Study on the impact of marketing through social media, online games and mobile applications on children's behaviour

Final Report

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Abstract

The European Online Games, Social Media and Mobile Application sector has grown substantially in recent years and children are exposed to increasingly sophisticated marketing techniques online which are often outside the purview of existing regulatory frameworks. This study aims to provide a better understanding of online marketing to children and to inform effective policy measures for the protection of children as consumers. The study uses a range of information sources, including a systematic literature review, a review of legislation and regulatory framework at EU and Member State level, in-depth analysis of games, focus groups with parents and children, a survey with parents, and behavioural experiments on advergames and in-app purchases. The study finds that online marketing practices have an impact on children, and that children have difficulties recognizing marketing content, in activating defence mechanisms and in taking decisions. The analysis also shows that although parents play an important role in mediating their children's online behaviour, parents are often not fully aware of the risks their children are exposed to in online environments. The study concludes with policy recommendations focussing on policies to address children as a particularly vulnerable consumer group.

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GLOSSARY

Concept	Definition
Advergame	Advergames are games specifically designed for advertising. These games are explicitly marketing-communication, developed by companies or organisations to promote their brand or product. The brand or product is the protagonist, central character, or key feature in the game.
Ad break	Ad break is a protective measure in form of a disclaimer interrupting a game and stating that the game content includes advertisements or commercial communications.
Flow	The concept of flow comes from the psychology of optimal experience and is applied to the understanding of the experience of online gaming. This proposes that what makes an experience genuinely satisfying is a state of consciousness called flow, in which concentration is so focused that the game player is completely absorbed in the activity.
Co-regulation	The mechanism whereby a EC legislative act delegates the attainment of the objectives defined by in the legislation to relevant parties such as economic operators, social partners, non-governmental organisations, or associations.
Embedded Advertising	Embedded advertising is marketing contents incorporated in other content with the result that the boundary between entertainment and marketing communication is blurred. Examples include advergames, product placement, pre-game, inter-level, and post-game advertising.
Freemium	Freemium, or free-to-premium, is a popular revenue model for app developers. Game players have free access to a version of an app with limited functionality. They are then offered the opportunity to upgrade to a paid app or to pay for additional features.
Grossing	Grossing category lists the apps that are generating the largest revenues. It uses an algorithm that weights more recent revenue over past revenue.
In-app purchases	In-app purchases are extra features and subscriptions available for purchase.
Inter-level advertising	Inter-level advertising involves advertising messages after the completion of a game play level as the next level is loading.
Mock up	A scale or full-size model of a design or device, used for teaching, demonstration, design evaluation, promotion, and other purposes.
Neuro-marketing	Neuro-marketing relates to any marketing or market research activity that uses the methods and techniques of brain science or is informed by the findings or insights of brain science.
Persuasion knowledge	Persuasion knowledge is the capacity of individuals to activate critical thinking following the recognition that a message has persuasive content.

Concept	Definition
Problematic practices	When addressing problematic practices in this study, we are referring to sophisticated marketing practices in websites and applications that are designed to affect children's consumer behaviour. These include brand engagement (by participating in competitions, online events, "likes" in social media, etc.); in-app and in-game purchase; embedded advertisements; child inappropriate commercial content, including alcohol; data privacy issues/market research content; mobile phone and credit card - the new wallet; lack of price and contract transparency; absence of age verification systems, and lack of contact information about suppliers.
Product Placement	Product Placement, as a type of embedded advertisement, refers to the insertion of a brand or product in an entertainment medium such as television, film, or an online game. The opportunities for product placement in games range from merely placing a logo on a virtual billboard, to integrating the product into the online game's plot. Static and dynamic product placement can be distinguished. Static in-game placement, also referred to as "hard-coded" advertising, includes the insertion of advertising elements into the game that cannot be changed. Dynamic in-game placement uses the same concepts as static in-game advertising. The difference is that dynamic in-game product placement allows the insertion of dynamic advertising elements within a game. In contrast to static in-game placement, the elements used in dynamic placement can be altered, adapted, and individually targeted depending on location, day of week and time of day. This allows companies to address more narrowly defined consumer segments.
Pre-game advertising	Pre-game advertising is the presentation of digital video or display advertisements before the game is played, normally while the game is loading.
Self-regulation	Self-regulation occurs when economic operators, social partners, non-governmental organisations or associations adopt and implement common practice guidelines (particularly codes of practice or sectoral agreements).
Sponsorship	Media law and economics distinguish sponsorship from advertising. Whereas advertising aims at promoting a specific product or service, the purpose of sponsorship is to promote the image or brand of a person, company, or organisation. Online game sponsorship is where a person, company or organisation finances a game either directly or indirectly by sponsoring a tournament, zone (level), or session of game play, with the objective of promoting its image or brand.
Viral marketing	A marketing technique that uses pre-existing social networking services and other technologies to increase brand awareness or to achieve other marketing objectives (such as product sales) through self-replicating viral processes. Marketing messages are distributed via social networks by sending an e-mail greeting to a friend or inviting a friend to play or join the Web site.

1 Introduction

The Internet allows different forms of media to converge. What once used to be multiple separate devices such as a telephone, television, or personal computers have now merged into single technological devices that are made commonly available in user-friendly formats. Convergence has an important impact on user habits, including those of children as well as affecting business advertising practices, revenues, content offerings and financing. These rapidly evolving digital environments, with an increasing number of smart devices that embed Internet-based solutions have made children early adopters of new technologies. They increasingly engage in text messaging, playing online games, watching TV online, and participate in virtual worlds and social networking activities from an early age. Rapidly, children become Internet savvy and their online presence encompasses not only the use of the digital content, but often requires them to take consumer decisions, e.g. when purchasing access to online games. Several studies indicate that children are increasingly becoming online consumers of digital content and particularly of online games (Europe Economics, 2011; London Economics, 2011; Stenzel et al., 2011). Online environments present new revenue streams for businesses. According to Lehdonvirta (2009), offering virtual goods has become a new source of revenue for online consumer services. At the same time, children are more vulnerable to risks related to the online world than other groups of consumers are. If the use of the concept of the average consumer in policy-making and in court cases has been criticised by scholars as inappropriate (Trzaskowski, 2011), this critique is even more relevant when considering children as consumers. The biases that make many adults prone to taking sub-optimal decisions as consumers may be compounded by young age and lack of experience, as has been addressed, for instance, in the Unfair Commercial Practices Directive (UCPD). Research has shown that children have a limited understanding of what marketing is. They do not always recognise marketing contents as such, and are not necessarily able to distinguish marketing content from other content (see among others Kinkel et al., 2004; Linn & Dowrick, 2004; Moses & Baldwin, 2005; Mallinckrodt & Mizerski, 2007, Moore & Rideout, 2007; Dahl, Eagle & Beaz, 2009). Children younger than 8 years old are considered especially vulnerable to this because they lack the cognitive skills necessary for understanding the persuasive intent of television and online advertising (Calvert, 2008). Evidence suggests that children over 8 tend to have a better understanding of the commercial purpose of advertising although not to the extent that adults do (Ali et al., 2009; Martinez, Jarlbro & Sandberg, 2013). It is children's susceptibility and lack of experience that makes them vulnerable to marketing tactics, and they therefore have a greater need for protection against its pressures and influence. Protecting children in online environments has become both a European and a global challenge that has gained the attention of policy makers.

Ministers responsible for the digital economy from OECD countries, including the European representatives, have recognised the importance of ensuring a safe Internet-based environment that offers protection to individuals, especially minors. In 2012 the OECD Council adopted a set of high-level principles calling for evidence-based policy making and enhanced domestic and international co-ordination to improve national policy frameworks. Simultaneously, the European Strategy for a Better Internet for Children (BIK) was launched in 2012 (COM(2012) 196 final). BIK takes a child-centric approach and proposes a series of actions to be undertaken by the Commission, by Member States and by the whole industry value chain in order to provide a safer Internet for children and young people. In the toolbox of BIK there is regulation, self-regulation (such as the CEO coalition to make the Internet a better place for kids) and funding through the Safer Internet Programme and currently the Safer Internet Digital Service under Connecting Europe Facilities (CEF). An important part of the programme is the Safer Internet Centres (SICs), which are present in 30 European countries. They give advice and information to children, parents and teachers through awareness centres and helplines. SICs also provide hotline services to report on online illegal content – primarily child abuse images.

This study is inscribed in the new behaviourally informed approach to policy making that the European Commission, and particularly DG JUST, along with other international and national policy-making bodies, have embraced over the past five years. This trend

reveals a more critical stance being taken by policy makers regarding the stylised representation of the rational consumer that is part of mainstream economics. Increasingly, even within policy circles, the rational consumer is seen as a fictitious figure. This implies that when consumers are affected by behavioural biases – which in turn impact on belief formation, business and economic decisions, and human behaviour in general – then competition may not improve their welfare but rather worsen it, as firms may try to exploit such biases. This is even more relevant when the consumers are children, especially when parents do not have the time to fully oversee and guide their children in the use of online environments.

Industries operating in the Online Games, Social Media and Mobile Applications environment employ an increasing number of people, and contribute to the economy in sizeable way, providing a good share of those creative jobs (especially applications and online games) that are important to global competition. The traditional value and supply chain has been transformed into a complex ecosystem of actors comprising operators, platforms, developers, brands, services and advertisers, device manufacturers and consumers. To some extent, industries operating in the Online Games, Social Media and Mobile Applications environment also show willingness for self-regulation and it would be, thus, unfair to negatively generalise about them. Nonetheless, if left unchecked, the industry is potentially a source of various types of risk for vulnerable consumers such as children, because the industry is geared towards adults (who may also be already vulnerable) and at times does not have in place particular safeguards to protect or better inform children.

In 2013 the Commission consulted with consumer organisations that raised several concerns related to websites using profiling and behavioural marketing techniques that target children, as well as on access to child inappropriate (commercial) content on websites targeting children, including sexualising content and alcohol-related advertisements (European Consumer Consultative Group, 2013). The lack of evidence for many of the issues discussed – and the potential needs for revision and expansion of some key EU directives to embrace provisions to protect children within online environments – clearly underscores the policy relevance of, and need for, this study.

The study sheds light on the effectiveness of the existing consumer protection measures provided by the Member States and/or by the industry, and aims to inform the Commission's work on alleviating consumer vulnerability in the online environment, especially within the framework of the Unfair Commercial Practices Directive (2005/29/EC), hereinafter UCPD, and the Audiovisual Media Services Directive (2010/13/EU), hereinafter AVMSD. The European Commission is working to ensure that all children across the EU/EEA enjoy an equally high level of protection, both regarding authorised and safe offers as well as illegal offers that are accessible in an inherently cross-border context. The identification of children as a particularly vulnerable group with regard to the purchase or use of digital content and intrusive online advertising has been made a key pillar of the consumer policy of both the European Commission (Europe Economics, 2011) and the European Parliament (European Parliament, 2012). In particular, the Report from the European Parliament called on the Commission to conduct a detailed analysis of the impact of misleading and aggressive advertising towards children.

So far, two key pieces of EU legislation – the AVMSD and the UCPD – form the backbone in the provision of consumer protection in the area of audiovisual media services. This legal framework is complemented by Directive 2000/31/EC, which addresses certain legal aspects of the information society services (hereinafter the e-Commerce Directive). It also establishes information requirements for commercial communications as part of the information society services. This relates to Directive 2011/83/EU on consumer rights (hereinafter known as CRD) that applies to contracts concluded between traders and consumers and aims to strengthen harmonised consumer rights across the EU; as well as feeding into the Regulation on Consumer Protection Regulation (CPC regulation) and Directive 95/46/EC on Data Protection (hereinafter DPD), which together cover a broad range of consumer protection provisions. Yet, when it comes to online marketing, and

marketing in social media and mobile applications in general, questions remain open as to the extent to which consumers, especially children, are effectively protected.

There is an increasing concern about the proliferation of advergames: an evolving marketing technique aimed at children in online environments that is designed almost exclusively to promote branded products by integrating or embedding marketing content within the games they play. The advergame topic has become increasingly important both for analysts looking at it as a new business model (or brand channel) for the online service industry, and for those interested in fair practices for, and protection of, children, as has been testified by a broad range of academic literature (Panic, Cauberghe, & De Pelsmacker, 2013; Peters & Leshner, 2013; Rozendaal et al., 2013; Steffen, Mau, & Schramm-Klein, 2013; Terlutter & Capella, 2013; Waiguny, Nelson, & Marko, 2013). Other studies highlight the use of Social Networking Sites (SNS) for advertising purposes. Branded entertainment in Social Networking Sites constitutes an increasingly frequent part of marketing strategies (Zhang et al., 2010). Evidence suggests that top global brands targeting younger audiences are more likely to display their commercial communications on SNS and to foster user engagement in this way (Araujo et al., 2012). As a result of these strategies, the line between entertainment and marketing communication is increasingly blurred, especially on the Internet. This has important implications for children in particular.

Types of embedded advertisement

Advergames are games specifically designed for advertising. These games are a marketing-communication sui generis, normally assigned by the marketing department of a company or organisation to promote its own brand or product. Advergames are specifically designed for the sole purpose of marketing a single brand or product. The brand or product is the protagonist, the central character or feature of the game.

Product Placement refers to the insertion of a brand or product in an entertainment medium such as television, film, or an online game. This type of marketing tool has a long and successful history, pioneered in the 1970s both in television and Hollywood films and became common practice for marketing in videogames in the 1990s. The opportunities for product placement in games range from merely placing a logo on a virtual billboard to integrating the product into the online game's plot. Static and dynamic product placement could be distinguished. ***Static in-game placement***, also referred to as "Hard-Coded" advertising, includes the insertion of advertising elements into the game that cannot be changed. ***Dynamic in-game placement*** uses the same concepts as static in-game advertising. The difference, however, is that dynamic in-game product placement allows the insertion of dynamic advertising elements within a game. In contrast to static in-game placement, the elements used in dynamic placement can be altered, adapted, and individually targeted depending on location, day of week and time of day. Therefore, this allows companies to address more narrowly defined demographic groups

Sponsorship. Media law and economics generally distinguish sponsorship from advertising. Whereas advertising aims at promoting a specific product or service, the purpose of sponsorship is to promote the image or brand of a person, company, or organisation. Thus, online game sponsorship refers to a situation in which a person, company or organisation finances an online game either directly or indirectly, i.e. through the sponsoring of a tournament, zone (level), or session of game play, in order to promote its image or brand.

Pre-Game, Inter-Level, and Post-Game Advertising. Advergaming, product placement and sponsorship are the most prevalent types of AOG. Besides these three major types of AOG, other types are referred to by IAB are***:*** Pre-game advertising is the presentation of digital video or display advertisements before the game is played, more specifically, while the game is loading. Similarly, inter-level advertising involves the display of advertising messages after the completion of a game play level as the next level is loading. Post-game advertising messages are displayed after the completion of the game.

Source: Interactive Advertising Bureau, 2010

The aim of this research is to provide an understanding of the new and dynamic channels of online marketing directed towards children in order to provide a basis for future policy recommendations. The insights gained will help the European Commission in the preparation of effective policy measures to alleviate consumer vulnerability among children in relation to sophisticated online marketing. This Final Report is organized as follows: Chapter 2 will outline the scope of the research, followed by by an elaboration of the research methodologies applied in chapter 3. Chapter 4 provides an outline of marketing techniques resulting from an in-depth analysis of games as well as evidence retrieved from a systematic review covering marketing techniques and problematic practices identified by the European Commission. Chapter 5 presents the results of the experiments conducted as well as the focus groups with children, while chapter 6 presents the results of the parents' survey and the insights gained from the focus groups conducted with parents.Chapter 7 provides a mapping and classification of policy interventions related to online marketing at EU and Member State level. Conclusions follow in chapter 8 and then policy recommendations are mapped out in chapter 9.

2 Scope of the research

This chapter presents the scope of the *"Study on the impact of marketing through social media, online games and mobile applications on children's behaviour"*. The chapter is organised as follows. The first section presents the aims and objectives of the study. The second section defines problematic practices as identified by the European Commission. The third section shows the research questions addressed by the study, while the fourth section presents the research process. Lastly, we sketch a comprehensive overview of the research undertaken as part of this study, showing how the problematic practices and research questions were addressed in order to achieve the aims and objectives of the study, using multiple methods and sources. The section also includes the limitations of the study.

2.1 Aims and objectives

The key aim of this research is to provide an understanding of the new and dynamic channels of online marketing directed at children in order to provide a basis for future policy recommendations. The insights gained will help the European Commission in the preparation of effective policy measures to alleviate consumer vulnerability among children in relation to sophisticated online marketing. In addition, the study sheds light on the effectiveness of existing consumer related policies in Member States and/or the industry globally, which can help the identification of new policy options. The following objectives were established to guide the study:

Objectives of the study

Objective 1. *The study will test and assess the understanding and the awareness of children in different age groups regarding sophisticated marketing techniques directed at them in the online environment, on social media, and regarding online games with marketing content and mobile applications.*

Objective 2. *The study will test and assess the efficacy of sophisticated marketing practices in affecting children's consumer behaviour in relation to websites and online applications in a broad sense, paying particular attention to their brand engagement (by participating in competitions, online events, "likes" in social media, etc.), in-app and in-game purchases, and their propensity to answer marketing research surveys.*

Objective 3. *The study will also test and assess parents' awareness and understanding of such online marketing techniques directed toward children.*

Objective 4. *Regulation of marketing and selling practises towards children in the online sector differs between Member States, and will be analysed through a specific literature review.*

Objective 5. *The study will provide input on whether there is a need to update the section on children as vulnerable consumers in the Guidance document to the UCPD and will feed into the upcoming review of the AVMSD. This should help assess the need for self-regulation or further regulation aimed at guaranteeing an appropriate level of child protection of children acting as consumers in the online sector.*

2.2 Focus

The study is focused on the following problematic areas of online marketing to children through online games, applications and social media:

Problematic practices

Embedded advertisement. The practice of blending advertising messages with interactive games and competitions (in research referred to as "advertainment" or "advergames") is present in many online games and social media content for children. Embedded marketing makes it more difficult to discern the marketing element, and especially so for children.

In-app and online games purchases. In mobile applications and online games marketed as "free", players can typically only access portions of these games for free, with new levels or features, such as faster game play, costing money. It can be difficult for children to understand that even though they have downloaded a free app, they still might have to pay additional 'real' money during the game. It may be particularly difficult for them to understand different types of currencies (including virtual ones) in an online game and especially the relationship between virtual and real currencies.

Child inappropriate commercial content, including alcohol. Advertisements for alcohol in social media sites and in other websites popular with children also represent an area of concern in the context of online marketing. This is a particular case of hidden Internet advertising occurring in the form of comments posted on social networks, forums and blogs. It is important to not only look at the way in which advertisement incites children into making purchases on these sites, but also to consider the content and appropriateness of that advertisement. Concerns include, among others, the sexualisation of children and violent content.

Data privacy issues/market research content. When children buy goods and services or simply sign up for free games/sites/apps, they may give away personal data without being aware of the possible consequences. Children may also not recognise market research questions when answering them to earn points to play in the game.

The mobile phone and credit card - the new wallet. When children purchase over the Internet or mobile phone, this may involve a variety of payment means, such as value codes (for iTunes), parent's debit or credit cards or via (mobile) telephone bills. This means that children's experiences with "real" money have become more intangible and their understanding of the implications of spending money is diminished.

Lack of price and contract transparency. Even adult consumers often have trouble figuring out what things cost online, what is included in the price, etc. In the case of children, this situation may be compounded by lack of reasoning skills and purchasing experience. The complex contracts behind the signing up to games/ social media sites/ applications are clearly beyond children's comprehension and, if parents' mediation and control is lacking, this creates a clear source of vulnerability.

Lack of age verification systems. Some online games have an age limit of, for instance, 12 or 13 years to sign up. Yet, there are usually no age verification systems on the site and often there is no way to ensure children answer truthfully to age verification systems.

Lack of contact information by suppliers. There is often a lack of contact details, where one can ask for information or complain. Some online games, in which children can make purchases with mobile phones or credit cards, do not have any complaints procedures or follow-up mechanisms.

