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Habits of use and consumption of smart screens among children from 7 to 9 years old in Spaina

Hábitos de uso y consumo de pantallas inteligentes entre niños/as de 7 a 9 años en España

Abstract

This article presents some of the results of the research project "Children, Apps, Tablets and Smartphones of Zero to Nine-year old Children". The results were obtained in a survey via the Qualtrics platform - with ESOMAR quality control – of 525 children from 7 to 9 years old in cities with more than 10,000 inhabitants, and segmented by Autonomous Communities, gender, age and household income. A specific analysis of descriptive variables associated with gender, age, household income and regions was conducted. The project was contextualised by means of a comparative analysis in Spain. A major conclusion highlights confirmation of the similarities and differences between the patterns detected in the use of smart screens in our country. In addition, some suggestions for improving the methodology when researchers work with early age children are presented. Finally, recommendations intended to develop an "Observatory of the habits of use and consumption of smart screens by children and adolescents" is described.

Resumen

Este artículo presenta algunos de los resultados del proyecto de investigación "Niños, Apps, Tablets y Teléfonos Inteligentes de cero a nueve años. Los resultados fueron obtenidos en una encuesta a través de la plataforma Qualtrics —con control de calidad ESOMAR— a 525 niños/as de 7 a 9 años en ciudades de más de 10.000 habitantes y segmentado por CCAA, género, edad y renta familiar percibida. En el artículo, se realiza un análisis específico de variables descriptivas asociadas a género, edad, renta percibida y regiones y se contextualiza el trabajo con un análisis comparativo en España. Una de las conclusiones relevantes del estudio es establecer semejanzas y diferencias entre los patrones detectados en el uso de las pantallas inteligentes en nuestro país. También el abordaje y recomendaciones a la hora de trabajar con niños/as de edad temprana. Se concluye con recomendaciones orientadas a desarrollar un "Observatorio de los hábitos de uso y consumo de la infancia y adolescencia en las pantallas inteligentes".

1. Introduction

Research on children's smart screen usage and consumption habits has received increasing attention from society and the scientific community and has particularly focused on smartphones and tablets. The latest IACM Niñ@s study (IACM, 2019; INE, 2018) already indicated that 35.4% of children aged six to nine have access to a tablet in ownership and 8.8% to a smartphone, reaching penetration rates of 47.8% in age groups between 10 and 12, and 61.6% at 13 years old. Apart from data, there is a need to build systems for measuring, monitoring and evaluating the use and consumption habits of children and teenagers on new screens; in particular, their edu-communication uses and consumption on the various mobile devices within their reach, notably smartphones and tablets (SPT). This paper focuses, therefore, mainly on the latter two devices, since they are the ones mostly used by the age groups under study.

This problem has become evident in recent months due to the COVID-19 pandemic, where situations have arisen related to the digital divide and the use of devices in education. This article presents some of the results of the research project called "Barometer of the use and consumption habits of children and adolescents on smart screens". This study provides a diagnosis of the situation of the use of Information and Communication Technologies by children in Spain, focusing on an age group ranging from 7 to 9 years old.

Quantitative and qualitative research on children, media and smart screens is an area of analysis that has been institutionalised as a research niche in the disciplinary field under the umbrella of national and international research associations. In particular, the European Communication Research and Education Association (ECREA), in its thematic section Children Youth and Media, and the International Communication Association (ICA), in its section Children Adolescents and Media, have addressed the issue in depth over the last decade.

Research on the target group of children and young people on the Internet, its risks and opportunities, dates back to the research carried out over the last 15 years by the teams led by Sonia Livingstone, Cristina Ponte and Elisabeth Staksrud mainly (Livingstone and Helsper, 2013; Livingstone, Ólafsson and Staksrud, 2013; Livingstone, 2014; Livingstone, Mascheroni, Ólafsson and Haddon, 2014; Livingstone, Mascheroni, Dreier, Chaudron and Lagae , 2015; Livingstone , 2016; Livingstone, Ólafsson, Helsper, Lupiáñez- Villanueva, Veltri and Folkvord, 2017; Livingstone, Tambini and Belakova, 2018; Ponte, Castro and Pereira, 2019; Staksrud, Ólafsson and Livingstone, 2013) around the different editions of the projects Kids Online and Global Kids Online. Also noteworthy is the research carried out by the Common Sense Media organisation since 2013 in its research area and in particular its Zero to Eight research in its first edition in 2011 and subsequent editions, as well as the phenomena and research analysed around media literacy by Jackie Marsh's team in the Cost DigiLitEY Action (2020) and their associated research with very young children (Marsh, Plowman, Yamada-Rice, Bishop and Scott, 2016; Kardefelt-Whinther, 2014).

