VISUAL REVIEW | Vol. 16, No. 3, 2024 | ISSN 2695-9631
International Visual Culture Review / Revista Internacional de Cultura Visual
https://doi.org/10.62161/revvisual.v17.5232

THE IMPACT OF MOBILE PHONE OWNERSHIP ON EXPOSURE AND ATTITUDE TOWARD ADVERTISING AMONG CHILDREN

BEATRIZ FEIJOO [1], ERIKA FERNÁNDEZ-GÓMEZ [1], PATRICIA NÚÑEZ-GÓMEZ [2]
[1] Universidad Internacional de La Rioja (UNIR), España
[2] Universidad Complutense de Madrid (UCM), España

KEYWORDS

Advertising
Mobile phone
Children
Ownership
Exposure
Attitude

ABSTRACT

This study examines the impact of mobile phone ownership on the exposure and attitude towards advertising that children receive through this device. This is a variable that has been little addressed, although it is relevant for the personalisation of mobile advertisements. A total of 1070 online surveys were conducted among children between 10- and 14-years old living in Spain. The results indicated that mobile ownership introduces significant differences in exposure to advertising on Instagram, Spotify, TikTok and Twitch. With regard to attitude, no statistically significant differences were observed between owners and non-owners. In both cases, the preferred predisposition was to ignore advertising messages.

Received: 28 / 03 / 2024
Accepted: 15 / 04 / 2024

1. Introduction

Children have access to mobile phones from an early age, through which they consume a variety of content on social networks, play video games, watch series or films, listen to music and are also exposed to advertising (Feijoo et al., 2024). Furthermore, although children do not have their own mobile phone, they can use their parents' or siblings' mobile phones.

This article examines the differences in children's exposure to and attitudes towards advertising depending on whether or not they have their own mobile phone. The article then presents the relationship between children's use and ownership of mobile phones, as well as the implications of exposure to advertising content. This approach has so far been little addressed in the scientific literature on mobile marketing (Jebarajakirthy et al., 2021; Maseeh et al., 2021; Taken-Smith, 2022).

1.1. Mobile Phone Ownership and Minors

Extensive studies have been conducted on the use of mobile phones by children (Smahel et al., 2020). Other recent research has focused on the penetration of mobile devices at early ages, employing interdisciplinary techniques to investigate the use of these devices (Crescenzi-Lanna et al., 2019).

The EU Kids Online 2020 study, conducted in 19 European countries, found that the majority of 9–16-year-olds use smartphones daily or almost all the time (Smahel et al. 2020). The age of first access varies slightly between countries but is increasingly earlier. For instance, in Spain, the age of first access is 10.96 years old (Andrade et al., 2021), while in Chile, it is already 8-9 years old (Global Kids Online, 2023).

In Spain, according to the National Institute of Statistics, 70.6% of children aged 10-15 have their own mobile device (INE, 2023). In the United States, studies indicate that up to three-quarters of four-year-olds own their own mobile device (Kabali et al., 2015). These devices are typically given to children by their parents when they are engaged in household chores, to keep them quiet and at bedtime. Most three- and four-year-olds use these devices independently. The most popular content delivery apps among this age group are YouTube and Netflix.

Conversely, the mobile phone, which was originally conceived as a means of communication, has become another screen for the consumption of leisure and entertainment available to minors. In Spain, the four most common uses are related to relational or recreational purposes. Indeed, the mobile phone is, ahead of the console, the main device used by teenagers to play video games. The fifth use they make of this device is related to school homework (Andrade et al., 2021). In the case of children, who are at a critical stage of their development, research on mobile phone exposure is in its infancy (Booton et al., 2023). In Europe, several countries have banned the use of mobile phones in classrooms to avoid distractions, which demonstrates the pervasive influence of this screen. In Spain, 59.1% of adolescents between the ages of 11 and 18 report bringing their mobile phones to school (Andrade et al., 2021). Italy, the Netherlands, and France have been at the forefront of implementing policies to prohibit mobile phones in classrooms. In Spain, it has been the Autonomous Communities that have adopted the measure of banning mobile phones in secondary education.

In this context, the role of media and advertising literacy is crucial, as restrictions and prohibitions do not allow young people to understand the risks involved and may result in them suffering greater harm when they finally start to use the device (Helsper & Smahel, 2020). Consequently, in digital literacy studies, a higher intensity of use is regarded as a positive indicator, as it indicates digital embeddedness and confidence in taking advantage of the opportunities offered by this technology. As Haddon et al. (2020) and Cabello et al. (2021) have observed, the only way to gain proficiency in the use of digital tools is to engage with them.

In the context of advertising, advertising literacy programmes in schools aim to develop children's persuasive knowledge about the purpose and process of advertising (Hudders et al., 2017). The rationale behind this is that increasing their understanding of advertising is seen as providing critical thinking and coping skills and mechanisms (Nelson, 2016).