2.3 Research questions

The objectives are accompanied by the following research questions, which have informed the methodological design of the study and recommendations for consumer policy:

Research questions of the study

Research Question 1. "*What are the most common, effective and questionable marketing techniques employed by the industry to impact consumer behaviour of children in different age groups in online games, mobile applications and on social media sites?"*

Research Question 2. *"To what degree, and in which ways, do these sophisticated marketing techniques influence the consumer behaviour of children with different socio-demographic characteristics and in different age groups?"*

Research Question 3. *"To what degree are children with different socio-demographic characteristics and in different age groups able to recognise and understand the implications of different marketing/market research content embedded in online games, social media sites and mobile applications directed at them?"*

Research Question 4. *"What is the best way to test (through behavioural experiments) what behaviour and skills are assumed to be those of an average child in a certain age-group in relation to problematic online marketing practices? Are there particular characteristics which make some children more susceptible to problematic marketing practices in specific gaming situations?"*

Research Question 5. *"To what degree are parents with different socio-demographic characteristics able to recognise and understand the implications of different marketing/market research content embedded in online games, social media sites and mobile applications directed at children online?"*

Research Question 6. *"To what degree, and in which ways, do parents with different socio-demographic characteristics worry about and attempt to regulate the online commercial activities of their children?"*

Research Question 7. *"How is it possible to map and classify the policy interventions in place in Member States, and at EU level, to alleviate children's vulnerability in an operational manner (legislation, guidance documents, self-regulatory tools, inspections, complaints mechanisms, help-lines, education and information provision, work of relevant NGOs, etc.)?"*

Research Question 8. *"How might it be possible to identify the most effective intervention tools and prepare the ground for proposing effective, evidence-based policies? How might one identify whether a policy initiative would be effective for mitigating children's vulnerability vis-à-vis sophisticated marketing techniques in online games, mobile applications and social media sites?"*

Research Question 9. *"How might it be possible to identify unfair commercial practices in online games, social media and mobile applications directed at children, and substantiate why they are unfair?"*

Research Question 10. *"What are the barriers to implementing effective measures for alleviating children's vulnerability in relation to online marketing, including cultural and socio-economic aspects?"*

Research Question 11. *"Based on the evidence collected in the study, which sector specific and/or crosscutting recommendations can be proposed to support the Commission's work to mitigate child vulnerability in online markets?"*

Research Question 12. *"What concrete recommendations can be derived from the study's findings on whether and how the chapter on 'Vulnerable Consumers' (with regard to children) of the UCPD Guidance and the AVMSD should be reviewed/ expanded?"*

2.4 Phases: research process

To achieve the aims and objectives of the study, addressing the research questions and considering the problematic areas defined above, this research has been organised within five interrelated phases.

The **Preparatory phase** constituted the starting point of the study and established the background of the research. This phase started with a systematic review of academic research conducted on online marketing to children (looking at, amongst other issues, online games, social media and mobile applications) with a focus on behavioural insights. In addition to the systematic review, an extensive desk research was performed to review the legislation, the regulatory framework and policy interventions at EU and Member State level. This preparatory phase also included the screening of the most widespread online games in social media sites and mobile application platforms in EU Member States and EEA States. Lastly, a selection of these most popular games was subject to an in-depth analysis.

Insights from the preparatory phase facilitated the design of the subsequent steps of the study. On the one hand, **focus groups with children and parents** and an **online survey with parents** were carried out. On the other hand, two different **experiments** related to in-app purchases and advergames were conducted with children. The last phase of the study consisted of an **analysis of the findings** generated by the previous phases.

As shown in the comprehensive overview provided below, the research questions were addressed through multiple methods and sources. The preparatory phase with its three components (systematic review, review of regulation, and in-depth analysis of games) contributed directly to answering some of the research questions and was instrumental to the design of the experiments, focus groups, and the parents' survey. This preparatory phase, conducted in closed consultation with the European Commission, grounded and shaped the broad scope of this study and proved essential to the overall feasibility of the study.

Table 1 Comprehensive overview of the study

Research questions	Phases	Methods/Source
RQ 1. *"What are the most common, effective and questionable marketing techniques employed by the industry to impact consumer behaviour of children in different age groups in online games, mobile applications and on social media sites?"*	• Preparatory phase	• Systematic review • In-depth analysis of games
RQ 2. *"To what degree, and in which ways, do these sophisticated marketing techniques influence the consumer behaviour of children with different socio-demographic characteristics and in different age groups?"*	• Preparatory phase • Experimental phase • Focus groups	• Systematic review • Experiments • Focus groups
RQ 3. *"To what degree are children with different socio-demographic characteristics and in different age groups able to recognise and understand the implications of different marketing /market research content embedded in online games, social media sites and mobile applications directed at them?"*	• Preparatory phase • Experimental phase	• Systematic review • Experiments • Focus groups
RQ 4. *"What is the best way to test (through behavioural experiments) what behaviour and skills are assumed to be those of an average child in a certain age-group in relation to problematic online marketing practices? Are there particular characteristics which make some children more susceptible to problematic marketing practices in specific gaming situations?"*	• Preparatory phase • Experimental phase	• Systematic review • Experiments
RQ 5. *"To what degree are parents with different socio-demographic characteristics able to recognise and understand the implications of different marketing /market research content embedded in online games, social media sites and mobile applications directed at children online?"*	• Preparatory phase • Focus groups • Online survey	• Systematic review • Focus groups • Online survey
RQ 6. *"To what degree, and in which ways, do parents with different socio-demographic characteristics worry about and attempt to regulate the online commercial activities of their children?"*	• Preparatory phase • Focus groups • Online survey	• Systematic review • Focus groups • Online survey
RQ 7. *"How is it possible to map and classify the policy interventions in place in Member States, and at EU level, to alleviate children's vulnerability in an operational manner (legislation, guidance documents, self-regulatory tools, inspections, complaints mechanisms, help-lines, education and information provision, work of relevant NGOs, etc.)?"*	• Preparatory phase	• Systematic review • Review of legislation and regulatory framework
RQ 8. *"How might it be possible to identify the most effective intervention tools and prepare the ground for proposing effective, evidence-based policies? How might one identify whether a policy initiative would be effective for mitigating children's vulnerability vis-à-vis sophisticated marketing techniques in online games, mobile applications and social media sites?"*	• Preparatory phase • Experimental phase	• Systematic review • Review of legislation and regulatory framework • Experiments • Focus groups

Research questions	Phases	Methods/Source
RQ 9. *"How might it be possible to identify unfair commercial practices in online games, social media and mobile applications directed at children, and substantiate why they are unfair?"*	• Experimental phase	• Systematic review • Review of legislation and regulatory framework • In-depth analysis of games
RQ 10. *"What are the barriers to implementing effective measures for alleviating children's vulnerability in relation to online marketing, including cultural and socio-economic aspects?"*	• All phases	• Systematic review • Review of legislation and regulatory framework • In-depth analysis of games • Experiments • Online survey • Focus groups
RQ 11. *"Based on the evidence collected in the study, which sector specific and/or crosscutting recommendations can be proposed to support the Commission's work to mitigate child vulnerability in online markets*		
RQ 12. *"What concrete recommendations can be derived from the study's findings on whether and how the chapter on 'Vulnerable Consumers' (with regard to children) of the UCPD Guidance and the AVMSD should be reviewed/ expanded?"*		

2.5 Limitations of the study

As with in any other research, this study was subject to some limitations related to how the problematic marketing practices and the research questions were tackled.

Firstly, the focus of the study was shaped by the problematic practices to be addressed. However, not all of these practices could be tested experimentally due to time and resource constraints. The very large and encompassing systematic review of the literature confirmed that, within the domain of online marketing, experimental studies so far existed only for advergames. Hence, in agreement with the Commission, advergames were tested experimentally as a type of embedded advertisement. This generated an understanding of how this type of marketing practice affected the behaviour of children and made it possible to test the effectiveness of some protective measures. Furthermore, in the case of advergames only it was possible to rely on an existing body of experimental studies that inspired the design and that could be used to interpret the findings. In complement to this, in app-purchases was selected as the focus of the other experiment, due to the policy relevance of this practice and because of the absence of previous studies in this field. Nonetheless, all the other problematic practices that were identified were addressed through a mix of quantitative and qualitative research methods such as systematic review, desk research, focus groups and surveys. This was furthermore connected to the limited way in which it was possible to answer research questions concerning 'effectiveness', as explored below.

Secondly, ethical and legal considerations limited the possibility of fully exploring the third problematic area experimentally: namely exposure to inappropriate content. This can involve a number of different issues, including sex-related content and violence. In this case the focus was alcohol advertising. Asking minors directly about alcohol would not be ethical. However, in the focus groups, in consultation with the Commission and respecting internationally recognised ethical standards, children were exposed to relevant material that could trigger discussion on the topic, but not under the heading 'alcohol advertising.

Thirdly, some of the research questions listed earlier contained in their formulation a reference to the concept of 'effectiveness' such as for instance: 'which questionable marketing techniques are effective' (research question 1); 'how to identify the most effective interventions' (research questions 8); and 'which barriers prevent the implementation of effective measures' (research question 10). Whether an industry strategy or a policy intervention was to be considered, effectiveness could be defined as the change in the sought outcomes (increasing sales in one case, protecting children in the other) that could be attributed to the given strategy or policy intervention and not any other intervening factors. This entailed uncovering a causal relation, which the study could robustly do only with the experiments on advergames and in-app purchases. In the advergame experiment, for instance, it was possible to safely assess the effectiveness of the game bearing energy-dense food advertisement by measuring if children playing that game ate more sweets than children in the control group playing another game. In that same experiment, it was possible to conclude that some of the possible 'protective measures' tested (i.e. warning message) were effective in reducing the effect of the game carrying energy-dense food advertisement. Outside of the domain of the two experiments, the study's assessment of effectiveness did not rely on any causal demonstration and was only based on qualitative assessment derived from triangulating secondary sources (a systematic review of the literature and a review of relevant legislation and regulatory framework) and only for those practices for which sufficient evidence was available. There was no quantitative evidence from experimental or quasi-experimental design to conclude, for instance, that online marketing using social media and peer pressure mechanisms (i.e. children 'liking' coca-cola on Facebook and this spreading through their network of friends) was effective in increasing sales of energy-dense food brands for consumption by children. Likewise, it was possible to observe that online marketing was widely used and so one could reasonably speculate that it might be effective, although the marketing literature showed that marketers did not have clear metrics about the effectiveness of online marketing.

Furthermore, it was important to consider the limitations to assessing the effectiveness of interventions, because this made it possible to clarify an important terminological use that will appear in the concluding chapter. The kind of interventions listed in research question 8 (legislation, guidance documents, self-regulatory tools, inspections, complaints mechanisms, help-lines, education and information provision, work of relevant NGOs, etc.), could obviously not be tested experimentally during experimental sessions with children. The effectiveness of most of these interventions would require a longitudinal design, gathering relevant indicators at the date of introduction and then some years later, and with a different research design for different countries. If one were to consider self-regulatory initiatives, such as codes of conduct or pledges committing the industry not to expose children to certain kinds of content and/or advertisement, such measures would be by default very effective if fully implemented, for they would remove the root-cause of the problem. For instance, when playing online children would never be exposed to alcohol or energy-dense food advertisement (or in the best possible world to any advertisement). Monitoring exercises of such self-regulatory initiatives that are reviewed in chapter 4 unequivocally showed that there were always problems of compliance. In this context, it would be difficult (if not arbitrary) to decide in clear-cut ways a threshold percentage of compliance above which such initiatives would be considered effective. As such, in most of this report and especially in the concluding chapter, the expression 'protective measures' has been used to refer *only* to those measures that were experimentally tested in the advergame and in-app purchase experiments.

3 Research methods of the study

This chapter presents the different methododological approaches used to address the aims, objectives and research questions of the study. Due to the broad scope of the research, both quantitative and qualitative research methods were used. The following sections cover the systematic review, the review of the legislation, and an in-depth analysis of games that were part of the preparatory phase of the research, as well as focus groups, the online survey and the experiments conducted in the other phases of the study.

3.1 Systematic review

A systematic review was conducted to identify relevant issues to explore further in the study's main phase, to inform the various research questions, and to contribute to the interpretation of subsequent empirical findings. This review followed a rigid scientific protocol with some flexibility to adapt to the policy nature of this work and to include all key references. If it had focussed only on behavioural insights from experimental studies, then the total number of relevant articles found between 2008-2014 (a period chosen deliberately in order to include the latest research on online marketing practices) would have been only 25, and would not have included articles addressing in-app purchases. Hence, we decided to apply less stringent criteria for the inclusion of articles and expanded the scope beyond experimental behavioural studies to include: a) at least some academic contributions dealing specifically with in-app purchase (even if not experimentally); and, b) academic contributions that might shed light on other aspects needed to complete this study such as the identification of games; discussions of regulatory measures on online marketing, and the selection of promising protective measures.

The preliminary exploratory search conducted used the following keywords:

- **Subjects/Objects**: *Children; Child; Kid; Minors; Youth; Adolescent; Teen; Parents; Internet; games; advergames; mobile; social networking site; online marketing; advertisement; gaming; health; alcohol; protection; regulation; privacy; virtual worlds; virtual goods, and in app purchase.*

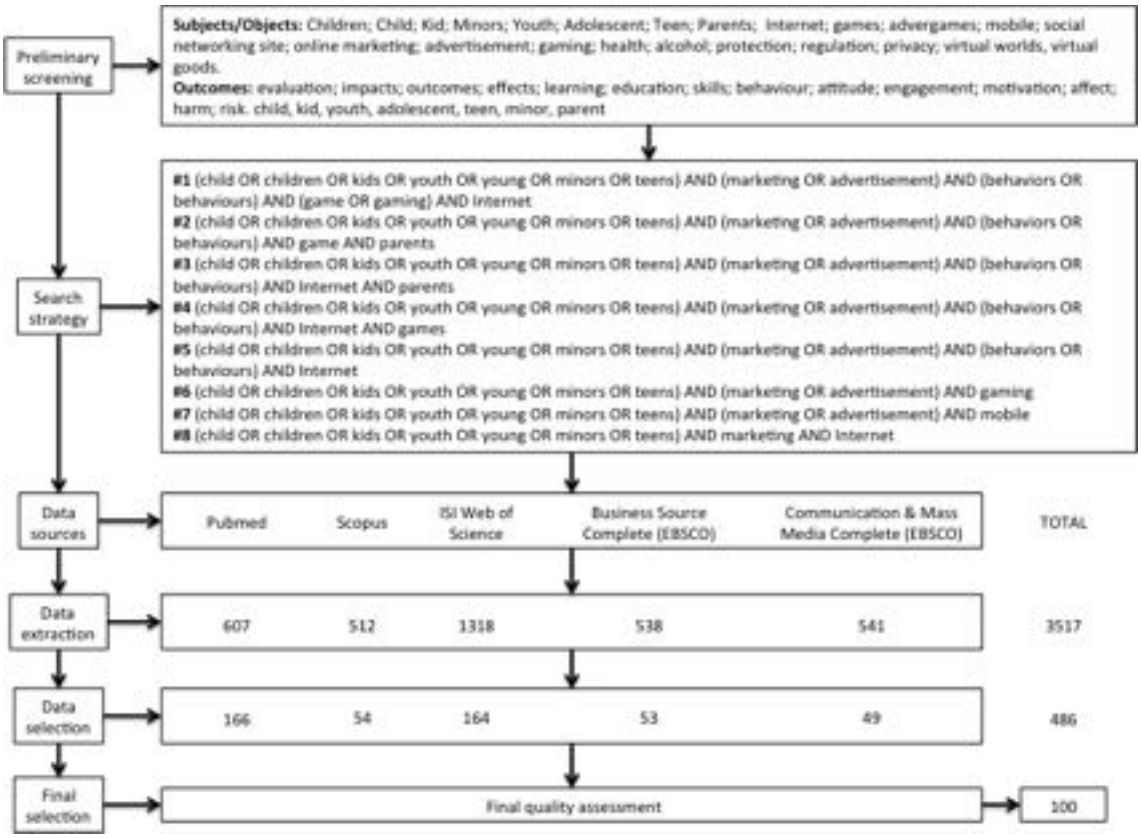
- **Outcomes:** *evaluation; impacts; outcomes; effects; learning; education; skills; behaviour; attitude; engagement; motivation; affect; harm; risk child; kid; youth; adolescent; teen; minor, and parent*

These keywords were combined and used in the following datasets:

- Association for Computing Machinery (ACM)
- Business Source Complete (EBSCO)
- Communication & Mass Media Complete (EBSCO)
- Emerald Management Xtra 111
- IEEE Xplore
- ISI Journal Citation Reports
- ISI Web of Knowledge
- JSTOR Arts & Sciences
- Oxford Journals
- ProQuest Health & Medical Complete
- ProQuest Psychology Journals
- PubMed
- Sage
- Scopus
- SpringerLink
- Taylor & Francis - Informaworld
- Wiley InterScience

This exploratory search identified more than 10,000 references. A preliminary screening of the results allowed us to construct Boolean search word strings used in the next step. The search strings combined keywords extracted from the most relevant references for the study. By using a combination of key words and Boolean operators (e.g. "and", "or", "not"), it was possible to narrow the search for the specific area of interest. Figure 1 presents the search strings used to identify relevant literature. In addition, we narrowed the datasets previously selected to eliminate duplications across journals. The final datasets selected contains top ranked scientific journals from the following sources: Pubmed, Scopus, ISI Web of Science, Business Source Complete (EBSCO) and Communication & Mass Media Complete (EBSCO). Once the search strings and the data sources were selected, two researchers conducted the 8 search strings independently, screening the title and the abstract of the articles. The search was limited (exclusion criteria) to results published between the period of 2008-2014 and to the seven points (a-h) cited in the objectives of the review. Discrepancies in each search were discussed between the researchers in order to achieve a consensus. A third researcher conducted the final quality assessment on the criteria of the scientific quality of the article, the methodological quality of the research and its relevance to the current project. This exercise narrowed the scope from 486 to 100 articles[1,3].

Figure 1 Systematic review: overview



[1] See Annex 1 Systematic review selection process.

The articles were classified according to the field or area covered, the methodology applied and the object or artefact analysed. Table 2 summarises the different dimensions identified and the number or articles analysed[2].

Table 2 Systematic review dimensions

Dimension	Number of articles
Field	
Public Health	50
Marketing	36
Regulation and protective measures	14
Methods	
Content analysis	28
Experimental studies	20
Interviews/focus groups	2
Miscellaneous (theoretical approaches, discussions, reviews…)	34
Survey	16
Artifacts	
Advergames	23
Apps/mobiles	9
Games/Social Networking Sites	2
Internet/websites	45
Other Media	17

3.2 Review of legislation and regulatory framework

Another part of the exploratory phase of this study was an overview and classification of the existing obligatory and non-obligatory measures aimed at protecting children in relation to online marketing in the EU Member States and EEA States. This overview was conducted as follows. First, a review of the transposition of relevant EU Directives into national laws of the Member States was undertaken using information provided by EURLEX. To do this the Member States´ communications, in terms of transposition measures for the AVMSD, the UCPD, the e-commerce Directive and the CRD, were collected and, where necessary, translated.

Second, the specific provisions of the relevant transposition measures (national laws) that could potentially be applicable to the problematic practices subject to the study (e.g. advergames, in-app purchases, data privacy issues, etc.) were outlined for each country. Other relevant pieces of legislation applicable to the problematic practices were found through extensive desk research on official government websites and data from the European Advertising Standards Alliance (EASA) Bluebook 6th Edition (2010).

Third, a further assessment of the national provisions was undertaken to ascertain relevant public bodies responsible for Media and Consumer Protection in the different EU countries (plus Norway, Iceland and Liechtenstein). The relevant self-regulatory bodies in the area of advertising were identified on the basis of information provided by the European Advertising Standards Alliance website and the Blue Book 6th Edition. The respective codes applied to advertisements in general and to children in particular, were identified and analysed, and specificities highlighted if deemed appropriate. The information provided by the EASA was complemented by desk research in order to identify specific guidance documents for industries, consumers and children for each

[2] See Annex 3 Systematic review references classification

Member State in order to provide an exhaustive overview on regulatory mechanisms of marketing and selling practices towards children in the online sector.