The most recent research has focused on the penetration of smart screens at increasingly younger ages using interdisciplinary techniques and approaches to these phenomena (Crescenzi-Lanna, Valente and Suárez-Gómez, 2019). Yet, there is little research addressing children under 9.

In this article, children between 7-9 are the focus of our research; looking beyond risks and opportunities and taking into account different disciplines in approach and design (Haddon and Livingstone, 2014).

It is necessary to consider that the rapid technological changes are causing transformations, also rapid, affecting the social values of those who share technological and cultural conditions and their vision of the world. To understand what a generation is, it is necessary to add other factors such as demographic, sociological, economic, communicational, consumption-related, etc. that would complete the characterisation of the Alpha generation, beyond the technological use as the only perspective. When referring to generations we contemplate all the variables that surround and describe the moment and context. The author Mark McCrindle (2014) named this generation in this way, attributing to it a series of characteristics. These referred to those born after 2010, the year the iPad and Instagram were created, and *app* was the word of the year. He also called them *Generation Glass*, referring to the use of screens where the glass is not just something you look through, but a means of developing technology.

Therefore, it is not only a matter of confirming that this is a generation of users of Information and Communication Technologies, but also of knowing how they access this use, the transformations they make in the way they consume devices and apps, plus their expectations and demands.

This study does not aim to make a detailed analysis of the Alpha but to study the consumption and use of applications (from now on apps) and devices by this generation of children under 10 years old, but starting from a consultation with them about their experiences and expectations.

In this generation, everything is linked, and the world of consumption is not separated from the offline and

online world. It should be noted that we started from a design where the adults did not impose their point of view and where, from the beginning, the children participated in the construction of the research in different ways throughout the process.

Boys and girls belonging to the so-called Alpha generation not only experience the technological changes, but also show expectations about the use of the devices and the apps. They stand out for the majority use of video as opposed to other formats, the preference for access to the interface through voice (hence the proliferation of the use of intelligent speakers by this generation) to the possible detriment of the screen, or interaction with other artificial intelligence devices (robots, connected toys, etc.) (Mascheroni and Holloway, 2017, 2019).

Consumption, in general, cannot be studied in isolation, but as part of the context in which we live and develop. And it is not only the consumption of objects, but also of services that must be considered. It is about education, media and leisure. It is also about how this is going to be projected into the children's social and cultural life. All consumption is linked in these generations, without a separation between the consumption of technology and consumption of on- and off-line products and/or services. Therefore, Buckingham refers to a "Consumer Culture", not just to consumption in isolation (McCrindle, 2014).

Talking about children's consumption not only implies the purchase of items, but also the way in which these are used, appropriated, and adapted individually and collectively. Studying children's consumption implies not only talking about advertising and marketing but how all their elements affect children in their environment and their social and cultural experience, together with the use of platforms. It is considering its social meaning (Buckingham, 2013).

It is also to speak of technological consumption where the hybridisation between the use of digital media by children and adolescents is intermingled with the consumption of brands and services. Studying the child as a consumer is, therefore, studying their context and their family. Social changes in the family also influence different consumption-related behaviour. Women's participation in the labour market, the number of siblings, or the economic income, among others, are factors that influence consumption. It is necessary to consider all these factors when designing a questionnaire or conducting research with children.

Consumption is part of our world and the citizen is an active person who chooses and reshapes his or her lifestyles according to those circumstances. The influence of children on family consumption depends on five factors: the style of the parents (the more traditional and conservative the households are, the less influence children have); the age of the children (the older they are, the more they influence); the characteristics of the family nucleus (the greater the purchasing power and social level, the greater the influence of children); the gender (boys influence electronics, video games and tangible products, and girls influence products that require more information such as travel, ticketing...) (Sancho BBDO and Universidad Jorge Tadeo, 2019); and media exposure (the more television and internet they consume, the more influence they have).The adolescent market is one of the most dynamic, but the analysis of its use and consumption patterns is not easy, since it is a group in constant change (Sánchez y Pintado, 2017). This influences their digital consumption pattern (Stailova, Nandaairi and Livingstone, 2019).

Data at European level indicate that the main use of tablets and smartphones at a general level is recreational (Núñez- Gómez and Larrañaga, 2020), with the focus on watching videos and listening to music. For 70% of Spanish adolescents, by contrast, the most important purpose is to communicate with their friends and family. Social networks, online video games, or use for homework hold an intermediate position, and other habits such as searching for current news are less common (EUKidsonline, 2020; Jiménez, Garmendia and Casado, 2018).

