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Audiences in revolution. Use and consumption of mass media groups' apps for tablets and smartphones

Félix Ortega [CV] [] [] University of Salamanca / fortega@usal.es

Beatriz González Ispierto [CV] [] [] University of Salamanca / beatrizgonzalezispierto@gmail.com

María Esther Pérez Peláez [] [] University of Salamanca / me.perezz@gmail.com

Abstract
Introduction: This article presents the results of a research study carried out at the University of Salamanca by its Audiovisual Content Observatory in 2014. The objective of this study is to analyse the uses and consumption of mass media groups' apps among students of the University of Salamanca. The study is based on Tablet Assisted Personal Interviews applied to a randomly selected sample of students of the University of Salamanca. The article addresses the research hypotheses, results and conclusions on the uses and consumption of media groups' apps among students of the University of Salamanca. This work identifies the most significant trends in young people's allocation of times and places in the consumption of tablets and smartphones. The results indicate that mass media corporations are gradually adapting themselves to the progressive migration that the audience is undertaking towards renewed forms, spaces and times of audiovisual media content consumption. New smart screens allow users to consume TV content from any device with access to the internet. Mass media groups are adapting the traditional value chain of the audiovisual industry, television, radio and the press to the new demands of the multiscreen and hyper-connected young audiences, who increasingly link their leisure and consumption habits with even more interactive and smart devices.

Keywords
Audiences; apps; mass media; tablets; smartphones.

Contents

1. Introduction. 2. Objectives and hypotheses. 3. Methods. 4. State of the art review of mass media corporations in Spain. 4. Research results. 5. Conclusions. 6. Notes. 7. References. 8. Annexes.

Translation by **CA Martínez Arcos** (PhD in Communication from the University of London)

1. Introduction

In Spain, 71% of the population aged between 16 and 74 years access the internet on a regular basis. Of this sector of the population, 28.2 million used the internet through different devices in the last month (AIMC-EGM, 2014). Consumers use different devices that allow them to access the internet, and of them the most popular are the smartphone, tablet, PC and, to a lesser extent, the smart TV. In 2012, the smartphone was already the most used device. However, in 2003 the tablet became the best-selling device in Spain. Consensus forecasts indicate that tablet sales in 2017 will reach more than 407 million units around the world (Fundación Telefónica, 2013, p.31).

According to the Royal Spanish Academy (RAE, 2001): "an application is a program created for a specific use". It is a computer program with a large number of utilities. Today, there are specific applications (hence apps, as they are currently known) that can be downloaded in new devices such as smartphones and tablets from several associated digital stores, according to users' preferences and needs. According to the Europa Press Agency (2014), the apps designed for the new electronic devices have constituted a real revolution in the smartphone and tablet market. In Spain, an average of 4 million apps are downloaded every day. There are different and ever-changing categories of apps, such as entertainment, children's, communication and business. In the past four years, large mass media groups in Spain have quickly entered the market of apps as a channel for content-distribution, user-interaction and sales (CRTVE was the first to do it in November 2011). Apps are being used as a complementary consumption channels in traditional screens and devices but are likely to replace the traditional forms of consumption. Large-format smart screens, which can be wall-mounted or on a TV stand, now act as giant tablets that can be used in households.

Apps are the new interface through which the society of information, communication, knowledge and creativity interacts with the media. Apps are channels of bidirectional communication that already constitute an online alternative that is used by the media to bring their products and services to users, who are now connected in a multi-display and multi-tasking consumption universe. The most important feature of these devices is not their almost infinite potential for interaction, but the fact that for the first time in the history of mass media groups they can have real time access to "real data", not statistical and unreal estimates, about their audiences, their uses and consumption habits. We have only began to glimpse the potential that the analysis and use of this huge amount of information can have for mass media groups. The analysis and interpretation of audience information packs, the *Big Data*, will allow mass media groups to change the consumption experience of those users who are connected and identified through apps or other programs that allow user-tracking and interaction.

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In this sense, smartphones are already the first gateway for this interaction. The sales of these devices by the end of 2013 totalled 967.7 million units worldwide. The manufacturers with the largest market shares worldwide were, Samsung with 31%, Apple with 15.6%, and Huawei and Lenovo with 4.8%, respectively, which leaves a fragmented market share of 39.6% to the other manufacturers (Gartner, 2014), as shown in the following table. The year-on-year increase in sales reached more than 70%, with more than 287,667.6 units sold in the 2012-2013 period. The world's population is rapidly equipping itself with smartphones, reaching a market penetration of over 60% in the top target markets of the audiovisual operators.

Table 1. Worldwide sales of smartphones to end users in 2013.

Company	2013 Units	2013 Market Share (%)	2012 Units	2012 Market Share (%)
Samsung	299,794.9	31.0	205,767.1	30.3
Apple	150,785.9	15.6	130,133.2	19.1
Huawei	46,609.4	4.8	27,168.7	4.0
LG Electronics	46,431.8	4.8	25,814.1	3.8
Lenovo	43,904.5	4.5	21,698.5	3.2
Others	380,249.3	39.3	269,526.6	39.6
Total	**967,775.8**	**100.0**	**680,108.2**	**100.0**

Source: Gartner (2014, February). Figures in thousand units.