Fourth, in-depth interviews were conducted with relevant stakeholders to obtain a reliable mapping of the ecosystem of interest, to find out about self-regulatory measures and initiatives, and to understand the industry´s attitudes toward on-going regulatory efforts. The information obtained through the stakeholder interviews complemented our desk research and in some cases provided valuable new insights into country-specific initiatives.

Finally, an exploratory and non-systematic online survey[3] was conducted in order to identify any further relevant measures that had not been previously identified. The online survey was distributed using a snowball strategy through the following channels, from which 35 responses were obtained:

- Contact points of the Consumer Protection Cooperation (CPC)
- Self-regulatory organisation (SRO) members of the European Advertising Standards Alliance's (EASA), a pan-European umbrella organisation for SROs in Europe
- Members from Interactive Software Federation of Europe
- Confederation of Family Organisations in the European Union
- Kids Online national correspondents
- European Schoolnet members
- Members of the World Federation of Advertisers (WFA).

3.3 In-depth analysis of games

3.3.1 Screening process

To analyse the current practices in online games, an in-depth naturalistic analysis of 25 games was conducted. This analysis aimed at identifying embedded advertisements; in-app purchases; virtual wallets; privacy and consent issues, and the possible protective measures incorporated into the games. This naturalistic analysis was conducted through the active online participation of two researchers who assessed the description of the game, its functionalities and their experience of playing it. Three different universes were examined: the four main platforms currently available, namely App Store, Google Play, Facebook and Amazon; the games provided within these platforms; and the advergames provided in company websites.

The first two universes (platforms and games within the platforms) were easily identified, accessed, and quantified. The third universe, advergames, was more problematic due to the nature and characteristics of the games and the absence of significant platforms.

Due to their importance in terms of market position and number of users, Google Play (Android), App Store (OS) and Facebook were selected.[4] The first two platforms cover the mobile ecosystem (mobiles and tablets). The third, even though available through mobile devices, focus on browser games. These platforms act as gatekeepers for the games produced by developers who, in turn, are required to follow the platform's guidelines in order to publish their games[5].

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[3] Annex 4 Regulation and protective measures – .

[4] Amazon was not included as a universe to gather the games due to the dominance of the other three platforms. However, we have included Amazon in the assessment of protective measures.

[5] For example, regarding children App Store mentions:

- Functionalities (2) Apps that encourage excessive consumption of alcohol or illegal substances, or encourage minors to consume alcohol or smoke cigarettes, will be rejected (2.1).
- Violence (15) Apps that depict violence or abuse of children will be rejected (15.2).

Between 20/06/2014 and 22/06/2014 the Top 100 games within Free, Paid and Grossing game categories were identified and screened in App Store, Google Play and Facebook, in EU28 plus Norway and Iceland. The distinguishing features of the games in these three categories concerned both the price of the respective apps and the revenues they could generate. The category 'Top "Free"' comprised the free apps with most downloads, while the 'Top "Paid"' category, consisted of the apps requiring payment with the most downloads. The 'Top "Grossing"' category consisted of apps with the highest total revenue, that is, price per quantity sold plus revenues from in-app purchases. The 'Top "Grossing"' category also covered apps with the highest total amount of money spent on them.

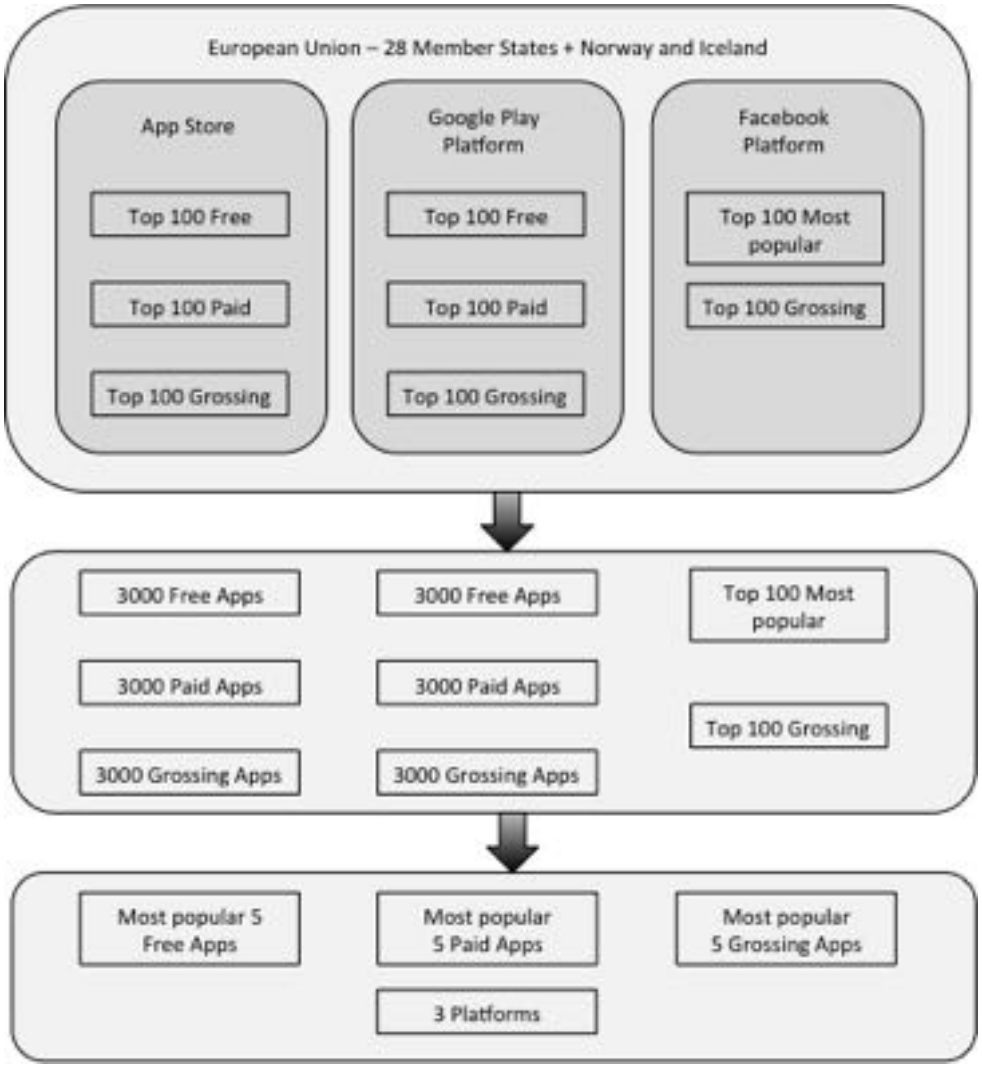
This exercise allowed us to gather 3000 free apps, 3000 paid apps and 3000 grossing apps in both App Store and Google Play. However, on the Facebook platform, there were just two categories: 'Most Popular' and 'Grossing'. The investigation of the most popular games in these two categories for each country found that this platform did not provide different lists for each country. As such, the top 100 popular games and the top 100 grossing games were identified.

- Privacy (17) Apps may ask for date of birth (or use other age-gating mechanisms) only for the purpose of complying with applicable children's privacy statutes, but must include some useful functionality or entertainment value regardless of the user's age (17.3) and Apps that collect, transmit, or have the capability to share personal information (e.g. name, address, email, location, photos, videos, drawings, the ability to chat, other personal data, or persistent identifiers used in combination with any of the above) from a minor must comply with applicable children's privacy statutes, and must include a privacy policy (17.4).
- Kids Category (24):
  - 24.1 Apps in the Kids Category must include a privacy policy and must comply with applicable children's privacy statutes.
  - 24.2 Apps in the Kids Category may not include behavioral advertising (e.g. the advertiser may not serve ads based on the user's activity within the App), and any contextual advertisement presented in the App must be appropriate for kids.
  - 24.3 Apps in the Kids Category must get parental permission or use a parental gate before allowing the user to link out of the app or engage in commerce.
  - 24.4 Apps in the Kids Category must be made specifically for kids ages 5 and under, ages 6-8, or ages 9-11.

Facebook "requires everyone to be at least 13 years old before they can create an account (in some jurisdictions, this age limit may be higher). Creating an account with false info is a violation of our terms. This includes accounts registered on the behalf of someone under 13". In addition, Facebook has a specific section to report an account belonging to someone under 13 and has developed a Family safety centre with tools and resources for parents, teachers, teens and law enforcement community. Regarding developers, the platform policy states that "Web sites or services directed to children under 13: If you use Social Plugins or our JavaScript SDK for Facebook on sites and services that are directed to children under 13, you are responsible for complying with all applicable laws. For example, if your web site or service is directed to children in the United States, or knowingly collects personal information from children in the United States, you must comply with the U.S. Children's Online Privacy Protection Act. You must also adhere to our usage notes".

Google Play does not include a Kids category.

Figure 2 Apps screening process



Relevant advergames were identified using the standard practice that was also used in content analytic studies identified in the systematic review. The world's most valuable brands as reported in the Forbes lists[6] were also a useful resource. Brands whose product or services could be appealing to children were identified and selected for examination.

[6] Forbes http://www.forbes.com/powerful-brands/list/

Table 3 shows the first ten brands selected, which then directed the search for advergames to be investigated in the study.

Table 3 Brand selected from Forbes list[7]

Forbes rank	Number	Brand
3	1	Coca-Cola
6	2	McDonald's
25	3	Pepsi
39	4	Nestle
40	5	Frito-Lay
42	6	Danone
55	7	Kraft
58	8	Kellogg's
61	9	Adidas
64	10	Colgate

[7] This table shows the highest ranking brands on the Forbes list found to have developed advergames.

3.3.2 Selection

The 25 games were selected as follows. In the case of the application games, the selection was split between Google Play, I-Tunes and Facebook. To balance the games analysed, 6 games from Apple's App Store (2 games per category), 6 games from Google Play (2 games per category), and 6 games from Facebook (3 games per category), were selected. In addition, 7 advergames were selected. Table 4 shows the games selected for in-depth analysis[8]:

Table 4 Games/advergames selected for in-depth analysis

Type	Platform/Brand	Game	Paid games
Application games	App Store	Geometry Dash	Yes
		Stickman Soccer 2014	Yes
		Fish Out Of Water!	No
		Angry Birds Epic	No
		Clash of Clans	No
		Candy Crush	No
	Google Play	Minecraft	Yes
		The Sims™ 3	Yes
		Don't Tap The White Tile	No
		Angry Cats	No
		Hay Day	No
		Castle Clash	No
	Facebook	Farm Heroes Saga	No
		Pet Rescue Saga	No
		Bubble Witch 2 Saga	No
		DoubleDown Casino - Free Slots	No
		FarmVille 2	No
		Slotomania Slot Machines	No
Advergames[9]	Coca-Cola	Coke Recycling - http://www.cokerecycling.com/Coke-Recycling-Game	n.a
	McDonald's	Happy Meal - www.happymeal.com	n.a
	Nestle	Crunch - www.nestlecrunch.com/playground.aspx	n.a
	Frito-Lay	Doritos - www.doritos.co.uk/dip-desperado/game.html	n.a
	Danone	Trust Danone - http://trust.danone.com/	n.a
	Kellogg's	Club Kelloggs - www.clubkelloggs.ca/en/games.html	n.a

n.a.: Not applicable

[8] A detailed description of the process carried out to select the games is explained in Annex 5 Selection of games.

[9] The fieldwork process was carried out from 04/08/2014 to 11/08/2014 when all the advergames were online and available.

3.3.3 Indicators

The in-depth analysis of the selected games was performed using a checklist developed on the basis of the main indicators reported in content analytic studies in the systematic review. The indicators were grouped into dimensions and sub-dimensions and dichotomous variables (YES/NO) were used in the coding frame to minimise subjectivity in the data generation. Table 5 summarises the indicators selected and their sources.

Table 5 Checklist in-depth analysis

Advertisement features
Type of ad (Jernigan & Rushman, 2014)
Embedded ad
Contextual ad
Ad attributes (Henry & Story, 2009)
Picture of the product
Logo or product symbol
Link for product information
Type of embedded ad (Alvy & Calvert, 2008)
Sponsorship
Pre-game ad
Inter-game ad
Post-game ad
Product placement
Advergame
Games features
Games attributes (Culp et al., 2010)
Genres
Purchase requirement for moving to a higher level in the game
Inducements to extend game play
Game personalization options
Play themes (Zhang et al., 2010)
Activities that contribute to learning and provide educational value to users
Activities that motivate users to learn and read more about the brand or its products/services
Activities that help users pit their knowledge, skill, beauty, or any other type of competition against others.
Activities in which winner(s) are or will be clearly announced
Activities in which scoring more points, being faster, gaining more buddies, having more contributions is important to users
Activities which encourage users to test their skills
Activities that attempt to elicit imagery and creativity from users
Activities that offer a sense of escape or adventure
Activities that provide an opportunity to users to experience an imagery life.
Activities that contain beauty, objects, or goals to be dreamed of or fantasized about.
Activities that require users' full concentration and engrossing in order to enjoy.
Activities that have the highest control in users' hands and leader direct guidance or rules to follow.
Activities that involve the formation of interest-groups or community with a specific group name
Revenue model (OECD, 2013)
Paid downloads
In-app advertising
In-app purchases (games, digital content)
Freemium (free-to-premium)
Promotion of non-digital goods
Resale of data collected via app use

User engagement
Social media (Winpenny et al. 2013)
Youtube
Facebook
Twitter
Others
Community (Winpenny et al. 2013)
Register or create an account
Member sign-in
Viral elements (Culp et al., 2010)
Messages passed on via social networks
Sending an e-mail greeting to a friend
Inviting a friend to play or join the Web site
Protective measures
Prompts (Brady et al., 2010)
For repeat visits
For prolonged visits
For buying virtual goods
For buying goods
Protective measures
Ad breaks / Ad alerts
Presence (Paek et al., 2014)
Present only before game loads
Present only while game is loading
Present only after game loads
Present before and after loading
Present during loading (during playing game)
Present before, during and after loading
Format (An & Kang, 2013)
One-sentence ad break
Multiple-sentence ad break
Icon
Combination
Content (An & Kang, 2013)
Presence of an introductory explanation about the ad break itself
Presence of advertising literacy components
Legal information (An & Kang, 2013)
Privacy policy
Terms of usage
Age limitation (Paek et al., 2014)
Age limit suggested
Present and age limit enforced (must enter birthdate)
Parental control (Henry et al., 2009)
Parental permission required statement
Parental section
Parental warning
Content rating and labelling schemes (OECD, 2012)
Content rating
Labelling schemes
Mechanism to contact the firm (Lascu et al., 2013)
Forms
Email
Report a problem
Phone

3.3.4 Procedure

A pilot test was carried out with 3 different games to check the indicators and the reliability of the coders. From 04/08/2014 to 11/08/2014 two researchers coded the selected games on 72 indicators using Microsoft Excel spreadsheet (indicator present = 1; indicator absent = 0). The researchers discussed discrepancies arising from the analysis of the games and reached an agreement about each coded item with help from a third researcher.

If the game did not contain an embedded advertisement, some indicators were skipped (IF indicator 1=0 GO TO indicator 12 and SKIP from indicator 48 to 59). When the indicator was not applicable, this was coded as 99. Genres of the games and content rate were coded as a free text. Annex 12 In-depth analysis of games results presents the raw results of the analysis.

3.4 Focus groups

3.4.1 Scope

The focus groups were designed to give us insights into what parents thought and did about their children's activities in the online world, and to give us insights into children's activities and preferences with social media, mobile applications and online games. These focus groups were conducted with parents and their children separately.[10] The discussion guide with parents was designed to gain a deeper understanding of their perception of the main problematic areas regarding their children's online experiences. The discussions with parents focused on the following themes:

- Awareness of children's online activities
- Attitudes, concerns and behaviours in relation to children's use of the Internet
- Knowledge of online games
- Attitudes, concerns and desires in relation to children's experiences of online games
- Recognition of problematic areas in relation to children's online activities
- Specific recognition of advergames and related issues, including alcohol advertising
- Specific recognition of issues related to in-app purchases
- Specific recognition of issues related to social media platforms, including promotion of alcohol beverages
- Perceptions regarding existing protective measures
- Mediation activities and perception of self-efficacy.

The focus groups with children complemented those with their parents. They gave insights into children's perception of the problems and threats that they are exposed to online, their ability to identify persuasive intent in an advergame, and whether this affected their preferences. The literature indicated that the link between knowledge and critical attitudes tended to be weaker in this new form of advertising in comparison to traditional channels. The discussions with children also shed light on the extent of their awareness and concerns related to other problematic areas, and how children themselves interpreted parental mediation. The focus groups with children centred on the following themes:

- Attitudes and perception of their Internet activities
- Habits on the Internet
- Preferences regarding websites
- Interaction with parents and teachers
- Habits and modes of playing online games
- Exploration of problematic areas
- Preferences regarding games

[10] See Annex 6 Focus group screening criteria and guidelines

- Awareness regarding problematic areas
- Parents' involvement in protective measures.

3.4.2 Materials

The children were shown three sets of images, as projective input, to facilitate the discussion on the following topics[11]:

- Experience of the Internet (general images set)
- Experience of problematic practices (animals and emoticons images sets):
  - Online advertisement
  - Advergames
  - In-app purchases
  - Privacy issues

3.4.3 Distribution of participants and screening criteria

A total of 16 focus groups, lasting 2 hours each, were conducted in eight countries (Spain, Italy, France, Poland, The Netherlands, Germany, UK and Sweden). In each country one focus group took place with children, aged 11-12 years, and another one with their parents/guardians. The two groups were conducted at the same time. The children were recruited on the basis of experience of gaming and other online activities. In the parents' focus group, one parent per child participated. The focus groups comprised eight participants and were led by experienced qualitative researchers. The screening criteria and quotas were as follows:[12]

- 50% of children to be female and 50% to be male
- 50% of parents to be female and 50% or parents to be male
- 50% of children should own a smartphone for their private use (data plan is not mandatory, as they can use WiFi)
- All children should report spending at least 30 min connected to the Internet on a typical day, either from their smartphone or from a computer (laptop, desktop)
- Of the children at least 2 per group should play games online with other players ("risky explorers"), 2 should play games alone ("intensive gamers"), and 2 should intensively communicate with people via chat or social media networks ("experienced networkers")
- At least 2 children per group should have purchased at least 1 app or game online

In the last 15 minutes of the session, the parents and children were brought together and divided into two groups – each group consisted of 4 children and their respective parents. Stimulus of a beverage app was shown to all groups. The objective of bringing the parents and children together was:

- To observe the reactions of children and parents to particular problematic practices and protective measures
- To observe the interactions between children and parents on these issues
- To suggest possible input to the development of protective measures

[11] See Annex 7 Focus group stimuli materials.

[12] See Annex 8 Focus group parents and children distribution.

3.5 Parents' survey

3.5.1 Questionnaire design

The questionnaire designed took into account the findings of the systematic review and inputs from Professor Sonia Livingstone, coordinator of the 'Kids online' project and Dr Ellen Helsper. The parents' survey[13] collects views on the following aspects:

- Children's use of the Internet – access and devices
- Parents' perception of children's digital skills
- Mediation of use and safety: active and restrictive
- Perceptions of risks, their severity and vulnerability
- Problematic practices online
- Protective measures
- Self-efficacy
- Parents' digital skills
- Parents' and families' socio-demographic information
- Parents' recognition of digital content

The questionnaire was developed in English and then translated into the language of each country covered in the study and checked using back translation.

3.5.2 Target and sampling

Table 6 summarises the technical information of the survey with parents[14].

Table 6 Technical specifications

Dimension	Information
Population	Parents of children (6 to 14 years old), aged 25 to 65 years old
Scope	Eight EU Member States (geographically balanced): • France • Germany • Netherlands • Spain • Poland • Italy • Sweden • United Kingdom
Methodology	Computer Assisted Web Interviews (CAWI) using online panels
Sample size	N= 6,400 (800 interviews per country)
Quotas	By country and age group: 25-34 years old 35-49 years old 50-64 years old
Sampling error	+1.25% for overall data and +3.54% for country-specific data. In all cases, a maximum indeterminate probability (p=q=50), for a confidence level of 95.5% is applicable for each one of the reference populations
Weighting	Weighting by country size
Sampling	Sampling based on quotas

[13] See Annex 9 Parents' survey questionnaire.

