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Hyperlinks and media visibility on Twitter in political events in Spain: new patterns in the digital information ecology

Andreu Casero-Ripollés (Universitat Jaume I, casero@uji.es) & Josep-Lluís Micó-Sanz (Universitat Ramon Llull)

Abstract

Digital environment involves numerous transformations for the media system. One of them is the process that is reconfiguring the traditional media visibility parameters from mass communication era. To study it, we use, taking an innovative approach, hyperlinks as proxy to the media visibility. Our goal is to find out the destination of the hyperlinks aimed at the media in the context of the political conversation on Twitter generated around an event of public relevance: the negotiations on the formation of the Spanish Government. The methodology is based on machine learning in a big data sample of 127.3 million tweets. This will allow us to make new contributions to how media is restructuring its social visibility as a result of integrating into the digital. The results indicate the prominence of pure players and social media platforms in the linking practices of users. By contrast, legacy media places in a secondary position. Also, geopolitical context plays a key role in conditioning the use of hyperlinks by Twitter users. Finally, our data reveal that the media have a limited capacity to determine the hyperlink network.

Keywords: hyperlinks, visibility, Twitter, social media, legacy media, digital media, journalism.

1. Introduction

Digital environment has become central, not only for journalism, but also for society as a whole. This environment involves numerous transformations for the media system. However, studying how journalism and the media have been integrated into the digital is an unsolved challenge (Broersma, 2019). Despite its central role in the dissemination of digital information, hyperlinks have generated less interest among scholars (Karlsson, and Sjøvaag, 2018; Fu, 2018). These tools are technical affordances that allow connecting content and drive user's attention, moving them from one place to another on the website. Therefore, these components are key in the architecture of the Network (Ryfe, Mensing, and Kelley, 2016).

In addition, hyperlinks can operate as indicators for other social phenomena (De Maeyer, 2013). By studying them, we can come near certain topics of interest to us such as professional practices and journalism values, political affiliation or users' political homophily, as well as the international flow of information. We will focus on the visibility of media on society. Hyperlinks are capable of making sense of social phenomenon in their digital dimension due to their centrality in the digital environment (Hsu, and Park, 2011). In consequence, they are a valuable tool to study the changes of the public visibility of media on the digital world (Bowler, Hong, and He, 2011).

Digital is reconfiguring the traditional parameters of media visibility coming from mass communication. The prominence of the legacy media in the processes of setting the agenda, setting frames or creating opinion is currently under discussion. The new communicative conditions generated by the digital environment make us wonder to what extent this predominance remains in the current scenario. Today we live in a hybrid media

system where old and new media combine to reshape the patterns and dynamics of the media and their role in society (Chadwick, 2017).

The purpose of this paper is to explore the visibility of media and social media using hyperlinks generated in the political conversation on Twitter around a relevant political event: the negotiations on the formation of the Spanish Government. Our aim is on discovering what media and social media platforms achieve greater digital visibility, and what types of media are prominent in the hyperlink network. To do this, we take the hyperlinks as proxies of digital visibility, analysing users links that lead to the media and social media web pages. Analysis includes linking practices of all users involved in the Twitter political conversation and not only the ones carried out by a group as, for example, journalists, politicians or young people. However, only links that lead to the media and social media websites are considered. Other hyperlinks that lead to candidate websites or political parties, government or parliamentary agencies, and personal pages or blogs have not been taken into account because our interest is in the reconfiguration of the media system in the digital domain.

2. Hyperlinks in the digital environment: between information flow, connectivity and strategic choices

Hyperlinks are a central and distinctive component of the Internet and the web environment (Jackson, 1997; De Maeyer, 2013). Its use enables shaping the hypertext. A hyperlink may be defined “as a technological capability that enables one specific website (or webpage) to link with another” (Park, 2003: 49). Beyond this, it also connects, in a general way, websites to other online contents such as images or documents. It is one of the main affordances on the Internet, connecting pieces of information one another and

helping users manoeuvre from one place to another on the Internet. If hyperlinks didn't exist, we wouldn't be able to understand the Internet as we currently do (Karlsson and Sjøvaag, 2018). It is a basic component of the web's architecture (Ryfe, Mensing and Kelley, 2016). Because of this, some authors affirm that we live in a hyperlinked society (Turow and Tsui, 2008).