Similarly, there is debate about the age at which they could use them correctly. Health experts have suggested that 16 years of age is the optimal age for adolescents to be prepared for this responsibility (UNIR Revista, 2024). It is evident that whether or not they have their mobile phone or use it is limited by age, as is the case with social networks. Minors access this screen and are exposed to different types

of content. This is exemplified by Instagram and YouTube, which, although they impose a minimum age of 13 for access, children gain early access through family profiles (Fernández-Gómez et al., 2021).

In Spain, for instance, the *Annual Social Media Study*, conducted by IAB Spain and Elogia (2023), which serves as a benchmark for the advertising industry, has evolved from examining the utilisation of social media by individuals over the age of 18 to incorporating the Alpha generation, comprising children between the ages of 12 and 17.

Children represent a significant proportion of the population and are therefore an important demographic in the purchasing decision process in many categories, including travel, food, toys, technology, and fashion (Núñez-Gómez et al., 2020). It is therefore unsurprising that their use of social media is of interest to the advertising industry.

In Spain, this is the generation that most follows influencers (82%), with the majority of engagement occurring on Instagram, TikTok, and YouTube. Furthermore, 52% of respondents indicated that they search for information on social media before making a purchase, while 43% admitted that social media has influenced their purchasing decisions. The five most frequently used social media platforms among this audience are WhatsApp (94%), Instagram (84%), TikTok (79%), YouTube (65%), and Spotify (57%). Twitch is in tenth place (18%).

Mobile devices occupy a central position in the lives of children, serving as the primary means of engagement in two key social spaces: the school and the street. In these settings, there is a heightened demand for immersion in the use of mobile devices. This demand is evident in a number of key activities that occupy children's daily lives, including education, play, and socialising with friends (Núñez-Gómez et al., 2020).

It is therefore necessary to construct systems for measuring, monitoring and periodically evaluating the use and consumption habits of mobile devices by minors. It is necessary to gain social knowledge on the use and consumption of smart screens. This should include knowledge, measurement and evaluation of the use and consumption habits of the different providers of products and services, whether private or public. Finally, it is important to detect the socio-cultural changes that are occurring in a target audience of digital consumers and with consumption patterns more located in multi-platform devices. This should be done using the work of Núñez-Gómez et al., (2021); Fitzpatrick et al. (2024) and Pedrosa et al. (2024).

1.2. Advertising and Minors

Advertising is an integral aspect of modern life, exerting a profound influence on consumer behaviour and the way individuals perceive themselves and their surroundings. It shapes the emotions and actions of consumers in a multitude of contexts. This potential for influence is particularly pronounced during childhood, and when the advertised product is placed in a social setting through audiovisual means, with an implicit emotional meaning that is difficult to detect, thus disseminating plans of action that may represent a threat to autonomous behaviour (Del Río, 1986; Núñez-Gómez, 2009). This is why, as recognised by UNESCO (2011), advertising literacy (a basic component of media literacy) is a necessary condition for exercising the right to freedom in today's world.

Previous studies have shown that understanding of advertising evolves in parallel with general social knowledge. It is established that from the age of eight most children know how to distinguish it from other content and identify that it wants us to buy what is advertised (Kunkel et al., 2004). Nevertheless, the capacity to comprehend its persuasive techniques is not fully developed until the age of 14 or even later, particularly in relation to more abstract and subtle aspects (Rozendaal et al., 2011).

Childhood is a period of active identity construction (Davies et al., 2000). This capacity may be attained at a relatively advanced level from the age of 10 years onwards, necessitating processes of social comparison and moral questioning of situations. In this regard, the peer group exerts a significant influence (Falcón et al., 2016).

Children are exposed to the same advertising and messages as adults, and this advertising and messages about consumption have an impact on the criteria for consumption and the evaluation of the characteristics of the products and services on the market. In Spain, for example, the report *The Use of Mobile Devices and Apps by Children in Spain Post-Confinement*, confirms the importance of technological brands for this audience (Núñez-Gómez et al., 2020). The aforementioned report also indicates that advertising has an impact on the recognition of advertisements and brands that are advertised on

mobile devices. The surveyed children demonstrated a high level of recognition for both brands and advertisements. Furthermore, the quality of the devices was explained to a greater extent for children by the feeling of security and by the experience of use and autonomy.

1.3. Personalised Advertising Based on User Experience

The field of mobile advertising is approached from two distinct perspectives (Martínez & Aguado, 2014). The first perspective considers these devices as conventional media that reproduce traditional formats, such as a pre-roll-on YouTube, a banner on a website, or an ad on social networks. The second perspective understands the specific technological characteristics of mobile devices, including location, interactivity, and social connectivity, which make them suitable for exploring innovative formats, such as proximity-based advertising, messaging, or content through apps.