[14] Also see Annex 10 Parents' survey target, sampling and wieighting.

3.5.3 Fieldwork process

The fieldwork period[15] ran from 26th February 2015 to 24th March 2015. Three consecutive launches were established from the outset:

- The first launch took place in the United Kingdom (24.2.15), which was the country in which the pilot study was conducted.
- Secondly, and after having included some minor changes, the full launch went ahead in the UK on 26.2.15.
- Finally, after the translation of the questionnaire into the other languages, a joint launch covered the remaining countries between 3.3.15 and 24.3.15.

The average interview length was 23 minutes, with considerably homogenous results per country, varying between 21 minutes in the UK and France, to 26 minutes in Poland. Table 7 summarises the average interview length per country:

Table 7 Interview length

Country	Interview length
Germany (DE)	23 mins
Spain (ES)	22 mins
France (FR)	21 mins
Italy (IT)	23 mins
Netherlands (NL)	23 mins
Poland (PL)	26 mins
Sweden (SE)	24 mins
United Kingdom (UK)	21 mins
AVERAGE	23 mins

3.6 Experiments

3.6.1 Advergame experiment

3.6.1.1 Scope

In this experiment the effect of playing an advergame on children's food intake was measured; followed by an examination of the effectiveness of introducing a protective measure against that food intake. Children played an advergame promoting either energy-dense snacks or non-food products. Half of the children played a version of the advergame with the protective measure (a message indicating that the game was an advertisement) and the other half without. While playing the children could eat from two bowls containing energy-dense snacks. After they had finished playing they answered questions related to the game, the advertised brands and products, the advertisement and the protective measure.

3.6.1.2 Participants

Children (N = 597) were individually tested in the Netherlands (N = 215) and in Spain (N = 382)[16], at their schools during regular school hours. They were divided in two age

[15] See Annex 11 Parents' survey fieldwork process.

[16] As all the schools invited to participate in the experiment agreed with enthusiasm, none were excluded from the study. This led to a larger sample in Spain than in the Netherlands.

groups: 6-8 years old (younger group) and 9-12 years old (older group)[17]. In the Netherlands, the mean (± *SD*) age of the children was 9.0 (± 1.18) years and 50.7 % were boys. Children were tested at three different primary schools, in Apeldoorn (77), Venlo (61), and in Roermond (61).

In Spain, the mean (± *SD*) age of the children was 8.9 (± 1.68) years and 47.1 % were boys. Children were tested at five different primary schools in Barcelona region, in the schools Voramar (51), Jesuïtes Gràcia Kostka (186), Escola Progrés (73), Escola Josep Carner (42) and Escola Alta Segarra (30).

Table 8 Participants

Country	N	Mean age	SD	% Boys	% Girls
Netherlands	215	9	± 1.18	50.7%	49.3%
Spain	382	8.9	± 1.68	47.1%	52.9%

The data from four Dutch children were excluded due to Ramadan, as they were telling the experimenter about this only after the experiment. Thirty-one Spanish children were excluded from the analyses because they had not finished the game, did not understand the experimental procedure, or had outlying scores on snack consumption ($M + 2.5*SD$).

The final sample comprised 211 Dutch children and 351 Spanish children. Of the Dutch children, 7.1 % were underweight, 74.3 % were normal weight, 13.3 were overweight, and 5.2 % were obese. Of the Spanish children, 18.5 % were underweight, 65.5 % were normal weight, 11.1 % were overweight, and 3.7 % were obese.

3.6.1.3 Stimuli and Materials

Professionally designed online memory games were used, that had been tried and tested in previous studies (Folkvord et al., 2013, 2014). The two games (promoting food and non-food products) were identical, except for the advertised brands and products.

The memory game consisted of 16 cards, with the brands appearing on the back of the cards, and the individual products (candy or toys) appearing on the front of the cards. The energy-dense snacks advergame promoted a popular candy brand and eight different sweets from this brand; the non-food advergame promoted a popular toy brand and eight individual toys from these brands. To enhance brand awareness, the brand was featured prominently on the right side of the screen.

Similar to typical advergames, two specific features were integrated into the experience to engage the children in the game. First, a digital timer appeared on the top-left of the screen, and a time bar appeared in the top centre of the screen to exert time pressure. Second, the game played an unpleasant sound when the child selected a false pair and a pleasant sound when the child selected a correct pair.

The stimuli and materials used available commercial brands. To avoid any possible misinterpretation, it is standard practice in this type of experiments not to reveal details of these brands.

3.6.1.4 Procedure

The experimenter collected one child at a time from the classroom, (the children had been grouped in alphabetical order). They brought each child to another classroom or office containing a computer running one of the advergames.

[17] In the Netherlands the youngest children were 7 years old, and 76 children were part of the younger age group while 134 children were part of the older age group. In Spain 159 children were part of the younger age group while 192 children were part of the older age group.

The session started with the children answering a short questionnaire on gender, age, class and hunger levels (masked with other questions), excitement about the research, levels of fitness and tiredness. Next, they played the advergame promoting either energy-dense snacks or non-food products. Half of the children played a version of the advergames with the protective measure, and the other half of the children played a version without the protective measure. The protective measure was a line of text that was prominently displayed, which stated: "Remember: This game is an advertisement for X".

For the advergame promoting energy-dense snacks "X" was a popular candy brand, and for the advergame promoting non-food products "X" was a popular toy brand. Thus, there were four different conditions: (1) advergame promoting energy-dense snacks, (2) advergame promoting energy-dense snacks with protective measure, (3) advergame promoting non-food products, and (4) advergame promoting non-food products with protective measure.

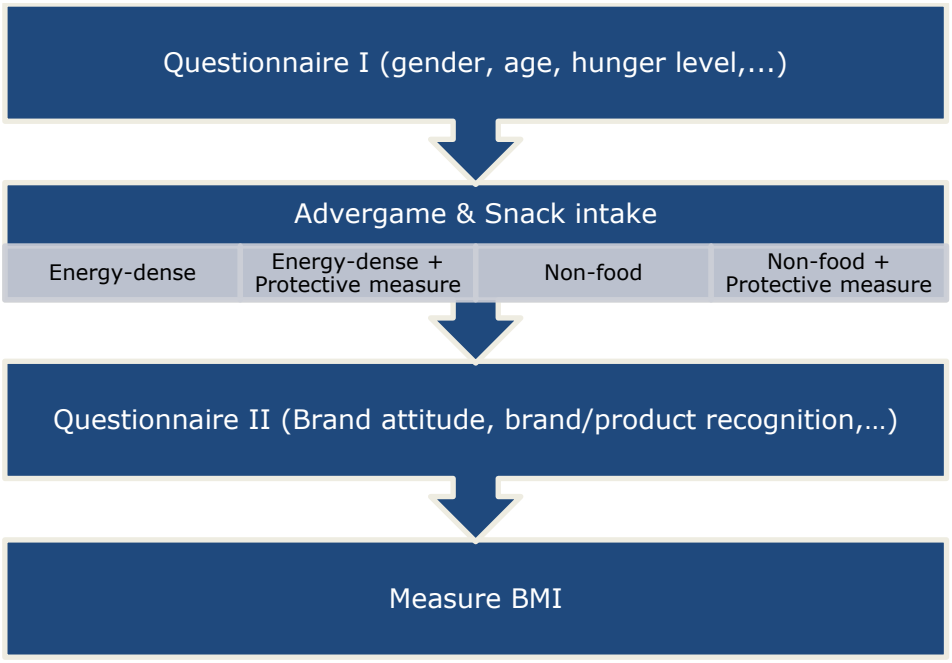
The children were randomly assigned to one of the conditions. The experimenter read the instructions on the screen, which stated that the child would be playing a memory game for five minutes and should attempt to finish as many games as possible. The children were exposed to the advergame for five minutes. Comparable studies (Folkvord et al., 2013, 2014) have used approximately the same amount of time.

While playing, the children could eat freely from the two bowls with energy-dense snacks in them. One bowl contained the advertised energy-dense snack and the other contained a different energy-dense snack. After each session, the experimenter weighed the bowls to calculate calorie intake. The experimenter refilled and weighed the bowls before the next child entered the room to make sure that the children did not notice how much the previous child had eaten.

When the game was finished the children filled in the second part of the questionnaire and the experimenter measured their weight and height (without shoes but with clothes). The second part of the questionnaire contained questions on brands and products and on persuasion knowledge (conceptual and attitudinal). Children who played the game with the protective measure were asked two extra questions to check if they had read the protective measure message. Finally, they were asked if they knew the purpose of the experiment.

The total duration of the experiment was around 25 minutes. The following figure sketches the design of the experiment:

Figure 3 Advergame experiment overview



3.6.2 In-app purchase experiment

3.6.2.1 Scope

In this experiment, the effectiveness of the different protective measures in games offering in-app purchases was compared. The simulated game consisted of a numeric task based on the Panamath test (Halberda et al., 2012) in which children were asked to select, out of two boxes containing circles, the one which contained the larger number of circles. They completed 10 levels of increasing difficulty and, in so doing, accumulated gold, depicted in a bar on the screen. After playing for free for a while, the children were invited to invest some of the earned gold to purchase different features within the game. Three protective measures were embedded in the game.

3.6.2.2 Participants

Children aged 8-12 years (N=485) were tested in the Netherlands (N=223) and in Spain (N=262) at their schools during regular school hours. The mean (± *SD*) age of the children tested in Spain was 9.75 (± 1.55) years, while in the Netherlands the mean (± *SD*) age was 9.64 (± 1.34) years. In terms of gender, in Spain 48.3% were female, while in the Netherlands the female proportion was greater, at 55.2%.

Table 9 Participants

Country	N	Mean	SD	% Male	% Female
Netherlands	223	9.64	± 1.34	44.8%	55.2%
Spain	262	9.75	± 1.55	51.7%	48.3%

In Spain, children were tested at four different primary schools in the Barcelona region: Voramar (101), Virolai (51), Escola Progrés (40), Escola Josep Carner (35) and Jesuïtes Gràcia – Kostka (35). Thirty additional children were tested but excluded from analysis due to 5 being previously tested with the advergame, 12 due to experimental and software errors, 9 who did not reach the minimum age to participate and 4 presented doubtful behaviour considering their age. In the Netherlands, children were tested at Mozaiek School in Roermond (133) and Terebint in Apeldoorn (90). For the analysis nine were excluded due to experimental or software errors.

3.6.2.3 Stimuli and Materials

Following the design of the Panamath game design, 10 levels were designed with varying difficult. A pair of boxes containing different amounts of circles appeared at each level of the game. Each box was depicted being held up in the air by a character from the children's programme *Sesame Street*. The circles in the boxes were differently coloured in accordance with the colour of the *Sesame Street* characters. The circles were shown either in two separated boxes or in an intermixed single box. The size and colours of the circles varied every two levels in order to make the game more engaging. The children were asked to choose which of the two pictures had more circles by pressing one of the two assigned keys that corresponded to the *Sesame Street* characters. The ratio between the two sets of circles determined the difficulty of the selection - the smaller the difference between the sets, the harder was the task. A gold bar appeared on the screen at the end of each level. The bar increased or decreased in size during the bonus and purchase phase accordingly. The duration of the game was approximately 15 minutes, with each level taking around 1.5 minutes to complete. The game structure comprised five different stages:

1. **Mock App store:** Before the game started the children saw a screen depicting a simulated App Store from which they could select the game they wanted to play with no information about the game content. However, they could see that some options

were free and some would cost money. Independently of the choice, all buttons led to the same game.

2. **Instructions and familiarization:** The children listened to pre-recorded instructions through headphones, in which a female voice explained the game with pictures giving examples of the scenes in the game. The instructions were also in text on the screen. In the training phase the children were told they were going to play a game in which they would have to choose which of the two pictures on the screen had more circles. Then they were presented with two example pictures, after which they had to press the correct key to continue with the instructions. They were then told to try to press the right key as quickly as possible. Children were provided with a small amount of gold in the beginning of the game. They were told they would have the chance of exchanging some of the gold to obtain extra features once the game started. The children were also taught how they could earn gold rewards with an example on screen. At certain moments in the game, children were told that they had to click on top of the gold bar to spend some of the gold in order to be able to continue with the game. The amount of gold that they chose was removed from the bar when clicked on and this worked as a proxy for the gift they would receive as thanks for participating in the study.

3. **Level of the Game:** Before each level, a game itinerary screen appeared to show the children their position (level) in the game and the remaining levels that could be reached. In this screen, children were presented with a rainbow containing 10 different colours from the outer to the inner arc. Each of the colours corresponded to one of the 10 levels of the game. As soon as the rainbow appeared on the screen, a bird jumped from one colour to the following one as a marker of level completion. Participants gained an overview of the game status as both the completed and remaining levels were presented. The entire game was divided into 10 different levels. In order to keep the children motivated throughout, the difficulty of the levels was adjusted to the respective child's performance after each level was completed. If children scored less than 65% correct responses within one game level, the difficulty level was reduced. If their performance was between 65% and 85% correct responses, the difficulty level remained constant. If their performance was above 85% correct answers, the difficulty level increased in the next game level. After each game level, participants were rewarded with a gold bonus. Successful completion of a particular level led to an increase in the size of the gold bar, which could be used to "pay" for the access to the next level.

4. **Gold Exchange:** Levels 1 to 4 were 'free' in that the children obtained gold but they did not need to spend it to continue playing. Before the beginning of levels 5, 7 and 9, after the rainbow itinerary screen was shown, the children were presented with the different in-app purchase options. At these points in the game, they had the option of paying for a new pair of characters to play with, of paying to continue playing, or of buying a magic wand that would allow them to speed up the Panamath game during the consecutive levels. The three purchase conditions were equal across all experiments and were always presented in the same order.

    - **Purchase option 1: Game customization.** Before the beginning of level 5, two new pairs of Sesame street characters were presented on the screen. The children had to click on top of one of the two options to select the new characters they wanted to play with until the end of the game.

    - **Purchase option 2: Pay to continue.** Before the beginning of level 7, children were asked to spend gold in order to continue advancing in the game.

    - **Purchase option 3: Obtain a feature to improve the game.** Before the beginning of level 9, children were presented with a magic wand with speed powers that would allow them to accelerate the duration of the Panamath pictures and the inter-trial intervals for levels 9 and 10 and therefore obtain their rewards sooner.

After each purchase option was described, the gold bar appeared and children were asked to give away (pay) the amount of gold they wanted to spend for each in-app purchase option.

5. **Interventions:** All the children were randomly assigned to one of the four experimental conditions. In Experiment 1 there was no intervention before the presentation of the three purchase options whereas experimental conditions 2, 3 and 4 contained interventions presented at the moment of purchase options 2 and 3.

   - **Experiment 1 Baseline Experiment.** The children played the game and were exposed to the purchase options directly.

   - **Experiment 2a Multiple alternatives treatment.** The aim of the intervention was to test whether a prompt to compare the alternative ways to spend the gold reduced the children's tendency to spend gold during the transactions. The game stopped at two different moments, in which a screen displayed four possible alternatives. The alternatives were always presented with appropriate visual cues for each alternative and with a voice narrating the following:

     'Before spending gold think of how many things you could do with this gold. You could have more balloons, or more stickers, or more rubber bands… Or perhaps you could even use it to play another game'

   - **Experiment 2b Disengagment treatment.** The flow of the game was interrupted at the last two purchase points by a complex picture of the well-known cartoon *Where's Wally*. Before continuing, children had to locate and click on Wally, the lead character in the cartoon. The aim was to explore whether disengaging children from the current task, by interrupting the flow and washing out their current visual-spatial focus on the game, could reduce their tendency to give gold during the transactions.

   - **Experiment 3 – Warning message treatment:** In the moments preceding the decision between the three options, a message came on the screen:

     'Think for a moment. Is it worth buying extra features?'

3.6.2.4 Procedure

The study was conducted in the school facilities during the day. The total duration of the experiment was around 20 minutes and children were simultaneously tested in groups of three. The children were seated in a quiet and well illuminated room that contained three computers equipped with headphones and a mouse. In order to avoid interference, the computers were located in such a way that it was not possible to see the screen of the other participants. Participants were also instructed not to talk during the game. After they entered the room they were told they would be playing an online game for which they would get a present at the end. At this point, the experimenters introduced the four possible prizes (two types of stickers, water balloons or rubber bands to make bracelets), which were placed at the entrance of the testing room or in a location not visible for a person sitting facing their computer. The purpose of the rewards was to provide participants with a physical, divisible and equally quantifiable alternative, which could be linked to the game's virtual currency and, simultaneously, serve as an enhancer of children's motivation to play the in-app purchase game. The experimenter delivered the rewards according to each participant's initial choice and final gold accumulation.

Children were asked to select one of the prizes offered by the experimenters. Each prize was placed in a transparent glass, which contained other items matched for approximate value, volume and attractiveness. Before the children were seated in front of their computer, the experimenters explained that they would get as much of the selected

reward as the gold that remained at the end of the game. That is, if the bar was half empty, they would receive half of the goodies contained in the glass.

Once in front of the computer, the children wore headphones to listen to the audiovisual pre-recorded instructions and the training phase started. The children were not allowed to interact, unless they expressed any confusion after the end of the training period. Having completed the training, the play phase started. Because the experimenters realized that the younger age group had some difficulties in understanding the instructions, the children in this group were also given a direct verbal explanation of the game. Upon completion of the game (after going through the 10 levels), the children completed, with the support of the experimenter, a short questionnaire about their game habits.

After the experiment, the children were given a small reward for their participation – the one selected before starting to play the game. The full amount of the reward was placed in an open envelope. Each child was shown the content of their envelope and was told "This is the total amount of goods you could get. Since your score was e.g. 90%, I am going to give you the proportional 90% of your reward". The rewards were delivered to the teachers at the end of the testing day, so that children would not be distracted in their later classes and, crucially, to ensure that subsequent players were not influenced by others who had completed the game.

Figure 4 In-app purchase experiment overview

4 Marketing techniques overview

This chapter presents the results of the in-depth analysis of games and evidence from the systematic review covering marketing techniques and problematic practices. It particularly addresses Research Question 1: *"What are the most common, effective and questionable marketing techniques employed by the industry to impact consumer behaviour of children in different age groups in online games, mobile applications and on social media sites?"*

The dimensions, sub-dimensions and indicators used in the analysis address research question 9: *"How to identify unfair commercial practises in online games, social media and mobile applications directed at children, and substantiate why they are unfair?",* and research question 10: *"What are the barriers to implementing effective measures for alleviating children's vulnerability in relation to online marketing, including cultural and socio-economic aspects?"*

The following sections present the mapping of online marketing techniques and problematic practices, the analysis of the advertisement features used in games, game features, the facilitation of user engagement, and the main protective measures currently in place, including those implemented in the major online platforms.

4.1 Mapping of marketing techniques and problematic practices

There has been a growth in online advertising in recent years. For example, in the UK it has become the largest marketing channel, overtaking television in 2011 (Winpenny et al., 2013). This type of advertisement introduces new commercial techniques that have distinct features compared to conventional advertising. Brady et al. (2010) stress that companies now use very sophisticated and engaging marketing techniques, placing online marketing outside the scope of existing regulatory codes. This can be problematic and can lead to situations in which children are unprotected. Cairns (2013) conducted a case study on interactive digital marketing, showing that interactive digital marketing across the globe was expanding the set of strategies available to business to promote products, brands and to influence consumer behaviours. She added that there was no evidence that current policies could constrain the effects of interactive collaborative marketing of HFSS foods and beverages. Jain (2010) also indicated that the changes in the marketplace have led to the introduction of novel marketing strategies such as neuro-marketing, to which children are particularly vulnerable. . In addition, contextual advertising, which refers to online and mobile marketing that provides targeted advertising based upon user information, such as the search terms that have been used previously or recent web-browsing activity, has been identified as problematic (Cai & Zhao, 2013).