Video viewing is now one of the main activities carried out by young children. Indeed, children between the ages of zero and eight consider the internet an important source of entertainment (Holloway, Green and Livingstone, 2013; Blackwell, Lauricella, Conway and Wartella, 2014).

This is reflected in the consumption of YouTube. More and more children under 12 are surfing the web enjoying the entertainment content that influential minors upload to this platform (McRoberts, Bonsignore, Peyton and Yarosh, 2016; Yarosh, Bonsignore, McRoberts and Peyton, 2016; Tur-Viñes, Núñez-Gómez and Martínez-Pastor, 2019; Ballano, Uribe and Munté-Ramos, 2014). YouTube stands as the leading platform for video viewing: 1 billion users, 88 countries, 76 languages, 95% of internet users (YouTube press, 2018). Although YouTube does not publish data on its child audience, Souza-Araujo et al. (2017) confirm the active presence of children under 13.

Pre-teens share interesting videos of themselves with their friends and family (*clustersharing*), as Chester (2015) points out. Sharing stories among peers is a widespread practice among children and is facilitated

by technology, as illustrated by Marsh et al. (2016). Regarding the role of parents in these activities, the study of parental management (Ammari, Kumar, Lampe and Schoenebeck., 2015) shows that mothers usually share online content and take responsibility for managing social networks more than fathers do. Fathers are more restrictive about sharing and are especially concerned about sharing content that might be perceived as sexual. Nansen and Jayemanne (2016) propose to complement the theories of parental mediation with concepts such as intermediation (Incibe, 2017; Livingstone, 2020).

In this sense, all online activity involves risks as well as opportunities. The most controversial issues relate to bullying, which remains the most damaging risk. On average, one out of every three Spanish children and adolescents claims to have been a victim of online bullying in the last year. Moreover, it affects more girls than boys. Compared to 2015, it has increased significantly: from 18% to 42% in the 15-17 age group (Garmendia et al., 2018; EUKidsonline, 2020).

The viewing of content related to sexual problems (sexting and contact with strangers) also increases with age: between 11 and 12 years old, it affects 25% of children; between 13 and 14 years old, 53%; and between 15 and 17 years old, 75%. In addition, 3 out of 10 children report having received this kind of messages. Two out of three adolescents (66%) between 15 and 17 years old and more than half (53%) of those between 13 and 14 years old admit having had contact with strangers on the web. Almost one in five of these minors had face-to-face encounters with people contacted via the internet (Garmendia et al., 2020).

In view of this transversal environment in which they operate, it is necessary to consider research at this age, taking into account several guidelines before starting:

- To overcome the common places established on the use of devices and apps by children by providing a vision outside the stereotypes.

- To increase, therefore, social knowledge of the reality of children as users of Information and Communication Technologies (ICT), and of their rights as consumers of these services and products.

- To adopt a generational perspective –the Alpha children– when analysing their expectations for the use and consumption of ICT.

- To analyse the various social groups of children, adopting an equity and gender approach.

- To integrate, in turn, a child rights approach, for the concrete implementation of the rights enshrined in articles 17 (access to information), 13 (privacy), 29 (aims of education), and 31 (play, leisure and free time) of the United Nations Convention on the Rights of the Child (United Nations, 2006).

2. Objectives of the study. Methodology and sample selection

There is a need from the different providers of products and services, whether private or public, to know, measure, and evaluate the habits of use and consumption, as well as the indicators used to measure them focused on these new generations (i.e.: Share, Rating, time and consumption habits, advertising consumption, accompanied consumption, opportunities, and perceived threats...).

For all these reasons, it is necessary to go deeper into the detection of the socio-cultural changes that are taking place in a target of digital consumer-users and with consumption patterns more located in multi-platform devices. Thus, an attempt was made to implement a new measurement system more adapted to these generations and the new devices.

The overall objective was to identify patterns in the use and consumption habits of mobile devices and their apps by children of the Alpha generation.

As secondary objectives we considered the following:

1. To obtain evidence of the use and consumption habits of children aged seven to nine on their smartphones and tablets in Spain at home, at school and on the go.

2. To obtain evidence about the significant differences among the variables age, gender, region, and perceived per capita income in the use and consumption of these devices.