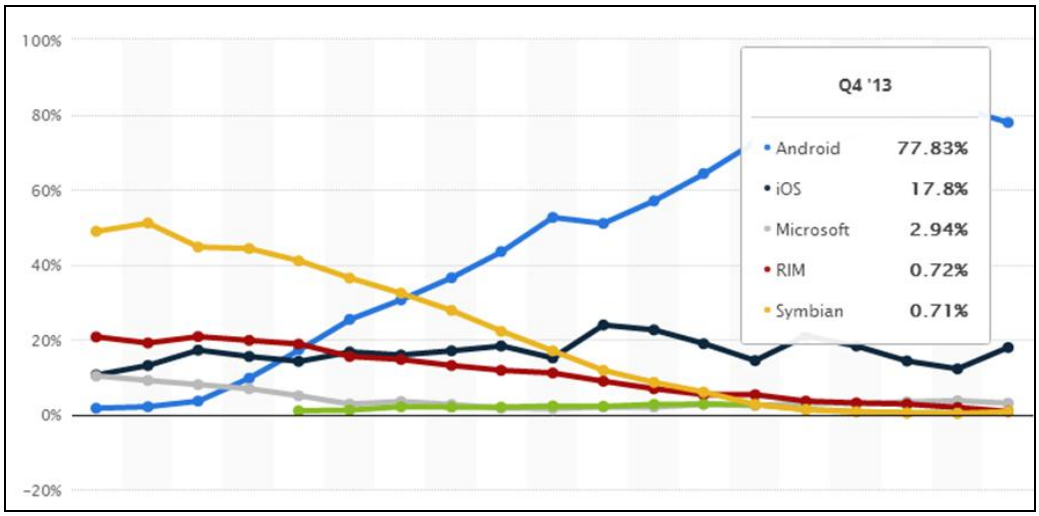
Of the total of units sold in 2013 in Spain, 40% were manufactured by Samsung, followed by Sony with 15%, LG 12%, Nokia 8% and Apple with 7%. In absolute terms, the Spanish population invested more money in renovating their smartphones than people from other European countries. They assigned a total of 1,150 million euros of their disposable income to renewing or purchasing smartphones that year (Europa Press, 2013). As shown in the following graph (Statista, 2014), the market shares of the main operating systems in the international market were distributed in the following manner in the last quarter of 2013: Android had 77.83% and iOS had 17.8%; they were followed far behind by Microsoft with 2.94% and RIM and Symbian with percentages below 1%.

As we can see in the previous figure, the Android operating system has consolidated its growth in the global market since 2009 and is currently the leader. On the other hand, iOS maintains a relatively stable market share of around 20% in positive synchronised correlation with the successful launch of new iPhone models. Other operating systems such as Symbian or RIM have seen their market shares decline almost to cero. Microsoft Mobile seems have a stable third global position but with less than 5% of the market share. In short, the battle is between three operating systems.

The global leadership of the Android operating system is based on two main facts: first, its store offers more free apps or at a lower price than its competitor iOS, and second, the device manufacturers and designers have aimed for an operating system that is stable, open, almost free, global and one that reduces the final cost of the units. The leaders in the smartphone apps market will

be Android, followed by iOS and, in third place, with shares below 5% in more professional sectors, will be Microsoft.

Figure 1. International market share of the major operating systems (first half of 2009 to last quarter of 2013).



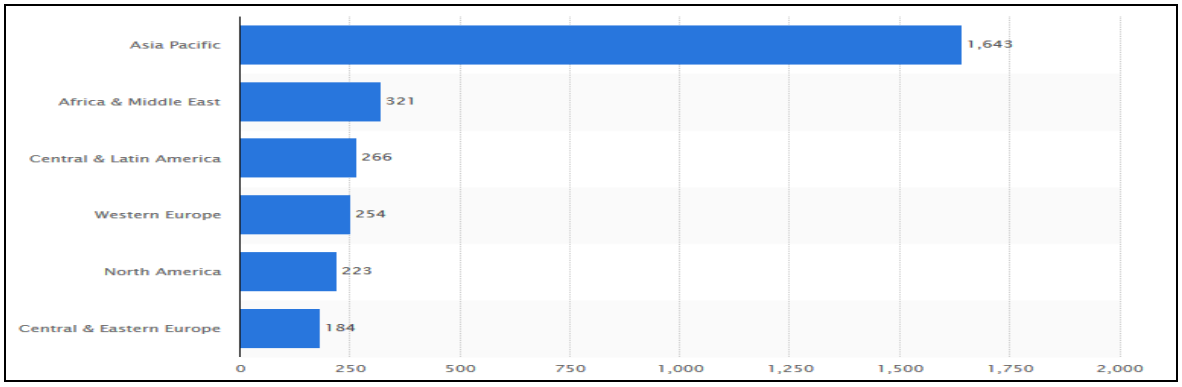
Source: Statista (2014, February). Data from last quarter of 2013.

The more developed markets of our socio-economic environment are in general terms fully digitised. The connection to the internet at any time and place has become something current and at the same time necessary for the day to day activities of companies, institutions and users. Thanks to new electronic devices such as tablets or smartphones we can access the internet instantly and from practically anywhere on the planet. According to Fundación Telefónica (2013), in recent years, the access to mobile lines, internet or broadband has experienced a very important growth in our environment. The number of people who accessed the internet in developed countries by the end of 2012 was 73.4% and this figure continues to grow every year, reaching almost full penetration, i.e. a *Natural Digital Penetration Ratio* of 1 **[1]**. The population of OECD member countries is practically fully connected through smart devices.

In Spain more than 50% of the population use the internet daily. In the last quarter of 2013 internet penetration reached 71.6%, i.e. more than 24.6 million Spaniards were connected through digital devices. The sector of the population that access the internet the most are young people aged between 18 and 24 years. To be precise, 94.7% of young people access the World Wide Web (Fundación Telefónica, 2013).

GSMA (2014) projects that in 2017 approximately 1,800 million smartphones will be sold, which represents a 75% increase in sales in comparison to 2013. Meanwhile, Fundación Telefónica (2013) predicts the worldwide sales of tablets to ascend to 407 million units. HD tablets are expected to become the individualised entertainment centre in households, replacing part of the personal consumption that currently occurs through smartphones, personal computers and other devices.

Figure 2. Sales forecasts for mobile phones by region for 2017.



Source: GSMA, Worldwide, Statista 2014. Data in millions.

The planet is heading to become connected to the internet of things through smartphones, tablets and other wearable devices. The revolution of audiovisual consumption is accompanied by wireless broadband and customised smart devices.

