Public
Sagastizabal Unzetabarrenetxea Idoia	@Idosagasti	<1.000	Women	Public
Sahuquillo García Luis Carlos	@lcsahuquillo	1.001-10.000	Men	Public
Salvador i Duch Jordi	@jsalvadorduch	1.001-10.000	Men	Public
Sánchez Pérez-Castejón Pedro	@sanchezcastejon	>1.000.000	Men	Public
Sánchez Serna Javier	@J_Sanchez_Serna	10.001-100.000	Men	Public
Serrada Pariente David	@dvserrada	1.001-10.000	Men	Public
Sicilia Alférez Felipe Jesús	@felipe_sicilia	10.001-100.000	Men	Public
Simancas Simancas Rafael	@SimancasRafael	10.001-100.000	Men	Public
Suárez Lamata Eloy	@eloysuarezl	1.001-10.000	Men	Public
Sumelzo Jordán Susana	@SSumelzo	10.001-100.000	Women	Public
Telechea i Lozano Carolina	@caroltelechea	1.001-10.000	Women	Public
Vázquez Blanco Ana Belén	@anadebande	10.001-100.000	Women	Public
Vera Ruíz-Herrera Noelia	@VeraNoelia	10.001-100.000	Women	Public
Vidal Sáez Aina	@AinaVS	10.001-100.000	Women	Public
Zaragoza Alonso José	@J_Zaragoza_	10.001-100.000	Men	Public
Zurita Expósito Ana María	@AnaZurita7	1.001-10.000	Women	Public

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Table 13. Followed accounts by Sample 4 datasheet and categorization.

Account	Nº Followers	Category	Subcategory	Country	Person/ Institution	Gender	Year
Anonym 332	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 333	1.001-10.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 263	10.001-100.000	Political	Politician	Spain	Person	Women	2017
Anonym 334	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2017
Anonym 3	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2017
Anonym 4	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 335	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2017
Anonym 336	10.001-100.000	Media	Journalist	Spain	Person	Women	2017
Anonym 173	10.001-100.000	Political	Politician	Spain	Person	Women	2017
Anonym 247	10.001-100.000	Political	Politician	USA	Person	Men	2017
Anonym 337	10.001-100.000	Media	Journalist	Spain	Person	Women	2017
Anonym 154	100.001-1.000.000	Political	Politician	Spain	Person	Men	2017
Anonym 338	100.001-1.000.000	Citizenship	User	Spain	Person	Women	2017
Anonym 339	10.001-100.000	Political	Politician	Spain	Person	Women	2017
Anonym 8	>1.000.000	Political	Public Institution	Spain	Institution	N/A	2017
Anonym 179	10.001-100.000	Citizenship	User	Spain	Person	Men	2017
Anonym 340	10.001-100.000	Political	Politician	Spain	Person	Men	2017
Anonym 341	1.001-10.000	Political	Politician	Spain	Person	Women	2017
Anonym 342	10.001-100.000	Political	Political Party	Spain	Institution	N/A	2017
Anonym 343	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 91	100.001-1.000.000	Citizenship	User	Spain	Person	Men	2017
Anonym 344	>1.000.000	Media	Media	Spain	Institution	N/A	2017

Anonym 345	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2017
Anonym 346	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2017
Anonym 347	1.001-10.000	Political	Politician	Spain	Person	Women	2017
Anonym 348	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 218	100.001-1.000.000	Citizenship	User	Spain	Person	Women	2017
Anonym 349	1.001-10.000	Political	Politician	Spain	Person	Women	2017
Anonym 350	10.001-100.000	Media	Journalist	Spain	Person	Men	2017
Anonym 351	<1.000	Political	Politician	Spain	Person	Women	2017
Anonym 246	>1.000.000	Political	Public Institution	Spain	Institution	N/A	2017
Anonym 352	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 353	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 354	10.001-100.000	Citizenship	User	Spain	Person	Women	2017
Anonym 355	1.001-10.000	Media	Journalist	Spain	Person	Women	2017
Anonym 356	1.001-10.000	Citizenship	User	Spain	Person	Women	2017
Anonym 357	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 358	1.001-10.000	Political	Politician	Spain	Person	Women	2017
Anonym 306	100.001-1.000.000	Political	Politician	Spain	Person	Women	2017
Anonym 359	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2017
Anonym 360	100.001-1.000.000	Citizenship	User	Spain	Person	Women	2017
Anonym 220	10.001-100.000	Political	Politician	Spain	Person	Men	2017
Anonym 361	1.001-10.000	Political	Politician	Spain	Person	Women	2017
Anonym 362	1.001-10.000	Political	Politician	Spain	Person	Men	2017
Anonym 363	1.001-10.000	Citizenship	User	Spain	Person	Men	2017
Anonym 364	10.001-100.000	Citizenship	User	Spain	Person	Men	2017

Anonym 365	1.001-10.000	Political	Political Party	Spain	Institution	N/A	2017
Anonym 268	10.001-100.000	Political	Politician	Spain	Person	Women	2017
Anonym 366	>1.000.000	Media	Media	England	Institution	N/A	2017
Anonym 151	10.001-100.000	Citizenship	User	Spain	Person	Men	2017
Anonym 52	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2018
Anonym 55	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 367	10.001-100.000	Media	Journalist	Spain	Person	Men	2018
Anonym 58	100.001-1.000.000	Political	Politician	Spain	Person	Men	2018
Anonym 78	100.001-1.000.000	Political	Politician	Spain	Person	Men	2018
Anonym 368	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2018
Anonym 210	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 208	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 59	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 193	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 51	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2018
Anonym 369	10.001-100.000	Citizenship	User	Spain	Person	Men	2018
Anonym 95	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 262	10.001-100.000	Political	Politician	Spain	Person	Men	2018
Anonym 370	1.001-10.000	Political	Political Party	Spain	Institution	N/A	2018
Anonym 371	10.001-100.000	Political	Politician	Spain	Person	Men	2018
Anonym 74	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 220	10.001-100.000	Political	Politician	Spain	Person	Men	2018
Anonym 372	1.001-10.000	Political	Politician	Spain	Person	Women	2018
Anonym 373	1.001-10.000	Political	Public Institution	Spain	Institution	N/A	2018

Anonym 374	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2018
Anonym 204	10.001-100.000	Media	Journalist	Spain	Person	Women	2018
Anonym 345	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2018
Anonym 375	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 376	10.001-100.000	Political	Politician	Spain	Person	Men	2018
Anonym 377	10.001-100.000	Media	Journalist	Spain	Person	Men	2018
Anonym 378	1.001-10.000	Citizenship	User	Spain	Person	Women	2018
Anonym 379	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 380	1.001-10.000	Political	Politician	Spain	Person	Women	2018
Anonym 41	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 381	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 335	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2018
Anonym 382	1.001-10.000	Political	Political Party	Spain	Institution	N/A	2018
Anonym 383	10.001-100.000	Media	Journalist	Spain	Person	Women	2018
Anonym 384	10.001-100.000	Media	Journalist	Spain	Person	Men	2018
Anonym 97	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 385	100.001-1.000.000	Political	Politician	Spain	Person	Women	2018
Anonym 386	10.001-100.000	Citizenship	User	Spain	Person	Men	2018
Anonym 185	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 387	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 388	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 389	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 198	1.001-10.000	Political	Politician	Spain	Person	Women	2018
Anonym 390	<1.000	Political	Politician	Spain	Person	Women	2018

Anonym 391	1.001-10.000	Political	Politician	Spain	Person	Men	2018
Anonym 392	10.001-100.000	Media	Media	Spain	Institution	N/A	2018
Anonym 393	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 394	1.001-10.000	Political	Politician	Spain	Person	Men	2018
Anonym 395	10.001-100.000	Political	Politician	Spain	Person	Women	2018
Anonym 36	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2018
Anonym 102	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 396	10.001-100.000	Political	Politician	Spain	Person	Men	2019
Anonym 397	1.001-10.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 101	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2019
Anonym 213	10.001-100.000	Media	Journalist	Spain	Person	Men	2019
Anonym 124	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 228	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 398	1.001-10.000	Political	Politician	Spain	Person	Women	2019
Anonym 399	1.001-10.000	Political	Politician	Spain	Person	Women	2019
Anonym 122	10.001-100.000	Media	Journalist	Spain	Person	Women	2019
Anonym 388	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 400	1.001-10.000	Citizenship	User	Spain	Person	Men	2019
Anonym 401	1.001-10.000	Political	Politician	Spain	Person	Women	2019
Anonym 218	100.001-1.000.000	Citizenship	User	Spain	Person	Women	2019
Anonym 220	10.001-100.000	Political	Politician	Spain	Person	Men	2019
Anonym 55	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 402	1.001-10.000	Political	Politician	Spain	Person	Women	2019
Anonym 108	>1.000.000	Political	Politician	Spain	Person	Men	2019

Anonym 403	1.001-10.000	Citizenship	User	Spain	Person	Men	2019
Anonym 404	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 345	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2019
Anonym 119	10.001-100.000	Media	Media	Spain	Institution	N/A	2019
Anonym 405	1.001-10.000	Political	Politician	Spain	Person	Men	2019
Anonym 406	1.001-10.000	Citizenship	User	Spain	Person	Women	2019
Anonym 98	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2019
Anonym 99	100.001-1.000.000	Political	Politician	Spain	Person	Women	2019
Anonym 407	10.001-100.000	Media	Journalist	Spain	Person	Women	2019
Anonym 408	1.001-10.000	Political	Politician	Spain	Person	Men	2019
Anonym 113	>1.000.000	Citizenship	User	Sweden	Person	Women	2019
Anonym 409	100.001-1.000.000	Political	Politician	Belgium	Person	Women	2019
Anonym 410	100.001-1.000.000	Citizenship	User	Spain	Person	Men	2019
Anonym 184	>1.000.000	Political	Politician	USA	Person	Women	2019
Anonym 411	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 227	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 239	100.001-1.000.000	Political	Politician	Spain	Person	Women	2019
Anonym 216	100.001-1.000.000	Political	Politician	Spain	Person	Men	2019
Anonym 74	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 412	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 413	10.001-100.000	Citizenship	User	Spain	Person	Men	2019
Anonym 414	1.001-10.000	Political	Politician	Spain	Person	Men	2019
Anonym 369	10.001-100.000	Citizenship	User	Spain	Person	Men	2019
Anonym 188	10.001-100.000	Media	Journalist	Spain	Person	Women	2019
Anonym 58	100.001-1.000.000	Political	Politician	Spain	Person	Men	2019

Anonym 415	10.001-100.000	Citizenship	User	Spain	Person	Women	2019
Anonym 416	10.001-100.000	Political	Politician	Spain	Person	Women	2019
Anonym 417	10.001-100.000	Citizenship	User	Spain	Person	Men	2019
Anonym 199	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2019
Anonym 418	1.001-10.000	Political	Politician	Spain	Person	Women	2019
Anonym 419	1.001-10.000	Political	Politician	Spain	Person	Men	2019
Anonym 420	1.001-10.000	Political	Politician	Spain	Person	Men	2019
Anonym 421	10.001-100.000	Political	Politician	Spain	Person	Women	2020
Anonym 422	100.001-1.000.000	Political	Politician	Spain	Person	Men	2020
Anonym 423	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 345	100.001-1.000.000	Media	Journalist	Spain	Person	Women	2020
Anonym 424	1.001-10.000	Citizenship	User	Spain	Person	Women	2020
Anonym 425	100.001-1.000.000	Media	Media	Spain	Institution	N/A	2020
Anonym 426	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 427	10.001-100.000	Political	Politician	Spain	Person	Men	2020
Anonym 428	>1.000.000	Political	Politician	USA	Person	Women	2020
Anonym 429	100.001-1.000.000	Political	Politician	Spain	Person	Women	2020
Anonym 430	10.001-100.000	Media	Media	Spain	Institution	N/A	2020
Anonym 431	>1.000.000	Political	Politician	USA	Person	Men	2020
Anonym 432	100.001-1.000.000	Media	Journalist	Spain	Person	Men	2020
Anonym 433	1.001-10.000	Political	Politician	Spain	Person	Men	2020
Anonym 434	1.001-10.000	Political	Politician	Spain	Person	Women	2020
Anonym 241	100.001-1.000.000	Citizenship	User	Spain	Person	Men	2020
Anonym 435	100.001-1.000.000	Citizenship	User	Spain	Person	Men	2020
Anonym 436	10.001-100.000	Political	Politician	Spain	Person	Women	2020