Nairn (2008) found that almost a quarter of the advertisements shown in children's popular websites in Britain were unsuitable for children and 70% of websites visited by children were not created for children alone. Slater et al. (2012) investigated the content of teen websites and found that advertisement for cosmetics and beauty products was very prevalent. This often included inappropriate content for children in terms of healthy lifestyle as it proposed ideals of female beauty focused on thinness and the need to lose weight. Kervin et al. (2012) explained that the online advertising to which children were exposed often failed to comply with existing broadcasting codes of practice for mainstream advertising.

Online marketing can be difficult to identify and to distinguish from non-commercial content. In their study, Alvy & Calvert (2008) found that, in many instances, a seamless integration of content and marketing was observed on children´s websites. Kervin et al.

(2012) pointed out that a number of Australian magazines for children provided links to websites that contained advertising which, in most cases, appeared as hidden advertising within written text, images and games. Malik (2012) explored the unethical practices of food advertisements targeted at children in India, identifying an abundance of food advertisements that relied on tricks and gimmicks to attract children.

Online advertisements promoting food products are common in websites targeting children in Europe and the US (Alvy & Calvert, 2008). Henry & Story (2009) found that almost one half of the branded websites they analysed used designated children's areas to market food and beverages. The advertised food was often in the HFSS category with low nutritional quality, possibly indicating a link between advertisements and healthy eating (Alvy & Calvert, 2008; Culp et al., 2010; Paek et al., 2014; Henry & Story, 2009; Kelly et al., 2008). In fact, the content analysis approach employed by Lingas et al. (2009) in their study revealed that the majority of food and beverage products advertised on US websites for children were classified amongst those that children should avoid. Nairn & Hang (2012) also found that advergames were widely used for promoting HFSS products that, in general, were banned from TV programmes. Furthermore, Thomson (2010) argued that advergames promoting cereals disciplined players into a potentially unhealthy nutritional logic, by specifically drawing children into an immersive marketing world. In a follow-up study, Thomson (2011) critically discussed online food advergames targeting children, arguing that mixed messages were being put out there about nutritional health which simultaneously promoted nutritional wellbeing and the consumption of high sugar cereals. Given the increase in diet and weight-related diseases amongst children, this kind of contradictory practise is certainly worrying.

Culp et al.'s (2010) study on advertising content embedded within the websites of two popular US children's networks showed that advergames was the predominant marketing strategy. Likewise, An & Kang (2013) analysed 164 children's food brand websites and found advergames in half of them. Lee et al. (2009) found that top-selling food marketers in the U.S. frequently used interactive children's games on their websites. The identified advergames included products that could be harmful for children such as candy, chewing gum and other high-sugar brands that tended to be integrated into active game components in advergames. Cicchirillo & Lin (2011) found that for-profit organisations tend to include information about the advertised food products in the advergames, but that they almost never mentioned their nutritional value.

Sithigh (2013) reviewed several legal issues arising in the app market, which were becoming increasingly important as the shift from phones to "smartphones" continued apace. With regard to the appropriateness of advertising content, they highlighted the difficulties related to app regulation and the limited role of statutory schemes and self-regulation by industry. However, Chen et al. (2013a) found that in some cases, the maturity requirement was inoperative and this meant that there was a risk of of children being exposed to unsuitable content. In a different study, Chen et al. (2013b) noted that maturity ratings did not apply to the advertisement content within apps. They found that advertising content was indeed common in free apps designed for children and was unsuitable for the ages defined in the maturity ratings.

Other studies highlighted the use of Social Networking Sites (SNS) for advertising purposes. Araujo & Neijens (2012) found that top global brands targeting younger audiences were more likely to advertise in Social Networking Sites than brands targeting generic audiences. Zhang et al. (2010) stressed that branded entertainment in SNS constituted an increasingly frequent part of marketing strategies. In particular, they analysed the role of playing games and giving rewards to users, in form of praise and material rewards (money or popular gadgets). They found that these strategies contributed to blurring the boundary between entertainment and marketing communication, especially on the Internet.

4.2 Online games and platforms features

To analyse the current practice of online games, an in-depth naturalistic analysis of 25 games was carried out between 04/08/2014 and 11/08/2014. The analysis focuses on four main dimensions: advertisement features, game features, user engagement strategies and protective measures. These dimensions made it possible to capture the most common marketing techniques directed at children that were employed by the industry in online games, mobile applications and social media sites, including advergames. The analysis also looked at protective measures developed by the main platforms: Google, Apple, Facebook and Amazon. The following sections present the results of the analysis for each dimension showing the relevant marketing techniques and how these could lead to unfair commercial practices[18].

4.2.1 Advertisement features

Advertisement features were analysed according to a number of key dimensions, including type, attributes and "level" of embeddedness.

The first sub-dimension, **type of advertisement**, related to whether the advertisement was embedded within the game or was merely displayed on the same webpage as the game (Jernigan & Rushman, 2014).

The second sub-dimension, **advertisement attributes,** was selected following Henry & Story's (2009) observation that there was a variety of marketing techniques present on web sites within designated children's areas (DCAs). The most popular advertisement attributes found in the websites in their study were: pictures of the product (100%), a logo or product symbol (97 %), and a link to product information (84%).

The third sub-dimension, **type of embedded advertisement,** was taken from the Interactive Advertising Bureau (IAB, 2010) who distinguished between the sorts of embedded advertisements in online games (AOG) as follows:

- ***Advergames.*** These games are specifically designed for advertising. These games are marketing-communication sui generis, normally designed by the marketing department of a company or organisation to promote its brand or product. The brand or product is the protagonist, the central character or feature of the game.

- ***Product Placement.*** This refers to the insertion of a brand or product into an entertainment medium such as television, film, or an online game. This type of marketing tool has a long and successful history. Pioneered in the 1970s both in television and in Hollywood films, it became common practice for marketing in videogames in the 1990s. The opportunities for product placement in games ranged from merely placing a logo on a virtual billboard, to integrating the product into the game's plot. Static and dynamic product placement can be distinguished. ***Static in-game placement***, also referred to as "hard-coded" advertising, includes the insertion of advertising elements into the game that can not be changed. ***Dynamic in-game placement*** builds on the same concept as static in-game advertising. The difference is that the elements used in dynamic placement can be altered, adapted, and individually targeted depending on location, day of week and time of day, allowing companies to target more narrowly defined demographic segments.

- ***Sponsorship***. Media law and economics generally distinguish sponsorship from advertising. Whereas advertising aimes at promoting a specific product or service, the purpose of sponsorship is to promote the image or brand of a person,

[18] See Annex 12 In-depth analysis of games results

company, or organisation. Online game sponsorship refers to a situation in which a person, company or organisation finance an online game either directly or indirectly, i.e. through the sponsoring of a tournament, zone (level), or a session of game play, in order to promote its image or brand.

- ***Pre-Game, Inter-Level, and Post-Game Advertising***. Pre-game advertising is the presentation of digital video or display of advertisements before the game is played, more specifically, while the game is loading. Similarly, inter-level advertising involves the display of advertising messages after the completion of a game play level, as the next level is loading. Post-game advertising messages are displayed after the completion of the game.

These definitions are aligned to the findings of Alvy & Calvert (2008: 710), who explored the range of marketing techniques that can be used online. These can include product placements -"*a marketing that embeds a product within the central content of a web site*"; integrated marketing pages - "*web pages that seamlessly incorporate a marketed product or brand into a web page with the use of product logos, product packaging images, and branded characters*", and advergames - "*online games that combine marketing with game play*". While Alvy and Calvert (2008) noted that the majority of children's websites used traditional advertisements, newer forms of marketing are emerging.

The results of our analysis showed that almost half of the games gathered from App Store and Google Play (5/12) included some form of embedded advertising, while just one game (*Don't Tap The White Tile*) contained contextual advertising. *Stickman Soccer 2014* and *Angry Birds Epic* included the presentation of advertisements before the game was played (Pre-game ad), while *Fish Out of Water* and *The Sims 3* displayed the advertising messages after the completion of a game play level (Post-game ad). This advertisement encouraged players to download a new game.

In addition, *Stickman Soccer 2014* and *The Sims 3* displayed product placement showing advertisements in a football stadium and in a city. In most of the cases, these embedded advertisements included the picture and the logo of the product and also a link for product information.

Facebook games showed another pattern. Here, all the games contained contextual advertising. It is worth noting that Facebook games were embedded into the Facebook platform, thus the left side of the platform displayed advertisements. One example of a Facebook game was *FarmVille 2* which contained embedded advertisement. The advertisement came with a picture and logo of the product, as well as a link to product information.

The analysis of the advergames showed that all games contained embedded advertisements and were, at least partially, also showing contextual advertising (Happy Meal, Crunch and Doritos). Most of these games displayed the picture of the product, the logo or product symbol, and a link to product information.

Coke Recycling, Doritos, Trus Danone, Club Kelloggs and Fast of Fail clearly depicted the brand or product as the protagonist, the central character or feature of the game (advergame), also included some type of product placement. Games providing a platform for Happy Meal and Crunch brands did not tend to use the brand or product as the central character, but as a contextual "feature".

4.2.2 Games features

Game features included game attributes, play themes and revenue models. The first sub-dimension covered **game attributes**. The selection of these attributes was based on Culp et al. (2010). These authors analysed the characteristics of food industry websites and advergames targeting children. The websites analysed in their study used a number of strategies to encourage children to spend more time on the websites, through the provision of games, free downloads or the customization of a page. Strategies deployed

to increase children's length of stay included a "play again" option, or the opportunity to progress to a higher game level. The opportunity to win prices also featured in one game.

The second sub-dimension, **play themes**, drew on Zhang et al. (2010) who analysed how play themes were incorporated into branded entertainment. These authors found that four main play themes (play as power; play as identity; play as frivolity, and play as fantasy) were present in branded entertainment in the brand profile pages of Facebook, with 'play as power' as the leading theme across all branded entertainment.

The third sub-dimension, **revenue model**, was adopted from the OECD (2013). In the report on the App Economy, a variety of new revenue models that were emerging in the mobile app economy were identified. These included paid downloads, in-app advertising and purchases, promotion of non-digital goods, freemium, and resale of data collected via app use. ***Paid downloads*** refers to the charging of money for downloads of apps, which developers can charge in any platform. ***In-app advertising*** provides another opportunity for developers to receive money from their apps, often leveraging existing ad networks managed by platform providers. This advertising can take form as either embedded or contextual advertising. Another revenue source stems from the possibility for users to make ***purchases within an app***. This includes apps that allow the unlocking of additional game features and functionalities, such as bonus game levels. In-app purchases are seen as an increasing source of complaint from parents, whose children have made costly in-app purchases via initially free downloaded apps. Also ***freemium***, or free-to-premium, has become a popular revenue model for app developers. Here users have free access to a version of an app with limited functionality, with the possibility to upgrade to a paid app or to pay for additional features. It is common to find "Pro" versions of a game, in which users can enjoy far more functionalities and features than in the free version. The ***promotion of non-digital goods*** remains an important source of revenue for app developers. It refers to apps that are provided for free, but serve as a way to promote other products, on the basis of which developers receive revenue from increased sales. Lastly, the ***resale of user data*** from apps serves as a source of revenue. The data collected by apps can be sold for a variety of purposes, including targeted advertising, firms selling user data such as telecoms, platform providers and app developers themselves.

Our in-depth analysis showed that casual games[19], including puzzles, were the most common genre identified in App Store and Google Play platforms, followed by simulation games (*Clash of Clans*, *Minecraft*, *The Sims 3*, *Hay Day* and *Castle Clash*). While the same held for advergames and Facebook, it is worth noting that Facebook featured two casino games.

The most common attribute in Google Play and App Store Purchase was the availability and/or requirement for payment to move to a higher level in the game. Just three of the games analysed (*Geometry Dash*, *Minecraft* and *Angry Cats*) did not include this feature. Inducement to extend game play was also found in all the games except for *Stickman Soccer 2014*, *Minecraft*, *The Sims 3* and *Angry Cats*. Game personalization options were included in half of the games (*Geometry Dash*, *Stickman Soccer 2014*, *Candy Crash*, *The Sims 3* and *Hay Day*). Inducements to extend game play were mainly messages challenging users to continue playing. In contrast to the diversity of choices present in Google Play and App Store, Facebook games and advergames were rather similar in kind. Facebook games contained the three attributes (purchase requirement for moving to a higher level in the game, inducements to extend game play and game personalization options), while most of the advergames (*Coke Recycling*, *Crunch*, *Doritos*, *Club Kelloggs* and *Fast or Fail*) contained inducements to extend game play, and just one (*Trust Danone*) offered game personalisation options. It is important to emphasise that in the

[19] The concepts of casual players and casual games became popular around the year 2000 as contrasts to more traditional video games, now called hardcore games, and the hardcore players who play them. A casual game is a video game targeted at or used by a mass audience of casual gamers. These games are distinguished by their simple rules and lack of commitment required (Chiapello, 2013)

case of Facebook games, the inducements also included information about how "friends" were performing (peer-pressure).

The analysis of play themes in games retrieved from App Store, Google and Facebook showed that activities in which scoring more points, being faster or gaining more buddies were prominent. The encouragement for users to perform to the best of their ability was very common. This was also a characteristic of casual games. In *Coke recycling* and *Trust Danone* advergames, there were activities of an educational value which also might have motivated users to learn and read more about the brand or its products/services.

In-app purchases could be seen as the main revenue model in the mobile ecosystem, but we have also identified practices related to product placement. It is important to emphasise that on Facebook, there was no paid download, so all the games contained in-app purchase options. In Google Play and App Store, half of the paid downloads games also contained prompts for in-app purchase. It seems that both business models were compatible. All the advergames and games including product placement (*Stickman Soccer 2014* and *The Sims 3*) were clearly related to the promotion of non-digital goods.

4.2.3 User engagement

The user engagement dimension covers social media, community, viral elements and prompts. The first and second sub-dimensions, **social media** and **community**, were developed following Winpenny et al. (2013). They analysed the content of alcohol marketing on social media websites such as Facebook, Twitter and Youtube to assess the precence of different types of marketing in each medium, the types of content presented and the forms by which users were induced to engage. Their study was based on previous work that examined how the content on social media sites is specifically designed to influence the audience. The study identified new tactics, such as the use of viral marketing that encourages users to endorse a product by word-of-mouth, as well as user engagement. These features were considered as **viral elements** defined as marketing messages via social networks by sending an e-mail greeting to a friend or inviting a friend to play or join the Web site (Culp et al., 2010). The final sub-dimension, **prompts**, an act of encouraging children to take a course of action, was taken from Brady et al. (2010) who identified this technique used to increase user engagement.

Most of the advergames, games from App Store and Google play and Facebook games analysed use social media to engage the users in social experiences, with no difference between downloads of paid games and the others[20]. Only a few games had the functionality to register or to sign-in to facilitate the development of their own networks (Geometry Dash, Clash of Clans, Don't Tap the White Tile, Castle of Clash, Trust Danone, Club Kellogs, Fast or Fail). These functionalities are more popular among the advergames, with half of them (Trust Danone, Club Kellogs, Fast or Fail) having member sign-in options in addition to Facebook.

The widespread adoption of Facebook has led to many games using messaging as a viral strategy to disseminate games. This is linked to obtaining extra features within the game. In some cases, particularly in the advergames, this viral strategy was accompanied by the opportunity to send an email or greeting to a friend to join not only the game but also the website.

Prompts to repeat or prolong visits and to buy virtual goods were especially prevalent in Facebook games. The games analysed used pop-up message to encourage the players to keep playing or buy virtual goods. This was linked with the revenue model (in-app purchase), which pushes developers to keep users playing for longer periods of time so as to increase the probability of buying virtual goods for moving to a higher level.

[20] See indicators related to Paid downloads, In-app advertising, In-app purchases (games, digital content), Freemium (free-to-premium), Promotion of non-digital goods and Resale of data collected via app use in **Annex 12 In-depth analysis of games results**

4.3 Protective measures

4.3.1 Overview

The last dimension analysed was protective measures which included ad breaks / ad alerts, legal information, age limitation advice, parental control, content rating and labelling schemes, and mechanism to contact the firm. The systematic literature review identified 14 studies that discussed protective measures. More than a half of the articles discussed **parental mediation and website safeguards** (including filtering technologies) on the Internet (De Lima & Legge, 2014; Lwin et al., 2008; Miyazaki et al., 2009; Rose et al., 2013; Shin & Huh, 2011; Tsai et al., 2012; Youn & Hall, 2008) or on apps/mobiles (Mac Sithigh, 2013. Cai & Zhao (2013) found that the extensive inclusion of advertising content in commercial website is, in most cases, not matched with proper adherence to U.S. rules (the COPPA Act) regarding privacy policy and parental permission when collecting children's data. Similarly, Shin & Huh (2011) noted the limited effectiveness of COPPA in protecting children's privacy, due to a combination of lack of cooperation by website designers and the objective difficulty in verifying users' actual age. However, they also pointed out that **website safeguards** have a potentially useful effect on preventing children's disclosure of data when combined with **active styles of parental mediation** (although restrictive styles of parental mediation may result in actual higher levels of disclosure). Miyazaki et al. (2009) also pointed to this "boomerang effect". Youn & Hall (2008) reported on the positive effect of "concept-oriented" communication patterns, open to dissent and discussion, on the possibility of discussing privacy concerns within the family. Shin & Huh (2011), on the other hand, highlighted the absence of effects on information disclosure of parental mediation in South Korea. De Lima & Legge (2014) discussed the strengthening of EU rules and called for a focus on children's protection without placing excessive restrictions on businesses.

An & Stern (2011) analysed the effects of **ad breaks**, (a disclaimer saying that the game content included commercial communications) and found that, while they did not appear to enhance persuasion knowledge, they curbed the influence of advertising messages in advergames. On the other hand, An & Kang (2013) found that ad literacy programmes did increase persuasion knowledge but did not appear to affect brand recall and purchasing intentions. Mac Sithigh (2013) argued that regulations and self-regulatory initiatives had very limited effects on child protection from inappropriate content. They argued instead that the private schemes, such as those established by Apple and Google, were more effective. However, Chen et al. (2013a) highlighted the pitfalls in Google's and Apple's **maturity ratings**, which implied some degree of risk of exposure to inappropriate content. Moreno (2014) called for stricter regulations and enforcement of children's privacy and safety, while Monaghan et al. (2008) criticised the lack of a consistent regulatory framework regarding children's exposure to gambling advertisements.

Paek et al. (2013) examined the characteristics of food advergames in terms of the foods advertised with this marketing technique. They suggested that **ad breaks** were commonly held to be a crucial step in helping children to understand the persuasive intent of the content, as identified in previous studies by An & Stern (2011). In this regard, An & Kang (2013) assessed the format, content and characteristics of online ad breaks. They categorized the format of ad breaks into 1) one sentence ad-breaks; 2) multiple sentence ad-breaks; 3) icon; and 4) some combination of 1-3. Most of the advergames studied contained one-sentence warnings only, followed in order of magnitude by multiple sentences, icons and both icons and multiple sentences. Examples of ad breaks included: "This is an advertisement!", "Hey kids, this is an advertisement", "hey, this is an ad, just letting you know!", "When you see this Ad Nooze, know that you are viewing an advertisement message that is designed to sell you something" or "Kids: this website contains advertisements and/or promotions for ConGra Foods Product".

While identifying marketing techniques presented on web sites with a designated children's area, Henry & Story (2009) found that safeguards such as **ad break warnings**

and "**parental permission required"** statements were presented in only about one third of the websites. However, it was found that there were fewer ad break warnings and parental permission required statements on websites without designated children's areas. Other safeguards related to parental control include a **parental section**, where parents could access information and guidance on online safety measures to protect their children, as well as **parental warnings**, warning messages directed at children, which stated that the child should inform his/her parents when accessing the website in question.