The development of the research was carried out as follows:

Firstly, in July 2019, an analysis was made of surveys and research which targeted children and adolescents with the aim of verifying reference variables and indicators so as not to unnecessarily reproduce indicators used in studies carried out by official statistical institutes in Spain, and to identify

relevant, less relevant or dispensable indicators. In addition, a more sociological approach was sought to deal with indicators not covered by these questionnaires and the age was lowered to 7 years to cover this age range. Therefore, we believe that a gap is being filled in which we must continue to study and deepen. In this way, we will be able to construct a suitable measuring instrument for this target group which will take into account other variables which have been less worked on to date.

Secondly, it should be noted that the questionnaire was designed after group meetings with the target audience and subsequent rectifications.

Thirdly, the questionnaire was also quantitatively pre-tested with 10% of the sample. At that point, the non-validated items were rectified, and various errors were corrected.

The field study was conducted with a random sample of 525 children aged seven, eight and nine. The distribution, supervision and monitoring of the survey was carried out through the research platform Qualtrics, a company certified by the ICC/ESOMAR code. The survey was disseminated during the month of July 2019. 566 valid responses were collected which, after quality control for response time and internal consistency, resulted in 525 valid responses. The precondition for admission to the survey required that the child was a regular user of a smartphone and/or tablet, and that they conducted the survey with the authorisation and/or supervision of their parent and/or guardian. The ethical principles governing our work with minors were always maintained, following the parameters established by the Convention on the Rights of the Child.

For this study, a random sampling of the Spanish national territory was carried out in cities with more than 10,000 inhabitants and by quotas of age, gender, and autonomous community of residence.

The contrasts implemented in our analysis included:

1. Age contrasts: with three groups: 7, 8, and 9 years.

2. Gender: male and female.

3. Income: Income levels were initially grouped into 1-2-3=low, 4-5=medium and 6-7=high, (n.b.: for reasons of data volume and contrast between the groups, level 3 was assimilated to low income).

4. Region: Four regions were contrasted for their specific interest and volume of data (Andalusia, Catalonia, Community of Madrid, and the Valencian Community) and the rest of the autonomous communities were grouped in the 'Rest' category.

In relation to the income variable, the children in the sample were asked to rank their families on a scale of 1 to 7 (1 being the lowest income and 7 the highest). Two clarifications must be made. First, this was the income perceived by the respondents. Second, in order to operate with this socio-demographic variable, values 1, 2 and 3 were grouped together in the low-income category; 4 and 5, in the medium income category; and 6-7 in the high-income category. As mentioned above, the questionnaire was carried out with parental supervision to contrast the more difficult to understand answers.

In the course of our research, and whenever we work with children and teenagers, we consider the points listed below.

Talking about children requires that they take centre stage, and in this case, the following points are crucial to achieve a child-centred study:

- Not focusing on how and what parents think about Alpha children.

- Not taking for granted many of the generational labels attributable to this Alpha generation.

- Not focusing research on the use of projective and predictive techniques to understand the future of Alpha children, but rather to understand their present and their daily lives.

- Not assuming that the Alpha generation of children is a homogeneous social group with respect to their beliefs and attitudes.

- Knowing how to look beyond the digital world by assuming other facets, categories and contradictions.

- Overcoming the established adult discourse centred on the social rights (social protection) of children, and therefore bringing out their cultural and civil rights.

The questionnaire was used in the survey protocol and had a total of thirty questions-variables; it was validated and pre-tested with a percentage of the sample. The types of questions in the questionnaire were closed-ended questions, with a Likert scale, and based on the results of the previous qualitative field

work carried out on the surveyed target. Some open questions were also asked. The questionnaire was conducted for 15 minutes.

In September and November 2019, the statistical treatment of the data matrix and the contrasts associated with the research questions and main hypotheses were carried out. Below are the most significant results with regard to the objectives set and associated with the contrast of variables by gender, age, autonomous community and income perceived (Núñez- Gómez and Larrañaga, 2020).

3. Analysis and results
3.1. Availability of devices within the Alpha generation

To find out how Spanish Alpha children use their mobile devices, we analysed the differences in the use of apps and devices considering the following variables on their use: availability of use, preference in the activity of use, place of use, and time of use.

In this point we evaluated the availability of both devices and applications by 7-, 8- and 9-year-olds. This means that we did not take into account whether the child was the personal user of the device or not (owner of the device); it was only considered that they had access to the terminal as well as the use of the apps.

By analysing the existing dependence between the variables, the aim was to observe which of the independent variables (socio-demographic variables) were predictive of the variables on use (response variables) indicated previously, and discriminate significant differences between categories. By way of clarification, we point out that the fact that there was a relationship between variables –since predictor variables affect response variables– should not be interpreted as the existence of a causal relationship (cause and effect) between them.