Mobile advertising expenditure is increasing at a steady rate and accounts for a significant proportion of the total global advertising expenditure (Statista, 2023). By the end of 2024, mobile advertising expenditure is expected to reach approximately USD 400 billion, equivalent to approximately half of the total digital advertising expenditure.

Although the active presence of children on mobile devices has been acknowledged by companies and advertisers, studies on the relationship between minors and mobile advertising are limited (Jebarajakirthy et al., 2021; Maseeh et al., 2021; Taken-Smith, 2022). However, they are the most common mobile device users and the most likely to view mobile advertising (Gao & Zang, 2016).

The personal nature of mobile access devices (Núñez-Gómez et al., 2020) and content consumption routines have encouraged brands to explore this medium. The availability of user data in the digital environment allows app and website developers to monetise their platforms by providing targeted information to potential advertisers (Feijoo & Sábada, 2022). This is achieved through programmatic advertising, which enables brands to target product and service information to very specific audiences. Nevertheless, the fact that companies have access to children's data raises ethical concerns about the use of this information on a particularly vulnerable audience.

It is pertinent to inquire as to whether children's perceptions of and attitudes towards advertising differ from those of adults (Kirk et al., 2015). A significant and positive association has been observed between attitude towards receiving mobile ads and customers' intention to receive mobile ads (Maseeh et al., 2021). In the context of this study, attitude is defined as the user's willingness to respond favourably or unfavourably to an advertisement (Izquierdo-Yusta et al., 2015). Factors such as personalisation, entertainment and credibility are positively associated with customer attitude towards receiving mobile ads, while irritation is negatively associated with it (Jebarajakirthy et al., 2021; Maseeh et al., 2021).

The most frequent reaction to mobile advertising among young people is indifference. The channels they trust the most to receive advertising on mobile devices coincide with the apps they use the most: they trust more the commercial messages they receive through the platforms they use the most (Feijoo & Sádaba, 2021).

In the analysis of how children relate to screens and mobile devices, it has always been crucial to consider the level of technological equipment available. The possession of a variety of technological devices is often associated with advantages in the development of digital skills for children (Mascheroni & Ólafsson, 2015; Cabello et al., 2021). Similarly, the frequency of use, diversity of devices and forms of access within the household also influence this (Haddon et al., 2020). It is becoming increasingly common for European children to obtain their first internet-enabled mobile phone at an earlier age, whether as a gift, prize or inheritance from other family members (Mascheroni & Ólafsson, 2014). The XII Barometer of Families in Spain (The Family Watch, 2023) indicates that approximately 20% of Spanish children under the age of 10 already possess their own mobile phone, with this figure rising to 25% by the age of 12.

In the context of advertising targeted to children via mobile devices, it is of interest to consider device ownership as a key variable. When minors do not have their own mobile phone, they often rely on adult devices in the household (mainly their mother's), which exposes them to advertising that is not specifically targeted to them due to targeting based on browsing routines and user profile, which is often used to personalise web advertisements.

Previous research (Núñez-Gómez et al., 2020) has demonstrated that mobile device ownership is a significant factor in the child-screen relationship. Children who own their own devices tend to engage in a more diverse range of activities, while those who use their parents' devices tend to engage in more limited activities, focusing mainly on YouTube browsing and gaming. The fact that children use their parents' devices may restrict their digital exploration, but it also exposes them to a greater amount of advertising than those who have their own mobile, especially in games and advertisements for brands and products that are not of interest to them. Furthermore, in terms of interaction with mobile advertising, children accessing from adult devices tend to click more frequently than those who are more autonomous and prefer visual interaction (Feijoo & Sábada, 2022).

In addition to the issue of minors' exposure to mobile advertising, it is also important to consider their attitude towards advertising and how this is influenced by whether or not they own the device. It is commonly assumed that personalisation of mobile messages is associated with the user's browsing routines.

1.4. Objectives and Methodology

The objective of this research is to ascertain the impact of mobile phone ownership on the exposure and attitude towards advertising that minors receive on this screen. This is a variable that has not been addressed to date, although it is relevant for the targeting and personalisation of mobile advertisements.

The following research questions were formulated in response to the stated objective:

RQ 1: Are there significant differences in exposure to advertising across different mobile phone platforms depending on whether the child owns the device or not?

RQ 2: Are there significant differences in children's attitudes towards mobile advertising depending on whether they own the device or not?

2. Methodology

A total of 1,070 individuals aged 10-14 years residing in Spain participated in self-administered online surveys. The confidence interval was set at 95% with a margin of error of +/-3%. The sampling procedure was multistage, stratified with proportional allocation, using as the first stratum four geographical areas aggregated ad hoc (following the classification of NUT areas used by the EU) and a second level of stratification according to the socioeconomic level of the families (low, medium and high). The final selection of the individuals to be surveyed was made according to cross quotas of sex and age, and the fieldwork took place between April and June 2022.

