Sports television programmes and their relationship with the social audience on Twitter in Spain

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Abstract
Introduction: This study presents an analysis of the relationship between viewers of sports TV programmes and Twitter users in Spain. **Methods**: The research is based on a quantitative method that involves the analysis of a sample of 150 TV programmes that made it to the top five most-discussed TV programmes of the day in Twitter (during a month). Together, these programmes attracted a total of 1,838,056 Twitter users. The quantitative comparative analysis and the Pearson's correlation coefficient were used to test three research hypotheses. **Results and conclusions**: Sports TV programmes are discussed by 34.8% of the sample of Twitter users: the sports TV programmes that are the most popular on Twitter are not the most watched on traditional TV; the percentage of interaction on Twitter around sports TV programmes is still very low in quantitative terms in comparison to these programmes' TV viewers.

Keywords
Twitter; television; social audience; share; sports programmes; interactivity.

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1. Introduction

This article discusses the relationship between sports content broadcast on television and the number of comments generated around them on Twitter. Our main objective is to further develop a research line proposed by other studies that link this social network with traditional television. In fact, there are already research studies that examine the correlation between the television audience and the comments on social networks among millennials (people born between 1981 and 1997), but they are not focused on the field of sports. For example, Nielsen (2014) argues that if there is an increase of 8.4% in comments on Twitter, the rating of that television programme improves by 1% in this age group. Another report points out that 88% of millennials uses second screens (phones and tablets) while watching TV (CEA, 2016).

Therefore, we are dealing with a population that increasingly uses social networks to discuss what happens in their daily lives and to share their TV experiences: 85% of active users in Twitter talk about television during the primetime (Orban, Nagy, Kjarval and Sánchez, 2014). Marta, Martínez and Sánchez (2013: 41) highlight the importance of this interaction for advertising given that "the great participation of young people in this environment shows the profound changes taking place in this scenario where users establish multiple interactions with brands". In order to contextualise this study, during the data collection, Twitter was the third most-used social network in Spain, with 56% of Internet users, behind Facebook (96%) and YouTube (66%), according to the Interactive Advertising Bureau (2015).

Although there are authors who claim that it is still early to establish an accurate relationship between Twitter and the TV audience (Bruns and Stieglitz, 2013), there is no doubt that the Twitter phenomenon has created an ideal place where viewers can comment on what they watch on TV without having to waiting until the next day to share their views with co-workers (Harrington, Highfield and Bruns, 2013). Social networks have renewed the power of traditional television channels since they provide added value to the viewing of linear, although delayed, broadcasting (Highfield, Harrington and Bruns, 2013).

Three of every four Twitter users in Spain publish comments while they watch TV and more than half of them admit the messages posted by other users on Twitter motivate them to tune into a particular programme (Salamanca, 2015). However, studies on Twitter and TV broadcasting in Spain fail to show a precise correlation between audience share and the number of comments on Twitter. For example, González-Neira and Quintas-Froufe (2014) have not found a correlation between the top five trending topics on Twitter and the primetime TV programmes. In fact, they have found that programmes with low ratings become trending topics on Twitter.

Quintas-Froufe, González-Neira and Diaz-González (2015) point out that a leading TV show in terms of ratings (the fake documentary "Operation Palace" in *La Sexta*), is also a leading

conversation topic on Twitter, although they explain that this is an exceptional case. Furthermore, other authors have analysed Spanish television programmes that are most successful on Twitter. In this sense, Aguilar, Paniagua and Farias (2015) carried out 1,201 telephone interviews and concluded that most-commented television genres are entertainment (16.9%), sports (16.7%) and fiction (15.4%). Tuitele (2013) provides data that also confirm the high interest in sports programmes in Twitter conversations related to television: reality shows and docu-reality shows (14.7%), magazine shows (14%), movies (9.3%), sporting events (22.4%), series (11%), talent shows (7.5%), programmes about sports (4.3%), etc.

As this research will focus on sports programmes, we review the few studies related to our field of study in Spain. It is important to note than for the purposes of this work sports television programmes are understood as: broadcasts of football matches, Formula 1 races and motorcycle racing; magazine programmes about football and Formula 1. Claes and Deltell (2014: 129) argue that "the social audience is more active in sport and entertainment programmes with new formats, especially those that are integrated in some way to the social networks" and that "Twitter seems to become a place of belonging for these consumers".