Figure 1: Devices used and number of devices available (%).
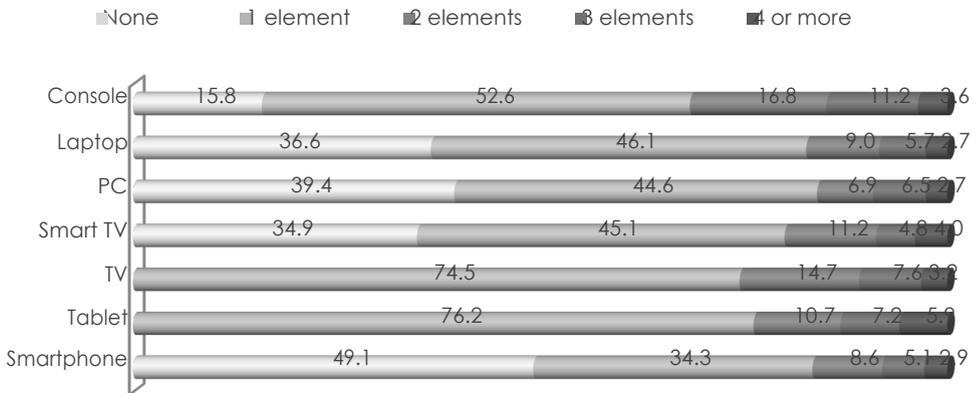
Source: Prepared by the authors on the basis of survey data.

Alpha children have greater access to using tablets than smartphones. While the total number of children in the sample had access to a tablet, only 50.9% of them had access to a smartphone. In addition, the level of income affects the availability of a smartphone. In contrast, the level of income does not significantly affect the availability of a tablet (INE, 2018).

Table 1: Availability of the smartphone according to income (%). Association between variables with an estimated error of 3.2% (χ^2, sig.: 0.032).

Income level	Smartphone availability				
	None elements	1 element	2 elements	3 elements	4
Low	61.1%	36.1%	2.8%	0.0%	0.0%
Medium	48.3%	34.7%	10.4%	2.7%	3.9%
High	48.3%	33.5%	7.4%	8.7%	2.2%
Total	49.1%	34.3%	8.6%	5.1%	2.9%

Source: Prepared by the authors on the basis of survey data.

The 'income' variable did not affect the availability of laptops, but there was a link between income level and desktop computers.

While there was a difference of 16.7 percentage points in PC availability among children from low and high incomes, this difference is reduced to 7.8 points in the case of laptop availability (Núñez-Gómez and Larrañaga, 2020).

Issues to be highlighted include the lower purchase of desktop computers compared to laptops, and the availability of laptops and tablets for school use. In any case, the non-existence of desktop computers in the domestic sphere (affecting low incomes to a greater extent) may be detrimental to their use for school activities. At the same time, it is necessary to take into account not only the availability of devices but also the quality of broadband internet access, both at home and in schools (Lee, 2018).

Although there were, in turn, significant differences with the income level predictor variable in terms of the availability of Smart TV, Figure 1 shows that all the children in our sample had at least a conventional television. Nonetheless, it is considered that this issue does not significantly affect the consumption of television programming. However, more attention will have to be paid to the existence of cable TV at home, or the availability of access to different digital TV streaming platforms.

The gender variable did affect the availability of video game consoles. Among children without consoles, 67.5% were girls. It is important to note how gender roles and the identification of gender patterns begin at an early age. It also affects Alpha children between the ages of 7 and 9. There are differences in the availability of video game consoles and in the way of choosing the theme, as explained in the following point.

3.2. Play, entertainment and devices

If we analyse the degrees of association between the preferential use of the smartphone and tablet among children, we can see the existence of differentiated patterns of preference for use of the devices among the Spanish Alpha generation.

Tables 2 and 3 indicate the order of preference for the use of mobile devices. Therefore, the use of these devices for play differed between boys and girls. A greater percentage difference in the preferential use was observed between smartphones and tablets, probably due to the fact that children of the Alpha generation are greater users of the tablet than the smartphone.

Table 2: Preferential use of the smartphone to play according to gender (%) Association between variables with an estimated error of 0.3% (χ^2, sig.: 0.003%).

Gender	Preferential use of the smartphone: Playing				
	1st choice	2nd choice	3rd choice	4th choice	5th choice
Boy	37.1%	32.1%	11.6%	5.2%	4.1%
Girl	24.4%	29.1%	12.4%	9.7%	7.8%
Total	30.9%	30.7%	12.0%	7.4%	5.9%

Source: Prepared by the authors on the basis of survey data.