Anonym 437	1.001-10.000	Political	Politician	Spain	Person	Women	2020
Anonym 438	100.001-1.000.000	Citizenship	Civil Institution	Spain	Institution	N/A	2020
Anonym 439	1.001-10.000	Political	Politician	Spain	Person	Men	2020
Anonym 440	10.001-100.000	Political	Politician	Spain	Person	Women	2020
Anonym 441	10.001-100.000	Political	Politician	Spain	Person	Men	2020
Anonym 442	10.001-100.000	Political	Politician	Spain	Person	Women	2020
Anonym 443	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 444	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 445	1.001-10.000	Political	Politician	Spain	Person	Women	2020
Anonym 446	1.001-10.000	Political	Politician	Spain	Person	Women	2020
Anonym 447	10.001-100.000	Citizenship	User	Spain	Person	Men	2020
Anonym 448	1.001-10.000	Political	Politician	Spain	Person	Men	2020
Anonym 449	10.001-100.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 450	10.001-100.000	Political	Politician	Spain	Person	Men	2020
Anonym 451	10.001-100.000	Citizenship	User	Spain	Person	Men	2020
Anonym 452	10.001-100.000	Citizenship	Civil Institution	Spain	Institution	N/A	2020
Anonym 228	10.001-100.000	Political	Politician	Spain	Person	Women	2020
Anonym 453	<1.000	Political	Politician	Spain	Person	Men	2020
Anonym 454	<1.000	Political	Politician	Spain	Person	Women	2020
Anonym 455	<1.000	Political	Politician	Spain	Person	Women	2020
Anonym 136	100.001-1.000.000	Political	Politician	Spain	Person	Men	2020
Anonym 456	10.001-100.000	Political	Politician	Spain	Person	Men	2020
Anonym 352	1.001-10.000	Political	Politician	Spain	Person	Men	2020
Anonym 457	100.001-1.000.000	Political	Public Institution	Spain	Institution	N/A	2020
Anonym 458	1.001-10.000	Political	Politician	Spain	Person	Women	2020

Anonym 459	100.001-1.000.000	Citizenship	User	Spain	Person	Men	2020
Anonym 460	1.001-10.000	Political	Politician	Spain	Person	Women	2020
Anonym 461	10.001-100.000	Political	Politician	Spain	Person	Men	2020
Anonym 462	1.001-10.000	Citizenship	User	Spain	Person	Men	2020
Anonym 59	10.001-100.000	Political	Politician	Spain	Person	Women	2020
Anonym 463	10.001-100.000	Citizenship	User	Spain	Person	Women	2020
Anonym 464	10.001-100.000	Citizenship	User	Spain	Person	Men	2020

ANNEX II - Published papers

The range of pages 247 (219) to 257 (229) corresponding to the content of the article: "Who Are the Most Followed Following? A Data Analysis Case Study of the Accounts the Top Media Directors from Spain Started Following on Twitter" published in Advances in Intelligent Systems and Computing 1331 Information Technology and Systems, has been censored for confidentiality reasons.

Citizenship or political?
The Twitter accounts that the Media
and their Directors started to follow

¿Ciudadanas o políticas?
Las cuentas de Twitter que los medios
y sus directores comenzaron a seguir

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Cite this article

Keywords

Palabras clave

Abstract

Digital platforms have transformed the influence streams among media, journalists, politicians and the citizenship, as well as concerning gatekeeping and agenda setting (Guo and Vargo, 2017; Wallace, 2018; Casero-Ripollés, 2021). Nonetheless, homophilic tendencies among power groups continue to be reproduced *online* (McPherson, Smith-Lovin and Cook, 2001; Maares, Lind and Greussing, 2021). With the objective of contributing to the deepening of the understanding of the dynamics and influence flows *online* among power elites, we analyzed via a machine learning Software, the 50 accounts that the network of the most followed Media Directors in Spain began following and compared them with the accounts that the Media they manage started following. We categorized them in Types of accounts, Location and Gender, and analyzed the repetitions between the accounts they began to follow to subsequently work with data visualization methods in order to find trends and tendencies (Bail, 2014; Batrinca and Treleaven, 2015). The results of this research indicate that some patterns of behavior differ between both networks, such as the gender and types of accounts they began following, whereas the location presented similar trends. The year where we can see the highest similarities corresponds to 2018, an electoral year in Spain, where both networks started following a majority of Spanish male politicians.

Resumen

Las plataformas digitales han introducido nuevas lógicas en las relaciones y en los flujos de influencia entre los medios, periodistas, políticos y la ciudadanía, así como en lo que respecta al *gatekeeping* y el establecimiento de la agenda político-mediática (Guo and Vargo, 2017; Wallace, 2018; Casero-Ripollés, 2021). No obstante, los grupos de poder siguen reproduciendo tendencias homofílicas en el mundo digital (McPherson, Smith-Lovin and Cook, 2001; Maares, Lind and Greussing, 2021). Con el objetivo de contribuir con la profundización de la comprensión de las dinámicas y flujos de influencia *online* entre las élites de poder, analizamos a través de un software de *machine learning*, las 50 cuentas que la red de los directores de medios más seguidos en España comenzó a seguir, y las comparamos con las cuentas que comenzaron a seguir los medios que dirigen. Las categorizamos en tipos de cuentas, ubicación y género, y analizamos las repeticiones entre las cuentas que comenzaron a seguir, para luego trabajar con métodos de visualización de datos en busca de tendencias y patrones (Bail, 2014; Batrinca and Treleaven, 2015). Los resultados de esta investigación indican que algunos patrones de comportamiento difieren entre ambas redes, como el género y los tipos de cuentas que comenzaron a seguir, mientras que presentaron tendencias similares con respecto a la ubicación de las cuentas. El año en el que se aprecian mayores similitudes corresponde a 2018, año electoral en España, donde ambas redes comenzaron a seguir mayoritariamente a políticos españoles varones.

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1. Introduction and theoretical background

Along with the emergence of digital and social platforms came various views about the impact of these new media in power dynamics and influence streams between the media, politicians and citizens (Meraz, 2009; Tran, 2014; Guo and Vargo, 2017; Casero-Ripollés, 2021). On one hand, numerous researchers state that these platforms offer technological infrastructures that empower the citizenship to have a more active role regarding the information they access to and their involvement in the *online* news setting (Tran, 2014; Feezell, 2018). This is so, that authors introduced the terms produsers and prosumers (García Galera and Valdivia, 2014) to describe the new role of the citizenship in selecting, sharing and even producing information (Feezell, 2018). What is more, some authors conceptualize Social Media as emancipatory tools that can be understood as freedom enhancers (Shirky, 2008). However, Morozov (2011) points out that having a more democratic access to the news and information, does not imply a social-wise democratization.

Contrastingly, other studies show how politicians and media, who were traditionally the main agenda-setters (McCombs and Shaw, 1972) still have power and influence the agenda setting development (Tran, 2014; Harder, Sevenans and Van Aelst, 2017). Furthermore, previous research indicate that social media (specially Twitter) operate as an echo chamber of those in power positions and the elites (Bruns and Highfield, 2013) as politicians and media show a tendency to be the main receptors of politicians' messages, reproducing the characteristic stratified attention of the capitalist society (Dubois and Gaffney, 2014). Individuals' social networks tend to homophily, being similarity one of the main connectors between people (McPherson, Smith-Lovin and Cook, 2001). This behavior seems to be replicated on social media and digital networks (Colleoni, Rozza and Arvidsson, 2014), where users may choose contents that reinforce their beliefs as opposed to consuming contents that could postulate new perspectives. Moreover, the attention is homophilic among the elites (Wu *et al.*, 2011; Maares, Lind and Greussing, 2021). Studies show how journalists tend to interact with colleagues (Molyneux, 2015) or leaders (McGregor and Molyneux, 2018), and what is more, male journalists present a tendency to interact with, and broadcast, nearly solely other male journalists (Usher, Holcomb and Littman, 2018).

In this same line, media research has documented a long tradition of media's misrepresentation, trivialization and stereotyping of women in media contents and news (Shor *et al.*, 2015). Previous research show that journalists and media have also used more men as sources than women, which reinforces men as leaders and authority figures (Zoch and Van Slyke Turk, 1998; Armstrong and Gao, 2011), all of which impacts in women's symbolic annihilation (Tuchman, 1978).

Gatekeeping, which used to be exercised by media, politicians and power elites (McCombs and Shaw, 1972) has also undergone changes with digital platforms and *online* media (Meraz, 2009) as these provide the infrastructure for converting any person with a smart device and internet into an informer, and any content has the potential to reach other citizens and even becoming viral, without the traditional mediatic filters (McCombs and Shaw, 1972). However, digital platforms are software systems, that introduce changes with their own policies, interfaces, algorithms and data usage, which operate as filters and shapers impacting the contents and information each person accesses to (Martínez Figuerola and Marzo, 2016; Finn, 2017). This has led some researchers to characterize social media and digital platforms as the gatekeepers of the XXI century (Wallace, 2018).

Twitter is considered the most relevant informational and political network (Verweij, 2012; Colleoni, Rozza and Arvidsson, 2014; Harder, Sevenans and Van Aelst, 2017; Hu and Kearney, 2020). It is widely used by opinion leaders (Smith, 2020), as well as by the media, who use it to disseminate information (Engesser and Humprecht, 2015). Journalists are also considered heavy users of this platform and use it mainly with work purposes to interact with other journalists, to broadcast their own work and their colleagues´ contents (Molyneux, 2015; Arrabal-Sánchez and De-Aguilera-Moyano, 2016), as well as to find informational sources (Verweij, 2012). Journalists´ use of Twitter is considered to have an effect on the voices and messages that become part of the social discussion and the news agenda (McGregor and Molyneux, 2018). It has an effect on the contents and news that other users read, on Twitter journalists are considered curators (Molyneux, 2015). Who each user follows on their social media is determinant on the contents they will be exposed to (Hawley, 2019), as social media platforms tailor the contents and accounts they suggest via recommendation algorithms (Gupta *et al.*, 2013; Finn, 2017; Twitter, 2019). In this research, we are focusing on who the Media Directors and the Media they manage started following as who elites follow have an impact on the rest of the users, especially when we are talking about the most followed Media accounts. On one hand, this is due to the fact that Media and journalists are considered curators as stated above (Molyneux, 2015), but also, because Twitter´s algorithmic recommendations of who to follow tend to recommend accounts followed by the accounts you follow (Twitter, 2019). This means that the accounts that the most followed elites start following tend to be more suggested to other users by Twitter´s algorithm. In addition to pursuing to identify the accounts followed by two media elites, the most followed media directors in Spain and the media they manage, in this study we seek to know whether the media and their directors tend to follow the same accounts, which would reinforce the echo chamber effect in case there were indeed similarities in the accounts that began to follow both networks.

2. Objective

In this context, we ask ourselves who the most followed Media Directors from Spain began to follow and who did the Media they manage, seeking to understand if we can see the characteristics of the digital environment reflected in these accounts and at the same time comprehend if the organizational behavior of the media is related to the behavior of their directors in terms of the characteristics of the accounts they started to follow.

3. Methodology

This research is the culmination of a study in which we analyze the behavior and influence flows among journalists, media, politicians and the citizenship. In a previous phase we analyzed the group of Spanish media executives with the most followers on Twitter. In this final instance, we seek to compare the accounts the group of Media Directors began to follow, with the accounts of the Media they manage, in order to understand whether individual and organizational behaviors go in similar directions, and to understand the *online* influence dynamics among the media elites.

In the first stage of the research we studied the 50 most followed Media Directors from Spain and analyzed the 50 accounts they started to follow as a network, from 2017 to 2019 (Israel-Turim and Micó-Sanz, 2021). We categorized these accounts and proceeded to do a quantitative data analysis as we crossed different variables of the data we collected and used visualization tools in the search for possible repetitions that could signify patterns or trends (Mahrt and Scharkow, 2013; Bail, 2014; Batrinca and Treleaven, 2015). We melded data analysis techniques combining computational and manual methods to preserve contextual implications while obtaining as much information and knowledge from the data (Lewis, Zamith and Hermida, 2013). The results of this analysis are the ones to be contrasted in this final phase.

In the present study we created a new sample constituted by the media institutions where these top 50 media directors work and have incidence. This new sample is constituted by 36 media, as some of the Media Directors and executives work in the same media organizations. Once the sample of this study was determined, we created a new context to extract the top 50 accounts they began following as a group. We analyzed 50 accounts as this number provides substantial data without generating a high dispersion.