Other researchers affirm that sports TV broadcasts not only are easy to quantify in Twitter but also to analyse from a qualitative point of view since the vocabulary used to express feelings in sports is very reduced (Zhao, Wickramasuriya and Vasudevan, 2011).

There is one study that examines the relationship of social networks with Football League First Division, and concludes that "times of the passive viewer have ended to give way to the individual who speaks out and, above all, wants to be part of the conversation" (Sotelo, 2012: 225).

The relationship between radio and Twitter in sports must be highlighted too. Infact, "Spanish radio programmes have seen on Twitter a new expansion platform that has allowed them, on the one hand, to extend their influence in the Internet and, on the another, to create a universe of channels and contents that leads listeners/users to improve their experience as radio listeners" (Piñeiro, 2014: 28; Piñeiro, 2015). In this context, Herrero (2011) highlights the weight of Facebook in sports radio programmes and concludes that the number of followers in this social network is not faithfully with the number of listeners according to data of the General study of the media, while proposing more research.

1.1. Research objectives and hypotheses

H1: Sports content broadcast on television are the most discussed genre on Twitter in comparison to other programmes.

H2: Sports TV programmes that are successful on Twitter are not the most watched genre on traditional television.

H3: The comments generated by sports programmes on Twitter are not significant in quantitative terms with respect to their number of viewers.

However, the objective of the article is also to determine the type of sports content that are the most commented, in order to establish whether there is a relationship between Twitter and the traditional TV audience. As mentioned, we consider that this research study provides a new methodological option to explore the relationship between television viewers and the users of other screens.

2. Methods

In order to examine the relationship between Twitter and traditional-TV programmes, we used a quantitative method and extracted data from both areas: social networks and television. The study lasted 30 consecutive days and was carried out in November (2014) because during this period the television season is not affected by any prolonged holidays.

With regards to the collection of data from Twitter in Spain, we collected information from the 5 most discussed TV programmes of the day (according to Tuitele, a social audience measuring Spanish company that was subsequently bought by Kantar Media). We decided to choose the TV programmes based on the number of users, not comments, in order to quantify the real impact on the audience (given that a same user can make more than one comment). Tuitele's ranking takes into account the comments made during a timeframe that ranges from 30 minutes before the programme starts to 30 minutes after it ends.

In terms of the traditional audience, were obtained the following data from each content: network, audience share, number of viewers, screening time and share-based position within the timeslot. Infosys (2014, i+), owned by Kantar media (the company that measures social and traditional audience in Spain), was used for the extraction of traditional audience data.

With respect to H1, we will examine the weight of sports programmes with respect to the rest of the content with the largest number of Twitter followers and also with respect to the number of users who tweet about the contents included in the entire sample. As for H2, we methodologically considered how to measure the success of a programme on traditional television to confirm whether there is relationship between the traditional share (the television audience) and the social share (the Twitter audience). This aspect takes into account four parameters in the sample: network (whether it is a mainstream channel that reaches large audiences), time slot (whether the sports programme is broadcast in primetime), share and the share-based position within the time slot.

It must be noted that we used Kantar Media's timeslot classification: morning (7 AM to 2:00 PM), afternoon (2 PM to 5 PM), evening (5 PM to 8:30 PM), night 1 (8:30 PM to 12 AM), night 2 (12 AM to 2:30 AM). The Pearson correlation was calculated between the Social Share (SS, number of Tweeter followers) and the Traditional Share (TS, number of viewers) in order to identify the programmes (N = 150) in which there was a significant correlation, i.e., to determine whether more viewers means more Twitter followers. The IBM SPSS statistical package was used for this part of the analysis (2014, V.22.0).

As for H3, we will compare the number of viewers of the sample of programme with the number of users who made comments about these programmes on Twitter. In this way we calculated the so-called percentage of interaction.

2.1. Sample

This article is the culmination of a research project on social networks and television, so it uses part of the unpublished database extracted from the annexes of the study that analyses the generic relationship between Twitter and the traditional audience (Gallardo-Camacho, Lavín and Fernández, 2016). This database provided a sample of N=150 programmes (5 for each day of the 30 days of analysis) that represents the behaviour of 1,838,056 users. In our case, we will primarily focus on the purely sports content included in the sample.