The OECD (2012) noted that legal measures to protect children were not homogeneous. National measures varied according to the risks addressed, as well as to the type of requirements they specify, such as **content rating schemes**, parental consent requirement or mandatory filtering. Countries with content regulation deployed **content rating** and **labelling** frameworks with minimum categories for adult content e.g. "rated for 18 year olds", or "R18+" and illegal content, which were indicated as "classification refused" or "RC". Official classifications were undertaken by public bodies or regulators, as well as delegated co-regulatory bodies. Another type of content regulation included self-regulatory measures, where the content originator created the rating. For the OECD (2012), classification, rating and labelling were three distinct, but integrated, steps in the process of categorising content according to its suitability for children. Whereas "classification" referred to the general process of categorising content, "**rating**" described the evaluation of a single piece of content, while "**labelling**" was the placing of a visible market to signal the type of content.

Lascu et al. (2013) analysed web-site features in their examination of policies related to food marketing. They found that the interaction-related features and mechanisms available on websites to contact a firm in the event of a complaint or query included the possibility to fill out forms, contact the firm by email or phone, or report a problem to the company directly. The study identified differences among countries based on socio-cultural and policy/regulatory environments.

4.3.2 Protective measures in place in the online games analysed

The analysis conducted for this study showed that none of the games analysed used ad breaks/ad alerts that included an explanation about the ad break itself, or guidelines on how to differentiate between the content and the advertisement. However, most of the online games, including advergames, provided links to a privacy policy and terms of usage. The content of both measures included age limit suggestions, but age limit enforcement was limited to the specific conditions of each platform (App Store, Google Play and Facebook). These links also provided the contact information of the developers, usually an email address.

It is worth noting that these three platforms were active in the field of filtering and helping parents/guardians with new technologies and the protection of their children[21]. Both App Store and Google Play had a range of filters and parental control tools within their devices or software to prevent children's access to certain types of content and to put restrictions on the in-app purchase process. However, these measures can only work if parents/guardians are aware of the opportunity and activate them. In this regard, there was a lack of parental control features, just the Happy Meal advergame contained a parental permission required statement and a parental section. Nevertheless, Google Play and App Store provided a content rating system and allowed users to report problems with the apps. We did not identify any kind of labelling schemes of the games analysed. Games offered by App Store, Google Play and Facebook contained more protective measures than advergames.

[21] Google Safety Center https://www.google.com/safetycenter/families/start/ and Facebook Family Safety Centre https://www.facebook.com/safety

4.3.3 Key platform user policies analysis[22]

4.3.3.1 Google

Google has a set of protective features and provides advice to parents, together with the corresponding safety tools for families in its "safety center"[23]. The "family safety basics" for parents offers tips such as "talk with your family about online safety" with some explanation about online safety, secure passwords, privacy settings on websites, age restrictions and other principles to ensure that the family stays safe online. The Top 5 Google safety features include:

- "Get family-friendly results from Search", where Google states that "by enabling SafeSearch, you can filter out most of the mature content that you or your family may prefer to avoid".
- Setting a filter to keep inappropriate content out, by enabling "Safety Mode" when browsing YouTube.
- Supervising users on shared Chromebooks, whereby a user can review the history of pages visited, block certain sites and manage what family members can view.
- Limiting access to approved apps and games, thereby creating restricted profiles that limit the access of other users on the family tablet
- Use of app ratings to choose age-appropriate apps, as users can filter apps by levels of ratings (everyone, low maturity, medium maturity, high maturity) and lock the filtering level with a PIN code. All apps submitted to Android (the operating system produced by Google) must declare a maturity level.

The purchasing of apps in Google Play was subject to acquiring a Google account and a "Google Wallet". When creating a Google Account, users were prompted to click on the "I agree to the Terms of Service and "Privacy Policy". The Terms of Service, however, did not include age restrictions. When creating a "Wallet", the user was invited to click "Accept and Create", where "accept" referred to a "Terms of Service" and the "Privacy Notice" that the user may read (subject to personal choice). The terms and conditions were in the language of the country of the user. The version for UK users[24] stated, among other things: "By agreeing to these Terms of Service, You agree that:

- You are between 13 to 17 years of age and creating a Google Wallet account for the sole and limited purpose of redeeming Google Play Gift Card value for select items that are eligible for purchase by You on Google Play, subject to applicable laws and upon Google's discretion; Or
- You are 18 years old or older; and
- Capable of entering into a legally binding agreement".

The "Privacy Notice"[25] described the use of the user's personal data, aimed at offering Google services and protecting users from fraud, phishing and other misconduct. After purchasing an app or game on Google Play, users could cancel purchases within two hours and obtain a full refund[26].

In the "Prevent accidental or unwanted purchases" section, Google indicated the possibility of using password protection on the Google Play Store app to prevent unwanted purchases[27]. The password was the same used to sign in to Gmail or Google Play. The process of enabling password protection, by setting up a "Require

[22] This analysis forms part of research conducted in 2015 and reflects the status of key platform user policies at the time of analysis.

[23] https://www.google.com/safetycenter/families/start/

[24] https://wallet.google.com/legaldocument?docId=0.buyertos/GB/4/1/und

[25] https://wallet.google.com/legaldocument?family=0.privacynotice&hl=en

[26] https://support.google.com/googleplay/answer/134336?rd=1

[27] https://support.google.com/googleplay/answer/1626831

authentication for purchases" function on mobiles or a password request on Android TV, was also explained.

In the "Refund and problems with in-app purchases"[28] section, Google stated that "App developers can make additional content or services (like additional turns in a game, different background themes, etc.) available for purchase within an application. If you're having issues with an in-app purchase, here's what you can do:

- To request a refund, contact our support team.
- To provide feedback or get more help, contact the developer.

Tip: To help prevent accidental or unwanted purchases, use password protection on your account".

Although not specifically described as child protection, there were other aspects of benefit to children's experience online. In addition to the Google Play guidelines[29] for app developers about maturity ratings, it stated that:

- "Google Play does not allow pornography or sexually explicit content and most nudity. If content is intended to be sexually gratifying, or promote incest or bestiality, it is not permitted."
- "We don't allow unauthorized publishing or disclosure of people's private and confidential information, such as credit card numbers, government identification numbers, driver's and other license numbers, non-public contacts, or any other information that is not publicly accessible."
- "Apps that collect information (such as the user's location or behavior) without the user's knowledge (spyware) are prohibited."

4.3.3.2 Apple

Apple provided restrictions (parental controls) on devices such as iPhone, iPad and iTouch, which prevented the use of specific features and applications. It provided advice on how parents can apply these[30,31]. Restrictions were set up together with a passcode and could be applied to a wide variety of features, including applications, specific content types (also by ratings), changes to privacy settings and features within the Game Center.

A specific section was devoted to "use restrictions to prevent purchasing on your iPhone, iPad, or iTouch". It allowed users to set-up a restriction passcode, with a recommendation to "make sure to choose a passcode that's different from the passcode you use to unlock your device". It also provided the option to prevent in-app purchases, by turning off the corresponding in-app purchase function, and to disable purchasing altogether, turning off App Store, iBooks Store, Installing Apps and in-App Purchases. Users who did not wish to prevent in-app purchases had the option to require the introduction of a passcode for each download.

The "manage your child's account" section mentioned the possibility of setting up an account through the "Apple ID for Students" programme that allowed children to make purchases using the "iTunes gifts" or a "monthly allowance". The latter allowed parents to manage their child's spending.

For children under 13 years of age, Apple had rules that they "can't create an Apple ID on their own[32]. However, as a parent or legal guardian, the family organizer could provide verified parental consent for a child to have their own Apple ID, and

[28] https://support.google.com/googleplay/answer/1050566

[29] https://support.google.com/googleplay/android-developer/answer/113474?hl=en

[30] http://support.apple.com/en-us/ht6088 http://support.apple.com/en-us/ht6088

[31] http://support.apple.com/en-us/HT201304 http://support.apple.com/en-us/HT201304

[32] http://support.apple.com/en-us/HT201084 http://support.apple.com/en-us/HT201084

subsequently create it on the child's behalf." Parents could limit access of children through Family Sharing features.

The fact that Apple relied to a large extent on parents in supervising children was also visible in the introduction to the "app Store Review Guidelines", which stated:

"We have lots of kids downloading lots of Apps. Parental controls work great to protect kids, but you have to do your part too. So know that we're keeping an eye out for the kids."

However, there were also guidelines that established rules for developers[33] with which they had to comply for eligibility for Apple's App Store. Among them, point 15.2 stated that "apps that depict violence or abuse of children will be rejected". Also, apps within the "kids category" had to include a privacy policy and comply with applicable children's privacy conditions. Furthermore, apps in the kids category shouldn't "include behavioral advertising (e.g. the advertiser may not serve ads based on the user's activity within the app), and any contextual advertisement presented in the app had be appropriate for kids", "must get parental permission or use a parental gate before allowing the user to link out of the app or engage in commerce", and "must be made specifically for kids ages 5 and under, ages 6-8, or ages 9-11".

Section 17 established rules aimed at preserving users' privacy. For instance: "Apps cannot transmit data about a user without obtaining the user's prior permission and providing the user with access to information about how and where the data will be used", "apps that require users to share personal information, such as email address and date of birth, in order to function will be rejected", "apps that include account registration or access a user's existing account must include a privacy policy or they will be rejected".

Rules on children's privacy were more stringent. Point 17.4 states that "apps that collect, transmit, or have the capability to share personal information (e.g. name, address, email, location, photos, videos, drawings, the ability to chat, other personal data, or persistent identifiers used in combination with any of the above) from a minor must comply with applicable children's privacy statutes, and must include a privacy policy". Asking for the respective age of a child was permitted in order to limit usage: "Apps may ask for date of birth (or use other age-gating mechanisms) only for the purpose of complying with applicable children's privacy statutes, but must have included some useful functionality or entertainment value regardless of the user's age".

With regards to advertising, section 7 determined the rejection of "apps that artificially increase the number of impressions or click-throughs of ads", "apps that contain empty iAd banners" and "apps that are designed predominantly for the display of ads".

Other rules limited the content of the apps available on Apple Store. Apps containing pornography, excessively objectionable or crude content, violence or abuse of children, realistic images of violence were among those that will be rejected.

[33] https://developer.apple.com/app-store/review/guidelines/ https://developer.apple.com/app-store/review/guidelines/

4.3.3.3 Facebook

Facebook required users to be at least 13 years old before they could create an account, and gave users the option to report accounts belonging to people under 13[34]. For those between 13 and 18 years, Facebook indicated that, while encouraging parents to monitor teeanagers' use, there were no special privacy controls. However, "minors, anyone under 18, who used Facebook did have more restrictive privacy defaults than adults." That included the "everyone" setting, where their information was actually only visible to friends, friends of friends and people in verified school networks[35].

The "family safety center"[36] contained rules and hints about payments and payment means. With regard to payments, it was specified that people under 18 may use Facebook payments only with the involvement of a parent or guardian.

Other hints to parents included indications regarding who could see teen's posts, review privacy settings and manage an activity log[37]. Specific guidance was provided in a highlighted section, which included encouragement to parents to talk with their children about the use of the platform and an outline of specific questions that could be directed to them in order to find out more about their use of the social networking site.

In its instructions to app developers, Facebook included app-level restrictions[38], including some related to age, whereby "selecting an age restriction means that anyone under the specified age will not be able to find your app in search or on friends' profiles or view the content in other ways." Furthermore, "content restrictions" restricted the app use based on content. In particular, the alcohol-related age restrictions set the minimum age based on the location of the user. Facebook warned developers that "the alcohol-related age restriction was only for convenience and that Facebook does not represent that by using that setting your app will be legally compliant in all countries where your app is visible. You understand that ultimately you are responsible for setting the proper legally compliant age restrictions for each country where your app is visible."

Other instructions to app developers and users were set out in Facebook Community Standards[39]. Facebook had processes through which it could remove, and possibly escalate to law enforcement, when perceiving risk of violence and threats to public safety, the promotion of self-harm, bullying and harassment, hate speech and pornography. Furthermore, Facebook asked users to refrain from publishing personal information about others without their consent, and worked to prevent attempts to compromise users' privacy and security. Users could report to Facebook any abuse and behaviour violating its Community Standards.

According to the Facebook Platform Policies[40], app developers should, among other things, "obtain consent from people before publishing content on their behalf", use publishing permissions to help people share on Facebook not to send people messages from your app", "use definitions in accordance with your privacy policy and other Facebook policies", and "all other data may only be used outside your app after you have obtained explicit user consent."[41]

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[34] https://www.facebook.com/help/157793540954833 https://www.facebook.com/help/157793540954833

[35] https://www.facebook.com/notes/facebook/answering-recent-questions-on-privacy-controls/399994657130

[36] https://www.facebook.com/payments_terms

[37] https://www.facebook.com/safety/groups/parents/

[38] https://developers.facebook.com/docs/opengraph/using-actions/v2.2#userrestrictions

[39] https://www.facebook.com/communitystandards

[40] https://developers.facebook.com/policy

[41] https://developers.facebook.com/docs/apps?locale=de_DE

4.3.3.4 Amazon

Amazon stated that it did not sell products to children, hence those under the age of 18 required the involvement of a parent or guardian[42].

Users of Amazon Kindle Fire could set up restrictions for in-app purchases, by setting up a Parental Control password that was required for the purchase of any content[43]. Moreover, Amazon provided a free app for Kindle Fire HD and Kindle Free Time that allowed parents to customise content for their children. Parents could create a profile for their child, establish the content they would have access to among books, apps, games and videos. While using Free Time, children could access web browsing, e-mail, contacts, calendars, content stores and purchase options (including in-app purchases), content libraries, wi-fi connectivity and online access. Amazon's content guidelines[44] specified the following examples of prohibited content:

- "Offensive Content: What we deem offensive is probably about what you would expect. We reserve the right to determine the appropriateness of all apps and to accept or reject any app at our discretion. We also have full discretion to publish maturity ratings for the apps.
- Pornography: We prohibit apps containing pornography or hard-core material that depict graphic sexual acts or sexually explicit material. This includes full nudity contained in your application or marketing materials. We also don't allow content that drives traffic to pornography sites.
- Illegal Activity: Each app must comply with all applicable laws. We prohibit apps that promote or may lead to the production of an illegal item or illegal activity. Developers are responsible for researching to ensure that each app is in compliance with all local, state, national, and international laws.
- Gambling with Real Currency: We prohibit apps that allow customers to participate in gambling activities with real currency (currency with actual monetary value). This does not include simulated gambling activities using virtual currency (currency with no actual monetary value).
- Intellectual Property Infringement: We prohibit any app to which you do not have the necessary rights to make available in Amazon or that violates our Copyright Policy (see below).
- Privacy/Publicity Infringement: We hold personal privacy in the highest regard. Therefore, we prohibit apps that infringe, or have the potential to infringe, upon an individual's privacy, right of publicity, or that portray an individual in a false light. Celebrity images and/or celebrity names cannot be used for commercial purposes without permission of the celebrity or their management. This includes unauthorized celebrity image collections.
- Copyright Policy: Amazon's Mobile App Distribution Program Agreement requires that you have ownership or license rights to the code and content (including advertising) included in any app. Do not upload any app if you do not have the rights listed in the Distribution Agreement. You are responsible for ensuring that you hold necessary rights to distribute the app through Amazon. If you are unsure if you own all rights to the app, please consult an attorney.
- Country-Specific Restrictions: Some countries that we sell our apps in may have more restrictive standards than other countries for what qualifies as "Offensive Content," "Pornography," or "Illegal Activity." We reserve the right to restrict any app or IAP item from sale in any country where the sale or distribution of that app's content would violate that country's laws, cultural norms, or sensitivities."

[42] https://www.amazon.com/gp/help/customer/display.html?nodeId=468496#GUID-A2C397AB-68FE-4592-B4A2-7550D73EEFD2__SECTION_D17374D6EE5B4077946965351E11175C

[43] http://www.amazon.com/gp/feature.html?ie=UTF8&docId=1000788541

[44] https://developer.amazon.com/public/support/faq#Approval%20Process%20and%20Content%20Guidelines

4.4 Summary of key results

This chapter has identified the most common, effective and problematic marketing techniques employed by the industry to affect children in online games, mobile applications and on social media sites.

While a large number of academic articles reported that online marketing was often difficult to identify and to distinguish from non-commercial content, children appeared to be exposed to an increasing amount of food product advertisements in online environments. These food products were often within the HFSS category. Advergames, in which brands tend to be integrated as active game participants, often promoted candy and other HFSS products. Some games even disciplined players into a negative nutritional logic. Branded entertainment in Social Networking Sites and the use of viral strategies were found to be an increasingly prevalent marketing strategy.

The analysis of games showed that almost half of those sampled from App Store and Google Play included some kind of embedded advertisement, with one game containing a contextual advertisement. Of these, two games were found to incorporate product placements. In most of the cases, these embedded advertisements include a picture, product logo and a link to product information. The games that children could play on the social networking site Facebook were found to deploy different patterns. All games but one contained contextual advertising. Facebook games were embedded into the Facebook platform, with the left side of the platform exhibiting advertising. In addition, the analysis of the advergames showed that all games contained embedded advertisement, but half of them also showed contextual advertisement. Most of these games displayed the picture of the product, the logo or product symbol, and a link for product information. Next to embedded advertisement, purchase available/required for moving to a higher level in the game was the most common attribute in Google Play and App Store, with only few games not including this feature. Similarly, inducement to extend game play, in form of messages challenging users to continue playing, was a common feature.

In terms of protective measures and the barriers to their effective use, the games offered by App Store, Google Play and Facebook contained more protective measures than advergames. None of these games used ad breaks/ad alerts that included an introductory explanation about the ad break itself or information on how to differentiate between the content and the advertisement. However, most of the online games, including advergames, provided links to both a privacy policy and terms of usage. Both of these measures include age limit suggestions. Age limit enforcement was limited to the specific conditions of each platform. These links also provided the contact information of the developers, often an email address.

The platforms were found to be relatively active in the field of filtering and helping parents/guardians to cope with new technologies and protect their children. A range of filters and parental control tools within their devices or software was provided to parents in order to prevent children's access to certain types of content and limit the in-app purchase process. However, these would only work if parents/guardians were aware of the opportunity and activate them.

While the analysis did not identify any labelling schemes for games, the literature suggested that maturity requirements may be insufficiently stringent, leading to children being exposed to inappropriate content. In addition, maturity ratings in general did not apply to the advertisement content within apps, implying that children may be exposed to unsuitable commercial content when playing a game, even though a game itself is suitable for children.

5 Children's perspectives and experiences

This chapter presents the results of the behavioural experiments supported by insights from the systematic review (see section 3.1) and the focus groups with children (see section 3.4). It addresses three research questions as follows:

Research question 2: *"To what degree, and in which ways, do these sophisticated marketing techniques influence the consumer behaviour of children with different socio-demographic characteristics and in different age groups?"*.

Research question 3: *"To what degree are children with different socio-demographic characteristics and in different age groups able to recognise and understand the implications of different marketing/market research content embedded in online games, social media sites and mobile applications directed at them?".*

Research question 4: *"How to best test (through behavioural experiments) what behaviour and skills are assumed to those of an average child in a certain age group in relation to problematic online marketing practices? Are there certain characteristics which make some children more susceptible to problematic marketing practices in specific gaming situations?"*

5.1 Advertisement and children: general theories

The majority of articles focussing on the impact of advertisement on children (reviewed in the next two paragraphs) were found in the cognitive and developmental psychology literatures. Although the more theoretical literature was not the subject of the systematic review, the main ideas have been briefly summarised, as they provide a background for the following paragraphs and give insight into the findings of the experiments.

According to Terlutter & Capella (2013), four major theories can be applied to the broadly defined study of advertisement and children: **Persuasion Knowledge Model (PKM), Limited Capacity of Attention (LCA), Cognitive Theory, and Concept of Flow**. PKM was seen by Terlutter and Capella (2013) as the most prominent and can be considered as a benchmark.