Research on smartphones and tablets is recent in our socio-economic context. The first units of Apple's iconic smartphone and tablet models were offered to consumers from the most developed markets in 2008, for IPhone 3 G, and 2010, in the case of IPad 1, which is probably the mother of touch devices. These almost iconic instruments of mass consumption, and a perfect alternative to operating systems like Android, have been in the hands of the great user for less than ten years but they are expected to penetrate all socio-economic levels over the next decade. In Spain, the penetration of smartphones already reaches 83%, which is a leading position in Europe according to Europe Telefónica (2015), while the penetration of tablets stands at 25% (ONTSI, 2015).

The first research studies on the use of mobile phones and youth were carried out by Ofcom in the United Kingdom (2009). These studies discuss the use of mobile phones among British youth and offer recommendations to parents on how to supervise the use of these devices appropriately. This study was carried out when there were first and second generation phones and not the current fully-audiovisual multimedia smartphones with 4G connectivity (or equivalents), which easily exceed connection rates of 200Mbit per second. Other studies related to the use of the internet, its risks and technology in young people are being carried out by the EU Kids Online project of the London School of Economics, under the direction of Sonia Livingston (Livingston *et al.*, 2013, 2014, Olafsson *et al.*, 2013). These studies, whose results are published in the form of annual reports (EU Kids Online, 2012, 2013 and 2014), show that young Europeans have evolved in their uses and consumption of internet in all devices and that they have adopted smartphones and tablets at an increasingly early age as almost *Vygotskian* instruments of interaction with the world.

In the EU countries with the highest income per capita, it is becoming common for children aged 7 and 8 to use and consume audiovisual contents intensively in their own touch screens or their parents'. In recent years, many authors have researched the way the market operates and in particular the use, consumption and interaction of devices and apps (Goggin, 2006, 2011, 2014; Oksman *et al.*, 2008; Skutnabba *et al.*, 2011; Westlund et al., 2011 2010, 2011, 2012, Alton, Böher, 2011 *et al.*,

Barkuhuus *et al.*, 2011; Wyeth *et al.*, 2011; Verkasalo *et al.* 2010), and in particular on mobile search and strategies of use of these devices (Church, 2011, Müller, 2009, Kamvar *et al.*, 2009). Other researchers have introduced interesting models of mobile navigation prediction associated with the variables time and location (Halvey, 2005), analyses and projections on the mobile industry (Ahonen, 2008, 2010, 2014) or publishing options for tablets (Haeger, 2011). Multi-touch apps that have been developed to improve the social skills of autistic children have been investigated on these devices by Hourcade (2012), while, more recently, Jane Vincent (2015) has explored opportunities in mobility for young people in the European Union. These new screens, functions and processes across all age segments are objects of research that will continue to develop actively in the coming years.

In Spain and its cultural surroundings research on the uses and audiovisual consumption of these devices is very recent. Ferraris (2008) analyses the possibilities of the mobile phone and its functionalist and critical "castration", while Aguado and Martínez have rightly introduced the concept of society and mobile communication in a liquid medium and relate it to the technological and cultural changes that these platforms involve in our society (Aguado *et al.*, 2008, 2011, 2012). Other authors have focused their analyses on the transformations of the informative and editorial models, the cyber media in new mobile platforms (Canavilhas, 2009, 2012, 2013, Rodríguez, 2013, Yunquera, 2015) and the evolution of the "e-magazines" and their interfaces from a semiotic and ecological perspective (Scolari, 2009, 2013). The role of apps in these platforms and their use as first, second and even third screen in the consumption of audiovisual content has also been also analysed by Barrientos-Bueno (2013). Reading and information consumption habits have been analysed in several studies, including: *Territorio Ebook* (2012), Arroyo-Vázquez (2013), and Salvador-Olivan *et al.*, 2015). Other authors such as Navarro *et al*. (2009) discuss the incipient multiscreen consumption by children, young people, adults and elderly people in Catalonia. In 2012, Javier Tolsa (2012) rightly analysed the screens market in Spain and later Xavier Bringue and Charo Savannah properly identified changes in habits and consumption among the children and teens (Bringue *et al.*, 2014). Common Sense Media, in its prospective study on the use and consumption of the children aged 0 to 8 years (CS, 2013), pointed out that in 2013 almost 75% of the population under 8 years of age in the USA was already active user of tablets and/or smartphones. These studies have shown that the new generation is premature in the use of touch technologies, which are becoming more affordable and universal.

Based on this theoretical framework and the review of previous research in the use of mobile technologies, this article addresses the uses and consumption of tablet and smartphone apps created by mass media corporations among university students, who are the spearheading in transition from children under 10 years of age, who constitute the population sector that is already fully digital and interacts through computers, tablets, smartphones, consoles, and wearable devices. Consumers born after the turn of the century consume and will consume media in the internet of things in new and renewed, almost revolutionary, ways. It is here where we place our focus with the objective of detecting the coming changes for the mass media groups in Spain.

2. Objectives and hypotheses

The objective of this research is to analyse the use and consumption habits of users of mass media group's apps on new devices in Spain. To be precise, the article focuses on the use of apps created by

the large mass media groups in Spain among university students aged between 18 and 24 years. This age group is the spearhead of the revolution that is taking place in the consumption of audiovisual apps and its study will helps us to anticipate the consumption of audiovisual content in new devices among digital natives.

The hypotheses that are tested in this study are the following:

H1: In 2014, mass media groups in Spain have an active presence in the tablet and smartphone apps markets and use similar strategies.

H2: The apps created by these media groups have similar designs, structures, functionalities, and interaction and distribution channels.

H3: Smart devices, particularly the mobile phone, have become the most used devices among university students to access the internet.

H4: University students use the apps created by mass media groups to obtain information, to interact and to consume content.

H5: After 20:00 PM, university students make a more intensive use of the mass media groups' apps.