Table 1 summarises the characterisation of the sample:

Table 1. Sample characterisation.

	MINORS (N=1070)
Age	10 -12 years: 58.2% (623) 13-14 years: 41.8% (447)
Gender	Boys: 51.9% (555) Girls: 48.1% (515)
Socio-economic group	Low: 30.9% (331) Medium: 50.3% (538) High: 18.8% (201)

Source(s): Own elaboration.

The novelty of this study lies in its focus on the use of mobile phones as an advertising medium, a topic that has not been previously explored in Spain. Instead, previous studies have compared mobile phones with more traditional media, such as television, which are more familiar to children.

The variables used in this study are as follows:

- The frequency of exposure to advertising through different platforms of recurrent use on the mobile phone among minors (WhatsApp, Instagram, Spotify, TikTok, YouTube, games, Twitch, Netflix). This was determined by asking the question "How often do you receive advertising through the following platforms?" and then asking respondents to indicate their response on a 6-point Likert scale: (1) I do not use this platform; (2) I have never received advertising on this platform; (3) Infrequently; (4) Somewhat frequently; (5) Frequently; (6) Very frequently.
- The attitude towards mobile advertising was gauged through a questionnaire that posed the following question: "What do you usually do when you receive advertising on your mobile?" The respondents were afforded the option of selecting a single response from a list of options formulated from highest to lowest interaction (Feijoo & Sádaba, 2021). (1) I ignore it completely; (2) I close or block it; (3) I pay attention to it; (4) I pay attention to it and click on the ad.
- Device ownership: nominal variable designed with three response categories: (1) The child him/herself; (2) Parents; (3) Others.

The statistical analysis was conducted using the SPSS software package version 25.0. As the distribution of the variables was not normal for the Kolmogorov-Smirnov normality test ($p < 0.05$), bivariate analyses were performed using the non-parametric Kruskal-Wallis test to analyse the relationship between mobile phone ownership and exposure and attitude towards mobile phone advertising.

In order to safeguard the integrity of the study participants and the researchers, authorisation was requested from the child's guardian to collect the information by signing an informed consent form, which had previously been validated by the Ethics Committee of the university to which this research is attached (Universidad Internacional de La Rioja). This committee also reviewed and approved the methodological design of the project.

3. Results

3.1. Exposure to Mobile Advertising and Phone Ownership

The Kruskal-Wallis test of association indicates that mobile phone ownership is associated with significant differences in exposure to advertising on the Instagram, Spotify, TikTok and Twitch platforms. As Table 2 shows, Instagram is a more frequently used application among users who own their own mobile phone, although it is important to note that it is one of the least used applications among this type of public, along with Spotify and Twitch. Among those who do use Instagram, they are most likely to see advertising frequently or very frequently, and to a greater extent among children who own their own device.

As for Spotify, it appears from the statistics observed that users opt for the free subscription with advertising (in contrast to Netflix where they reported less frequent advertising). As with Instagram, children with their own mobile phone perceive greater exposure to advertising than those accessing via their adult's device, but to a lesser extent than on Instagram.

TikTok displays a higher frequency of exposure to advertising inputs than Instagram, and this is particularly evident among children with their own phone. Twitch has a more anecdotal percentage of use compared to the other apps (almost 69% of the sample does not use it), and the perception of greater frequency of exposure is again found among children with their own mobile phone, although to a lesser extent than in the other apps studied.

Table 2. Frequency of exposure to targeted advertising according to device ownership