A methodological problem arose during the study. TV-related Twitter conversations are difficulty to quantify because of "noise". In other words, a sports TV broadcast is mentioned in *tweets* by people who watches the programme live, but also by the public who is the football stadium and by people who consumes this content through other media, such as radio (Claes and Deltell, 2014). In a personal in-depth interview about the methodological approach of the study, the Head of customer service of Kantar Media (Mariayun Martín de los Ríos Alarcón) explained that tweets about TV programmes can be made by "people who are listening to it on the radio" and that "for that reason, the data from sports programmes begun to be separated from the rest, in another section". We believe that, far from hindering the objectives of the research, this methodological choice will provide a new perspective and solutions to the problem, which will be raised in the discussions section.

Another challenge is that the aforementioned database did not mention the share-based position of television programmes within the timeslot below the 15th position (as shown in table 1). Faced with this situation, the value was established as if the programme were in the 15th position.

3. Results

The sample (N = 150) contained 31 sports programmes that were in the top 5 programmes that were commented by the largest number of Twitter users. Therefore, sports programmes occupy the second position (20.6%) among all the television programmes included in the sample, only below the magazine shows (21%), and above infotainment (18%), reality shows (14.4%), fiction series (10%), talk shows (4%), films (2.7%) and award shows (2%). The 20.6% of sports programmes included: 17 broadcasts of football matches, 8 broadcasts of Formula 1 races, 1 broadcast of motorcycle racing, 4 magazine shows about football, and 1 docureality about the Formula 1.

3.1. Twitter users who discuss sports TV programmes

If we focus on our object of study, the percentages mentioned above refer to the number of programmes that made it to the top 5 most discussed TV shows on Twitter (based on the number of commenters) in any of the days of the study. However, we think it is relevant to break down those 31 sports programmes depending on the exact number of users and to compare them with the values obtained by the rest of the sample. The sports programmes of the sample were commented by 640,418, while the total sample comprised 1,838,056 users. In other words, sports programmes were commented by 34.8% of all the users who tweeted. Figure 1 breaks down the number of Twitter users who commented about the different types of sports programme.

Football broadcasts accumulate 520,059 users in 17 matches broadcast over the 30 days of analysis, which represent 28% of the Twitter users in the sample. Formula 1 broadcasts were commented by

4% of the Twitter users with 8 races broadcast live on television, while motorcycle racing broadcasts only reached 28,731 users. The 5 sports magazine programmes reached 14,363 Twitter users (which represent 2.25% of the sample).

Figure 1. Sports programmes according to the number of Twitter users who comment on them
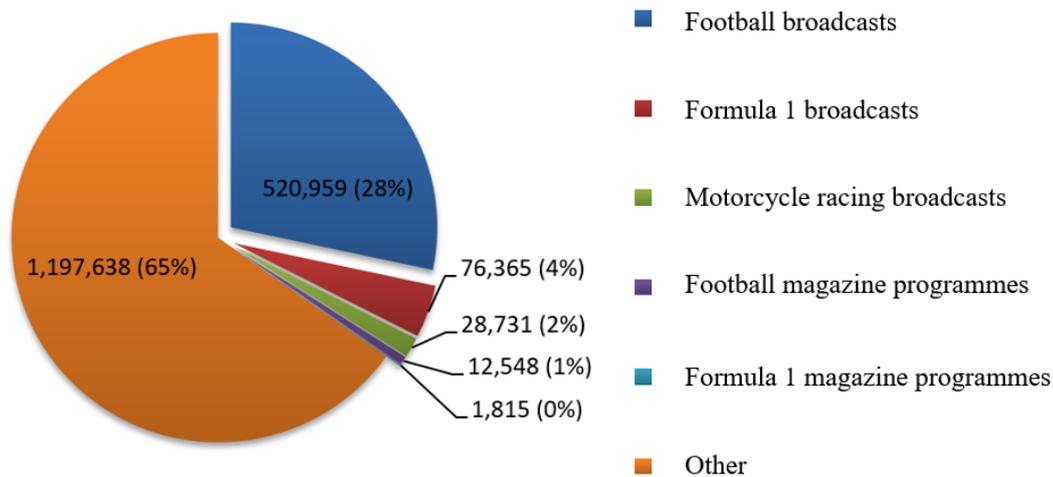
Source: Authors' own creation

3.2 Relationship of success between Twitter and the traditional TV audience

This section focuses on comparing data from traditional TV and Twitter. To this end, the following table presents the main information of the sports TV programmes that were the most discussed on Twitter: network, timeslot, position in timeslot and TV audience share.