Hyperlinks emerge as a new element of the digital environment within political communication, especially in the context of social media. Users of Facebook and, particularly Twitter, frequently include hyperlinks within their messages to avoid character limitations and enrich their content (Gao et al., 2012), generating a hypertextual dynamic. When we refer to political events, these hyperlinks incorporated into tweets are often informative content spread by legacy or new media (Park, Thelwall, and Kluver, 2005). Therefore, a new dynamic is generated which involves and interrelates users and media throughout the use of hyperlinks (Holton et al, 2014). In addition, using hyperlinks may affect the flow of information and circulation of news. In social media, hyperlinks open new routes for the circulation of information and generate virality. Moreover, they are communication tools that serve as online curators (Sams, and Park, 2014). Hyperlinks play a crucial role in how attention is allocated to the material online, or in defining what kind of content becomes popular, and in what information is seen only by a few people (Hargittai, 2008). Therefore, they are capable of conditioning digital visibility (Bowler, Hong, and He, 2011). Hyperlinks aimed at the news media are capable of generating traffic and attention to them (Karlsson, and Sjøvaag, 2018), as they potentially increase their visibility and incidence on the digital public debate. This may imply a commercial dimension (Ryfe, Mensing, and Kelley, 2016) since it may increase the audience of a news media and, therefore, generate an economic profit derived from advertising.

As noted, hyperlinks have a relational component (Fu, 2018; Sjøvaag et al., 2019). Using them, a user attempts to establish an association with another actor, as a news media, and communicates such affiliation to the general public (Shumate and Contractor, 2014). Hyperlinks are open systems that interact with news media and social media systems (Fu and Shumate, 2017). This way, there is a dynamic of endorsement and acknowledgment from a social actor to another (Broesma, 2018).

Hyperlink networks emerge as a result of this relational logic (Fu and Shumate, 2017). The totality of links among a set of websites constitutes a hyperlink network, where the nodes are websites and the ties are links (Fu, 2018). Hyperlinks influence the flow of news circulation and configure the networked structure of the digital news ecology (Sjøvaag et al., 2019). Previous literature found that core players, linked to legacy media, are highly connected in the hyperlinked news-flow network (Himmelboim, 2010). However, social media platforms are increasing their prominence. In a study on the structure of the hyperlink network in Scandinavia, it was detected that 20 per cent of the news links are destined to these digital platforms (Sjøvaag et al., 2019). On the other hand, it has been demonstrated that geography plays a key role since is capable of conditioning hyperlink networks. This particularly affects the centre/periphery dimension, which causes the local media to assume weaker positions in the digital landscape (Sjøvaag et al., 2019).

Including a link in a message spread by a social media platform implies a choice. The use of this resource is an intentional act (Fragoso, 2011; De Maeyer, 2013; Ryfe, Mensing and Kelley, 2016). Link choices have a key strategic importance for three reasons. Firstly,

they condition information flow, optimising or blocking the diffusion of news (Ackland, Gibson, Lusoli and Ward, 2010). Secondly, they are crucial to determine the relationships between users and media because they create links between them and connect them. This creates hyperlink networks (Fu and Shumate, 2017) and an interconnected media environment (Singer, 2019). Finally, they have an effect on how users find, consume and share news (Martín and Dwyer, 2019), or, in other words, what sources of information they prefer which could condition their perceptions and opinions.

Previous literature has studied link choices and linking-practices developed by journalists. This literature reveals that when sharing news on Twitter, they usually target conventional media, rather than pure players (Russell et al., 2015). We also know the meaning of links in online news sites. These purposes fall into four general categories: navigation that helps users to find content; commercial that involves linking practices to earning money; social that refers to sharing content via social media; and citation related to establishing credibility of the news (Ryfe, Mensing and Kelleu, 2016: 42). Despite this progress, the study of linking practices for a wider range of audiences is still pending.