Table 3: Preferential use of the tablet to play according to gender (%). Association between variables with an estimated error of =% (χ^2, sig.: 0.00).

Gender	Preferential use of the smartphone: Playing					1st
	choice choice	2nd choice	3rd choice	4th choice	5th	
Boy	39.3%	32.2%	16.1%	5.2%	2.2%	
Girl	21.7%	33.3%	18.2%	8.5%	4.3%	
Total	30.7%	32.8%	17.1%	6.9%	3.2%	

Source: Prepared by the authors on the basis of survey data.

Although the concept of play can be very broad given the different ways in which it is experienced, there is no doubt about the differences in use when children in the sample were asked about the use of specific apps. There was a very preferential choice of boys over girls for the use of the video game "Fortnite". It should be noted that this is the most popular online game among children and teenagers at the moment. In addition, the children in the sample were asked about the use of video games by type according to themes (previously tested in a qualitative way).

Nonetheless, the greatest demand for use of the devices was linked to audiovisual content and games (video games).

The use of the tablet increases with age. In the 3-year interval, this consolidation is notorious. In fact, the tablet was the best toy for 40.2% of the children of the Alpha generation in the study.

The use of the mobile phone to listen to music and take photos and videos on the tablet also increased with age. Perhaps the category "toy" and the category "entertainment" go hand in hand and bring together uses that are becoming the main ones, such as listening to music, or watching or making videos and/or photos.

Similarly, the importance of the use of the smartphone as the main device for communication on social networks increased with age.

Alpha generation boys in our study had a clear preference for car, fighting and sport video games, so there was an intergenerational transfer to Alpha generation boys of values that society perceives as masculine. This is especially true when compared to the type of games preferred by the girls in the sample. In contrast, the girls selected video games linked to the themes of painting, animals, and learning in a significantly preferential way compared to boys. In this case there seems to be an intergenerational transfer of values that are conceived as feminine, but linked to the promotion of creativity, knowledge of the fauna and the ecosystem, and learning.

Thus, it can be stated that:

- There is a transfer of gender role learning at early ages, where two types of identities are differentiated: male and female genders. When analysing the activities valued by the girls in the use of the tablet, it should be noted that Painting was pointed out by 64% of the girls as opposed to 36% of the boys.
- When it comes to doing homework, getting information, and studying, 55.8% of girls compared to 44.2% of boys chose this activity.

3.3. School use and learning

Although there seemed to be a predilection among 7, 8 and 9 year old girls for the use of both devices and apps for studying and learning, it must be said that 30.9% of the children fully agreed that the tablet had a preferential use linked to entertainment. And in the case of the smartphone, although this opinion on preference of use was reduced to 17.3%, the agreement on the preferential type of use was maintained.

The use of mobile devices and apps determine several types of preferential uses by children: entertainment and learning. In the first place, and related to entertainment, there are some preferences of their own linked to their right to play and free time (art. 31 of the Convention on the Rights of the Child), and as such linked to their social participation activities through play. And, secondly, and related to learning, there is the self-interest in access to information (art. 17 of the Convention on the Rights of the Child), but also with an intergenerational debate on how to understand learning in the school curriculum, and in the same way the application of educational methodologies that take into account the use of devices and apps at school. If the tablet is a device that is used or can be used for school activities or with homework, only 12% of the children in the sample indicated a preference for using the tablet for reading. This is especially true when compared to other types of use such as watching videos, playing games, or taking videos or photos.

However, 59.2% of Spanish Alpha children agreed and fully agreed that mobile devices (smartphones and tablets) are useful for learning. This opinion increased with the age of the child.

Also, 49.7% of the children of the Alpha generation in the sample agreed and very much agreed on the need for greater school use of mobile devices, with this demand increasing as the age of the child increased.

Children are not only demanding the pedagogical use of the devices at school but also the usefulness of the tablet and smartphone to learn autonomously or with their peers when their teachers and parents do not teach them what they want to learn.

3.4. *Apps*

Children from high-income families expressed greater acceptance by their parents in the purchase of the requested apps as compared to those from low-income families. In the case of the purchase of smartphone apps (it should be noted that children with higher incomes have a greater availability of this type of device - Table 1), 33% of children with higher incomes agreed and totally agreed with getting a positive answer from their parents when demanding the purchase of apps for their devices, while just 13.9% of children with lower incomes agreed with this statement.

The use of the devices is linked to the range of products and services available for tablets and smartphones. Studying the use of apps requires analysing their availability, the type of apps used, the frequency of use, and the time and place of use.