PKM. The '**Personal Persuasion Knowledge**' model (Friestad & Wright, 1994) is the most cited and adopted in the literature. Persuasion knowledge is defined as the capacity of individuals to recognise that a message is attempting to persuade them and to activate critical thinking. In particular for children, the literature focuses on the threshold age above which children could be expected to be capable of activating persuasion knowledge to the same extent as adults. The effectiveness of persuasion knowledge is seen as related to children's ability to recognize advertising as distinct from the other content. From about the age of 5 or 6 years children appreciate that television advertisements is a source of information (for example, children realize that a TV advertisement could tell them what toys are currently available in a shop). However, 5 and 6 year-olds do not appreciate the persuasive nature of advertising, and are likely to accept an advertising message as an unbiased source of information (Gunter, et al., 2005). After about 7 or 8 years of age, children start to appreciate the persuasive intent of advertising, and realize that the purpose of TV advertising is to persuade people to buy products and spend money (Kunkel et al., 2004). Yet, children between 7 and 11 years old often experience difficulty in recognizing and evaluating advertising information (An & Stern, 2011). An & Stern (2011), pointed to several sources of empirical and theoretical evidence (Brucks et al., 1988; John, 1999; Roedder, 1981; Martin, 1997) that have shown that 7 to 11 year old children are 'cued processors' in that they needed a cue to activate their persuasion knowledge. In summary, the literature point to three groups:

a) below 7 'limited processors'; b) 7-11 'cued processors'; c) above 12 'strategic processors'.

It is worth noting that even for TV advertisements; the above categories cannot be considered conclusive as different thresholds were found in different studies. Furthermore, these age categories concerne children and TV advertising while research on online advertising is only just emerging. Previous research, focusing on the impact of TV advertising on children, indicated the need to enhance children's persuasion knowledge as a necessary step to developing a critical attitude towards marketing messages. Advergames are fundamentally different as they engage children in interactive games. The interactive nature of advergames appears to undermine the link between persuasion knowledge and attitudes. Panic et al. (2013) argued that it is the amount of cognitive resources children used in advergames that undermines the link between persuasion knowledge and purchasing intentions in advergames.

Applying Kahneman's limited capacity of attention model (Kahneman & Tversky, 1973) it is possible to formulate a rival hypothesis to that of persuasion knowledge. It can be hypothesised that engaging in the interactive game and interpreting commercial information "compete" for cognitive capacity. Playing a game require cognitive effort and trigger emotion (positive affect). Thus, even if persuasion knowledge could be activated initially, it is possible that effort (cognition) and enjoyment (attraction) neutralise the recognition of the persuasive intent of the game, leading to the advertisement message going through subconsciously at the level of system 1.

Van Reijmersdal et al. (2012), for example, found that the development of persuasion knowledge by children (their awareness of the commercial intent of the game) did not affect their cognitive and affective responses to the brands and the games. This was confirmed by Rozendaal et al. (2013), who found that even children who understood the advertising content in online games might fail to develop critical attitudes that would decrease the influence of marketing communications. Likewise, Büttner et al. (2014) noted that current research showed that implicit processes contributed significantly to the influence of advertising. This occurred outside explicit processes on the conscious level of self-control, meaning that persuasion knowledge and media literacy were not enough to prevent or reduce advertising effects. On the other hand, Verhellen et al. (2014) found higher critical attitudes among children with developed persuasion knowledge.

Limited capacity model of attention. In addition to age, other factors that can influence children's processing of commercial content have been identified. Consumer affective reaction was found to be an important variable in Baker's study (1999), but so was the nature of the medium, the cognitive load it imposed and the engagement it elicited. These factors were captured in the Limited Capacity Model of Attention, which is particularly relevant to the current study. Social media, online games and mobile applications are interactive and it is reasonable to assume that their potential for affective involvement of children is higher than traditional TV advertising. Playing a game was found by Janseen et al. (2010) to take a considerable amount of cognitive resource and, as a child's information processing capabilities are limited, attention to factors outside the game could be attenuated. Cognitive load and the affective stimuli in advertisements increased the difficulty of recognising and defending oneself against the persuasive message. Hence, as noted in Panic et al. (2013, p. 266), children were engaged in two tasks – the game as the primary task and processing embedded advertising information as secondary task. Based on a standard limited-capacity model of attention (Kahneman & Tversky, 1973), these tasks competed for the same scarce cognitive bandwidth. This would be especially applicable to OGSMMAs as playing a game demand more cognitive capacity than, say, simply processing a TV commercial. The implication is that persuasion knowledge and the tactics to activate it could be less effective for OGSMMAs than they are for TV advertisements.

Social cognitive theory. Social cognitive theory models the emergence of interactive agency distinguishing among three modes of agency: direct personal agency, proxy agency that relies on others to act on one's behalf to secure desired outcomes, and

collective agency exercised through socially coordinative and interdependent effort (Bandura 1977; 2001). The interaction of these modes influence individuals' behaviours and how participants respond to learned and observed interactions. Social cognitive theory has been applied to the analysis of advergames, studying how children construct ideas about the brand and the product or services offered in a game, which then influences their behaviour (Terlutter & Capella, 2013).

Concept of flow. The concept of flow has emerged from the psychology of optimal experience (Csikszentmihalyi, 1990) and has also been used as a theoretical model to understand the experience of online gaming. This idea is that what makes an experience genuinely satisfying is a state of consciousness called flow – a state of concentration so focused that it amounts to absolute absorption in the activity. As Terlutter & Capella (2013) pointed out in their study, digital games facilitate players entering the flow state (Nelson et al., 2006; Schneider & Cornwell, 2005; Waiguny et al., 2012).

5.2 Key determinants of children's vulnerability

Some articles found differences in the effects of problematic marketing practices on children depending on characteristics including gender, age, socioeconomic status and family communication patterns, Internet skills and usage, and attitude towards advertising.

5.2.1 Gender

Studies on teenagers found differences on the impact of online advertising on behaviour depending on gender, but the results were mixed and inconclusive. On the one hand, Redondo (2012) found high effectiveness of advergames among Spanish adolescents exposed to a website only for the females in their sample. On the other hand, the results of Youn & Hall (2008) indicated that US boys seemed to be more responsive to e-marketers' information practices than girls, and more frequently read unsolicited email or disclosed personal information to websites. Similarly, Jones & Magee (2011) found that Internet advertising about alcohol was more effective on Australian boys, as compared to girls within the 12-15 age groups.

5.2.2 Age

In relation to age Jones & Magee (2011), also found that online alcohol advertising had a stronger effect on boys aged 12-15 (the youngest in a sample that ranged from 12 to 17). Likewise, Van Reijmersdal et al. (2010) found that brand placement had a stronger impact on attitudes towards the products advertised to the youngest girls (11 – 12 years old - the study was conducted only on girls, aged 11-17). Similarly, the study by Lim & Seng (2010) on in-app purchases revealed a negative correlation between purchasing of virtual goods and age. This study was conducted on general users, not on children or teenagers (27.1% of the respondents were under 17 years old (n=55). Age could also have an impact on the persuasion knowledge. Ali et al. (2009) showed that the percentage of children that could distinguish advertising in the advergames is about 50% among the 8-year-old children, increasing to 75% of 10-12 year olds. Similarly, Rozendaal et al. (2011) found an increase in persuasion knowledge between 8 and 12 years (with the most significant increase at the age of 10) in understanding the goals of six advertising tactics: ad repetition, product demonstration, peer popularity appeal, humour and celebrity endorsement.

Ali et al. (2009) noted that advertising in web pages was harder for children to identify than TV advertisements. While children were typically able to recognise TV advertising at about the age of 5 years, only a 25% of six-year-old children from the UK and Indonesia could identify advertisement in the context of advergames. Similarly, Owen et al. (2013) found that children's ability to recognise non-traditional types of advertising, including advergames, where brands were embedded in an entertainment context, was severely limited. Nairn (2008) showed that with brand messages embedded in colourful, fun and fast-paced games, the majority of children did not perceive the games as advertising or with persuasive intent. Nairn called for more transparency and clear labelling of online

advertising in order to help children distinguish between entertainment and persuasion for commercial gain. In a further review of research on advergames, Nairn & Hang (2012) concluded that children do not recognize advergames as advertisements.

All these results showed that younger children were more likely to be affected by online marketing and have more difficulties in recognising the advertising content.

5.2.3 Socio-economic status

Regarding socioeconomic status, Arredondo et al. (2009) found that children from families with a higher socioeconomic status were able to recognise other types of food logos that differed from the popular fast foods. It was also reported that overweight children were better able to recognise fast food logos. Youn & Hall (2008) focused on the impact of family communication patterns. Socially-oriented communication established deference and obedience to parental authority as a means to harmonious relationships, while concept-oriented communication patterns encouraged children to develop their own views, allow disagreements and welcome debate. Children in the latter environment were less likely to disclose information online.

5.2.4 Internet use and peer pressure

Shin et al.'s work (2012) showed that children with high scepticism towards online advertising, less frequent internet use, and lower confidence in their Internet skills, were less likely to disclose information, although the link between this activity and behavioural intention to disclose information was found to be relatively weak. Rozendaal et al. (2013) found that the most important predictors of children's desire for the advertised brands were a low critical attitude and high peer influence susceptibility. Furthermore, they underlined that recognition and understanding of advertising in social games was effective in reducing advertised brand desire only in the case of children who were familiar with social games.

5.3 Impact of marketing on children

5.3.1 Impact on behaviour

Several articles found that online marketing had an impact on children's behaviour. For example, online marketing could affect their food intake and their attitudes towards the advertised brands. In their study, Schwartz et al. (2013) argued that food marketing directed at children was highly effective and that it was a significant contributor to childhood obesity in the U.S. Moreover, different studies found that advergames were effective in fostering consumption of unhealthy foods. Dias & Agante (2011) found significant differences in food choices, which tend to follow the advertising messages (one group was exposed to an advergame promoting healthy food and the other to one advertising unhealthy food). This occurred despite the fact that the Portuguese children, aged 7 and 8, in both groups reported similar and fairly high levels of nutritional knowledge and awareness of foods good or bad for health. Pempek & Calvert (2009) obtained similar results in an experiment involving thirty 9 and 10 year old children from low income families. In both articles, the authors emphasised that advergames constituted not only a threat by promoting the consumption of unhealthy foods, but also a potential opportunity to promote healthier food and beverages. However, the evidence reported by Folkvord et al. (2013) from an experiment with 270 children aged between 8 and 10, showed that consumption choices of energy-dense snacks were boosted by advergames featuring any type of food. In their study, one experimental condition focused on energy dense snacks, while another experimental condition focussed on fruit. Children in both groups ate significantly more energy-dense snacks in comparison to a control condition. Thus, the findings from the literature review were unequivocal; advergames promoting food significantly impact children's consumption behaviours.

5.3.2 Impact on perceptions and behavioural intentions

Advergames also boosted children's behavioural intentions towards brands. Cicchirillo & Lin (2011) have shown that learning about food products and brands through advergames affected their attitudes to the products and brands. In an experiment with 2,453 girls in the 11-17 age group, Van Reijmersdal et al. (2010) found that interactive brand placement boosted the attitudes towards the products advertised along all the dimensions tested: awareness (cognition), brand image (affect) and behavioural intentions towards buying this brand (conation). Furthermore, brand placement did not appear to hamper the pleasure of playing games.

In another experimental study with 105 Dutch children, Van Reijmersdal et al. (2012) reaffirmed the positive effects of brand placement through advergames. They showed that brand prominence enhanced brand recognition and that game involvement affected brand attitude via the affective reactions induced by the game. Redondo (2012) also found high effectiveness of advergames among Spanish adolescents exposed to a website, albeit limited to the female segment of the sample. He also concluded that the most effective strategies involved a brief exposure to a prominent brand placement or a long exposure to a subtle version of brand placement. Kelly et al. (2013) explained that, with increased exposure to brand-related information, Internet food marketing increased brand familiarity among children. Te'eni-Harari (2013) highlighted the importance of advertising involvement in the motivation to process information on the brand and purchasing behaviour. Advertising and product involvement had a direct and positive direct effect on advertising effectiveness.

There were very few empirical studies specifically focussing on in-app purchases. Guo & Barnes (2009) developed several important insights on what shapes interaction and decision when purchasing virtual goods while playing. Their results showed that effort expectancy, character competency, the quality of the virtual world system, social influence, virtual item resources, personal real resources, performance expectancy, and self-actualisation were important for predicting virtual item purchase behaviour in virtual worlds. Lim & Seng (2010) analysed data from a survey of users of Pet Society, a popular game in Facebook, and identified five major factors explanatory factors related to in-game purchase of virtual goods: in-game achievement factors, hedonistic factors, social factors, status and profit-making factors. More specifically, their analysis indicated a negative correlation between the purchasing of virtual goods with age and positive correlation with frequency of game play. Mäntymäki & Salo (2013) surveyed a sample of users of Habbo Hotel, one of the most famous and popular teen-oriented virtual worlds. The results highlighted the role of perceived network size and motivational factors in explaining in-world purchase decisions. They found that virtual purchasing behaviour was substantially influenced by the same factors driving usage behaviour, and could be understood as a means to enhance the user experience. Ho & Wu (2012) found that the type of game was a moderating variable affecting the intent to purchase virtual goods. Lehdonvirta (2009) also confirmed that the main drivers for purchasing of virtual goods were functional, hedonic and social attributes.

However, even where persuasion knowledge was activated, this did not hamper the effects of advergames. This finding is in line with the Limited Capacity of Attention (LCA) theory: even if children were aware of the commercial intent of the game, this did not necessarily reduce their attraction towards the brand or their intention to purchase its products.

Some papers explored the effectiveness of ad-breaks in increasing the persuasion knowledge and in reducing the impacts of the advergames. An & Kang (2013) found very few advergames contained ad-breaks and in most cases they consisted of one single phrase. In addition, they had had low visibility and deficient readability for children and were unlikely to enhance the persuasion knowledge that would help children to identify the commercial intent and to develop a critical attitude towards the content of advergames. Nonetheless, a previous study also involving An (An & Stern, 2011) found

that although none of the ad-breaks had any effect on the awareness of the commercial nature of the game, the groups who played with ad-breaks did have significantly lower memory of the product and desire to purchase it. A more recent study by An et al. (2014) obtained opposing results. They analysed a South-Korean programme aimed at improving the "ad literacy" in a sample of children aged between 8 and 9 and found increases in persuasion knowledge, but no impact on purchasing intention.

Finally, a few studies addressed the mobile ecosystem. Gao et al. (2013) showed that the attitude towards mobile marketing was influenced by perceived usefulness, the desire to use innovative services and personal attachment to mobile phones. They also found that, while in China and Western Europe the acceptance of mobile marketing was reduced by the desire to avoid privacy-related risks, in the US this only had a negligible effect. Martí-Parreño et al. (2013) reported that entertainment and usefulness significantly influenced teenagers' attitude towards mobile advertising, whereas perceived usefulness reduced irritation. Ünal et al. (2011) argued that advertisements that were informative, entertaining, reliable and personalised had a positive effect on attitudes towards mobile advertising. In their empirical study on consumer attitudes and acceptance towards mobile marketing practices across the US and Pakistan, Sultan & Rohm (2008) stated that in order to overcome mixed or even negative attitudes among young consumers with respect to mobile marketing, companies should consider both the value of the services delivered and trust in the product/brand.

5.4 Impact of advertisements on drinking behaviour

The Science Group of the European Alcohol and Health Forum (2009) provided a comprehensive review of the impact of advertisement on the drinking behaviour of young people that built on previous systematic reviews. The evidence collected showed that advertising encouraged people both to start drinking and to drink large amounts. An Australian study by Jones & Magee (2011) indicated that the exposure to some types of alcohol advertisements was associated with increased alcohol consumption among adolescents. Furthermore, there has been a rapid expansion of online marketing of alcohol on social media that are frequently accessed by children and adolescents (Gordon et al., 2010).

Some studies have stressed the importance of social media sites for alcohol advertisement. Gordon et al. (2011) found that UK drinkers aged 12-14 were three times more likely to be aware of alcohol content on social networking sites than brand websites. Likewise, a recent study by RAND, commissioned by DG SANCO (Winpenny et al., 2012), and a follow-up analysis by Winpenny et al. (2013) revealed a shift in marketing efforts from brand websites to three main social media sites – Facebook, YouTube and Twitter. The exposure to alcohol advertising on these media increased with user engagement. In Facebook, the users who clicked "like" on a brand page would receive updates on their "walls". Furthermore, "liking" and other activities such as posting, responding to events and so forth resulted in Facebook "stories" of "people talking about this". Both the likes and the stories could become visible to several users, starting from the "friends" of the "likers" (Winpenny et al., 2013). YouTube videos could be organised in channels created by both individuals and brands. Those who subscribed to a channel received updates on their own pages. Similarly, those who followed a brand on Twitter received tweets in their own Twitter feed.

Jones et al. (2014) suggested that existing measures such as Internet filters and entry pages did not help to protect children from alcohol advertisements, given the ease with which children circumvented barriers to underage access. Through analysis of dedicated alcoholic brand websites they found that commercial Internet filters had a limited effect. For example, access was blocked for the "obvious" keywords (e.g. "alcohol", "beer" etc.) but not for "drinking games". Access to brand websites varied a lot depending on the filter, but even the most effective still allowed access to one third of the sites.

Existing measures to block alcohol content advertising to underage minors in these social media sites were found to be limited. Winpenny et al. (2013) found that on Facebook underage users could not access the pages generated and maintained by alcohol brands,

but they could see alcohol-related applications and most content generated by other users. Jones et al. (2014) pointed out that people under 18 could easily create false profiles in Facebook and access alcohol brand pages, and Jernigan & Rushman (2014) confirmed the existence of a number of false declarations by cursory examination of user-generated content. Twitter users were not asked to state their age when setting up a profile. There was software available to alcohol brands that allowed for age verification before users could follow their tweets and interact with them, but there was no external verification method to identify false declarations. Furthermore, all users had access to information on the brand simply by searching on Twitter, regardless of whether they were following the brand (Jernigan & Rushman, 2014). Moreover, Winpenny et al. (2013) found that three of the five alcohol brand Twitter accounts could be accessed by a fictitious 14-year-old user. In Youtube, this fictional 14-year user could view all five alcohol brand channels even after completing the optional sign-in process. Jernigan & Rushman (2014) explained that YouTube did require information about age when setting up an account, and all alcohol brand channels were age restricted, but that users of any age who were not signed in could still access alcohol-related videos. The authors concluded that underage users could access alcohol related content on the social networking sites, albeit with varying levels of ease. Griffiths & Casswell (2010) explored alcohol-related messages and marketing in "Bebo", a popular site among teenagers in New Zealand. They noted that the participation of "viral" marketing related to alcohol was open to people of any age, and that the youth analysed tended to create "intoxigenic social identities", with positive value attributed to alcohol consumption as well as "intoxigenic digital spaces" though peer-to-peer transmission of alcohol marketing messages, which included forum comments, photographs and quizzes about their engagement with alcohol.

Overall, marketing in social networking sites appeared to be promoting a positive image of alcohol consumption through a variety of means, including interactive games, competition, and use and sharing of photos (Nicholls, 2012), with user engagement playing a key role in this strategy. Hastings & Sheron (2013) argued that there should be a deliberate marketing strategy aimed at reinforcing healthy drinking habits among young adults whose habits were likely to spill over to children and adolescents. The fact that alcohol related messages ricocheted among users made online marketing more powerful and less controllable. Therefore, the authors shared the recommendations issued by the University of Stirling (2013) for a "complete ban on alcohol advertising and sponsorship". In addition, these new types of media are intensely and increasingly used by young people, and seen in light of the limited presence and effectiveness of age control mechanisms this is seen as a clear reason for public health concerns.

5.5 Children's views (11 and 12 years old)

5.5.1 Online advertisement perception

The analysis of the focus groups conducted as part of this study showed that children had a negative opinion of online advertising in general. No children stated that he/she liked online advertisement in general, although some children liked to watch some particular advertisements that were considered fun or related to their interests, but they mainly liked to watch them when they felt like it, not when they interrupted their activity. Advertisements were for them one of the most "annoying things" on the Internet together with viruses, dangerous people and privacy issues. They disliked advertisements mainly because they interfered with their activities and they distracted them when playing games:

> *"It is just annoying to me. You are playing and then suddenly there is the advert", "I get angry when I am playing because an ad can destroy my game".*

Some children were extremely annoyed by advertisements:

> *"I would try to switch everything off, so that it disappears", "it really annoys me, advertising is so stupid, I would simply drown the advertising".*

Furthermore, they did not find them interesting:

"Ads are boring stuff".