3. Hyperlinks as proxy to media visibility

A central trait in the media is its capacity of public visibility. This fact determines, in part, the centrality of the media in today's society. We can define this concept as the capacity of media to acquire a prominent and privileged position in the Internet in terms of notoriety, preeminence, distinction, and reputation in relation to third parties. High digital visibility implies the possibility of being seen and being able to focus and condition the attention of online users. That gives the media more options to become a preferred source

of political information for citizens and more options to condition the formation of public opinion.

Media visibility has been challenged within the digital environment. The proliferation of actors beyond to conventional media able to produce and spread information with the consequent increase in competition, as well as the fragmentation of the audience, directly affect the position of the media in the digital news system. Recent studies show that in the digital landscape the monopoly of the media on public debate is beginning to break, albeit incipient. Barnard (2018) argues that Twitter introduces changes in journalistic practice and in the mainstream media superstructure that alters the dynamics of media power. Rogstad (2016) demonstrates that Twitter expands the thematic agenda of legacy media by articulating an independent agenda that offers new opportunities to draw the public's attention to new topics, excluded from the media agenda.

On the other hand, Casero-Ripollés (2021) reveals that the digital authority has a high degree of distribution among the different social actors that participate in the conversation on Twitter in Spain. The media are no longer the only protagonists when it comes to driving and dominating discussions on digital platforms. Taking data from this same research, the level of digital authority of the media, calculated with eigenvector centrality, does not exceed 0.65 out of 1 (Casero-Ripollés, 2020). This shows the limited power of the media to assume a high centrality in the political discussion on Twitter. Key actors in traditional media derived from the mass communication era (audiovisual media and printed newspapers) are giving up to pure players and news agencies in the digital field as these new actors have higher capacity to exert digital authority (Casero-Ripollés, 2020). In this context, it is emerging a decentralised information ecology where news

media are exclusively a cultural form and a public information provider among many others in a broader environment (Broersma, 2019).

We can use several indicators to determine the media visibility on the digital environment. Following the attention economy, this property determines the ability of the media to reach more or less people. Another relevant indicator to determine the visibility and preeminence of the media are hyperlinks (Karlsson, and Sjøvaag, 2018). The starting point is the fact that linking practices are a strategic act. Given this, we can identify four aspects that associate hyperlinks with media visibility. Firstly, linking is an endorsement as implies recognition of a medium, or another social actor, by a user. The use of hyperlinks is a form of expression in the digital environment which involves users' transfer of trust to the linked website (Fu, 2018). This means that the user acknowledges relevance to the destination of his link. Secondly, since one of the functions of hyperlinks is to identity building (Ackland, Gibson, Lusoli, and Ward, 2010), making use of them can be understood in terms of reputation. Those obtaining more hyperlinks accumulate greater relevance and reputation in the digital environment.

Thirdly, hyperlinks work as shortcuts driving users' attention to certain news media. Therefore, they give or take prominence to the media on the digital stage since they can increase the audience. Thus, the online content with the highest number of, and shorter in length hyperlinks, produce better results in terms of perception, understanding and, above all, user's behaviour (Arias-Robles, and García-Avilés, 2017). Fourthly and lastly, hyperlinks are capable of generating interactions between users and media due to their relational dimension (Fu, and Shumate, 2017). This function suggests that hyperlinks promote the proliferation of communicative and social relations easily and possibly,

establishing contacts and connections. Their use enables building dialogic relationships between media organisations and their audiences as allows the possibility of generating visits and dialogical loops (Kent, and Taylor, 2002). Therefore, it provides a preferred position to a medium in the network exchanges, when achieving a high number of links (Sjøvaag et al., 2019). This way, the media obtains centrality in the digital conversation. Therefore, links can be considered as proxies of the media visibility.

However, there is scant research about how digital visibility derived from hyperlinks is distributed among media and social media in the digital environment in relation to political events. For this reason, the following research questions are proposed:

RQ1. What are the media that achieve greater digital visibility in terms of hyperlinks received during a highly relevant political conversation on Twitter related to the Government formation in Spain?