The data, which includes the top 50 media directors accounts from Spain with more followers on Twitter, the group of media they manage and the 50 accounts both networks started to follow from 2017 to 2019, was extracted from a big data analysis software developed for the project "Influencers in Political Communica-

tion in Spain. Analysis of the Relationships Between Opinion Leaders 2.0, Media, Parties, Institutions, and Audiences in the Digital Environment" named *Contexto. io*. This software organizes contexts of information around Twitter accounts using their digital public footprints. The composition of a context consists of a group of people and/or organizations that interact creating an ecosystem. They are created with a selection of Twitter accounts that are algorithmically sorted by the software taking into account their relevance in the context by analyzing the accounts digital trace. In order to determine the sample we worked with datasets that contained the Spanish Media and Media Directors accounts on Twitter. The software contains a section named *Metrics* where we could visualize information regarding the number and variation of *followees, followers, tweets* and *favorites* of the accounts of a context. In this section searched for the Media Director´s accounts with the highest numbers of followers. We extracted the most followed ones and created a new context, in order to analyze them as network. Afterwards, we searched for the media institutions they direct and created a new context with these media, which was constituted by 36 media, as some of the Media Directors had high directive positions in the same media. Therefore, we created two new contexts, one with the most followed Media Directors in Spain, and another one with the 36 media accounts they managed, in order to proceed to their comparison. The software organizes the accounts into graphs utilizing a set of parameters in order to determine the nodes sizes and distances, such as Relations between the accounts, Communication, Common organizations and Predicted links. The resulting networks were the following:

Figure 1. Samples networks: Media Directors and the Media they manage

Once we had the two samples, we proceeded to search for the 50 accounts each network started to follow in 2017, 2018 and 2019. To do so, we also worked with the *Contexto.io* software, as through a section named *Expand* we could visualize the accounts that the contexts started to follow as groups. This section provides the possibility of selecting specific periods to analyze, the capability of including or excluding the members of the samples and it presents the accounts that the networks started following in order of popularity, calculated by the percentage of the sample´s members that started following those accounts. For the present research, we selected to visualize the accounts that the sample began to follow taking into account the ones in- and out-of-network.

After collecting the data of the samples and of the accounts they started following, we categorized the accounts the sample began to follow in the same way as in the previous phase which is: Types of accounts, Location and Gender; and added a new category that analyses whether the accounts the networks began to follow are the exact same ones. The categories are defined as follows:

Types of accounts

> We categorized the accounts in three types: Political, Media and Citizenship.
>
> The Political accounts include politicians, political parties and public institutions. Public institutions have been considered political devices (Thoenig, 2003), reason why we integrated Public institutions in this category. The way a public institution works might answer to political agendas. Therefore, a user deciding to follow or not a public institution may denote a certain political opinion or preference taking into account both, the cognitive dissonance theory (Festinger, 1957) which states that individuals tend to elude news and information that is not in line with their beliefs, and homophily on social media, through which users choose contents that reinforce their beliefs (McPherson, Smith-Lovin and Cook, 2001). However, users, and specially media, journalists and popular users can decide to follow accounts beyond whether it aligns with their beliefs for public relations purposes.
>
> The media category is composed by Media institutions and Journalists and the citizenship category contains Users (entrepreneurs, scholars, artists, celebrities, activists, etc.) and Civil Institutions (companies, NGOs, civilian associations, among others).

Accounts repetition

> We analyzed if the exact accounts the sample started following every year were also began to be followed by the network of top media directors in that same period.

Location

> We labeled the accounts according to the precedence or location of the Twitter account, taken from the user´s Twitter location or their bio, and in case this information has not been detailed by the account, we searched for the person/institution to find it.

Gender

> Within the accounts that did not belong to Institutions, we categorized the accounts in Men, Women and Non-binary (Butler, 1988) in order to analyze possible gender balance trends, as media studies have shown a tradition of gender disbalances in media representations (Zoch and Van Slyke Turk, 1998; Armstrong and Gao, 2011), which has been related to the fact that men are also over-represented in power positions (Carli and Eagly, 2002; Kubu, 2017). The way to determine the gender of the accounts was by analyzing the Twitter profiles. Firstly, through the users' "bio", taking as a reference the way in which each user refers to themselves. In cases where there was no bio nor self-gender references, we used the name and image of the user and added a search of web pages, interviews, etc. where information about the gender identification of that person could be found.

4. Results

4.1. Types of accounts

In 2017 the analyzed media began to follow a clear majority of citizenship accounts, while the Media Directors began to follow a minority of this type of account; 42% in the case of the Media they manage and 22% the Media Directors. In that same year, the percentage of political accounts was similar between both samples, with a 4% difference, whereas there was a higher difference in the Media accounts as the Media Directors began to follow a 50% of Media, while the Media they manage, a 34% of this type of account.

The year 2018 is the one in which we can find the most similar behavior among the networks in terms of the types of accounts they started following. Both samples started to follow a majority of political accounts and the percentage distribution by category was similar: Political accounts (46% the Media Directors and 42% the Media they manage), Media (38-32%) and Citizenship (16-26%).

In 2019 we can see how the Media began to follow relatively similar percentages of each type of account: 38% Media, 32% citizenship and 30% political, while the Media directors began to follow equal numbers of Political and Media accounts and a minority of Citizenship (20%).

Figure 2. Types of accounts the Media Directors and the Media they manage started following
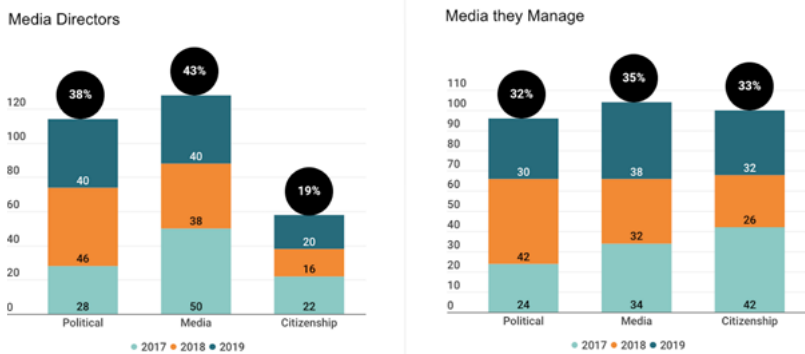
Overall, the analyzed media presented a similar distribution between the categories over the years, while their directors began to follow a majority of Media accounts and Political accounts in second place, and a smaller percentage of Citizenship accounts.

4.2. Accounts repetition

During the first year of this study, only 8% of the accounts were followed by the analyzed media and the Media Directors. In 2018 the number of accounts followed by both networks increased to its highest point with the 36% of the accounts and in 2019 it decreased but to the 34%.

Figure 3. Percentage of repetition of the accounts that the Media Directors and the Media they manage started following
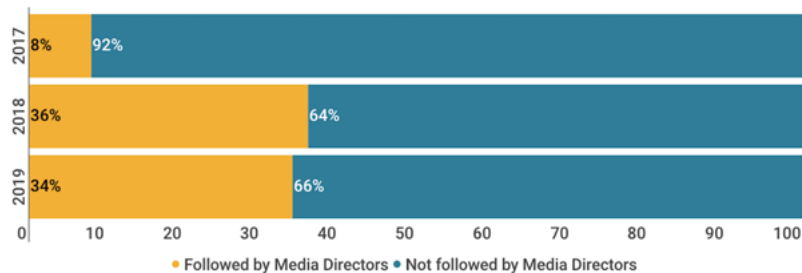
Figure 4. Percentage of types of accounts within the repeated accounts.
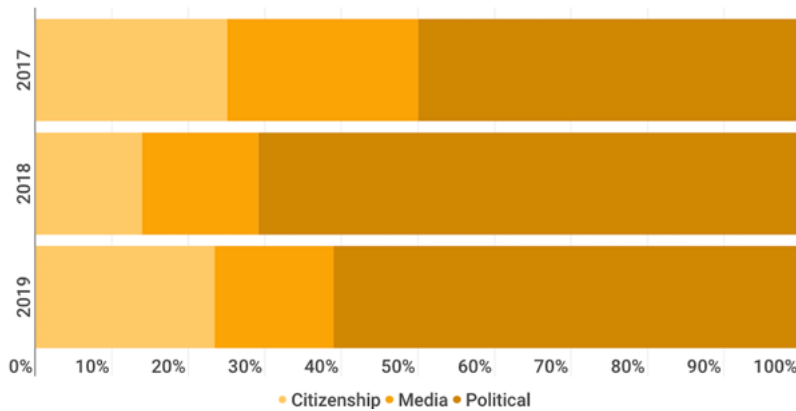
- Citizenship ● Media ● Political

When analyzing the percentages of types of accounts within the accounts that both networks started following, we can see how the majority of coincidences happen in the political sphere. This percentage was higher in 2018, a fact that we can associate with the electoral context of the country, as 2018 was an electoral year in Spain.

4.3. Location

The overall tendency regarding the location of the accounts they began to follow is similar in terms of maintaining a majority of Spanish accounts the three years of the study, and also in the patterns' variations.

Figure 5. Location of the accounts that the Media Directors and the Media they manage started following

The first year of this study was in both cases the year where they began to follow a smaller percentage of Spanish accounts, 80% the Media Directors and 74% the Media they manage. 2018 was in both cases the year with the highest percentages of Spanish accounts, 92% in the case of the Media Directors and 98% the Media they manage. The third analyzed year presented a descensus in the Spanish location percentage, which was still higher than the first year, corresponding to 88% and 80% of the accounts.

Both networks presented differences regarding the rest of the countries of the accounts they began following. In 2017, the Media directors began to follow only accounts from the United States, being an election year in that country, and in particular the year in which Donald Trump assumed the presidency. Once again, the political context seems to influence the accounts that the Media Directors decide to follow on Twitter. Meanwhile, the Media they manage began to follow accounts from several countries including, in addition to the United States, the United Kingdom, New Zealand, France and global accounts. Among the accounts of the UK, we can find The Metropolitan Police and Greater Manchester Police. We believe this finds its root in the fact that Manchester and Barcelona were the setting of two terrorist attacks in Europe that year (Statista, 2017). In 2018, the year in which both networks began following the highest percentages of Spanish accounts, we can observe how the Media Directors began following accounts from three more countries: United States of America, Greece and Colombia, whereas the Media they manage only began following one account from USA. In 2019, repeating the pattern of 2017, the Media began following accounts from a wider variety of locations in comparison to their directors. Nonetheless, both networks began to follow accounts from the same countries: Venezuela, Sweden and the United States.

When we compare the Spanish and non-Spanish accounts, we can see how both networks have a different behavior regarding the number of followers of the accounts they began following. When following Spanish accounts, Media Directors began following a majority of accounts with 10-100K followers, while the Media they manage a majority of 100K-1 million followers. Meanwhile, the accounts they began following from other countries are majorly accounts with more than a million followers in the case of both analyzed groups. It seems that when following accounts from outside of their own country, they choose to follow those accounts that present a high relevance in terms of reach/number of followers, public figures and accounts followed by many other users.

Figure 6. Number of followers percentage comparison of Spanish and non-Spanish accounts.
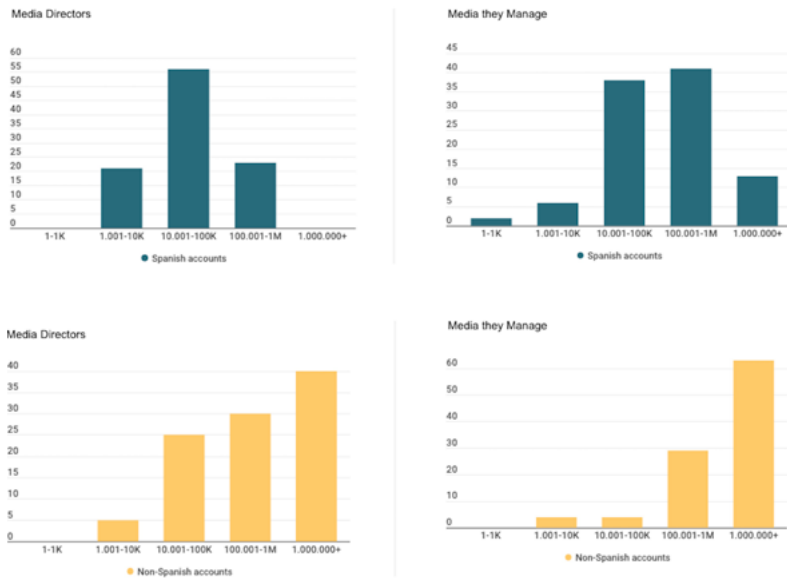
4.4. Gender

While the Media Directors presented a men-women balanced percentage in the accounts they started following, we can observe how the Media they manage began to follow more accounts that belong to men. 2017 was the year in which the gap was larger, with a close to a 70-30 distribution. The difference decreased every year, arriving at 63-37% in 2019. We could not identify any non-binary accounts amongst the accounts any of the networks began to follow and there was one account where the gender was unknown.