Table 1. Main information of the most-discussed sports TV programmes on Twitter

Name of programme	Network	Timeslot	Position in timeslot	TV share
Liga 2014-2015 (Granada-Real Madrid)	Canal+ & Gol	Evening	>15	6.0%
Liga 2014-2015 (FC Barcelona-Celta de Vigo)	Canal +	Evening	>15	4.8%
F1 Grand Prix qualifying sessions (United States GP)	Antena 3	Evening	4	8.9%
F1 Grand Prix (United States GP)	Antena 3, TV3	Evening	1	16.9%
UEFA Champions League (Real Madrid-Liverpool)	La 1	Night 1	1	33.0%
UEFA Champions League (Ajax-Barcelona)	Canal +	Night 1	>15	4.4%
F1 Grand Prix free practice sessions (Brazilian GP)	Neox	Afternoon	13	1.6%

Liga 2014-2015 (Real Madrid-Rayo Vallecano)	Canal+ & Gol tv	Evening	>15	5.5%
Liga 2014-2015 (Almería-FC Barcelona)	Canal+ & Gol tv	Evening	>15	4.8%
F1 Grand Prix qualifying sessions (Brazilian GP)	La Sexta, TV3	Afternoon	4	8.2%
Road Racing World Championship (Valencian GP)	Telecinco	Morning	1	22.5%
F1 Grand Prix (Brazilian GP)	Antena 3 & TV3	Afternoon	1	17.6%
La goleada	13tv	Night 2	14	1.5%
El chiringuito de jugones	Neox	Night 2	7	3.4%
UEFA EURO2016 qualifying sessions (Spain-Belorussia)	La 1	Night 1	1	29.5%
Liga Adelante 2014-2015 (Osasuna-Poferradina)	La Sexta	Evening	6	5.3%
El chiringuito de jugones	Neox	Night 2	6	2.5%
Friendly match (Spain-Germany)	Cuatro	Night 1	1	26.7%
F1 Grand Prix free practice sessions (Abu Dhabi GP)	Neox	Morning	14	1.3%
Liga 2014 (FC Barcelona-Sevilla)	Canal +	Night 1	>15	4.6%
Liga 2014 (Eibar-Real Madrid)	Canal+ & Gol	Evening	>15	6.1%
F1 Grand Prix qualifying sessions (GP Abu Dhabi)	Antena 3	Morning	1	16.9%
F1 Grand Prix (Abu Dhabi GP)	Antena 3	Morning	1	26.0%
UEFA Champions League (Apoel-Barcelona)	La 1	Night 1	1	21.1%
UEFA Champions League (Basel-Real Madrid)	Canal +	Night 1	>15	
El chiringuito de jugones	Neox	Night 2	8	3.5%
UEFA EURO2016 (Feyenoord-Sevilla FC)	Cuatro	Evening	4	8.8%
Liga 2014-2015 (Málaga CF - Real Madrid)	Canal+ & Gol	Night 1	>15	
Liga Adelante 2014-2015 (Llagostera-Betis)	La Sexta	Evening	6	6.7%
Mi última carrera con Ferrari ("My last race with Ferrari")	La Sexta	Morning	6	6.2%
Liga 2014-2015 (Valencia CF-FC Barcelona)	Canal +	Night 1	>15	
AVERAGE	**Canal + (10)**	**Night 1 & Night 2 (13 times)**	**8***	**10.9% ***

Source: Authors' own creation

**Share data were not available for three football matches (those percentages are therefore excluded from the average)

* Programmes whose average was below the 15th position were averaged as 15

As Table 1 shows, the TV channel that broadcasts the sports programmes that are discussed the most is Canal +, which is a pay TV channel. The timeslots in which more sports programmes are screened is night 1 & night 2 (13 times together). However, the most discussed sports programmes (with a frequency of 18) are shown in the other timeslots (morning, afternoon, and evening). With respect to the share-based position of sports programmes in their timeslot, they occupy in average the eighth position (we must take into account that the position would be lower for programmes below the 15th position). Finally, the average share is 10.8%, with the highest share at 33% and the lowest at 1.3%.

In table 2 shows the Pearson correlation between the Social Share (SS, Twitter users) and the Traditional Share (TS, TV viewers), according to the 150 television programmes included in the sample.