RQ2. What are the differences between the types of media in terms of digital visibility depending on the number of hyperlinks received during a highly relevant political conversation on Twitter related to the Government formation in Spain?

4. Methodology

This research analyses which media and social media are the destination of the hyperlinks of Twitter users during the conversation produced during the negotiation process for the formation of the Spanish Government. Our analysis concentrates on Twitter because has a clear orientation to the circulation of information on politics. The sample analysed comprises of the period from 21/12/2015 to 03/05/2016. It is a period of 133 days.

Three Spanish cities have been selected for the analysis: Madrid, Barcelona and Valencia. Two reasons motivated our choice: a) they are the three cities with the highest population size in Spain. According to data from 2016, Madrid has 3.1 million inhabitants, Barcelona has 1.6 million inhabitants, and Valencia has 787,000 inhabitants. b) These cities have the greatest relevance and prominence in the Spanish political life.

The data has been obtained directly from the Twitter API. As a starting point, 145 accounts were selected for the analysis. They belong to representative Twitter users within the political field (leaders and parties) and media (journalists and opinion makers or political commentators). Their selection is based on three criteria: their activity on Twitter (number of tweets published), their popularity on this social network (number of followers) and their public relevance outside Internet (position held: media directors, well-known journalists, political leaders, members of Parliament or public officers, among others). The group of accounts included in the analysis meet the criteria of a strategic sample. All followers from these 145 Twitter profiles have been incorporated in the analysis, using a snowball sampling strategy. A total of 24 million accounts approximately were generated.

Due to the large size of this universe, the analysis has been limited to 10,000 accounts for each of the three studied cities. The most influential accounts of each city were selected to extract 30,000 users. The calculation was made using Pagerank (Page et al, 1999), which determines the importance of a node within a universe based on the importance of its followers. After the selection of these accounts, the duplicated accounts in other cities were deleted. The total accounts analysed has been 24,389. The study includes all the Twitter users who use hyperlinks, and not only politicians or journalists. As a result, the

sample of tweets generated by the accounts during the analysed period is 127.3 million messages.

The investigation process is based on a mixture of automatic computational methods and manual codification. The first are based on machine learning. This technique is a scientific discipline in the field of Artificial Intelligence that creates systems able to learn automatically how to identify complex patterns in millions of data using of algorithms (Mohri, Rostamizadeh, and Talwalkar, 2018). The procedure for obtaining and downloading these data was carried out in real time during the sample period, through the Twitter API, because the event studied was predictable. In parallel, the main news produced by the negotiation process each day have identified and manually been catalogued. The criteria of classification used has been that the main topic of the news has a direct relationship with the negotiation process to form a Government in Spain. To do this, the three main media outlets in Spain have been used according to their audience following the Digital News Report (Newman et al., 2019): El País.es, El Mundo.es and 20minutos.es. These news items have not been analysed since they have only been used to identify the tweets associated with the topic of the case study through machine learning analysis. With this technique we have established an automatic association between tweets and news items to configure our sample. Finally, those tweets with a potentially doubtful relationship with the negotiation process have been manually deleted. We have checked all the links (and their destinations) of the 127.3 million tweets in the sample.

The hyperlink analysis has been developed in two phases. At first, we identified the media, including social media, to which the Twitter links were directed in each city (Madrid, Barcelona, and Valencia). Then, we analysed where the links were directed

considering the three cities simultaneously as a single set. The analysis is performed identifying the first ten media and social media platforms (top 10) which appear as destinations of the hyperlinks generated by the 24,389 Twitter profiles analysed.

For this study, only hyperlinks directed to the media and social media have been examined since our goal is to analyse how public visibility within the media system is being reconfigured. Therefore, other possible hyperlink destinations such as political party websites and candidates, blogs, institutional websites (Parliament or Government) or personal websites have not been considered for this research.