3. Methods

The study is based on 42-item tablet assisted personal interviews (see annex I), applied to a sample of randomly-selected students (148) from the University of Salamanca, at the premises of the Unamuno campus. The final sample *n* was composed of 110 women and 38 men -the historical women/men ratio in the University of Salamanca between 2007 and 2010 was close to 1.7 (USAL, *Unidad de la Igualdad*, 2014)-. The selection of the sample was random, alternating men and women at the time of approaching people to interview them. For the interview, we used a tablet, two pieces of paper, and an online questionnaire created with Google's questionnaire platform (*Google Forms*). The interviews were conducted throughout May 2014. The age of the sample of university students was 18 to 25 years.

The valid random sample was of n=148 students from a total population of N=31,846 students of the University of Salamanca in 2014 (*Universidades Consumer*, 2014). The sample represented 4.6% of the total student population registered that year.

4. State of the art review of mass media corporations in Spain

This section of the article compares the apps launched by the different mass media groups operating in Spain. We examined the apps that offer mainstream-informative services associated with the TV channels owned by the major mass media groups.

According to AIMC (2014), the operating system preferred by the Spanish people for their new devices is Android, which has the largest market share. The following table compares the main apps

that offer audiovisual media content and are available for download at the *Play Store* for Android (Google Store, 2014), which has the largest market share in Spain and has a majority presence among university students, as our study has demonstrated.

Table 2. Information/news apps created by the most important mass media groups in July 2014 in Spain.

Media group	App	Menu	Design	Interaction	Live video & sound	Updating	Number of downloads	Downloadable content	*Free / premium*
RTVE		-Live channel -On demand content	List menu	No	Yes	Live	100,000 +	No	Free
RTVE. It has one version for mobile and tablet, and one for tablet in HD.		-News -TV and radio reports on demand	List menu	No	Red button (navigate through TV contents)	Every day	1,000,000 +	No	Free
ATRESMEDIA		Live contents of the media group's TV channels	Grid menu	No	Yes	Live	1,000,000	No	Free and Premium (€2.69)
ATRESMEDIA		Live streaming of *La Sexta* TV channel	List menu	Yes	Yes	Live for some content	100,000	No	Free
MEDIASET		-Most watched content -Latest news -Live content	Grid menu	Yes	Yes for some contents	Live for some content	500,000	No	Free

Source: Authors' own creation based on data collected from the *Play store*. It is important to note that the features of the apps are virtually identical in terms of options and design across platforms, be it Android or iOS.

As we can see in the previous table, we have not included apps created by the Grupo Prisa and Telefonica Movistar (Yomvi and Movistar TV, respectively) because they do not offer content from mainstream-informative TV channels and are not significantly consumed by university students. The following table compares the main apps created by these mass media groups which are used as vehicles for interaction-entertainment with the user.

As we can see in the table above, the three media groups with the largest market share in Spain are going through a phase of full expansion and consolidation in the integration of this new channel of distribution and interaction with consumers through these new platforms and devices. In this distinctive strategy, Atresmedia presents in its app, like RTVE, exclusive series and other products. This strategy, which complements other distribution channels, seems appropriate to attract young audiences in the new processes of interaction and customised audiovisual consumption that are being consolidated.

Table 3. Entertainment-interaction apps created by the main mass media groups in Spain, in July 2014.

Media group	App	Features
RTVE		- Allows capturing 30-second video clips from TVE programmes - Allows sharing content on social networks - Allows comments on content broadcast by the RTVE group
ATRESMEDIA, Atresplayer-Conecta		- Gives access to additional content from programmes and series - Gives access to exclusive content
MEDIASET		- Gives access to interactive contents - Allows sharing content on social networks - Gives access to games

Source: Authors' own creation based on analysis of apps and *Play Store*.

Another category of apps that has been created to cater a particular age sector is the children's category. The most important apps of this type in the *Play Store* (Google Store, 2014) are: in first position, with over one million downloads, the app created by CRTVE, *Clan*, which already has more views and visits than the website and is, in the words of its creators, "the audiovisual nursery of Spain" (Varona, 2014). This app is, without a doubt, providing a public service of added value to the Spanish families. The Mediaset Group has the *Boing* app that allows users to watch content from its TV channel but has a more limited development; it only has reached 50,000 downloads during the same period. Our forecast is that in the coming years these apps will become consolidated and the media groups will develop niche apps associated with specific targets, channels and/or series. Themed and niche apps have already been developed in Spain for these devices and environments: in the past four years, the interactive media department of CRTVE has developed apps for its TV series, such as *Cuéntame, Los misterios de Laura, Isabel*, among others, as well as apps associated with global sporting events.

Table 4. Children's apps developed by the most important mass media groups in Spain.

Media group	App	Products-services	Interaction
RTVE's Clan, with more than 1,000,000 downloads by March 2015.		-Gives access to episodes of cartoon series -Enables picture-taking -Colouring books - *Let's Clan* supports the learning of English as a second language with TV series in English.	-Enabled through the uploading of photos to the internet (photos can be shot or taken from phone's album). Forum of parents and Forum of children.
MEDIASET's Boing, with more than 50,000 downloads.		-Gives access to drawings from the Boing TV channel's series.	-Mainly through games

Source: Authors' own creation based the content analysis of apps and the *Play Store*.

The media corporations are committed to adopt similar strategies in this new distribution and interaction channel, which includes the consolidation in apps of the live streaming, video on demand (VOD), exclusive and personalised content, interaction, list or grid menu design. This confirms our first hypothesis (H1).