Table 2. Correlation of TV programmes between Twitter users and TV viewers

Television programmes	N	ρ SS-TS	p
Formula 1 and road racing broadcasts	9	.719(*)	.029
Football broadcasts	17	.145	.630
Sports magazine programmes	5	-.470	.424
Entertainment magazine programmes	32	.014	.940
News magazine programmes	27	.592(*)	.001
Reality shows	21	.568(*)	.007
Talent shows	11	.694(*)	.018
Talk shows	6	.789	.062
Award shows	3	.(a)	--
Fiction films	4	.865	.135
Fiction series	15	.346	.206

Source: Authors' own creation

** Correlation is significant at the level of 0.01 (bilateral)
* Correlation is significant at the level of 0.05 (bilateral)
(a) cannot be calculate because at least one variable is constant

As we can see in table 2, we checked whether the number of people who tweeted about a programme (SS) increased as the number of TV viewers increased (TS). News programmes, reality shows and talent shows have a statistically significant Pearson correlation.

Among sports programmes, there is only one high positive correlation between SS and TS: the broadcasts of the F1 Grand Prix (this also includes the only motorcycle race of the sample).

The correlation is insignificant in football broadcasts, and negative and not statistically significant in sports magazine programmes.

3.3. Percentage of interaction between Twitter users and TV viewers

The data collection also allowed us to compare the number of users who discussed the sports programmes on Twitter with respect to the number of people who watch these programmes on TV. In this way, we can determine the weight of viewers' interaction while consuming a TV programme.

Table 3. Percentage relation between the number of Twitter users and the number of TV viewers

Type of sports programme	Number of users (A)	Number of viewers (B)	% of difference (B-A)
Football broadcasts (14*)	520,959	27,819,000	1.9%
Formula 1 broadcasts (8)	76,365	13,531,000	0.6%
Road racing broadcasts (1)	28,731	2,497,000	1.1%
Football magazine programmes (4)	12,548	713,000	1.7%
Formula 1 magazine programmes (1)	1,815	396,000	0.4%
TOTAL / AVERAGE %	640,418	44,956,000	1.4%

Source: Authors' own creation

* The data provided by Kantar Media did not include 3 of the 17 matches of the sample

As Table 3 shows, proportionally, football broadcasts generate the highest percentage of interaction since the Twitter users that discuss it represent 1.9% of viewers. In general terms, the total sample of users who have commented sports TV content (640,418) represent only 1.4% of the 44,956,000 million viewers.

The 150 programmes in the sample (including sports programmes) accumulate 295,837,000 viewers while only 1,838,056 Twitter users commented about them. In other words, only 1% of Twitter users generates conversations related to television with respect to the traditional audience (N=150). If we focus on non-sports related programmes, the average interaction is of 0.5% (N=119; 150 - 31).

4. Discussion

After the presentation of results, we confirmed the three research hypotheses of this study. With regards to H1, we cannot categorically affirm that sports programmes are the most commented on Twitter, but we can assert that sports content on television are the second most frequently discussed programmes (N=31; 20.6%), based on the number of Twitter users that comment on them. In addition, these programmes are discussed by 34.8% of all users in the sample (Figure 1). While this percentage does not constitute the majority of Twitter users, the importance of this type of content is above the rest of programming (magazine shows, infotainment shows, reality shows, fiction series, talk shows, movies and award shows).

With regards to H2, we confirmed that sports programmes that are successful on Twitter are not the most watched on traditional TV. As Table 1 showed, the most discussed sports programmes on Twitter during the period of analysis were broadcast in pay TV channels with low ratings, were not the most-watched in their timeslot (on the 8th position on average, bearing in mind that those below the 15th position were assessed as if they were in the 15th position), and were not screened in prime time (night 1 & 2 night). In other words, the most discussed sports TV programmes on Twitter were are broadcast in low-audience timeslots: 18 in the morning, afternoon and evening timeslots.

This fact is most notable in the 6 sports magazine programmes that are broadcast in low-audience networks (averaging 221,800 viewers). Nonetheless, they made it to the top 5 most discussed TV programmes of the day on Twitter. Therefore, our results coincide with those of other authors that found no correlation of success between Twitter and television (González-Neira and Quintas-Froufe, 2014). However, another study found out correlations of success between Twitter and television in programmes with the largest traditional share and social share (Gallardo-Camacho, Lavín and Fernández-García, 2016).

The study neither found a generalised correlation between Twitter users (SS) and TV viewers (TS). In fact, the Pearson correlation is only significant in the Formula 1 broadcasts. In other words, the more the broadcasts are watched, the more they are tweeted. But this relationship is barely perceptible in football broadcasts, and is negative in the case of sports magazine programmes (Table 2).