Frequency of exposure to advertising by platform		Phone ownership			Total
		The child	Parents	Other	
I do not use this platform	WhatsApp (N=93)	4,9%	13,4%	0,0%	8,7%
	Instagram* (N=457)	37,0%	49,2%	100,0%	42,7%
	Spotify* (N=490)	41,4%	51,0%	60,0%	45,8%
	TikTok* (N=281)	20,8%	32,8%	40,0%	26,3%
	YouTube (N=62)	3,9%	8,2%	0,0%	5,8%
	Games (N=95)	9,0%	8,8%	0,0%	8,9%
	Twitch* (N=737)	65,9%	72,4%	80,0%	68,9%
	Netflix (N=259)	22,8%	25,7%	40,0%	24,2%
I have never received advertising on this platform	WhatsApp (N=490)	49,9%	40,8%	40,0%	45,8%
	Instagram* (N=15)	1,5%	1,3%	0,0%	1,4%
	Spotify* (N=36)	3,6%	3,1%	0,0%	3,4%
	TikTok* (N=25)	2,7%	1,9%	0,0%	2,3%
	YouTube (N=15)	1,0%	1,9%	0,0%	1,4%
	Games (N=35)	3,4%	2,9%	20,0%	3,3%
	Twitch* (N=31)	2,7%	3,1%	0,0%	2,9%
	Netflix (N=225)	21,3%	20,7%	20,0%	21,0%
Infrequent	WhatsApp (N=197)	17,5%	19,2%	40,0%	18,4%
	Instagram* (N=83)	7,2%	8,6%	0,0%	7,8%
	Spotify* (N=103)	8,2%	11,3%	20,0%	9,6%
	TikTok* (N=102)	8,9%	10,3%	20,0%	9,5%
	YouTube (N=64)	5,5%	6,7%	0,0%	6,0%
	Games (N=134)	12,1%	13,0%	20,0%	12,5%
	Twitch* (N=66)	7,0%	5,2%	0,0%	6,2%
	Netflix (N=204)	18,7%	19,7%	0,0%	19,1%
Somewhat frequently	WhatsApp (N=101)	8,3%	10,9%	0,0%	9,4%
	Instagram* (N=203)	21,0%	16,7%	0,0%	19,0%
	Spotify* (N=163)	16,7%	13,6%	0,0%	15,2%
	TikTok* (N=203)	20,8%	16,7%	20,0%	19,0%
	YouTube (N=225)	20,4%	21,8%	20,0%	21,0%
	Games (N=273)	25,4%	25,7%	20,0%	25,5%
	Twitch* (N=115)	10,1%	11,5%	20,0%	10,7%
	Netflix (N=182)	17,0%	16,9%	20,0%	17,0%
Frequently	WhatsApp (N=90)	9,5%	6,9%	20,0%	8,4%
	Instagram* (N=191)	20,3%	15,1%	0,0%	17,9%
	Spotify* (N=168)	17,7%	13,2%	20,0%	15,7%
	TikTok* (N=268)	27,4%	22,4%	0,0%	25,0%
	YouTube (N=374)	37,6%	31,6%	40,0%	35,0%
	Games (N=315)	29,8%	28,9%	40,0%	29,4%
	Twitch* (N=80)	9,5%	5,0%	0,0%	7,5%
	Netflix (N=125)	12,8%	10,3%	20,0%	11,7%
Very often	WhatsApp (N=99)	9,7%	8,8%	0,0%	9,3%
	Instagram* (N=121)	13,1%	9,2%	0,0%	11,3%
	Spotify* (N=110)	12,4%	7,7%	0,0%	10,3%
	TikTok* (N=191)	19,4%	15,9%	20,0%	17,9%
	YouTube (N=330)	31,5%	29,9%	40,0%	30,8%
	Games (N=218)	20,3%	20,7%	0,0%	20,4%
	Twitch* (N=41)	4,8%	2,7%	0,0%	3,8%
	Netflix (N=75)	7,3%	6,7%	0,0%	7,0%

* Significant difference (p<.05) between variables (EXPOSURE and PROPERTY) for the Kruskal-Wallis test.

Source(s): Own elaboration.

It is of interest to observe the frequency of advertising consumption on YouTube and games. Both have the highest percentages of exposure to commercial messages (more than 50%) in both user profiles (device owners and non-owners), indicating that there are no significant differences between the two samples.

3.2. Attitudes Towards Mobile Advertising and Phone Ownership

With regard to the attitude expressed towards the advertising they receive via mobile phones, the Kruskal-Wallis test did not show statistically significant differences between the children who own and those who do not own the screen (Table 3). The preferred predisposition in both cases is to ignore advertising messages, which is the choice of half of the respondents, with a slightly higher percentage among owners. However, minors who access it via their adult's mobile phone expressed a greater intention to close or block it than minors who own a phone. For the options that involve more interaction (paying attention and clicking on the ad), the percentage of responses was practically the same between owners and non-owners, with hardly any differentiating nuances.

Table 3. Attitude towards mobile advertising segmented by device ownership.

Attitude towards mobile advertising	Phone ownership			Total
	The child	Parents	Other	
Ignore it completely (N=565)	54,3%	50,6%	80,0%	52,8%
I close it / block it (N=309)	27,6%	30,5%	20,0%	28,9%
I pay attention (N=177)	16,4%	16,9%	0,0%	16,5%
I pay attention and click on the ad (N=19)	1,7%	1,9%	0,0%	1,8%

Source(s): Own elaboration.