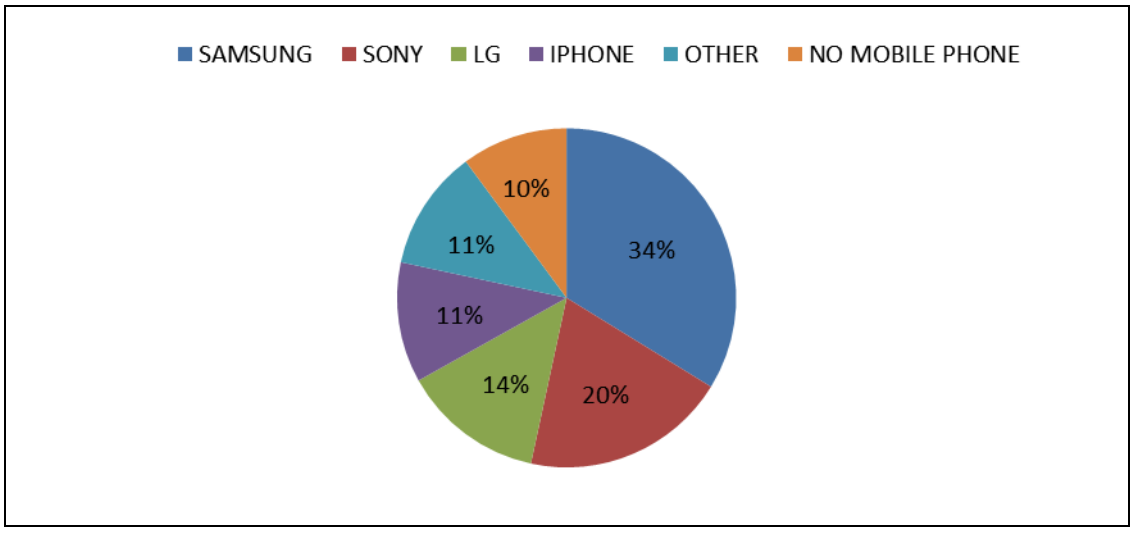
Atresmedia and Mediaset copy and adapt their products to the strategies of CRTVE which has acted as a leader in innovation, development, audiences and experimentation in Spain in these new platforms. These groups, which are part of the DTT oligopoly that operates in Spain, have regained ground in the last two years and have developed apps that have been downloaded by hundreds of thousands of users. The potential of these apps and the new distribution channels is in its early stages of development, but undoubtedly the trend is of exponential growth in the coming years, following the young audience that has migrated to these platforms.

4. Research results

As we have seen, the smartphone is the device most commonly used to consume the contents created by media groups and internet companies, so our third hypothesis (H3) is confirmed. Of the respondents, 98% uses the smartphone as the first option to access the internet, followed by the PC and the tablet. 10% of respondents did not have a smartphone, because they did not want to have it, or felt they did not need it. Most respondents indicated that their smartphone was powered by the Android operating system, while iOS only powered the smartphones of 11% of the students (item 16 of the questionnaire -see annex 1-).

The following figure shows the distribution of brands of the university students' smartphones.

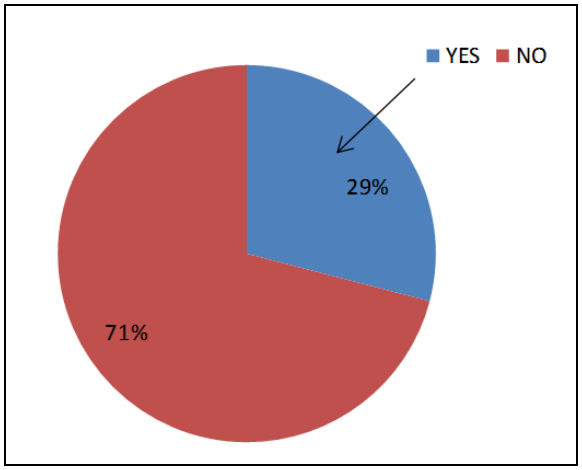
Figure 3. Brand of the smartphones owned by university students in 2014.



Source: Authors' own creation (Item 4 of the questionnaire -annex 1 and responses in annex 2).

The manufacturer with the largest market share among the university students is Samsung (with 34%), followed by Sony, LG and Apple's iPhone, in this order.

Figure 4. Download of apps created by mass media corporations among university students



Source: Authors' own creation. Item 29 of the questionnaire (see annex 1). See annex 3 for responses.

29% of respondents stated that they have at least one app created by a media group in their mobile devices. Therefore, the fourth hypothesis (H4) that says students of the University of Salamanca use apps to consume contents created by media groups is confirmed, although the proportion of students that uses these apps is not the majority.

Use of TV apps

TV apps in most cases are not used for the consumption of audiovisual content, but for interaction with TV programmes that are watched in other devices like smart TVs or PCs. According to the results of the questionnaire (item 30 in annex 1, and responses in annex 3), 85% of respondents do not use TV apps to consume TV content on their mobile devices. The remaining 15% do use apps to consume TV contents. In addition, based on the analysis of the responses to item 31 of the questionnaire (annex 1), the most used apps among this group of students are, in this order: RTVE.es, Atresplayer, and Atresmedia Conecta. In short, most students do not use the apps created by media groups to consume television in these new mobile screens.

Use of radio apps

Of the respondents that do have downloaded media groups' apps (29%), 7.2% have downloaded radio apps on their devices (item 32 of the questionnaire, see annex 3 for responses). Among those 25 students, stand out the download of apps such as EuropaFM and "new radio channels" such as Spotify and Google Music (item 33 and 34). It should be noted that most respondents have not paid money for any radio app (Item 35 of the questionnaire).

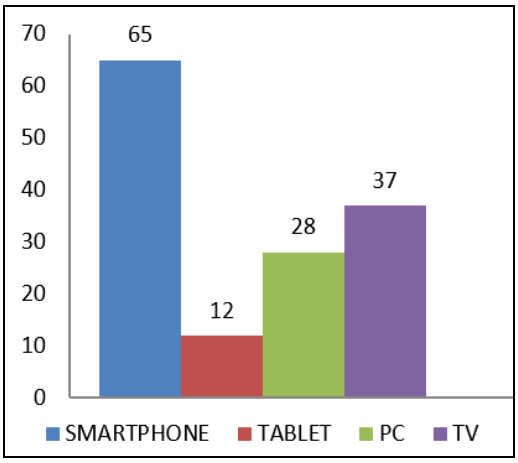
Use of news apps

29% of respondents stated that they have downloaded newspapers' apps to their mobile devices. The most used news apps among students of the University of Salamanca are the apps of *El Mundo*, *El País*, *Marca* and *Salamanca24h* (a local newspaper from Salamanca) (items 36 and 37).