Figure 7. Gender of the users of the accounts the Media Directors and the Media they manage started following

Figure 8. Percentage of types of accounts per gender

In the case of the types of accounts they began following per gender, the Media Directors and the Media they manage presented different patterns. In the case of the Media Directors, where there was a more gender balanced distribution between men and women, there also was a more gender balance distribution per category. They started following more women politicians and more men journalists, but in similar percentages, and the users were the least followed type of account for both genders. Meanwhile, the Media they managed presented an inverse tendency by following a majority of female politicians with a 47%, a 33% of female journalists and a 20% of female users. Contrarily, they began following a majority of male users, a 37%, a 36% of journalists and minority of male politicians. It seems like the gender disbalance in the case of the analyzed media is not only in a distribution level between gender, but also regarding the roles they have. The fact that the ac-

counts that the media began following that belong to women corresponded mainly to politicians or journalists, contrasting to the accounts that belong to men that were mainly from users, which include entrepreneurs, scholars, celebrities, and influencers among others, could show that the media chooses to follow women's accounts when they have a recognized political or media role. These results provide evidence for the documented gender disbalanced representations perpetuated by the media (Armstrong, 2004; Shor *et al.*, 2015).

5. Discussion

The Media Directors and the Media they Managed presented both similarities and differences between the accounts they began following on Twitter from 2017 to 2019. Regarding the types of accounts, the media directed by the 50 most followed media directors on Twitter in Spain started to follow similar percentages of Media, Citizenship and Political accounts (close to 33% each when adding the three years of the study). This was not the case among their Media Directors, who began following a majority of Media accounts (43%) and Political accounts (38%), while they started following the Citizenship to a lesser extent (19%). Both networks shared the fact that the most followed type of accounts were those of the Media. Nonetheless, in the case of the Media Directors it was a more pronounced majority than in the Media they manage, where we can appreciate a similar distribution between all the categories (See Figure 2). These results seem to provide support for theories about homophily in social networks (Lazarsfeld and Merton, 1954; McPherson, Smith-Lovin and Cook, 2001; Katz *et al.*, 2004) and particularly in power groups (Colleoni, Rozza and Arvidsson, 2014). We can see how both, the Media Directors, who are mainly journalists, and the Media they manage, tended to follow mostly accounts of other media and journalists, and in the case of the Media Directors, accounts of politicians in the second place. These results highlight a tendency from the analyzed media and their directors to use Twitter as a platform for peer-to-peer exchange among those who have traditionally been the agenda-setters (McCombs and Shaw, 1972). Various authors have dedicated their research to understanding if social and digital media encourage the development of a diversified and democratic public sphere, or whether it operates in the other way, deepening filter bubbles (Pariser, 2011), homophilic echo-chambers (McPherson, Smith-Lovin and Cook, 2001; Bruns and Highfield, 2013; Colleoni, Rozza and Arvidsson, 2014) and polarization (Terren and Borge, 2021). Even though digital media have been conceived as platforms that enable the citizenship to partake in a more active way in the public debate (Feenstra and Casero-Ripollés, 2014), the analyzed mediatic elites have shown the tendency to interact with other members of the media and political elite, reinforcing the theories that conceptualize Twitter as an echo chamber among the power elites (Bruns and Highfield, 2013; Molyneux and Mourão, 2019), where politicians and media are the main sources, agenda set-

ters and receptors of each other (McCombs and Shaw, 1972; Tran, 2014; Harder, Sevenans and Van Aelst, 2017), as opposed to theories that conceptualize social media platforms as emancipators from long standing power dynamics (Shirky, 2008). Social media does provide the possibility of a space where information and communication between the citizenship is freer and more accessible, which would go in line with the Habermasian (1962) public sphere vision, but for this potential to be reached, there should be an exchange of diverse opinions and an ongoing healthy debate (Terren and Borge, 2021). "While the Internet has facilitated broader public discussion, in many regards its 'virtual public sphere' still mirrors existing social structures" (Ausserhofer and Maireder, 2013) p. 292. So, what does it imply that the media elite has begun to follow more media and political accounts than those of the citizenry? We can interpret that they do not seek to use social media networks to promote social discussion and public debate, but rather to interact with other elites, co-creating the political debate from an agenda-setting perspective (McCombs, 2006; Amaral *et al.*, 2016). We consider that it would be interesting to delve into other types of digital interactions by the analyzed elites in future research, for example by analyzing what types of accounts they tend to endorse (through likes and retweets).

The analyzed Media started following in 2017 more than a 90% of accounts different from the ones followed that same year by their directors, while in 2018 and 2019 more than 30% of the accounts coincided with the accounts followed by the Media Directors. 2018 is also the year in which these directors started following a higher percentage of accounts identical to the Media they manage (see Figure 3), with Political accounts being the most repeated accounts both in that year and in all the studied periods (Figure 4). We wonder if they began to follow the same political accounts as they were the most relevant at the time and in the context, accounts that became relevant on Twitter at the time, or if it could elucidate that the media follow the political lines of their directors. We believe this could constitute a relevant aspect to investigate in future research.

The studied Media started following a majority of Spanish accounts in the three years of the study, in the same line with their Directors, presenting homophilous tendencies regarding their location, supporting theories that postulate the tendency of Twitter users to follow accounts from the same or close regions (Shiori Hironaka; Mitsuo Yoshida; Kyoji Umemura, 2021). Twitter´s platform has a global scale, and one of the reasons why it has been considered as a democratization enhancer (Shirky, 2008) is that it dissolves geographical boundaries (Anduiza, Cantijoch and Gallego, 2009). Nonetheless, the vast majority of the accounts that the analyzed media elites started following were national, showing that proximity at the geographic level plays a role in the connections also *online*. There are many studies that show that even on digital platforms, users tend to share and interact in geographically local networks (Ausserhofer and Maireder, 2013), and that proxi-

mity to the center of political power conditions the structure of the digital political debate (Casero-Ripollés, 2021). In line with these postulates, in this study we can see how the homophilic dimension of geographic proximity is reproduced by the analyzed elites.

The variations in the percentages of Spanish and other origins varied in a similar way every year, as observed in Figure 5, being 2017 the year with the lowest percentages, which still represented over 70% of the accounts. 2018 was the year with the highest percentage of Spanish accounts in both studies that even presented similar numbers; 92% from the Media Directors and 98% from the Media they manage. The accounts that both networks started following that are from outside Spain present the particularity that they are mostly accounts with more than one million followers, unlike the accounts located in Spain (see Figure 6). The most followed Spanish media directors and the Media they manage seem to opt to follow accounts from outside Spain when these have a massive number of followers. This could respond to their *online* popularity (Cha *et al.*, 2010), algorithmic authority (Campbell, 2011) or responding to the social platforms automated recommendations (Gupta *et al.*, 2013). We believe this constitutes an interesting line to investigate in future research.

The year 2018 which was an electoral year in Spain, presented peculiarities such as being the year in which both groups started following a majority of Political accounts, the year with more Spanish accounts and the one in which more accounts coincided. The results of this exploratory study indicate that the political context has an impact on the accounts followed by the Media and their Directors. There seems to be a correlation between the political setting and the actions of the media elite on social platforms, specifically on Twitter, a concept we consider relevant to further explore in future investigations.

Regarding the gender of the accounts they began to follow, the Media Directors presented a men-women balance in the accounts they began following. This results propose, at least regarding followship, a difference with previous research that stated that male journalists tend to interact almost exclusively with other male journalists (Usher, Holcomb and Littman, 2018). Meanwhile, the Media they manage began following a majority of men, as presented in Figure 7, following long known patterns of mis and underrepresentation of women in Media (Zoch and Van Slyke Turk, 1998; Armstrong and Gao, 2011). Moreover, the gender imbalance observed in the analyzed media shows two levels: on the one hand, the number of accounts that belong to women and men, on the other, the type of accounts, and therefore the social roles from those women and men. As can be perceived in Figure 8, the analyzed media tended to follow more women politicians and journalists, and more male users (entrepreneurs, scholars, celebrities, etc.). This fact could indicate that, similarly to the case of the accounts that are not from Spain, which presented the characteristic of having a much higher number of followers, the media follows

women's accounts when they have a recognizable political or mediatic position, which may propose that the media elites reproduce patterns of gender inequality when following women on Twitter outside of the political and media elites. The women the analyzed elites started following earned their reputation because of institutional political or mediatic positions, meaning they themselves where part of these elites, as they had an established role in relevant institutions (Wedel, 2017), being in the position to make decisions of social impact (Mills, 1956). Therefore, the most followed Spanish media directors on Twitter, as well as the media they manage, chose to follow women when they were in positions that make up the traditional elites, and not so much women for their *online* relevance or algorithmic authority (Cheong, 2013; Campbell, 2020), not giving the same space to citizen women voices as they gave to citizen men, following the media tradition of making a biased representation of women (Zoch and Van Slyke Turk, 1998; Tuchman, 2000; Armstrong, 2004; Armstrong and Nelson, 2005; Shor *et al.*, 2015). However, we highlight that the Media Directors started to follow a balanced percentage of women and men, even taking into account that they were women in positions within the elites, considering that the sample itself is constituted by 90% men and 10% women, and previous studies had shown that male journalists tended to interact almost exclusively with other male journalists (Usher, Holcomb and Littman, 2018). None of the analyzed media networks began following any non-binary accounts, which constitutes more evidence of the disbalanced representations perpetuated by the media in relation to gender roles (Armstrong, 2004; Shor *et al.*, 2015).

In conclusion, the elite of most followed media directors in Spain and the media they manage presented both, similarities and differences regarding the accounts they started following between 2017 and 2019. Both networks presented a homophilic behavior (McPherson et al., 2001) by starting to follow a majority of accounts that belong, like them, to the Media and located in Spain. Nonetheless, the Media Directors began following a higher percentage of Media accounts, along with Political accounts, suggesting a use of Twitter as an echo-chamber of the power elites (Bruns & Highfield, 2013), whereas the Media they manage presented similar percentages of Media, Political and Citizenship accounts.

The period in which we can find more similitudes was during the year 2018, year in which there were parliamentary elections in Spain. During this period, the greatest coincidences were found in the exact accounts they started following, as well as in the distribution of the type of accounts they started to follow. Moreover, most of the accounts that both networks began following that year were political accounts from Spain. The political context seems to influence the behavior of the media elites regarding the accounts they follow on social networks.

Meanwhile, the analyzed networks presented differences in terms of the gender of the accounts they started following. The Media Directors presented a men-women balance in the accounts they began to follow, while the Media they manage began

to follow a majority of men, and none of the networks started following non-binary accounts, perpetuating gender disbalances in media representations (Armstrong, 2004; Shor et al., 2015).

The fact that there were differences is interesting because although at some points, the media elites seem to use Twitter in an homophilous way, which can be interpreted as them using it as an echo chamber, the fact that we can observe some differences shows that the media directives do not have such a preponderant influence on the accounts the media they manage follow, giving space for the media to have their own profiles, and therefore the media elite as a whole does not appear as such an homogeneous block. This could give space to diverse voices within the media-politicians-citizenship ecosystem on Twitter. We believe that it would be relevant to delve deeper into this issue in future research, for example through a qualitative analysis of the discourse of media directors and of the people who manage the media accounts, in order to understand in greater depth the dynamics between them.

Analyzing different previous studies on social media and public sphere we can see how on digital social networks both, the promotion of public debate (Anduiza et al., 2009; Ausserhofer & Maireder, 2013; Puigbò et al., 2014; Terren and Borge, 2021), as well as the strengthening of homophilic groups (Ausserhofer & Maireder, 2013; Bruns & Highfield, 2013; Colleoni, Rozza and Arvidsson, 2014; McPherson et al., 2001) coexist. Hence, it can be said that digital social media may be understood within this duality. The present research shows how this dichotomy can be observed regarding the analyzed Spanish media elite, as they presented both homophilic behaviors, as in the case of the types of accounts they followed, mostly media and political in the case of the Media Directors, following mostly Spanish accounts, behavior observed in both samples, or in the fact of the intensification of the account repetition during the electoral period. On the other hand, we found trends where they followed different accounts, and gave space to populations traditionally relegated by the media, as in the case of citizenship in the media sample and the case of women by the media directors.

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Article

Who Did Spanish Politicians Start Following on Twitter? Homophilic Tendencies among the Political Elite

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Abstract: Political communication has undergone transformations since the advent of digital networks, but do these new platforms promote interactivity and a public sphere with a more democratic political debate or do they function as echo chambers of the elites? In this research, we study the accounts that Spanish politicians started following on Twitter from 2017 to 2020, with the aim of understanding whether they reproduce patterns of homophilic tendencies or if they give space to new voices. To do so, we selected a sample from the deputies that were in the Spanish parliament during the four years of the study and through a big data and machine learning software, we identified the accounts they started following as a network and categorized them. We combined manual and computational data analysis methods and used data visualization techniques to look for patterns and trends. The results suggest that the Spanish political elites exhibit homophilic behaviors in terms of account types and geographic proximity and present a gender balance among the accounts. This study also suggests that the behavior of the political elite presented particularities during the electoral period, where we can observe an intensification of the homophilic patterns.