We have defined three types of media: a) legacy media (that come from outside the Internet and have a long history that comes from mass communication era); b) pure players (digital media that do not have an offline version); c) social media platforms (related to web 2.0 such as Facebook, You Tube, or Twitter). In relation to the latter, our methodology does not allow us to know where the hyperlinks to social media platforms lead at the end. It may happen that certain hyperlinks going to Facebook eventually lead to legacy media news, while others go to YouTube, leading to videos created by television networks. They can also lead to non-media content, disseminated by social media, such as those created by political parties and candidates, activists and social movements, public institutions, or individual citizens. But we do know the figures related to links created by users that leads to a social media platform, with the consequences that this implies. This will be discussed in the last section of this paper.

5. Results

5.1. Analysis of hyperlinks in the three cities individually

The analysis of hyperlinks created by influential users in each city enables us to obtain two empirical evidences (table 1). Firstly, it shows the preeminent place reached by the social media platforms, specifically Facebook and YouTube (both in YouTube.com and in Youtu.be). The second evidence suggests that each of the cities analysed have distinctive and particular traits relating to the destination of hyperlinks included by users.

In Madrid, the predominance of the media with state coverage stands out. This fact is due to that this city is the headquarters of the main political institutions of the Spanish State. However, it is interesting to note that, among these state media, the pure players or online only media are more numerous in the top 10 than the legacy media. Social media platforms have a high profile in this city, since they hold four of the top 10 positions.

It is significant to find several top 10 Spanish media in the city of Valencia, both legacy media and pure players (table 1). Despite having media covering the news of the city and the region, these fail to become the source of hyperlinks for local users. Valencia users make use of hyperlinks published by media from Madrid. Social media platforms are also intensely employed by users from this city.

In Barcelona, the predominance of media linked to its own media system stands out, using Catalan as language of expression and defending Catalanian independence in its editorial guidelines (table 1). In addition, most of these are pure players without a print version. Consequently, among the hyperlinks generated by the Twitter users of Barcelona, the presence of Spanish media with state coverage is practically null.

Finally, three relevant results were found. The first is the absence of conventional television and radio networks in the top 10. This indicates a low interest on the part of users to link audiovisual media. However, YouTube emerges within the top 10 in the three cities. Therefore, social media platforms based on image and video are replacing television media in the use of hyperlinks by users. The second finding is the null presence of public media. These media were highly relevant during the second half of the twentieth century in Europe, but none are present in the top 10 of any of the three cities studied (table 1).

Thirdly, it is relevant that, aside from Facebook and Twitter, only one media was able to persevere in the top 10 of the three cities simultaneously. This is eldiario.es, a pure player founded in September 2012, which ranks third in Madrid and Valencia and seventh in Barcelona (table 1). This medium accumulated visibility as the preferred destination of the hyperlinks of Twitter users incorporated in the negotiation messages for the formation of the Government. The case of *El País* is also significant as it was the reference newspaper for Spanish political, economic and social elites founded in 1976. This newspaper was only able to access the top 10 in Madrid and reached eighth position, accumulating 1% of the user hyperlinks (table 1). This fact suggests a change regarding media visibility in the Twitter environment since a pure player makes its way to capture attention and connections in the form of hyperlinks, whereas an elite print newspaper witnesses how its prominence decreases drastically.

Table 1. Destination of the most frequent hyperlinks used by influential users in each of the cities analysed

	Barcelona [4661655]	Madrid [2678417]	Valencia [4670620]
1	mon.cat [159156] (3.4%) PP	elmundo.es [80491] (3.0%) LM	fb.me [179336] (3.8%) SMP
2	vilaweb.cat [140120] (3.0%) PP	fb.me [70176] (2.6%) SMP	elmundo.es [124716] (2.7%) LM
3	ara.cat [125695] (2.7%) LM	eldiario.es [48045] (1.8%) PP	eldiario.es [90482] (1.9%) PP
4	fb.me [117960] (2.5%) SMP	europapress.es [40272] (1.5%) NA	youtu.be [68607] (1.5%) SMP
5	naciodigital.cat [76289] (1.6%) PP	elespanol.com [36633] (1.4%) PP	okdiario.es [61588] (1.3%) PP
6	youtu.be [67246] (1.4%) SMP	youtu.be [32592] (1.2%) SMP	europapress.es [58627] (1.3%) NA
7	eldiario.es [52316] (1.1%) PP	youtube.com [30738] (1.1%) SMP	elespanol.com [53313] (1.1%) PP
8	youtube.com [47953] (1.0%) SMP	elpais.com [26435] (1.0%) LM	abc.es [51010] (1.1%) LM
9	directe.cat [45007] (1.0%) PP	instagram.com [24944] (0.9%) SMP	europapress.es [48787] (1.0%) NA
10	elpuntavui.cat [39539] (0.8%) LM	elconfidencial.com [21964] (0.8%) PP	youtube.com [44828] (1.0%) SMP