4. Discussion and Conclusions

This study highlights the impact of mobile phone ownership on the exposure and attitude towards advertising that children receive through this device, a variable that has been little addressed until now, although it is significant for the personalisation of mobile advertisements. Indeed, mobile phone ownership plays a special role in the study of advertising received through a device whose ads are targeted mainly by the user's browsing routine. Personalisation is one of the most highly valued variables of mobile advertising (Maseeh et al., 2021), which has a positive influence on the attitude towards it. Phone ownership plays a pivotal role in the ability to deliver commercial messages in accordance with the interests of the primary user. However, the results of this research indicate that both user profiles, those who have their own mobile phone and receive advertising that aligns with their browsing routines and tastes, and those who access content from their parents' mobile phones, primarily exhibit an indifferent attitude towards commercial messages.

It is crucial to examine the underlying reasons behind the indifference displayed by both profiles towards the advertising they receive on mobile devices. It appears that the mere availability of commercial messages related to browsing routines is insufficient to capture the attention of young users (RQ2). This line of enquiry should be further analysed to ascertain whether the level of advertising saturation that minors receive via mobile phones (Núñez-Gómez et al., 2020), could be the cause of the lack of effectiveness of personalised messages.

However, the ownership of a mobile phone does introduce significant differences in the frequency of exposure to advertising (RQ1). Children who own their devices report receiving more commercial messages on the social networks Instagram and TikTok and on Spotify. This may be related to the fact that children with their own mobile phone tend to be more impacted by advertising in more personal and individual use spaces such as social networks. The fact that Spotify is highlighted as an advertising container suggests that minors use the free account. Although there were no significant differences, it is relevant to highlight that children who do not own mobile phones tend to perceive more advertising impact from YouTube and games, which are more oriented towards general entertainment.

In light of these considerations, it becomes necessary to reflect on whether minors who do not possess their own mobile phone have the requisite skills to discern the commercial intent of messages that frequently combine organic and persuasive content, a phenomenon observed on the platforms most frequently utilized by this demographic – YouTube and game apps (Hudders et al., 2017; Rozendaal et al., 2011). In the study of younger users' relationship with screens and mobile devices, the level of technological equipment has consistently been a significant factor. The possession of more technologies also confers an advantage in the acquisition of digital skills for children (Cabello et al., 2021), as well as greater frequency of use, variety of devices and forms of access within the household (Haddon et al., 2020). Consequently, the lack of mobile phone ownership may result in a lack of experience and skill in handling such devices, which in turn may lead to a reduced ability to recognise the advertising intent of more hybrid formats. This hypothesis requires further investigation.

The results of this research are of significant value to advertising and marketing professionals, as they demonstrate that children who own mobile phones exhibit significant differences in the frequency of exposure to advertising, but not in their attitude towards the advertising received. Consequently, children who possess their own mobile phone and who are exposed to advertising in accordance with their browsing habits, shopping preferences and even their geographical location do not exhibit an open predisposition towards commercial messages. It can be observed that consumers tend to have negative attitudes towards mobile advertising unless they have given specific consent to receive it. There is a direct relationship between consumer attitudes and behaviour towards mobile advertising, which highlights the importance of permission-based advertising (Tsang et al., 2004; Strycharz & Segijn, 2024). Therefore, it is crucial to gain the consent of users, especially younger audiences, in order to enhance interaction with mobile advertising and to do so in an ethical and respectful manner. Factors such as entertainment and information value are key determinants for the acceptance of mobile phones as an innovative medium for the communication of advertising content. The development of mobile advertising will depend on acceptance and usability to ensure permission-based advertising. Concerns about protecting users' privacy have progressively emerged in recent years (Ditrendia, 2022), as mobile advertising can become extremely intrusive practices in an intimate personal space.

This research has a number of limitations that should be borne in mind. Firstly, the results are based on the respondents' own statements, which were gathered using a methodology that may have influenced the data. For instance, the level of advertising exposure may be influenced by the perception of saturation that children have in terms of the commercial messages they receive on their mobile phones. Finally, this research also fails to differentiate between children's attitudes towards push and pull advertising, a distinction that should be taken into account in future studies.

5. Acknowledgements

This research is part of project “La alfabetización publicitaria ante el teléfono móvil. Análisis de la capacidad del público infantil para enfrentarse a los contenidos persuasivos” con referencia PID2020-116841RA-I00 financiado por MICIU/AEI/10.13039/501100011033.

References

Andrade, B., Guadix, I., Rial, A., & Suárez, F. (2021). *Impacto de la tecnología en la adolescencia. Relaciones, riesgos y oportunidades*. Madrid: UNICEF España. https://acortar.link/feLgSV

Booton, S.A., Hodgkiss, A., & Murphy, V. A., (2023). The impact of mobile application features on children's language and literacy learning: a systematic review. *Computer Assisted Language Learning, 36*(3), 400-429. https://doi.org/10.1080/09588221.2021.1930057

Cabello, P., Claro, M., Rojas, R., & Trucco, D. (2021). Children's and adolescents' digital access in Chile: The role of digital access modalities in digital uses and skills. *Journal of Children and Media, 15*(2), 183-201. https://doi.org/10.1080/17482798.2020.1744176