Keywords: political communication; Twitter; homophily; social network analysis; social media; power elites; data visualization; echo chambers; digital communication; digital social networks

1. Introduction

1.1. Echo Chambers or Enhanced Public Sphere?

The way in which political communication is understood has changed since the advent of digital social networks (Alonso-Muñoz et al. 2016). These platforms have impacted the ways in which people interact, setting new dynamics of influence among members of power elites and in relation to the citizenry (Chadwick 2017; Jenkins 2008; Wallace 2018). Previous studies have pursued the objective of understanding if digital social media support the development of a diverse and inclusive public sphere where democratic discussion is promoted (Ausserhofer and Maireder 2013; Colleoni et al. 2014), given that they operate as an impulse for political activism (Feenstra and Casero-Ripollés 2014), habilitating new political actors and voices in the conversation (McGregor and Mourão 2016). Likewise, many authors claim that the digital realm helps the promotion of transparency and interactivity (Deuze 2011; Feenstra and Casero-Ripollés 2014; Shirky 2008), eliminating physical barriers (Ausserhofer and Maireder 2013) and traditional political and media gatekeeping filters (McCombs and Shaw 1972; Meraz 2009; Vargo 2018).

However, further studies show that instead of promoting such democratic participation, in the digital sphere people strengthen their prior points of view (Ausserhofer and Maireder 2013) as they see the contents of those who they choose to follow, due to algorithmically recommended content, which also tends to be in line with their views and opinions as they are based on search history and users' past activity (Finn 2017; Mayer-Schönberger and Cukier 2013; Terren and Borge 2021). This has led authors to speak about the internet as a space that deepens filter bubbles (Pariser 2011) and political polarization (Kubin and

von Sikorski 2021; Terren and Borge 2021). The platforms can mimic the capitalist dynamic of stratified attention, amplifying the messages of those who hold power (Casero-Ripollés 2021; Dubois and Gaffney 2014; Fuchs 2017), and previous studies show that the main recipients of politicians´ messages on social media are either politicians or the media, homophily being one of the reasons why they have been conceptualized as echo chambers of the elites (Bruns and Highfield 2013; Colleoni et al. 2014).

1.2. Homophily

"Similarity breeds connection" (McPherson et al. 2001, p. 415). The principle of homophily suggests that connections between similar people happen at higher rates than connection between people that present differences (McPherson et al. 2001), and that people tend to connect and create relationships with those who present similar characteristics to their own (Christakis and Fowler 2009; Katz et al. 2004; Kossinets and Watts 2009; Lauw et al. 2010; Lazarsfeld and Merton 1954; McPherson and Smith-Lovin 1987; McPherson et al. 2001; Perl et al. 2015). Moreover, people tend to strengthen their opinions by reading contents and following users aligned with their preexisting beliefs, instead of contacting with new or different perspectives (Christakis and Fowler 2009; Huber and Malhotra 2017; Katz et al. 2004; Lazarsfeld and Merton 1954; McPherson et al. 2001; Perl et al. 2015; Valera-Orda et al. 2018). When the principle of homophily is followed by the elites on social media, it can lead to the creation of echo chambers where the messages of those who already have power are amplified, gaining even more power (Bruns and Highfield 2013). It has been found that members of the elites such as politicians and journalists tend to follow and interact almost exclusively with other politicians and journalists (Bruns and Highfield 2013). In this framework, we wondered what is the case of Spanish politicians on Twitter. Do they interact with each other, or do they give space to the citizenship?

There is no consensus when referring to the concept of the political elite (Zuckerman 1977). There are different and complementary definitions of the concept, such as an elite that has a preeminent political influence (Roberts 1971); the Weberian model of elite power understood in terms of those who are in stable positions at the top of relevant social institutions (Wedel 2017); the concept of the elites as those who are in the position to make decisions that impact other individuals´ lives by being in the most relevant social hierarchies and institutions (Mills 1956); or as the minority that rules the society (Rahman Khan 2012). Moreover, elites can be understood under Meisel´s umbrella of the 3Cs, where there is group consciousness, coherence and conspiracy among the members of a power group (Korom and Planck 2015; Meisel 1958; Zuckerman 1977). Therefore, in the present research we studied the Spanish political elite from the perspective of a power group that exercises high influence and can be analyzed as a cluster, as it represents those who were in a hierarchical position in one of the most influential institutions, the parliament, enabling them to make decisions that affect the rest of the members of the society. They were the deputies who constituted the parliament from 2017 to 2020, analyzing only those who shared the entire period, with the purpose of generating a first approximation to their behavior regarding the type of accounts they began following as an elite. They were heterogeneous in terms of party affiliation, gender, age, origin, among other variables, but homogeneous in terms of the social role they occupied in the studied period, and therefore homophily can be measured in terms of similarity to the determined sample. We believe there are lines to further explore in future research by subcategorizing this elite in different periods, by political party or by gender. In the present research we studied the Spanish political elite as a group, taking into account the positional method of elite studies (Best and Higley 2017; Hoffmann-Lange 1989) that states that political power and influence in societies is conferred by formal institutional positions in the main organizations where decisions that affect the citizenship are taken, as well as the institutions responsible for the resources' social distribution (Best and Higley 2017). The elite structure is pluralistic, nonetheless "theorists acknowledge that modern democracies are organizationally diverse, they claim that the diversity of organizations and interests they embody are not reflected in

the elite structure. They assume that power is more concentrated in a small power elite than exponents of pluralism believe, so that participation in crucial policy decisions is limited to a small circle or knot of actors with common social backgrounds and interests that are concealed by a diversity of organizations and interests that, in terms of decisive power, is more apparent than real" (Best and Higley 2017, p. 80).

Homophily can be driven by different dimensions, such as geographical position, race, ethnicity, religion, sex, gender, age, network position, and beliefs, among other things (Lazarsfeld and Merton 1954; McPherson et al. 2001). In this research we focused on analyzing whether the Spanish deputies started to follow mostly political and media accounts, or if they started to follow citizenship accounts, taking into account the tendency that politicians and media have shown to follow and interact with each other, as found in previous research (Ausserhofer and Maireder 2013; Bruns and Highfield 2013; McGregor and Molyneux 2018; Molyneux 2015). We also studied the location of the accounts they started following, as the geographical position is a well stated form of homophily found to be reproduced also in online connections (Ausserhofer and Maireder 2013; Casero-Ripollés 2021). We also focused on understanding if the accounts they started to follow presented a balance between women and men, since we found an exhaustive amount of previous research that shows the long patterns of misrepresentations of women in political elites and power positions in general (Aaldering and Van Der Pas 2018; Bode 2016; Carli and Eagly 2002; Connell 1987; Kubu 2017; Lombardo 2008; Lovenduski 2005; Madsen and Andrade 2018; Painter-Morland 2011), and even when being in powerful positions, they can remain as outcasts of the inner circles of the elites (Moore 1988). Moreover, even when having balanced gender representation, an equal number of women representatives in the government does not necessarily mean that there will be a qualitative representation of women's interests (Lombardo 2008). Regarding social media interactions, it has been stated in previous research how male journalists and politicians tend to interact with a majority of male peers (Colleoni et al. 2014; Usher 2018), whereas such inbred homophily has not been found among women journalists (Maares et al. 2021). Given the persistent evidence of off- and online gender inequalities in politics, this research also seeks to examine how gender dynamics impact the way Spanish politicians relate to each other regarding the accounts that the Spanish parliamentarians start following on Twitter.

1.3. Twitter, the Political Network?

"Twitter is the de facto social media platform for discussing politics online" (Chamberlain et al. 2021). Twitter has been described as a political tool (Pérez-Curiel and Limón Naharro 2019; Redek and Godnov 2018) and as a political network (Conway and Wang 2015; Fernández Gómez et al. 2018) as it represents a significant role in political communication campaigns (Alonso-Muñoz et al. 2016; Usher 2018). Previous research shows that it is one of the social platforms preferred by politicians and political parties (Alonso-Muñoz et al. 2016). More than 80% of opinion leaders are on Twitter (González Bengoechea et al. 2019; Smith 2020), and in Spain, previous research has found that more than 90% of the deputies are users of this platform (Haman and Školník 2021). Political actors use this platform to broadcast their messages and for political debate, as well as to interact with opinion leaders and key actors (Ausserhofer and Maireder 2013; Broersma and Graham 2013). Nonetheless, as mentioned above, this interaction tends to be with other politicians and journalists, not with the citizenship (Alonso-Muñoz et al. 2016; Cervi and Roca 2017).

Twitter research has become very popular in the past few years as Twitter provides access to large amounts of available digital data (Williams et al. 2013; Zimmer and Proferes 2014). Previous literature states that most Twitter studies focus on content analysis (Zimmer and Proferes 2014). Twitter research on echo chambers has focused on interactions and content exposure, and the methods can vary, using digital trace data and self-reported data (Terren and Borge 2021). Political communication has been approached in Twitter studies in different research areas such as the use of the platform in determined events, its use

by the public, and the use that political parties and politicians make of the microblogging network (Chamberlain et al. 2021; Jungherr 2016).

In Spain, Twitter research has focused on the identification of influential actors in the political conversation using big data to detect digital authority (Casero-Ripollés 2021), and the use that Spanish political leaders make of the social platform analyzed from different perspectives such as in comparison to politicians from different political systems such as the United Stated of America and Norway (Cervi and Roca 2017), to detect the influence degree and the types of strategic communications tactics that the Spanish leaders use on Twitter, as well as analyzing the interconnection between the politicians' Twitter and media profiles (Suau-Gomila et al. 2020), or regarding the linguistic strategies that politicians use in self-referencing (Coesemans and De Cock 2017). Moreover, previous research on Twitter in Spain has focused on gender gaps among politicians, showing how there are still differences between the attention and amplification that women receive in the political Twitter sphere (Guerrero-Solé and Perales-García 2021), the differences in the language used between men and women politicians (Beltran et al. 2021), as well as the differences between women and men politicians from different Spanish parties when tweeting about feminist issues (Fernández-Rovira and Villegas-Simón 2019).

In this research we focused on analyzing the accounts that Spanish politicians began following, with the aim of contributing to the research on the use that political actors make of Twitter in Spain from a gender perspective, which even though has been previously explored (Beltran et al. 2021; Casero-Ripollés 2021; Cervi and Roca 2017; Coesemans and De Cock 2017; Fernández-Rovira and Villegas-Simón 2019; Jungherr 2016; Stier et al. 2018; Suau-Gomila et al. 2020), still lacks the consideration of homophily among Spanish political elites on Twitter. Moreover, research on following flows on Twitter in Spain among politicians is practically non-existent.

1.4. Followership

Why are we analyzing who the politicians follow? On the one hand, the accounts users follow on social networks determine their experience on that network by defining the content to which they are exposed. Earlier studies show that the content users see on their social media feeds influences their perception of the relevance of these topics (Feezell 2018) but also, depending on the accounts they follow, the algorithmic recommendations they receive from the network (Gupta et al. 2013; Hutchinson 2017; Twitter 2019b). One of the criteria used by Twitter´s algorithm to create recommendations is to suggest the accounts followed by the accounts each user follows (Twitter 2019b), which means that the accounts followed by relevant users and influencers usually gain more visibility on digital platforms as they tend to be more algorithmically recommended to other users (Twitter 2019a). Therefore, the accounts that the Spanish deputies follow may be recommended more frequently to the users that follow them, gaining more visibility, influencing the whole network.

2. Materials and Methods

With the aim of understanding the behavior of the Spanish politicians regarding who they started following on Twitter, we created a sample of deputies. This sample was composed by the deputies that coincided in the parliament during the studied period, which covered the years 2017 to 2020. To define the sample, we made a database with all deputies who made up the parliament between 2017 and 2020 and then proceeded to select those who coincided during these four years. This means that all those deputies who were only there during a shorter period within those years, and not the whole period, were removed. This way, we were left with those who shared the four years of parliamentary duty.