In the analysis of consumer habits it is important to know with whom, at what time and where do university students consume the media groups' apps. To this end, students were asked to complete some tables about their particularities of their use of apps, indicating differences in consumption during weekdays and weekends. This part of the study was based on the hypothesis that the consumption of apps would differ between weekends and weekdays. The most relevant results are discussed below.

Consumption of apps by time slots

Figure 5. Consumption of the media groups' apps among university students on weekdays from 12:00 to 16:00 hours.



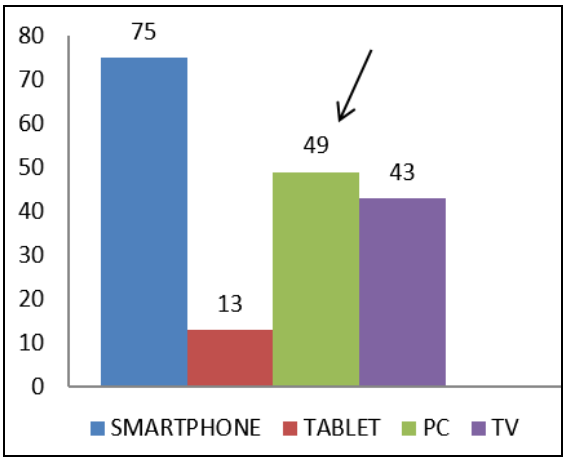
Source: Authors' own creation (table 1 of annex 7). Graph shows number of users, time slot and devices used.

The analysis of the use of apps by time slots indicates that the period of highest consumption are 12:00 to 16:00 hours and 20:00 and 24:00 hours, which are the prime time in the consumption of apps. We analysed in depth these time slots as they are very relevant in our study. The figures below offer a comparison of the consumption of apps by time slots among young people, differentiating the consumption during weekdays and weekends.

The most used device for the consumption of content of the different media groups' apps is the smartphone, followed by the PC, the smart TV and the tablet, in this order. We understand that the high percentage of the use of the mobile device has a direct relationship with its combined (Wi-Fi and 3G or 4G technologies), portable, ubiquitous and universal connection in comparison to other devices of visualisation-interaction that lack these features. Young consumers take the smartphone as

their preferred content consumption device because they carry it continually throughout the day, although using it more intensively on weekends.

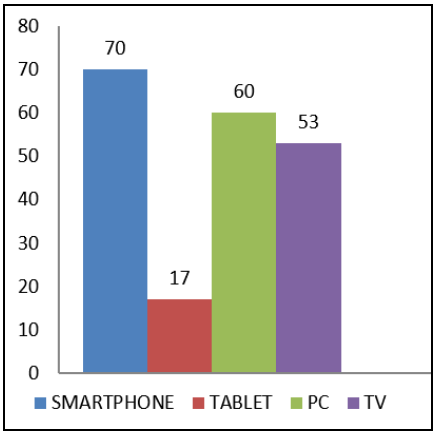
Figure 6. Consumption of the media groups' apps among university students on weekdays from 12:00 to 16:00 hours.



Source: Authors' own creation (table 2 of annex 7). Graph shows number of users, time slot and devices used.

During weekdays the consumption between 12:00 and 16:00 hours focuses on the smartphone, television and the PC. Most users, 85%, have pointed out that they use several screens simultaneously because they are immersed in the digital age and adopted this habit; they are so called "multiscreen" consumer with two hands and two eyes distributed in three or even four simultaneous displays. As we can see in the previous figure, in the same time slot during weekends, consumption increases in all devices, and the smartphone remains the most widely used device. TV is less consumed during weekends, while the consumption of the PC increases, in a partially substitute mode.

Figure 7. Consumption of the media groups' apps among university students on weekdays from 20:00 and 24:00 hours.

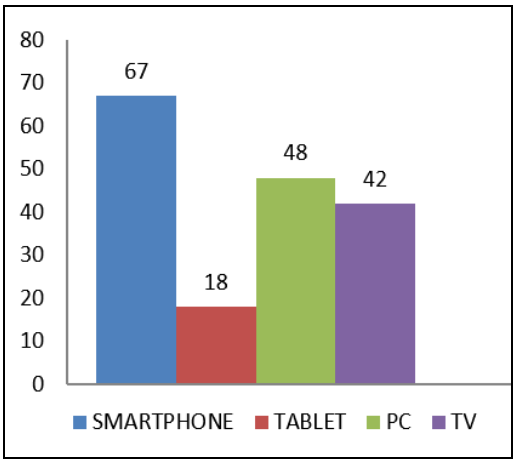


Source: Authors' own creation (table 1 and 2, annex 8). Graph show number of users, time slot and devices used.

Consumption of apps by university students remains quite stable throughout the weekdays. Most of the consumption of apps occurs after the 20:00 hours on each weekday, coinciding with the traditional prime time of TV, which becomes the second screen.

The following figures show that activity after 8:00 PM is similar on weekdays and weekends. There is a higher consumption of the PC and television in this time slot on weekdays.

Figure 8. Consumption of the media groups' apps among university students on weekends from 20:00 and 24:00 hours.



Source: Authors' own creation (table 1 and 2, annex 8). Graph show number of users, time slot and devices used.