Crescenzi-Lanna, L., Valente, R., & Suárez-Gómez, R. (2019). Safe and inclusive educational apps: Digital protection from an ethical and critical perspective. *Comunicar, 61*, 93-102. https://doi.org/10.3916/C61-2019-08

Davies, H., Buckingham, D., & Kelley, P. (2000). In the worst possible taste: Children, television and cultural value. *European Journal of Cultural Studies, 3*(1), 5–25. https://doi.org/10.1177/a010860

Del Río, P. (1986). Publicidad y consumo: hacia un modelo educativo. *Infancia y Aprendizaje, 9*, 139–173. https://doi.org/10.1080/02103702.1986.10822135

Ditrendia (2022). *Informe Mobile España y el mundo 2022*. https://acortar.link/NSvDtC

Falcón, L., Díaz-Aguado, M. J., & Núñez, P. (2016). Advertising and Sexism with focus groups of preadolescents. *Journal for the Study of Education and Development, 39*(2), 244-274. https://doi.org/10.1080/02103702.2015.1133089

Feijoo, B., Fernández-Gómez, E., & Segarra-Saavedra, J. (2024). Exposición de menores a la publicidad móvil. *Cuadernos Del Audiovisual* | CAA, (11), 129–142. https://doi.org/10.62269/cavcaa.1

Feijoo, B. y Sádaba, C. (2022). Publicidad a medida. Impacto de las variables sociodemográficas en los contenidos comerciales que los menores reciben en el móvil. *index.comunicación*, 12(2), 227-250. https://doi.org/10.33732/ixc/12/02Public

Feijoo, B., & Sádaba, C. (2021). Is my kid that naive? Parents' perceptions of their children's attitudes towards advertising on smartphones in Chile. *Journal of Children and Media*, 15(4), 476–491. https://doi.org/10.1080/17482798.2020.1866626

Fernández-Gómez E., Caluori Funes R., Miguel San Emeterio B. & Feijoo-Fernández B. (2021). El uso de Instagram por niños youtubers: gestión de la marca personal, autopromoción y contenidos publicitarios. *Estudios sobre el Mensaje Periodístico*, 27(4), 1089-1102. https://doi.org/10.5209/esmp.75754

Fitzpatrick, C., Johnson, A., Laurent, A., Bégin, M., & Harvey, E. (2024). Do parent media habits contribute to child global development?. *Frontiers in Psychology*, 14, 1279893. *https://doi.org/10.3389/fpsyg.2023.1279893*

IAB Spain y Elogia (2023). *Estudio de Redes Sociales 2023*. https://acortar.link/k0kSrr

Gao, S., & Zang, Z. (2016). An empirical examination of users' adoption of mobile advertising in China. *Information development, 32*(2), 203–215. https://doi.org/10.1177/0266666914550113

Global Kids Online (9th March 2023). *New findings from Kids Online Chile*. https://acortar.link/VViq6l

Haddon, L., Cino, D., Doyle, M., Livingstone, S., Mascheroni G., & Stoilova, M. (2020). *Children's and young people's digital skills: a systematic evidence review*. (Versión 2). KU Leuven, Leuven: ySKILLS. http://doi.org/10.5281/zenodo.4274654

Helsper, E. J., & Smahel, D. (2020). Excessive internet use by young Europeans: psychological vulnerability and digital literacy?, *Information, Communication & Society, 23*(9), 1255-1273. https://doi.org/10.1080/1369118X.2018.1563203

Hudders, L., De Pauw, P., Cauberghe, V., Panic, K., Zarouali, B., & Rozendaal, E. (2017). Shedding new light on how advertising literacy can affect children's processing of embedded advertising formats: a future research agenda. *Journal of Advertising, 46*(2), 333-349. https://doi.org/10.1080/00913367.2016.1269303

Instituto Nacional de Estadística, INE (2023) *Encuesta sobre Equipamiento y Uso de Tecnologías de Información y Comunicación en los Hogares Año 2023*. https://acortar.link/MPvXtU

Izquierdo-Yusta, A., Olarte-Pascual, C., & Reinares-Lara, E. (2015). Attitudes toward mobile advertising among users versus non-users of the mobile Internet. *Telematics and Informatics, 32*(2), 355-366. https://doi.org/10.1016/j.tele.2014.10.001

Jebarajakirthy, C., Maseeh, H. I., Morshed, Z., Shankar, A., Arli, D., & Pentecost, R. (2021). Mobile Advertising: A systematic literature review and future research agenda. *International Journal of Consumer Studies,* 1–34. https://doi.org/10.1111/ijcs.12728