For this analysis, 6 categories of app usage by children were generated, as follows: Television, Video games, Social networks, Music, Reading, and School.

However, the children in the sample also said that they disagreed with their parents' response to the request to buy apps for the tablet or smartphone. Children from high-income families expressed greater acceptance by their parents in the purchase of the requested apps as compared to those from low-income families. In the case of the purchase of apps for the smartphone (it should be noted that children with higher incomes have a greater availability of this type of device), 33% of children with higher incomes agreed and totally agreed with getting a positive answer from their parents when demanding the purchase of apps for their devices, while just 13.9% of children with lower incomes agreed with this statement (Núñez Gómez and Larrañaga, 2020).

It becomes evident that the type of apps that are least used or available are those linked to social networks, and those that are most used or available are those related to video games.

In comparison between devices (smartphone and tablet), the availability and use of apps increased in the case of the tablet for those that referred to the categories School, Painting/Colouring, Reading, Music, Video games, and Television, while the apps linked to the categories Photos/Videos, and Social Networks showed similar results in both devices. In fact, firstly, the categories related to children's main activities stood out with the use of the corresponding apps, and secondly, the children of the Spanish Alpha generation in our sample used more frequently those apps that have less restriction of use according to their age.

31% of the children in the sample claimed to use social networking communication apps with the tablet. Among these, the most notable was the use or expectation of use –it is assumed that due to their age they should be restricted from using social networks given the Data Protection legislation in Spain– of WhatsApp (not really a social network but an instant messaging service, but it is included in this category given its actual consumption), TikTok, Facebook and Instagram. Services such as Snapchat were relegated to the background.

Listening to music on the tablet was another favourite entertainment of the children surveyed. 59.6% of them said they had music apps on their tablets. They were less devoted to the consumption of apps aimed at reading. The reading apps linked to school activity stood out, and in contrast, the "non-compulsory reading" apps had less impact.

3.5. Context of use

Most of the children in the sample used the smartphone in the company of their parents. If we take into account the places where the children said they used this device the most, these are: the living room of the house, the bedroom, and the car (coinciding with the spaces where the tablet was used the most, although to a lesser degree).

The emerging categories in the analysis carried out point to two main social environments for children: the domestic space (family interaction), and the school and street space (learning and socialisation). Such environments correspond to different demands and actions on the part of the children.

In relation to family interaction: 84.2% of the children agreed and totally agreed (from now on, these two categories will be always referred to in aggregate) with "asking their parents about problems", 79.6% with "playing with their parents and having them supervise", and 58.1% agreed with the statement "valuing time with their parents without using devices". The children in the sample valued the time shared with their parents, from which we can infer the need to maintain this bond strengthened, and the demand for quality in the interaction and time with their parents.

Regarding learning and socialising through devices: 30.4% agreed that "devices help to meet people"; 44.5% agreed with "preferring to play with devices"; 59.2% of the children surveyed agreed that "devices serve to learn"; in addition, 49.7% of the children agreed with "using mobile devices at school" (tablet and smartphone, supposedly for pedagogical and learning purposes). The devices are at the centre of the actions of the Alpha generation children in Spain, in two main social spaces of interaction such as the school and the street, from which a greater demand for immersion in the use of the devices is inferred. This demand stands out in several major actions that are part of children's daily lives: education, play, and socialisation with their friends.

On the other hand, another emerging category on the safe use of devices and apps is noted: 29% of the children surveyed indicated their agreement with the "installation of apps on demand, purchased by their parents"; as mentioned above, for 30.4% "the devices help to meet people"; 20% indicated that "they have ever felt harassed or violent when using the devices"; and 50.5% agreed with "consulting their friends and siblings about their problems". Children demanded safety on devices, as noted above; it is a feature that explains the quality on the tablet and smartphone, according to the Spanish Alpha generation. They knew or claimed to know that they may be harassed or feel violated when using the devices by acknowledging that they may have experienced such situations. However, there was a conflict with their parents in relation to the expectation of use of apps and the demand for their installation, as well as in relation to the restriction of their use perhaps because of the type of apps demanded, and therefore the perceived insecurity of the parents. In any case, most children thought that there were problems (e.g. safety in the use of the devices) that could be solved among peers, whether they were siblings or friends.

4. Discussion

To conclude, we believe that research on the use and consumption habits of smart screens in our socio-cultural environment is an object of study that will be further developed in communication and education research in the coming years. Future lines of research will necessarily lead to analyse other age segments, with larger samples and through comparative analysis of countries and possibly specific population groups. There is an emerging need to develop from the academia and in consensus with the administrations, the main funders of this type of research, the design of an "Observatory of the use and consumption habits of children and adolescents on smart screens", with a different approach to risks and threats, and more participatory.