In the testing of these two hypotheses (H1 and H2), we faced the challenge of the noise generated by the conversations that occur between people who are not watching TV (either because they are watching it in the place of the event or on the Internet, or are only listening to it through the radio). However, we raised some points of view that discuss the possibility that the results can be influenced to a lesser extent than we think. On the one hand, if we focus on the 5 sports TV magazine programmes (which are generally not consumed through media or contexts other than television) we can see that they have fewer viewers but still manage to generate a high number of conversations on television due to their subject: sports. On the other hand, we have observed the behaviour of the

audiences of sports broadcasts that have taken place outside Spain and have become trending topic in Twitter Spain. For example, the broadcasts of the eight Formula 1 races took place outside Spain but became one of the 5 TV programmes of the day discussed by the largest number of Twitter users.

Those eight broadcasts only attracted the interest of 76,365 users, which is way below the number of users who discussed the broadcasts of the 17 football matches in the sample (520,000). Despite there were more matches than races, football matches proportionately got many more conversations per broadcast. In this sense, Formula 1 races were broadcast in free-to-air channels during the study period and still got much less comments than football broadcasts.

Interestingly, the football match that accumulated the highest number of Twitter users is the one held outside of Spain: Apoel FC vs. FC Barcelona, which attracted 48,645 users on Twitter Spain and 4,003,000 TV viewers (in this case the noise generated by discussions from the place of the event would be eliminated, but not the noise cause by consumption via radio). However, we also think that the fact that the football matches were broadcast mostly through pay channels (with lower audience levels) could be an element that corrected the increase in comments made by radio listeners, although this is not measurable in any way. For all these reasons, the verification of the first hypothesis must be relativised.

With regards to H3, the study confirmed that the comments that are generated by sports TV programmes on Twitter are not yet quantitatively significant, especially if we add the possibility of noise coming from other media or the stadium itself, which would reduce the number of interactive users. In fact, we found out that the percentage of interaction between sports TV programmes and Twitter is just 1.4%. The participation of Twitter users in the broadcasts of football matches (1.9%) and sports magazine programmes, which discuss the results of the matches (1.7%), is outstanding.

The percentage is lower among the other non-sports programmes included in the sample: 0.5%. Therefore, sports programmes generate more interactions between viewers, although the percentage remains very low, quantitatively speaking. In this sense, we agree with Owen (2002) when he highlights the attractiveness of the passive role of the viewer in the communication process. This hypothesis coincides with the research study carried out by Gallardo and Jorge (2010), which highlights the passive role of the viewer of videos on the Internet, where the percentage of interaction is much lower (only 1.5 per thousand).

5. Conclusions

Based on the previous results, and although the first hypothesis could not be completely verified, we conclude that sports-related TV programmes are among the most discussed on Twitter. This indicates, at least as a tendency, that Twitter has become that "virtual loungeroom" (Harrington, Highfield and Bruns, 2013: 406) where we share our experiences and also our opinions about sports. Particularly in a country where football is the king of sports.

The sports contents that are most discussed on Twitter are linked to the broadcasts of live football matches (according to the number of Twitter users and the percentage of interaction; Figure 1 and Table 3). In other words, we conclude that sports broadcasts generate a high level of conversations and guarantee a higher percentage of participation than other types of programmes. Marín and

Romero (2012: 9), although focused on the radio, conclude that the content of tweets "is closely linked to football and, to a lesser extent, to other sports".

On the other hand, we believe that a logical explanation to the confirmation of H2 could be that the Twitter audience is different from the TV audience: the former being younger and much more accustomed to participate through the second screens. That is why a television show (about sports or not) with a good Social Share does not always stands out for its traditional audience (Traditional Share).

We also conclude that we are not destined to interact when we consume audiovisual content. We have no doubt that second screens provide added value and democratise the flow of conversations, but also highlight the attractive role of the passive viewer.

That is why the percentage of participation and interaction of second screens is so low in relation to the total number of viewers (1.4% in sports programmes). The same happens among YouTube users, who are assumed to be more willing to interact (Gallardo and Jorge, 2010). However, it seems that sports viewing prompts the need to verbalise feelings and that social networks allow people to do that.

We agree with the ideas of Claes and Deltell (2014) to avoid the pollution and noise of conversations on social networks: a) use the geo-location data of mobile devices to discard from the sample the tweets written from the sports venues; and b) delete the tweets using the hashtags promoted by radio programmes.

In short, we are facing a context where the social audience has a high interest because it implies that its profile is younger than that of traditional television. Without a doubt, we are witnessing a phase of media convergence in which continuous research in the area of communication is essential to understand a rapidly changing phenomenon.

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