We manually checked the number of followers, location and gender of the members of the sample and once we identified them, we proceeded to create a network, understood as such according to social network analysis (Barnes and Harary 1983; Casero-Ripollés 2021; Grandjean 2016; Tang and Liu 2010), in order to analyze them. We used a machine learning

software named *Contexto.io*, which was developed as part of the project "Influencers in Political Communication in Spain. Analysis of the Relationships Between Opinion Leaders 2.0, Media, Parties, Institutions, and Audiences in the Digital Environment". This software can organize, explore and analyze contexts of information around people using their public digital footprints. A context is composed by a group of people and/or organizations that interact forming an ecosystem. They are created by using their Twitter accounts which are then algorithmically sorted by their relevance within the context, taking into account their digital trace. Therefore, we performed a manual search of each of the deputies on Twitter to identify their user accounts. Utilizing the abovementioned software we created a new group and manually added each Twitter user and thus created the network with the 97 Twitter accounts of the deputies who coincided in the Spanish parliament between 2017 and 2020. Once the network was created, this software organized the accounts in a graph regarding different possible parameters such as relations, communication, common organizations and predicted links, which are the categorizations we selected for the present sample. The resulting network, composed of 97 deputies, 54 men and 43 women, is the following (Figure 1):
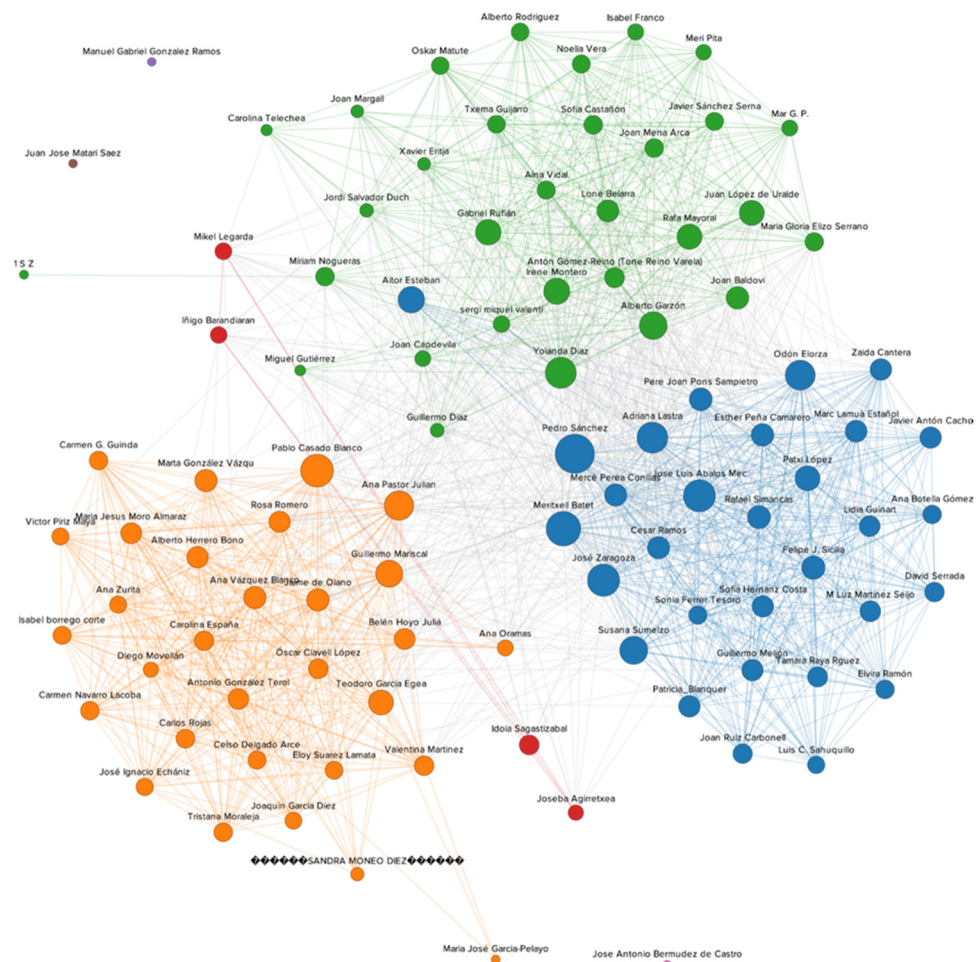

Figure 1. Network of Spanish deputies sample graph.

Once we created the sample, we consulted the data regarding who they started to follow in different periods. The sample, composed of all the deputies that coincided in the Spanish parliament from 2017 to 2020, is understood as one possible group to define the stable political elite of those years, in order to have a sample with sufficient members to analyze as a conjunct. We could have categorized the sample in many ways, taking into account the politicians' gender, race, origin, political affiliation, religious affiliation, and

analyzed homophilic tendencies from these possible different categories (McPherson et al. 2001). The present study represents a specific case study on Spanish politicians on Twitter, so we decided to make an approximation to the homophilic behaviors of the whole political class that composed the parliament during four years, making an approximation to the macro category as politicians in power, to see if they started to follow the citizenry or if they started to follow mainly other politicians and media, as stated in previous research on echo chambers and homophily on Twitter (Bruns and Highfield 2013; Colleoni et al. 2014). Methodologically, in elite studies, there are three main ways of determining an elite for its study: positional, decisional and reputational (Best and Higley 2017; Hoffmann-Lange 1989), also categorized as reputational, structural and the agency or decision-making approach (Scott 1974). In the present study, we have taken the positional/structural path, since, as Scott states: "the structural approach has the most to offer to researchers on power and that it provides a basis for incorporating the insights of the rival approaches" (Scott 1974, p. 84). Taking into account theoretical and pragmatic reasons, the positional method is one of the most widely used in the study of national elites (Best and Higley 2017; Hoffmann-Lange 1989; Larsen and Ellersgaard 2017, p. 53). Given that the present study is a first approach to the political homophilic tendencies regarding the accounts that the Spanish political elite began following, we believe that the best methodological approach is to select the sample according to its formal position of power in society, in this case the set of deputies that form the Spanish parliament. Structural approaches to power are centered on the aspects of strategic positions in the main institutions of a society; positions that are the at the core of the resource's distribution and control, which are the main centers of power, and therefore, those who occupy these positions are understood as main actors in the exercise of power. Therefore, the sample clearly represents an elite and seeks to provide an approximation of the political elite in Spain. Like any method and methodological decision, it has advantages and disadvantages. The advantage in this case is to be able to understand how the Spanish elite operates as a whole, as a group of decision-makers, as a cluster of people with positions of high impact on citizens' lives. The limitation of this approach is to leave aside the differences among them, such as gender, political orientation, nationality and the language they speak. We believe it would be interesting to deepen into the abovementioned subcategories in future research, subsequently to the present project that aims to analyze the parliamentary Spanish elite as a group, as even though they are heterogenous, the political elite´s diversity has been presented by authors as more apparent than real, taking into account that they share involvement in central policy decisions (Best and Higley 2017). Moreover, we followed the methodological approach of several previous studies where the political elite was analyzed as such, leaving aside the differences among them, such as their political affiliation or gender (D'heer and Verdegem 2014; Putnam 1976; Sjöberg and Drottz-Sjöberg 2008; Verweij 2012).

We were also able to access the data of the accounts they started following through the *Contexto.io* software, which has a section called *Expand* where it is possible to visualize the accounts that the context started to follow, with possibility of selecting specific periods to analyze. This section provides the option to select whether to display the accounts that the group started to follow including those belonging to the context or excluding them or to display only those that were outsiders of the network. The software thus provides a list in order of popularity within the network, measured by the percentage of users in the group that started following each account. For this study, we chose to visualize the accounts that the sample started to follow both, in-network and out-of-network. We studied the 50 accounts that the sample began to follow in highest percentages in 2017, 2018, 2019 and 2020. We considered 50 or more accounts generated a high dispersion. These accounts were manually catalogued in order to proceed to search for patterns and trends (Batrinca and Treleaven 2015; Dodge 2005; Mahrt and Scharkow 2013; Vogt et al. 2014) that could help us understand the relationships and influence flows of the analyzed politicians and other groups such as the media and the citizenship, and to be able to comprehend the space

women have in the politicians cybersphere. The categories used to analyze the accounts the sample started to follow were the following.

2.1. Type of Account: Political, Media or Citizenship

The political accounts were sub-categorized in political parties, politicians and public institutions. Public institutions are included in this category as they can be considered political devices that may operate according to the political framework (Thoenig 2003). The media accounts were divided into media institutions and journalists. The citizenship accounts were classified as civil institutions (constituted by NGOs, civil organizations, companies, entrepreneurships, etc.) and users (including scholars, entrepreneurs, influencers, celebrities, artists, activists, etc.).

2.2. Person/Institution

We categorized the accounts considering whether they belonged to a person or an institution.

2.3. Location

The location is the place or precedence of the accounts the deputies started following expressed in their Twitter user accounts.

The data we analyzed in this research corresponded to the accounts that the sample started following between 2017 and 2020, not the set of accounts followed by the network, since it is not possible to access this data, taking into account that users start following and unfollow accounts dynamically.

2.4. Number of Followers

The number of followers of the accounts was categorized in five levels defined in previous research (Table 1):

Table 1. Number of followers categorization.

Influencer Category	Number of Followers
Non-Influencers	<1000
Micro-Influencers	1001–10,000
Mid-Influencers	10,001–100,000
Macro-Influencers	100,001–1,000,000
Icon-Influencers	>1,000,000

Source: (Israel-Turim et al. 2021).

The number of followers used in the analysis corresponds to the period in which the study was being carried out, not to the number of followers the accounts had when the sample started following them, as we cannot access this data.

2.5. Gender

From the accounts that belonged to people we categorized them according to the gender they identified themselves with by analyzing their profiles. To do this, we took into account how they described themselves in their bios and if their bios did not make it clear, we looked for more information online about each user to find out how they defined themselves. Since most of them used Spanish and Catalan, which are languages that contain gender differentiation in most of the words, it was easier to identify how they referred to themselves, since by putting for example "deputy" in their bios, which would be "diputada" or "diputado" or "diputade" in Spanish, we can already know how they identify gender-wise, as "a" is used for women, "o" for men and "e" for non-binaries. Another example is an account whose bio was "Un socialista vasco", which translates as "A Basque socialist". This phrase in Spanish clarifies the gender the user identifies with, as the pronoun is masculine. The gender subcategories were women, non-binary and men

(Butler 1988; Richards et al. 2016), aiming to explore gender balance (or imbalance) trends, as women and dissidents have a long tradition of being underrepresented in powerful positions (Carli and Eagly 2002; Connell 1987; Kubu 2017; Madsen and Andrade 2018; Painter-Morland 2011). Previous research has shown a problematic confusion between sex and gender, which tend to be presented as interchangeable categories, when sex has been defined as a biological phenomenon whereas gender is understood as a cultural dimension (Bittner and Goodyear-Grant 2017). Both, sex and gender, tend to be understood as binary categories, male and female in the case of sex, and men and women in the case of gender, whereas research has proven that both are not. There is a percentage of the population that is born as intersex or third-sex (Carpenter 2018), estimated to be around 1.7% (Amnesty 2018), and there are other gender identities such as genderqueer and non-binary (Richards et al. 2016). In this study, following previous research where identities who do not identify themselves in a binary way as women or men are taken into account, we categorized the accounts into women, men and non-binary (Medeiros et al. 2020).

The analysis of political ideology is a limitation of the present research, in which we decided to focus on the types of accounts, number of followers, geographic location, and gender. We consider it is relevant to delve into more variables of analysis in future research, such as political ideology.