Source: created by authors. The total number of links received from Twitter appears within square brackets. The percentage with respect to the total appears within round brackets.

Legend: LM (legacy media), PP (pure player), SMP (social media platform), and NA (news agencies).

The aggregated analysis of the hyperlink destinations of Twitter users according to the type of media enables distinguishing between legacy media (associated with mainstream media with a long history), pure players or online only media (present only in the digital environment and recently appeared), social media platforms (such as social network sites or social video platforms) and news agencies. The data reaffirm how each city analysed vary one another in behaviour (table 2). Thus, it is significant to note the prominence of social media platforms in both Madrid (4 media in top 10, and 5.8% of the links) and Valencia (3 media in top 10, and 6.3% of the links). These digital platforms hold the second place in Barcelona (3 media in top 10, and 4.9% of the links). This suggests that users linked to sharing online news are searching for emerging spaces for consuming

news. Likewise, legacy media is in decline as it holds the third position in the three cities and only two media area included per city within the top 10. In addition, these media were able to accumulate no more than 4% of hyperlinks in the three cities analysed respectively.

The rise of pure players or online only media is patent and, in all cities, surpasses the legacy media, with the exception of Madrid (table 2). Its predominance is surprisingly high in Barcelona, where link destinations are primarily pure players with local coverage, usually in relation with the topic of the independence (5 media in top 10, and 10.1% of the links). This demonstrates the inception of a system and a media market boosted by the linking practices of Twitter users. In addition, this reveals how disconnected were users in respect to common and national communicative spaces, and when it comes to linking and consuming news about the formation process of the Spanish Government. Linking practices indicate an inclination to interpreting this nationwide event from a local perspective.

It is also significant the presence of Europa Press, a news agency that made it into the top 10. This medium accumulates 1.5% of the total hyperlinks in Madrid, and 1.3% of the total in Valencia. These data expose how these new actors are gaining visibility in the digital environment. This implies a change in their role with respect to the traditional mass communication scenario. They had a subsidiary position as providers of information to the legacy media, and were almost irrelevant in terms of visibility (Johnston and Forde, 2011).

Data also indicate disparity in the type of destination media for the hyperlinks used by Twitter users. This heterogeneity is conditioned by the geopolitical position of each city. It is also a determining factor in users' behaviour when choosing the type of hyperlink or when spreading messages about the negotiation for the formation of Government. In Madrid, legacy media obtain better values due to its proximity to the power centres. In contrast, pure players predominate in Barcelona since users prefer local media. On the other hand, social media platforms reach the highest percentage in Valencia as alternative sources of information due to the lack of solid local media, and their distance from power centres.

Table 2. Media types based on the destination of the most frequent hyperlinks used by influential users in each of the three cities independently

	Barcelona [4661655]	Madrid [2678417]	Valencia [4670620]
PP	472888; 10.1%; 5	106642; 4%; 3	144383; 4.3%; 3
LM	165243; 3.5%; 2	106926; 4%; 2	175726; 3.8%; 2
SMP	133159; 4.9%; 3	158450; 5.8%; 4	292771; 6.3%; 3
NA	0	40272; 1.5%; 1	58627; 1.3%; 1

Legend: LM (legacy media), PP (pure player), SMP (social media platform), and NA (news agencies).