The present research corresponds to the first wave of a longitudinal study with an annual periodicity, and with the aim of creating a "barometer of the use and consumption habits of children on devices and apps". In this first wave there has been no in-depth analysis of different social groups (children with disabilities, ethnic groups, children of immigrant origin, etc.) given the limited objectives for this first study, although their incorporation will be taken into account in subsequent waves.

By sampling in cities with more than 10,000 inhabitants in Spain, certain regions of Spain with a greater number of settlements with less than 10,000 inhabitants may have been under-represented, while other regions may have been over-represented. This may limit, in a sense, the knowledge about use and consumption, in some cases, of devices and apps by children living in more rural environments. These lines are fields to be explored in further research.

All these practices influence the daily life of the generation studied. These children are not isolated people. Rather, multiple variables and external and internal inputs make and create their use and consumption behaviour; therefore, the online world cannot be studied separately from the offline world and other activities that shape their decisions and education as future citizens. The analysis of parental mediation is also necessary when it comes to influencing the contents and uses (Goodyear, Armour and Wood, 2018; Valcke, Bonte and De Wever, 2010; Yubero, Larrañaga, Navarro and Elche, 2018). This area would require further analysis in this age group.

It is necessary to advance in research designs and methodologies adapted to the new times and designed by age group, respecting their languages and thoughts when measuring and researching.

5. Conclusions

The main objective of this study was to identify the use and consumption habits on mobile devices in children between the ages of 7 and 9. The guidelines set out in the Convention on the Rights of the Child were followed throughout the work (United Nations, 2006).

In the course of the research, it was found that, at this age, the most widely used devices are the

smartphone and the tablet. One of the most important habits detected at this age is aimed at entertainment, with video viewing as one of the main activities. This viewing is done on the tablet (46.3%) with greater preference than on the smartphone (41.1%). In general, as can be seen, at these ages there is a clear preference for the tablet, and children rate it better in terms of user experience, autonomy, and quality.

It is worth noting, in this aspect of use, that, for the most part, use is done in the company of adults. There is an important link established with their parents, for example, to consult them about their problems concerning the use the devices. The children in the sample valued the time shared with their parents, from which we can deduce the need to maintain this bond strong, and the demand for quality in the interaction and time with their parents (EUKidsonline, 2020).

Continuing with this aspect, the expectation of the use of apps and the demand for their installation by the Alpha generation in Spain generates conflicts with their parents, perhaps due to the restriction of their use and therefore the perceived insecurity of the mothers and fathers.

Although children mostly consult and ask their parents about their problems, a majority think that there are problems (e.g. safety in the use of the devices) that can be solved among peers, whether they are siblings or friends. The use of the tablet is consolidated with the gradual increase in age, just as the expectation of the use of the smartphone increases, especially for communication on social networks.

As for the secondary objectives that were linked to the space of use, gender and income, it should be noted that, following the habits, the most common places of use are primarily the domestic space (family interaction), and the school and street space (learning and socialisation). Such environments correspond to different demands and actions on the part of the children.

Family income influences the availability of certain devices. This variable affects the availability in the use of mobile devices (to a lesser extent in the availability of tablets), and the possession of other technological devices such as desktop computers or smart TVs.

In terms of gender, most boys of the Alpha generation prefer video games about cars, fighting and sports, while a majority of girls play video games about painting/colouring, animals or learning. Girls have less availability of video game consoles and play different types of video games than boys.

Therefore, we can say that there is a transference in the learning of the gender role at early ages, and two types of identities are differentiated: male and female gender.

A high percentage of children said they did not have apps on either the smartphone or the tablet. It becomes evident that the type of apps that are least used or available are those linked to social networks (due to age restrictions), and those that are most used or available are those related to video games.

In comparison between devices (smartphone and tablet), the availability and use of apps increases in the case of the tablet for those that refer to the categories School, Painting/Colouring, Reading, Music, Video games, and Television.

Girls and boys of the Spanish Alpha generation use more frequently those apps that have less restriction of use according to their age.

To conclude, we can say that three dimensions can be observed in the analysis of the study data: the safe use of devices and apps, family interaction, and learning and socialisation with devices.

The demand for use by the Alpha children stands out in several major actions that concern children's daily lives: education, play, and socialisation with their friends. They also demand safety in the use of the devices.

6. Acknowledgement

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