3. Results

3.1. Types of Accounts

The Spanish deputies that coincided in the parliament in the four years of this study started to follow a majority of political accounts, with more than 50% every year, presenting a homophilic behavior regarding the type of account they began to follow (Colleoni et al. 2014; McPherson et al. 2001) (see Figure 2).
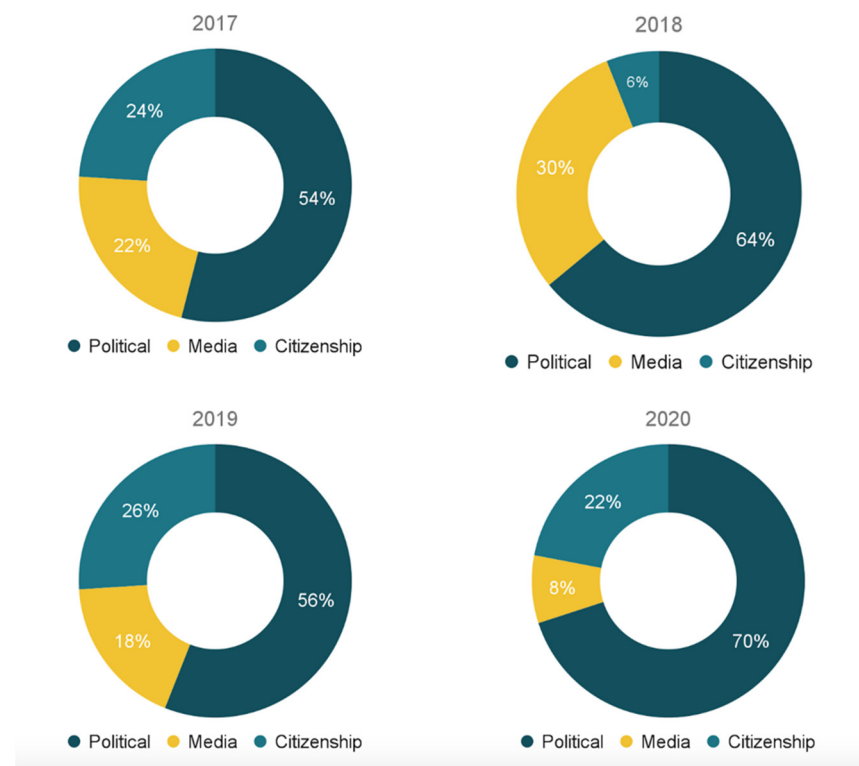

Figure 2. Percentages of the types of accounts the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

The years in which we can find a higher percentage of political accounts were 2018, an electoral year in Spain, and 2020. During the electoral year, the media accounts that the

sample started to follow increased, being this the year in which they started following the highest percentage of media accounts, with a 30%. The rest of the years, the sample began following more citizenship accounts than media ones, though on average, they started to follow the exact same percentages of media and citizenship accounts. The year with the lowest percentage of media accounts was 2020, which was not a predictable result, as it was the year in which the COVID-19 pandemic began, and digital and social media consumption increased notably (Singh et al. 2020). The fact that they began following more than 20% of citizenship accounts every year, except in 2018, can be understood as a shy openness to listen to voices outside of the media and political elites, and may also be explained by the raise of the influencers figures, who are gaining relevance in the online sphere (Fernández Gómez et al. 2018; Pérez-Curiel and Limón Naharro 2019).

Political Subcategories

The vast majority of the political subcategories that the sample began following were other politicians. The year in which they began following fewer politicians was 2018, the electoral year in Spain, when the politicians accounts still represented 66% of the political accounts the sample began following. This year was the year in which they began following more public Institutions, which included several ministries, the Moncloa account and the European Parliament (Figure 3).
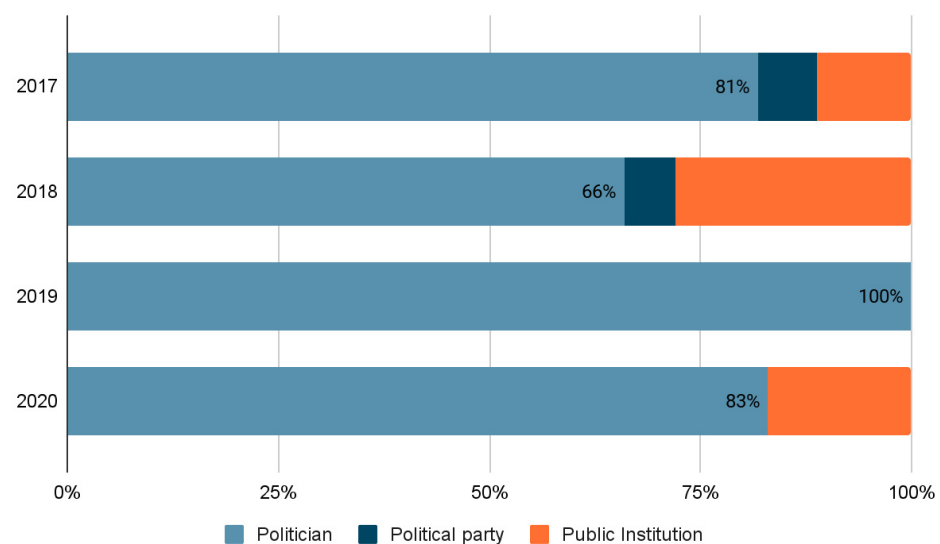

Figure 3. Percentages of political subcategories that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

The political parties' accounts were the subcategory less followed by the politicians' network. An explanation for this may be that there are fewer political parties than politicians, as there are many politicians per party. Another possible justification is that they already followed the political parties' accounts, or the fact that this network is constituted by deputies from different political parties, so they did not coincide in following them. We believe analyzing whether the politicians follow the accounts of the political parties that they do not belong to, and who follows each political party, constitutes an interesting line for future research.

3.2. Institution or Person

The percentages (Figure 4) of accounts that belonged to individuals and institutions were very similar to the percentages presented in the accounts of the political subcategories, which makes sense, since an average of 60% of the accounts that they started to follow were political. The tendency of Spanish politicians is to follow accounts belonging to individuals as opposed to institutional accounts. The analyzed politicians seem to give more space to

people than to institutions among the accounts they started following on Twitter. From the institutional accounts they began following, the majority were political institutions (public institutions or political parties), media institutions in second place, and the civil institutions were the least followed. The year in which they started to follow more institutions was 2018, when they started following 32% institutional accounts, of which 69% were political institutions and 31% were media institutions. It was the only year in which they did not start to follow any civil organization (Figure 5).
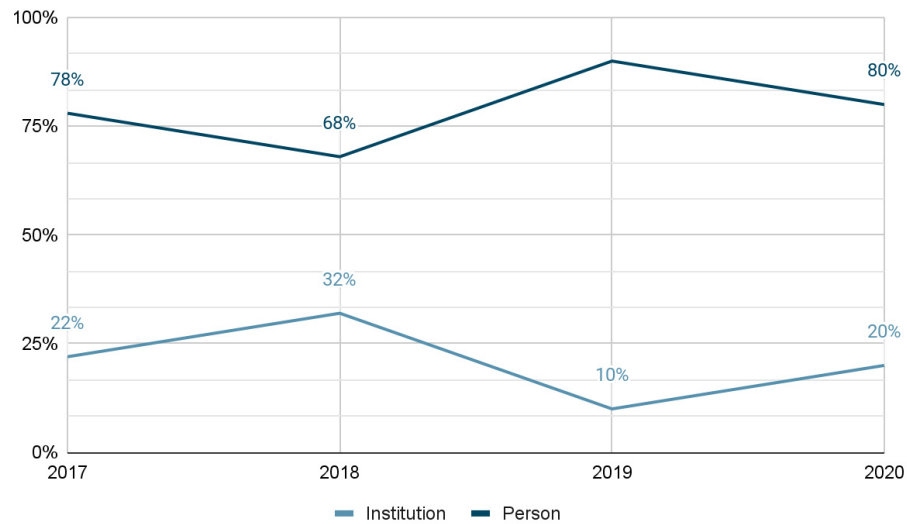
Figure 4. Institutions vs. people percentages that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.
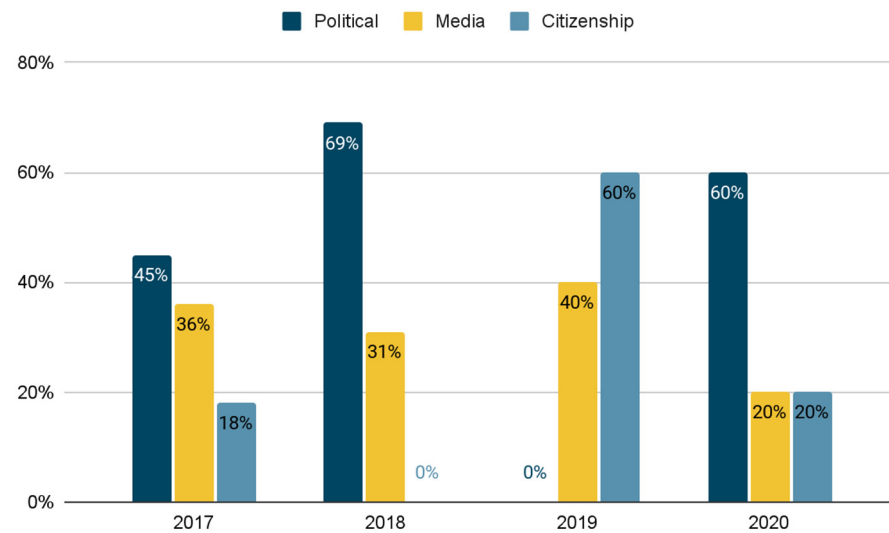

Figure 5. Percentages of the types of institutions that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

3.3. Location

Once again, the year 2018 presented differences in comparison to the rest of the years of the study, as during it the sample did not start to follow accounts from any country other than Spain. The rest of the years, only 4% of the accounts followed belonged to other countries. The countries from where the sample began following accounts were the United States of America, England, Sweden, and Belgium, countries that belong to the global north. We could not find any accounts from countries of the global south, defined as the countries

that tend to be marginalized in the political sphere (Medie and Kang 2018). This result also supports evidence of homophilic behavior (McPherson et al. 2001) (Figure 6).
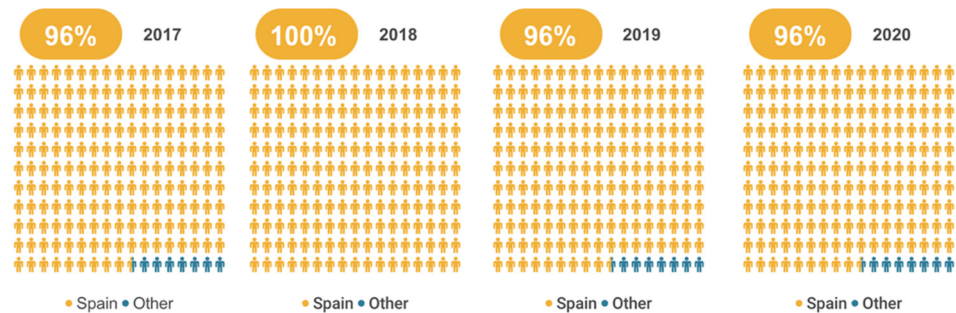

Figure 6. Percentages of Spanish accounts or those from other countries that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

3.4. Number of Followers

Most of the accounts that the analyzed Spanish deputies began following had between 10,001 and 100,000 followers, categorized as mid-influencers. This trend was especially high in 2018 and the pattern in all the years of the study, except in 2017, when we found almost the same number of micro- and mid-influencers, with one more account of micro-influencers.

The Spanish deputies began following a similar number of accounts from micro- and macro-influencers, with one more account belonging to the micro-influencers. In the fourth place, they began following icon-influencers and the non-influencers were the group least followed by the sample (Figure 7).
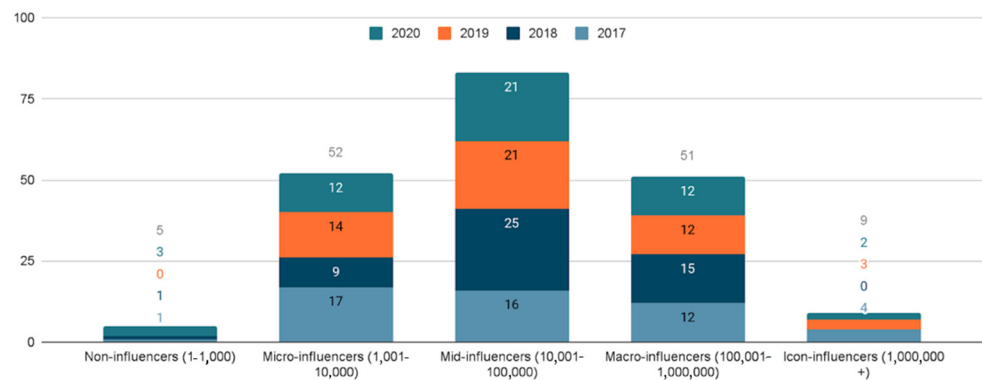

Figure 7. Aggregated number of followers of the accounts that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

In order to comprehend whether this result implies homophilic behavior, we analyzed the number of followers of the accounts in the sample.