5.2 Analysis of hyperlinks in the entire network

The analysis of the hyperlinks of influential Twitter users considering all three cities globally reveals that eldiario.es, a pure player founded in September 2012, holds the first position since accumulates 4% of the total hyperlinks (table 3). Therefore, this media is the preferred destination for links of tweets about the negotiation process for the formation of the Government in Spain.

The second position is held by Facebook. This social network site accumulates 3.3% of the total hyperlinks used by Twitter users (table 3). This evidences how important social media platforms are in the consumption of political information and its growing visibility when it comes to conditioning user's linking practices.

The first legacy media in the top 10 has the third position. It is atres.red, the website of the private television network *Antena 3*, which accumulates 3% of the hyperlinks used by Twitter users (table 3). Within the top 10, only another legacy media appears: the print newspaper *elmundo.es*. It is significant how *El País*, the main elite print newspaper in Spain, does not make it in the top 10 of the three cities considered altogether. Likewise, it is significant to see the absence of public broadcasting service media.

Table 3. Destination of the most frequent hyperlinks from influential users in the entire network

	Madrid, Barcelona and Valencia [1518906]
1	eldiario.es [60733] (4.0%) PP
2	fb.me [49522] (3.3%) SMP
3	atres.red [45037] (3.0%) LM
4	elespanol.com [28191] (1.9%) PP
5	publico.es [27362] (1.8%) PP
6	elmundo.es [23841] (1.6%) LM
7	nuevatribuna.es [22466] (1.5%) PP
8	europapress.es [20226] (1.3%) NA
9	infolibre.es [16824] (1.1%) PP
10	youtu.be [16564] (1.1%) SMP

Source: created by authors. The total number of links received from Twitter appears within square brackets. The percentage with respect to the total appears within round brackets.

Legend: LM (legacy media), PP (pure player), SMP (social media platform), and NA (news agencies).

The analysis of users' hyperlink destinations concerning different types of media enables us to observe the predominance of pure players. These media accumulate 10.3% of hyperlinks from Twitter users. In addition, 5 pure players are in the top 10. This figure represents 50% of the total (table 4).

Legacy media fade into the background as pure players become predominant. Only a television network and a print newspaper are in the top 10 destinations of hyperlinks. Legacy media all together accumulate 4.6% of hyperlinks (table 4).

Lastly, it is worth noting how the emerging role played by social media platforms as hyperlink destinations for Twitter users constitutes a highly relevant political event. These managed to place two media in the top 10, accumulating 4.4% of the total hyperlinks (table 4). News agencies reached fourth position with only one medium and 1.3% of the total hyperlinks.

Table 4. Types of Media based on the destination of the most frequent hyperlinks used by influential users in the entire network

	Madrid, Barcelona and Valencia [1518906]
PP	155576; 10.3%; 5
LM	68878; 4.6%; 2
SMP	66086; 4.4%; 2
NA	20226; 1.3%; 1

Legend: LM (legacy media), PP (pure player), and SMP (social media platform).

6. Discussion

From a sample of 127.3 million tweets, our research formulates new contributions on how visibility within the digital media system is being restructured. One has to do with the

prominence of pure players, or online only media, and social media platforms in the linking practices of users. The leverage acquired by digital platforms indicates that dependencies exist not only for the media (Ekström, and Westlund, 2019), but also for users themselves, as they increasingly use these media to generate their links on Twitter. The fact that social media assume high values as destination for links has two implications. Firstly, its incidence in the digital environment is growing. Secondly, the tendency to consume information through these platforms is consolidating (Newman et al., 2019). Thus, users less frequently acquire information directly from news media websites. Social media are privileged intermediaries between media and users. Despite the fact that they do not directly produce information, they are becoming a place of transit towards information for many citizens. This evidences the progressive platformization of society (Van Dijck, Poell, and De Waal, 2018) and reinforces their position in the media system.

On the other hand, pure players have also emerged as a preferable destination for hyperlinks used by Twitter users. This fact displays how despite lacking offline presence, these media are successfully adapting to the digital context. Regardless of their recent appearance (their trajectory is shorter than a decade in Spain in many cases), they are getting the attention of the public and positioning themselves as visible media by means of users linking practices.