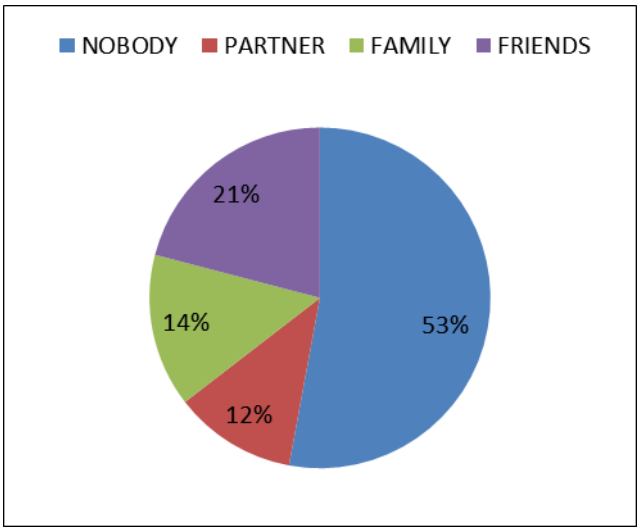
The smartphone continues to be the device most used in the consumption of apps but this preference descends slightly during weekends in the prime time slot. Consumption after 8:00 PM is intensive on weekdays and weekends, which confirms the fifth hypothesis (H5). It is important to note that, as mentioned, there is another time zone with a high rate of consumption of apps, the 12:00 to 16:00 time slot. It is equally relevant to note that the consumption of the PC and TV is more intensive in this time slot on weekdays, while the decline in the use of the PC and TV during weekends in this time slot is noticeable. In this timeslot in weekends, university students allocate time for other activities instead of the consumption of audiovisual content.

Consumption with whom, and where

The study also analysed the type of people and places involved in students' use of these apps. It was found that in weekdays, 53% of the times, university students consume the media groups' apps by themselves; 21% of the time with friends; 14% with family and 12% with their partner.

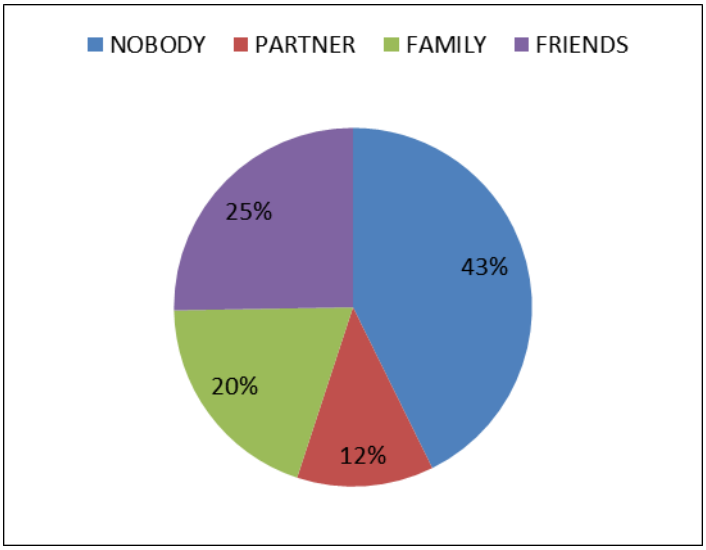
This pattern of behaviour is probably motivated by users' consumption habits. In most cases, apps are used to read news or consume audiovisual content to satisfy their individual needs and tastes in personal devices. The lower consumption in the company of family and partners would be explained by the "family" situation and accommodation of most university students.

Figure 9. People with whom university students consume the media group's apps on weekdays



Source: Authors' own creation (table 1, annex 9)

Figure 10. People with whom university students consume the media group's apps on weekends?



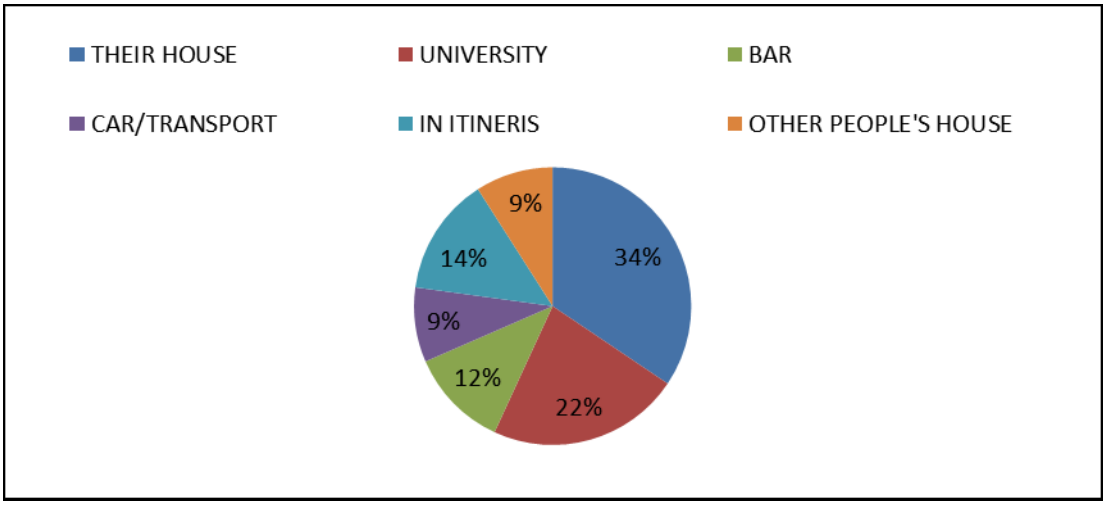
Source: Authors' own creation (table 2, annex 9).

There are significant differences in terms of consumption during weekends and weekdays. The most common consumption modality remains to be solitary use, however, this percentage decreases 10 percentage points in weekends, as shown in the following figure. In the opposite direction, in the weekend consumption in the company of family and friends increases by 8 and 4 percentage points, respectively. Users' consumption in the company of their partner during weekends only increases by 2% in comparison to the weekdays.

We suggest that the private consumption of apps by young people decreases during weekends because these days they allocate their time differently (than on weekdays) and plan social activities with their family, partner and/or friends.