Kabali, H. K., Irigoyen, M. M., Nunez-Davis, R., Budacki, J. G., Mohanty, S. H., Leister, K. P., & Bonner, R. L. (2015). Exposure and use of mobile media devices by young children. *Pediatrics, 136* (6), 1044–1050. https://doi.org/10.1542/peds.2015-2151

Kirk, C. P., Chiagouris, L., Lala, V., & Thomas, J. D. (2015). How do digital natives and digital immigrants respond differently to interactivity online?: A Model for Predicting Consumer Attitudes and Intentions to Use Digital Information Products. *Journal of Advertising Research, 55*(1), 81-94. https://doi.org/10.2501/JAR-55-1-081-094

Kunkel, D., Wilcox, B. L., Cantor, J., Palmer, E., Linn, S., & Dowrick, P. (2004). *Report of the APA Task Force on advertising and children*. Washington, DC: American Psychological Association.

Martínez, I., & Aguado, J. M. (2014). Publicidad móvil: impacto presente y futuro en el ecosistema del contenido digital. En: Fernández-Astobiza, I (coord.) *Espacios de comunicación: IV Congreso Internacional de la Asociación Española de Investigación en Comunicación*. Bilbao: AE-IC, pp. 487-499

Mascheroni, G., & Ólafsson, K. (2014). *Net Children Go Mobile: risks and opportunities* (2nd ed.). Milano: Educatt. https://acortar.link/CrGcd8

Mascheroni, G. & Ólafsson, K. (2015) The mobile internet: access, use, opportunities and divides among European children. *New Media and Society, 18*(8), 1657-1679. https://doi.org/10.1177/1461444814567986

Maseeh, H. I., Jebarajakirthy, C., Pentecost, R., Ashaduzzaman, M., Arli, D., & Weaven, S. (2021). A meta-analytic review of mobile advertising research. *Journal of Business Research, 136*, 33-51. https://doi.org/10.1016/j.jbusres.2021.06.022

Nelson, M. R. (2016). Developing Persuasion Knowledge by Teaching Advertising Literacy in Primary School. *Journal of Advertising, 45*(2), 169-182. https://doi.org/10.1080/00913367.2015.1107871

Núñez-Gómez,P., Sánchez-Herrera,J. & Pintado-Blanco, O,T.(2020). Children's Engagement with Brands: From Social Media Consumption to Brand Preference and Loyalty. *Sustainability*, 12(22), 9337. https://doi.org/10.3390/su12229337

Nuñez-Gómez, P, Larrañaga, K& Mongui, M (2021). *El consumo y el uso de dispositivos móviles y Apps por los niños y las niñas de la generación Alpha en España*. https://n9.cl/rt3g8

Núñez, P. (2009). El proceso de socialización del niño a través de la publicidad televisiva. Madrid: Cersa

Pedrosa, R. K. B., Soares, A. R., Reichert, G. P., Andrade, F. B. D., & Reichert, A. P. D. S. (2024). Benchmarking of apps for mobile devices targeted at children's health. *Texto & Contexto-Enfermagem, 32*, e20230204.

Rozendaal, E., Lapierre, M., van Reijmersdal, E., & Buijzen, M. (2011). Reconsidering advertising literacy as a defense against advertising effects. *Media Psychology, 14*, 333–354. https://doi.org/10.1080/15213269.2011.620540

Smahel, D., Machackova, H., Mascheroni, G., Dedkova, L., Staksrud, E., Ólafsson, K., Livingstone, S., & Hasebrink, U. (2020). *EU Kids Online 2020: Survey results from 19 countries*. EU Kids Online. https://doi.org/10.21953/lse.47fdeqj01ofo

Statista (2023). *Annual evolution of global mobile advertising spending between 2007 and 2024*. https://acortar.link/XrdwUz

Strycharz, J., & Segijn, C. M. (2024). Ethical side-effect of dataveillance in advertising: Impact of data collection, trust, privacy concerns and regulatory differences on chilling effects. *Journal of Business Research*, 173, 114490. https://doi.org/10.1016/j.jbusres.2023.114490

Taken-Smith, K. (2022). Mobile Advertising to Hispanic Digital Natives. *Journal of International Consumer Marketing, 34*(1), 1-10. https://doi.org/10.1080/08961530.2021.1911014

The Family Watch (2023). *XII Barómetro de las Familias en España* [XII Barometer of Families in Spain]. https://acortar.link/obspG3

Tsang, M. M., Ho, S. C., & Liang, T. P. (2004). Consumer attitudes toward mobile advertising: An empirical study. *International journal of electronic commerce, 8*(3), 65-78. https://doi.org/10.1080/10864415.2004.11044301

UNESCO. (2011). *Media and information litteracy. Curriculum for teachers*. Paris: UNESCO.

UNIR Revista (10 de enero de 2024). *"No se debería poder acceder a un móvil antes de los 16 años"* https://acortar.link/5Pibjs