By contrast, legacy media are displaced as the main destination of hyperlinks. Traditionally, within the parameters of mass communication era, these media were the preferred sources of information for the audience (Strömbäck, 2008), the primary definers (Hall et al., 1978) and the main agenda settlers (McCombs et al., 2011), thus conditioning

the public debate and the formation of citizens' opinion. Instead, our findings indicate that they are moving from a leading role to being sidelined in terms of visibility on Twitter, considering users' linking choices. This challenges the results of previous research that affirms that legacy media are highly connected in the hyperlinked news-flow network (Park, Thelwall, and Kluver, 2005; Himelboim, 2010). But it is important to note that, when these studies were published, many social media platforms had not appeared yet, so they could not challenge legacy media.

Besides, the results show that actors with more resources do not necessarily capture more links. These resourceful actors are generally associated with the legacy media. Conversely, several pure players which have recently appeared and have limited resources obtain higher values. Therefore, in this particular case, the rich get richer phenomenon is partly questioned (Fu, 2018).

Another original contribution of this research is how geopolitical context plays a key role in conditioning the use of hyperlinks by Twitter users in the face of a highly relevant political event. Several factors promote this effect such as: proximity or distance in relation to power centres; the presence of a local consolidated media system with a native and differentiated language and media. The proximity of Madrid to the centres of power and political decision making, causes legacy media to achieve their best values in the capital of Spain. The political, cultural and media singularities of Barcelona, where an independence movement is currently active, causes the predominance of local pure players. Finally, the peripheral position of Valencia with respect to the power centres, stimulates the use of hyperlinks that lead to emerging communicative spaces, such as social media platforms. Hence, it is demonstrated that geography conditions the structure

of the hyperlinks network (Sjøvaag et al., 2019) and digital conversation in general (Casero-Ripollés, Micó-Sanz & Díez-Bosch, 2020).

Last but not least, another contribution of this study has to do with the prominence acquired by the media in the hyperlink network. The data show that media obtain scarce percentages when being a destination for the links of Twitter users in the event studied. Thus, as we can see in table 3, the media with the highest volume of hyperlinks received only reached 4% of the hyperlinks in total. Although we have only studied hyperlinks destined for some media, this finding enables us to deduce that there is a broad variety of destinations derived from the user's link choices. The fact that users participate in the dissemination of digital information with their linking practices implies more actors involved in this process. This way, visibility is distributed among a larger number of destinations, as choice capacity is expanded when making links. This results in high diversification that reduces the prominence of media. Moreover, it highlights the predominance of a decentralised informational ecology (Broersma, 2019), in which the media must renegotiate their role in the framework of power redistribution within the media system (Ekström, and Westlund, 2019).

7. Limitations and future research

This research has some limitations. With the methodology applied, it is impossible to determine who are the creators of the content behind the links. This particularly affects the hyperlinks that lead to social media platforms since actors in these platforms distribute content generated by third parties. In other words, they do not produce their own informative content. Thus, it may happen that certain hyperlinks going to Facebook end up as posts of legacy media news, whereas others going to YouTube, end up storing

videos created by mainstream television networks. They may also go to non-media content, disseminated by social media, such as those created by political parties and candidates, social activists and movements, public institutions, or individual citizens. Therefore, it is impossible to know exactly where such links end. Although this is a limitation, it is significant how in these cases social media platforms are located as a preference for accessing information. A link having a legacy media or a pure player as destination, which in both cases generate direct traffic, has different implications if the destination is a social media platform. In the latter, these digital media regulate users' traffic as intermediaries, accumulating audience in the form of visits to acquire centrality and authority in the network interactions.

On the other hand, we have exclusively analysed hyperlinks destined to some media as oppose to analysing the totality of the links, regardless of the type of destination to which they are directed. This fact constitutes another limitation of this study. This prevents us from acquiring data about the visibility of the media in the entire network generated by the links in relation to other actors such as parties, candidates or citizen blogs. This issue must be studied in future investigations. However, we have been able to obtain relevant findings on the relevance and position of the different actors within the media system, and how the power is being reconfigured within this system.

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