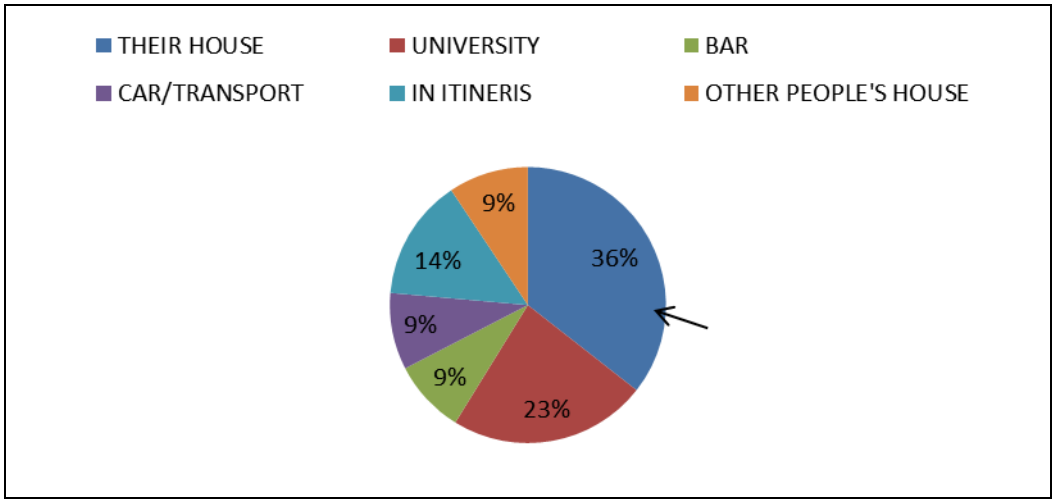
In terms of places of consumption during weekdays, in most occasions the media groups' apps are used at home, followed by public places, *in itineris* and at other people's homes.

Figure 11. Where do university students use the mass media groups' apps on weekdays?



Source: Authors' own creation (table 1, annex 10)

Figure 12. Where do university students use the mass media groups' apps on weekends?



Source: Authors' own creation (table 2, annex 10)

During the weekends young people make greater use of the apps at home, which is the normal consequence of spending more time at home. It is important to note that consumption *in itineris* and

at the university is maintained. We infer that the availability of Wi-Fi in some areas of the university (library and residences, for instance) is significant in the consumption of apps given their free nature for university students.

In short, consumption is very similar between weekdays and weekends. There are differences associated with consumption habits and social conventions, however, they are not significant.

5. Conclusions

Uses and consumption of audiovisual products among young people are moving progressively towards interactive distribution channels contained within smart individual and customised screens. Mass media groups in Spain are gradually adapting themselves to the progressive migration that the audience is undertaking towards renewed forms, spaces, times and companies to consume audiovisual content. Mass media groups are adapting the traditional value chain of the audiovisual industry, television, radio and the press to the new demands of the multiscreen and hyper-connected young audiences.

We are living in an always-connected and fully digitised society that is redefining the way in which it consume the products and services created by the mass media. The new devices most commonly used for these tasks are the smartphone and the tablet, small touch devices that are changing the world of communications and the habits of digital media users.

90% of university students have a mobile smartphone and almost one in three has a tablet powered by the Android operating system or the IOS, with a ratio of 9 to 1. Today, the individual audiovisual mobile consumption market is dominated by the smartphone and the consensus forecasts indicate that the leadership will be shared by smartphones, phablets, tablets and the different wearable devices that are being developed and marketed today by the leading manufacturers. The tendency of the mass media groups was consolidated with the creation of content according to the preferences of individual users. If young people are in these devices, in order to retain them or attract them, the most successful competitive strategy includes the development of apps that meet the needs of entertainment and audiovisual consumption of the audiences in revolution: young people.

The article has confirmed that the consumption among young university users is consolidating a trend towards individual, multi-screen, multi-tasking consumption, characterised by a constant interaction with their preferred audiovisual content through mobile apps and social networks. For the mass media groups, this new channel of communication opens up new virtually limitless possibilities that were unthinkable only five years ago.

The market of digital apps is already a new consolidated channel of distribution and interaction with young users. However, this channel of audiovisual consumption is only used by one in every three young people when it comes to apps created by mass media groups in Spain, which should slowly but constantly adapt their content to tablets, smartphones and third generation devices (those with 4G connectivity and high definition displays) to not lose contact with the audience and in particular with an strategic demographic, the young audience. Interaction, quality of service, the exclusivity of content and the customisation of these apps are successful ways to attract and retain users and encourage customer loyalty, as well as to investigate them and exploit the information-

communication obtained from them. In the next decade, the world of apps on smart devices will complete and complement the use and consumption of traditional media still largely present in off-line information devices. As large-format smart screens become interactive and monitor our use and consumption and as communication and interaction becomes part of all technological developments and of the Internet of things and of people, the uses and consumption of a hyper-connected audience transform and evolve towards new areas of entertainment.

Mass media groups must compete for leadership in the world of entertainment, communication and information apps, but must also renew their websites and use the latest technology to deliver their contents, products and services, to all users in a segmented and personalised way. As the study has shown, failure of the mass media to adopt this strategy will drive away the changing young audience or will weaken their relationship with them, according to the confirmed hypotheses.

6. Note

[1] NDPR is the percentage of digital coverage in the population of a country in relation to the population size in a given year, i.e. NDPR=% Digital coverage of population and territory / % of population connected digitally through n*X technology. NDPR=1 indicates full coverage.

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8. Annexes

Annex 1: Questionnaire in PDF format available at http://goo.gl/REyhuX

Annex 2: Full database in Excel format available at http://goo.gl/J1CiLX

Annex 3. Tables of consumption of apps in weekdays and weekends, in all time slots available at http://goo.gl/BwRmmh

Note: Use and exploitation of data included in annexes is authorised as long as the source is cited properly.

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