As we can observe, the distribution of the number of followers in the sample is not the same as that of the accounts they started following. While the accounts they began following were a majority of mid-influencers in the first place and micro- and macro-influencers in very close second and third places, the sample was constituted by accounts that were mainly micro-influencers in the first place, mid-influencers in second and macro-influencers in third place. While this could be understood as a difference between the composition of the sample and the accounts they followed, and therefore non-homophilic behavior, most of the accounts in both networks remained split between micro-, mid- and macro-influencers. In any case, we can see that non-influencers and icon-influencers were the types of accounts that had the least presence. From this point of view, we can say that

the behavior of the sample was to follow accounts similar to their own in terms of number of followers (Figure 8).
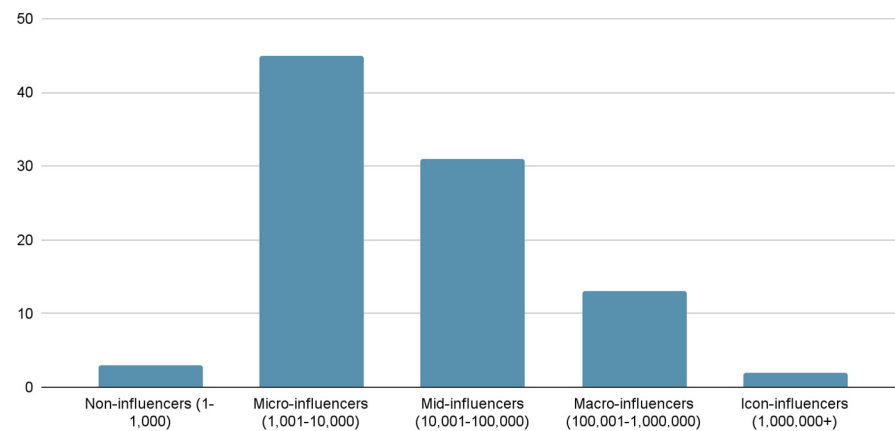

Figure 8. Sample accounts and numbers of followers of the accounts.

3.5. Gender

During the first three years of this study, the Spanish deputies started following more women than men; 2020 was the only year in which they began following more men than women. The Spanish senate as a whole was composed of 62% men and 38% women senators, and has presented a similar distribution for the past five legislatures (Senado 2020). The sample of the present study constituted 56% men and 44% women, which represents a more balanced network, especially considering the long underrepresentation of women in powerful positions (Carli and Eagly 2002; Connell 1987; Kubu 2017; Madsen and Andrade 2018; Painter-Morland 2011) (Figure 9).
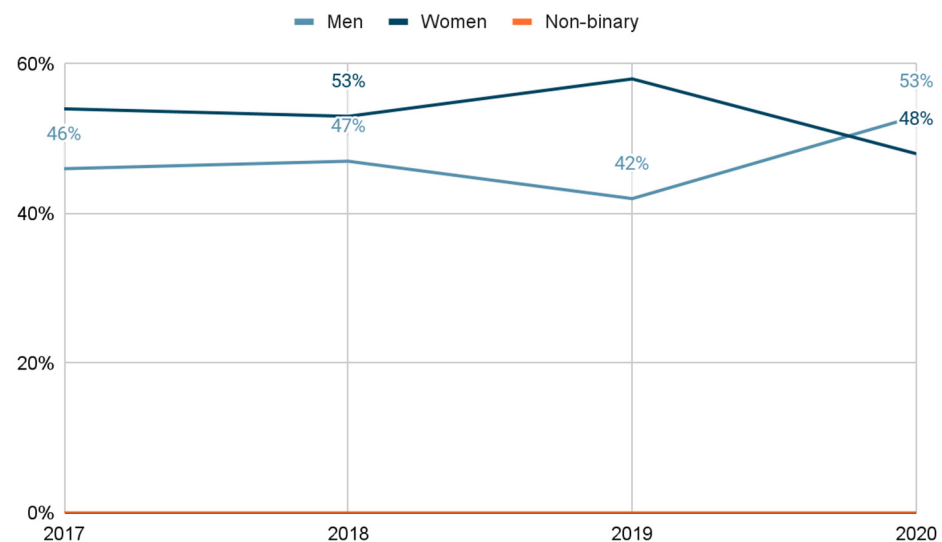

Figure 9. Gender of the accounts that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

When analyzing the gender per category, we can observe how the sample of analyzed Spanish politicians started following a higher percentage of female politicians (69%) than of male politicians (57%), with similar percentages of women and men in accounts belonging to journalists (17% and 16% correspondingly), and a higher percentage of male users (27%) over female users (14%). The user category included entrepreneurs, scholars, celebrities, athletes and activists. We wonder at the reason for following more male users than fe-

male ones. May it reflect a tendency to follow women only when they have a very clear established position, such as a political role? (Figure 10).
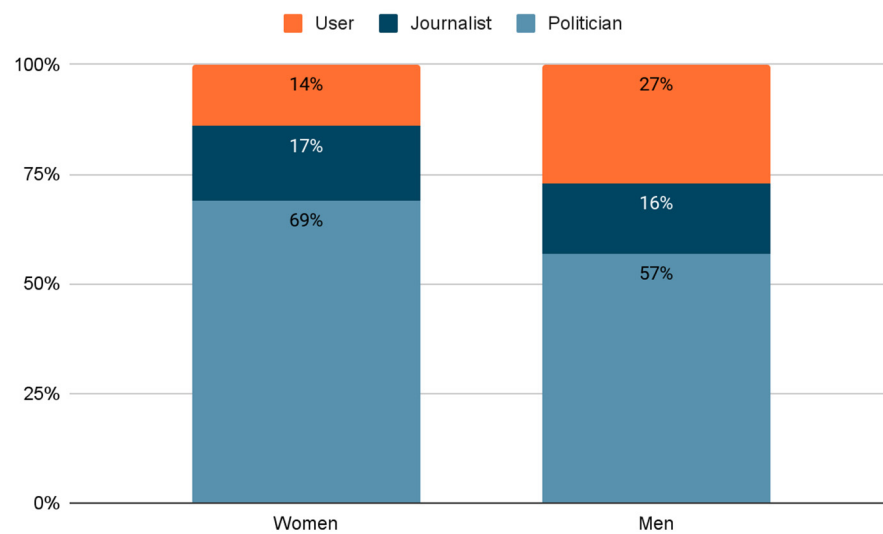

Figure 10. Gender per category of the accounts that the sample of Spanish deputies started to follow in 2017, 2018, 2019 and 2020.

4. Discussion

In this research we analyzed the accounts that the deputies that coincided in the Spanish parliament from 2017 to 2020 began following as a group, with the aim of searching for patterns and trends (Batrinca and Treleaven 2015) that could help us understand the influence flows between politicians, other power groups such as journalists and media, and citizens. Moreover, we sought to comprehend if they reproduce homophilic behavior on Twitter (McPherson et al. 2001) by starting to follow members of other power groups such as other politicians or the media, and therefore conceived it as an echo chamber of the elites (Bruns and Highfield 2013), or if they gave space to the citizenry, promoting a democratic and inclusive political debate and public sphere (Ausserhofer and Maireder 2013; Colleoni et al. 2014).

The analyzed Spanish deputies, who corresponded to the ones that coincided in the parliament between 2017 and 2020, started following a majority of political accounts. More than half of the accounts they began following every year were political and among these, the majority were of other politicians. Given the fact that choosing to follow accounts that presented the same characteristics as their own, in this case other politicians, which would constitute the dimension of others that share their own sociopolitical status, working sphere and role in the society (McPherson and Smith-Lovin 1987), we can consider that the present results provide evidence to support the theory of homophilic behavior among the political Spanish elite (Colleoni et al. 2014; McPherson et al. 2001), considering that the politicians started following mainly other politicians. Nonetheless, the pattern of following other power elites only applied to the political elite, as the sample did not begin to follow more media than citizenship accounts. In fact, on average, they began following the same percentages of media and citizenship accounts, though the distribution differed. During 2017, 2019 and 2020, the network of Spanish politicians began following more citizenship accounts than media ones. They began following between 22% and 26% citizen accounts, which may imply that part of the politician's attention goes to seeking views of the citizenship and interacting with them. This result is in line with studies that state that the figure of the influencer, which has emerged in the past few years (Fernández Gómez et al. 2018; Pérez-Curiel and Limón Naharro 2019), is making room for new voices in different areas, including the political sphere, redefining social influence towards a gradual redistribution of power (Casero-Ripollés 2021). However, in 2018 the sample only started

following 6% citizenship accounts, which means that during the electoral period is when Spanish deputies opted to start following fewer citizenship accounts. In this year, they began following 64% political accounts and 30% media accounts. This result is aligned with the studied link between politicians and journalists and their dialogical co-creation of the public and political agenda (Barberá et al. 2019; Davis 2007; Harder et al. 2017; Martin 2014; McCombs and Shaw 1972). Contrarily, 2020 was the year in which they began following the lowest percentage of media accounts, which seems unforeseen taking into account the fact that this year the COVID-19 pandemic began, and the media and information consumption increased considerably, media being considered a fundamental tool for the health emergency management (Casero-Ripollés 2020; Singh et al. 2020). We may reason that the politicians already followed the media accounts, so when the pandemic started, they already had the accounts among the ones they followed, which is why they did not start following them that year. However, further research would be needed to answer this matter, as one of the limitations of this study is that we analyzed the accounts they began following, as we could not access the data of the accounts they were already following. Another hypothesis for this result is that they accessed the pandemic information in a more direct way in the parliament, and therefore they did not need to follow media accounts for this purpose.

Regarding whether they started to follow institutions or individuals, the trend among the analyzed accounts was to follow fewer institutional accounts and more personal ones. Among the institutional accounts they followed, most were political (public institutions or political parties). In second place they followed media institutions, and the type of institutions they started following to a lesser extent were civil institutions. The year in which we can find more institutional accounts was 2018. It seems like the analyzed deputies preferred creating new connections with users like them, and during the electoral year they displayed a different behavior, following more institutional accounts. Moreover, 2018 was the only year when they did not start following any civil organization accounts.

Most of the accounts that the Spanish deputies started following were Spanish accounts, once again presenting homophilic behavior, this time concerning geographical proximity (Katz et al. 2004; McPherson et al. 2001). Moreover, the accounts they began following from other countries were all from the global north, which can also be understood as homophilic behavior and as the use of Twitter as an echo chamber of the elites (Bruns and Highfield 2013; Colleoni et al. 2014; Meraz 2009), given that it represents a perpetuation of the north−south global geopolitics hierarchy (Medie and Kang 2018), where "the voices representing the developing world are hardly heard" (Vu et al. 2020, p. 460).

Regarding the gender of the accounts that the Spanish deputies started following, we found that they began following more women than men during the first three years of the study, and in the fourth year of the study the difference was 5% more men. This result defies long patterns of misrepresentations of women in political elites and powerful positions in general (Aaldering and Van Der Pas 2018; Bode 2016; Carli and Eagly 2002; Connell 1987; Kubu 2017; Lombardo 2008; Lovenduski 2005; Madsen and Andrade 2018; Painter-Morland 2011). The fact that the sample constituted 56% men and 44% women may be one of the reasons for this result. Nonetheless, we believe it is important to further explore this issue, given that there may be other aspects that influence this outcome, such as the fact that perhaps the sample already followed male politicians and during the years of the study, from 2017 to 2020, the feminist movement in Spain gained relevance (Willem and Tortajada 2021), which may have influenced politicians to start following more women. It is also important to keep in mind that the constitution of the analyzed sample contains different political parties that may have had greater or lesser affiliation with feminist ideas. We consider that it would be relevant to study in future research whether this balanced percentage between men and women is maintained when studying each political party separately.

The sample started following similar percentages of women and men journalists (17 and 16%, respectively) but started following more women politicians than men politi-

cians (69 and 57%), and more men users than women users (27 and 14%). The category of users included businessmen, celebrities, influencers and academics, among others. Men are given space in various and different roles and are often taken as referents and leaders in different fields, as there is a long association of masculinity and leadership (Aaldering and Van Der Pas 2018). Evidence of this is the media´s gender bias in the use of a higher number of male sources in the most diverse areas, regardless of whether there are women leaders in the areas being consulted (Armstrong 2004; Armstrong and Gao 2011; Armstrong and Nelson 2005; Bustamante 1994; De Swert and Hooghe 2010; Moreno-Castro et al. 2019; Zoch and Van Slyke Turk 1998). The results of this study propose the idea that women begin to be followed when they have an established role such as a political office, and men are taken as referents in a wider variety of fields.

During the year 2018, which was an electoral year in Spain, we observe a few particularities. It is the year in which the sample began following more media accounts. This makes sense in an electoral context, as media and journalists are relevant actors of influence on political agendas (Davis 2007). This same year, they began following more political institutions within the political accounts, and it is the year with the highest percentage of institutions in general. Although the general trend concerning the location of the accounts was to start following a vast majority of Spanish accounts with more than the 90% every year, the only year in which there were no accounts from other countries was 2018. These results suggest that the electoral year impacted the behavior of the political elite on Twitter in relation to who they started following. Although the Spanish politicians analyzed showed homophilic behavior in terms of the accounts they began to follow during the entire period studied, we can observe an intensification during the electoral year, being the year in which they began to follow more media accounts, more institutional accounts, more public political institutions and more accounts from Spain, and one of the years in which they began to follow fewer women. Therefore, we can conclude that the Spanish deputies showed homophilic behavior during the period from 2017 to 2020 regarding the accounts they started to follow in terms of type of accounts (political, media or citizenship) and the gender, the number of followers and geographical location, and that this homophilic behavior presented variations and an intensification during the electoral period.

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