Some children mentioned the commercial element as another reason to dislike ads. For example, one stated that an advertisement on smoking can be a problem because it can influence children. Another child stated that advertisements "*are there to make people want a product. Ads give money to the site. They are not useful*". Some signalled other risks of online advertisements, such as advertisement links that can lead to viruses or to undesirable pages.

Children had the feeling that advertisements were clearly recognisable and that it was easy to distinguish advertisement from other online content. However, it is worth emphasising that they also admitted that sometimes it could be hard to distinguish the advertisements from the rest of the content of the page as they could be very well integrated.

Advertisement was experienced as very annoying and disturbing, particularly pop-ups when gaming. The children felt overloaded by advertisement and wanted to skip them. Intensive gamers were particularly exposed to advertisement through free games whilst experienced networkers encountered advertising through social networks and risky explorers did so through both games and social networks[45]. But, all the children were able to get rid of the advertisements, simply by clicking them off as soon as they could, or by trying not to pay (conscious) attention to them. However, there were some advertisements that could not be skipped and some others that they did like to watch anyway.

Children usually experienced advertisements as very annoying when they were playing, particularly pop-ups that disturbs them, and those that contained viruses or led to fake websites. Children tended to try to get rid of advertisements – especially if they were not targeted at them (e.g. adult products or services). However, they might click on them by accident anyway. Some children felt especially impacted by advertisements that conveyed an emotional content, especially those related to social issues (e.g. cancer campaigns), and talked about feeling great empathy when they came across them.

Children preferred to play with free games. In some cases, children said that they had to watch the advertisements to be able to go on playing for free, otherwise they would have to pay for the premium version. Children mainly complained about having to watch some advertisements to be able to watch some videos, especially on YouTube. Children felt particularly annoyed and frustrated, arousing feelings of aggressiveness – especially when using smartphones as they were described as more difficult to control. Some children felt particularly annoyed by advertisements with sexual (e.g. dating, contraceptives) or drug-related content. They also reported having found sex advertisements within the games (e.g. spelen.nl) and expressed embarrassment about having been exposed to them. Some children felt particularly annoyed about deceptive advertisements that provided false information in order to work as a hook, such as those that pretended to offer prizes or products at cheap prices.

Nevertheless, children considered advertisement to be the "price" they had to pay for playing for free. Furthermore:

- In some cases, watching an advertisements allowed gaining points that could be exchanged for money;
- Watching advertisements could lead to finding appealing offers and promotions;
- Advertisement could be experienced as a sort of "break" (e.g. to get something to drink);
- Some advertisements became very popular due to their viral spread over the Internet or very impactful due to their emotional content. Children usually liked to watch funny advertisements;

[45] The following criteria were used to select the children participating in the Focus group: at least 3 of them per group had to play games online with other players ("risky explorers"), 3 of them had toplay games alone ("intensive gamers"), and 3 of them had to intensively communicate with people via chat or social media networks ("experienced networkers"). See Annex 6 Focus group screening criteria and guidelines.

- Some children liked the fact that they could customize the advertisements they were exposed to by clicking "hide this ad";
- Some children said that they would pay attention if the advertisement was related to something they were interested in, such as another appealing game, football or clothes.

Alcohol was not usually considered an issue when children were confronted with the game about mixing up drinks in a bar[46], although it aroused polarising reactions. On the one hand, the focus was on the main point of the activity (mixing up ingredients) as long as no real alcoholic drink had to be prepared. Children did not consider the game to be about alcoholic drinks, but about mixing up ingredients in order to make a drink, which was considered rather naïve and/or a little unrealistic as the drink combinations might be odd. On the other hand, most of the children did not experience it as a problematic practice as they understood the point was to make (alcoholic) drinks, not to drink them. Besides, as there were no brand logos present, they didn't feel that particular alcoholic beverages were suggested to them. So they did not expect this kind of game to have an influence on their future behaviour. However, some of the children thinking that the game was promoting alcoholic drinks did reject the game. This was especially true of some of the Swedish participants, who thought that playing this sort of games might have some influence on their future behaviour.

Figure 5 Alcohol related game used as stimulus

5.5.2 Children's perceptions of the impact of online marketing on their own behaviour

Since children felt that advertisements were annoying and uninteresting, their usual reaction when an advertisement appeared was to click it away. The children did not think that they were affected by online advertisements. However, the advergames experiment presented in section 5.6 concluded differently, finding that the children's behaviour was indeed affected by online advertisements in the form of an advergame.

[46] See Annex 7 Focus group stimuli materials

On the one hand, most children did not think that playing the alcohol or the Coca-Cola advergame would affect their behaviour or that it exposed them to risk. They rejected the idea that they might start drinking alcohol due to playing a game. For example, a Dutch boy stated "*it is a game. It is not as if you will be drinking a lot yourself*". On the other hand, as noted above, some children saw a link between this game and alcoholism. They did not think this would affect them but that it might affect other children. One girl recognised a potential effect of the Coca-Cola game on consumer behaviour and indicated that "*maybe when you see it, you think that you also want it and you buy it*."

A number of children said that they had already made in-app purchases to get extra features or to get to higher levels, etc. Their behaviour was affected by this marketing technique and they recognised this. Children talked about the decision on whether to purchase or not and often expressed doubts: "*you do not exactly know what to expect and whether you really want to do it or not", "what do I need to do here?", "we do not know what to do about it*".

One child explained that on one occasion he had spent around 150 Euros on in-app purchases because he wanted to speed up the game. Another child asked him if he had really wanted to do it, and he replied that he had not. Other children seemed to be more rational in their purchases: "*If I really like the game I ask my parents to pay. If I do not, I just delete the game", "I would read the description and if I like it, then yes, I would install it*".

Some children were not very positive about in-app purchase and did not consider buying additional game features. When they saw an option to make extra purchases they closed the game, just repeated the same level or changed to another game. For example, a Swedish girl explained "*I delete them if I cannot go further without buying stuff*".

5.5.3 Social media

Social networks were considered a problem by children if their privacy was threatened or if children made inappropriate use of them, especially when:

- Children reveal family matters that are considered as private;
- Children show their profiles, photos or personal data to strangers, so that they lose control of their posts;
- Children's profile is hacked or their photos are misused;
- Social networking becomes the only way of social interaction, so that children do not meet to interact face-to-face anymore: this behaviour is expected to reinforce shyness and make children lose social skills and become isolated;
- Children are afraid of not being fully integrated within their peer group if they are not connected all the time or do not receive enough recognition (followers, likes, etc.)
- Children become victims of bullies or eventually some friend gets into their profile to misuse it (e.g. post obscene comments);
- Children use bad language or show reprehensible behaviours;
- Children misinterpret messages in a way that create important conflicts;
- Children use their profile to lie or make up a different personality.

Most of the children liked to share their everyday life within their peer group and used the social networks to be in constant communication with their friends. Video streaming apps, such as Skype, Viber or FaceTime, were used for the face-to-face communication, mainly at home. Instant messaging apps, such as WhatsApp or KiK, were used and they constantly updated about what was going on within their peer group; they were used anywhere and anytime, except during class-time.

Apps, such as Instagram, Snapchat, Vine or Videofy.me were used mainly to share fun stuff, but also personal videos or photos related with their activities (e.g. to show what they bought when going shopping) or follow some aspirational people (usually "cool" teenagers or youngsters). Other social networks, such as Twitter, were less common as they seemed to be more adult-oriented and associated with more "serious" stuff.

YouTube was usually used to watch music and/or fun videos and seemed to perform partially as a substitute for traditional TV. It was also considered to be a tool for inspiration and learning through its tutorial videos (mainly related to gaming and skills development), and self-expression and creativity (which was perhaps connected to the desire to increase their online popularity through the creation of good content about their lives). YouTube was perceived as especially problematic among some of the parents because inappropriate contents are also uploaded and the age restrictions can be overcome by filling in false data. In fact, most of the parents did not know how to control what their children was watching on YouTube. WhatsApp was widely used by most of the children for everyday communication and it worked as a substitute for traditional phone calls. The main problem related to the use of WhatsApp, from the perspective of the parents, was that unknown people could access the children's chatting groups.

Instagram was widely used to share photos and make comments about them; in some cases also to compete for popularity (number of "followers" and "likes"). Parents seemed to control it less than Facebook as they did not usually have a profile there. The main problem parents associated Instagram was that children was sharing private photos, and that it could promote exhibitionism and frivolity in general.

Snapchat was mainly used to share mini videos (e.g. showing themselves or friends doing funny things). It aroused ambivalent feelings due to the fact that messages and files disappeared once they had been opened (unless the user saved them). This made it a very dynamic platform, but children also lost track of what they sent and received if they did not save it on purpose.

5.5.4 Privacy

Preserving children's privacy was experienced as the most important issue by parents and children when it came to bad practices and/or potential dangers on the Internet. Parents worried about the safety of their kids and psychological consequences of the intrusion in their private sphere. The intrusion of the children's' privacy was mainly associated with sexual harassment and abuse (e.g. adults getting into children's chats, hackers that activate the webcam without children's awareness). Secondly, it was associated with cyberbullying, or the children being treated badly by his/her peers on the social networks. Other perceived threats related to the intrusion of their kids' privacy were:

- Children providing personal data that might be used for bad purposes, mainly hacking the home system or kidnapping the kid;
- Children and parents losing track and control on the information, particularly photos and videos, posted by children online. These could be easily spread all over and stay online forever , and they could be easily manipulated;
- Identity theft by hackers who steal children's profiles or email accounts.

There was a special concern among parents regarding girls, as they were usually more active in the social networks and were considered more vulnerable to potential (sexual) aggressions than boys. However, they also tended to be perceived as more mature and sensible, which the parent's thought might have led to the development of more self-protection behaviours compared to boys at a similar age.

Some parents worried about their children playing with strangers given the lack of security about who these strangers were and what their intentions might be (parents are afraid that they are sexual or sect-oriented). However, this concern was much more intense when their children interacted with other people in social networks. Some children avoided playing on the social networks as they felt overloaded by the many invitations to play different games they received. Most of the parents showed concern if children were asked to give permission to share their personal data or to give someone else's data to score points in order to upgrade – this seemed to be rather common when playing on social networks, such as Facebook. But children seemed to provide fake data

as they were warned at school (and by parents) about the potential consequences of providing personal data.

5.5.5 Advergames and drinking games

Children were unfamiliar with the concept of *advergames*. After the moderator explained what they were, some children indicated that they had played these games; others had never come across them. Moreover, some were confused with games were you have to pay, advertisements that pop up while playing the game and games where the goal is to guess the brand. One boy did recognise that he had seen a game from a Dutch supermarket chain and that while playing "*it everywhere turns blue and there is the brand logo*". He said it was easy to discover this because before starting the game clearly stated that it had been made by the brand. He did not find this embedded advertising annoying. During the focus group two specific examples of games were shown to the children. In the first one, there was a waiter filling bottles with cocktails. The second consisted in recycling Coca-Cola bottles.

When asked for their opinion on advergames, children tended to couch responses in terms of funny or boring. However, some children also underlined the commercial intent of the game (Coca Cola advergame). For example, a Spanish girl recognised that the game was fun but she remarked that "*they only do it so that they can sell us something*". An Italian boy stated "*for sure it is a sell. They advertise their product*".

With the Coca-Cola game children had some difficulties identifying it as an advergame. First they tended to say that the game was about recycling, a picnic, weather, party, summer, etc. Some noticed the Coca-Cola cans, but others did not see them at the beginning and most were unaware that this game was an advertisement. A boy from the Netherlands recognised at first that this was an advertising game for Coca-Cola. However he felt that this was weird "*because Coca-Cola is a drink, not a game to play*." When children realised that this was an advergame, some mentioned that the purpose of the game was commercial. For example, some said that the sole purpose of the game was to sell coke. One stated "*they do it only for selling their Coke*" and another thought about the effects "*it probably makes you think about Coca-Cola all the time*". Also, many showed a negative opinion when they realised that it was an advertisement. Nevertheless, for others it was not a problem and one even said that the game was funny and educational. Furthermore, even after the moderator had explained that this was an advergame, some children failed to recognise the marketing content. For example, one indicated that the advergame was good because it promoted recycling and another said that, in the game, "*you do not really see many advertisements*", indicating that he/she did not recognise this type of marketing content in the game.

When looking at the cocktail game, most children indicated that they had seen similar games. Some even said that its name was *bartender* and noticed that there was alcohol in it. However, some did not realise that the game was about alcohol. For example, a British boy explained that "*When you are playing on the phone you do not notice. We would generally not notice it*". Moreover, another was convinced that this game was not promoting alcohol as an advertisement: "*It is not actually an advertisement. It does not say it is*". Most children did not mention problems related to the game and did not seem to be especially worried about it. For example, Polish children said that the advergames did not bother them, that they did not see problems with the alcohol content and that their parents would not have problems with it either. However, some children did find it problematic. Three British girls expressed a negative opinion about this game once they had discovered that it was about alcohol. Most of the other Swedish children were also quite negative. One even stated that due to the game "*children may want to try some drinks when they grow older, and they can become dependent and turn into alcoholics."* An Italian girl said that the alcoholic drinks could be problematic, for example in case a younger child played the game.

5.5.6 In-app purchase

Children seemed to be more familiar with in-app purchases than with advergames. Many had experienced being asked to make additional purchases while playing a game, several children reported having bought extra features and a majority of them found it difficult to make a decision when prompted to make an in-app purchase. Most of the children appreciated that even if the app was free, there might be the option to pay for specific features. However when they were required to pay in the middle of the game, children tended to feel annoyed, angry, frustrated and sad. They also felt that this situation was a bit unfair and they did not understand why they had to pay. They made their feelings clear:

> *"I am angry. I worked to level up and then they ask me to pay to continue." "It is so annoying. It is like somebody coming up to you in the street and saying "do you want to buy this?"", "I really want to carry on with the game. And you cannot because it is asking to pay. It is really annoying.", "you got the game and then you have to buy something. So, it is a bit confusing why you have to do that".*

One child demonstrated a particularly positive opinion:

> *"I am very happy because I can choose how to improve my game without buying the complete version that is more expensive. I like it because it is not compulsory".*

Children tended to focus more on the irritation that in-app purchases created, rather than the implications of this marketing technique. However, some children were quite negative. … b) a majority of the children found it difficult to make a decision when prompted to make an in-app purchase

One indicated that in-app purchases were "*not smart, because in the end you cannot do anything with it, except to play the game*". Another one stressed that they "*fool children to spend a lot of money*". One child, however, found these purchases reasonable "*I understand that if you do not have any coins at the moment that you do want to buy something in order to speed it up*." Another said that it was a way of becoming better than other players. Finally, a German boy indicated that the problem was not to do some purchases, but rather the amount "*if you can buy different angry birds, I think it is not bad. But some people who enjoy playing it waste their money in order to get to the levels with several angry birds*."

5.6 Actual influence of sophisticated marketing techniques – results from behavioural experiments

5.6.1 Advergame experiment

5.6.1.1 Rationale of the experiment

There is a body of evidence stating that online advertisement affects children's preferences and choices. Advergames combine entertainment with marketing messages. Van Reijmersdal et al. (2010, 2012) found that they succeeded in influencing children towards choosing specific brands. Folkvord et al. (2013) found that food advergames increased the consumption of energy-dense snacks, both when they promoted this type of food and when they advertised fruit. An & Stern (2011) and An et al. (2014) focused on interventions to enhance persuasion knowledge. They found that ad breaks did not improve persuasion knowledge. Nevertheless, their presence reduced children's brand recognition and their desire to buy the product. Looking at the existing literature there was a clear need for further research on the ways in which children processed advergames and how protective measures might affect their understanding, preferences and behaviour.

In this following experiment the interplay of persuasion knowledge, cognitive abilities, and choice were explored in order to test whether or not ad breaks enhanced persuasion knowledge and limited brand recognition and consumption intentions as the literature has suggested. An ad break of the same design as the one used in the research conducted by Folkvord et al. (2013) was used to inform children of the commercial motivation of the game to be played[47].

5.6.1.2 Descriptive statistics

Children (N = 597) were individually tested in the Netherlands (N = 215) and in Spain (N = 382), at their schools during regular school hours. We excluded 4 Dutch children due to Ramadan, or because they took food with them in their pockets during the experiment, and 1 child was excluded from the analyses because of partial non response. Furthermore, 31 Spanish children were excluded from the analyses because they had not finished the session completely, did not understand the experimental procedure, or had outlying scores on snack consumption (M + 2.5*SD). The final sample consisted of 211 Dutch children and 351 Spanish children. This large difference in sample size between the Netherlands and Spain can be explained due to the fact that different schools were sought to participate in this study, and more Spanish schools than expected accepted this request compared to Dutch schools, thereby positively affecting our Spanish sample.

The children were divided in two age groups: 6-8 years old (younger group) and 9-12 years old (older group).[48]In the Netherlands, the mean (± SD) age of the children was 9.0 (± 1.18) years and 50.7 % were boys. They were tested at three different primary schools, one in Apeldoorn (77), one in Venlo (62), and one in Roermond (77). In Spain, the mean (± SD) age of the children was 8.9 (± 1.68) years and 47.1 % were boys. The children were tested at five different primary schools in the Barcelona region, in the schools Voramar (51), Jesuïtes Gràcia – Kostka (186), Escola Progrés (73), Escola Josep Carner (42) and Escola Alta Segarra (30). In both the Netherlands and Spain, the children liked both advergames equally and had the same response to the different energy-dense snack brand or snack products advertised. Furthermore, we found no differences in brand recognition.

Of the Dutch children, 7.1% were underweight, 74.3% were normal weight, 13.3% were overweight, and 5.2% were obese. Of the Spanish children, 18.5% were underweight, 65.5% were normal weight, 11.1% were overweight, and 3.7% were obese. The following tables show the variables measured by condition, separately for the Dutch and Spanish children.

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[47] A detailed description of the methodology used is provided in Section **Error! Reference source not found.**

[48] In the Netherlands the youngest children were 7 years old, and 76 children were part of the younger age group while 134 children were part of the older age group. In Spain 159 children were part of the younger age group while 192 children were part of the older age group.

Table 10 Variables measured by the condition, for the Dutch sample (*N*= 211)

	Energy-dense advergame (*n* = 52)	Energy-dense advergame with PM (*n* = 55)	Non-food advergame (*n* = 52)	Non-food advergame with PM (*n* = 52)
Sex (boy)	50 %	50.9 %	42.3 %	59.6 %
Hunger (cm on VAS)	4.6 ± 4.2	4.3 ± 4.1	3.3 ± 3.4	4.8 ± 4.8
BMI	17.2 ± 3.0	17.5 ± 2.8	17.9 ± 3.0	17.3 ± 2.8
Age (y)	8.9 ± 0.9	9.2 ± 1.1	9.1 ± 1.2	8.8 ± 1.3
Attitude to the game (Q14_1 – Q18_1 & Q20_1-Q21_1)	9.7 ± 2.4	9.7 ± 2.6	10.1 ± 2.0	9.8 ± 2.3
Attitude to the brand (Q39_1 – Q44_1)	10.7 ± 2.4	10.4 ± 2.4	10.7 ± 2.2	9.8 ± 3.0
Total calorie intake (kcal)	182.4 ± 137.0	206.6 ± 146.9	90.3 ± 129.1	81.0 ± 101.4
Jelly cola bottles intake (kcal)	95.5 ± 83.3	86.3 ± 105.0	35.9 ± 50.8	40.2 ± 59.2
Milk chocolate snack shell intake (kcal)	86.9 ± 100.9	120.2 ± 123.2	54.3 ± 112.9	40.7 ± 68.9
Remembering PM (yes)	n.a.	5 %	n.a.	6 %
Recognizing PM (yes)	n.a.	40 %	n.a.	33 %

Table 11 Variables measured by the condition, for the Spanish sample (N= 351)

	Energy-dense advergame (n = 83)	Energy-dense advergame with PM (n = 90)	Non-food advergame (n = 88)	Non-food advergame with PM (n = 90)
Sex (boy)	50.6 %	45.6 %	44.3 %	44.3 %
Hunger (cm on VAS)	7.6 ± 4.5	7.8 ± 4.9	7.4 ± 4.7	7.4 ± 4.8
BMI	16.4 ± 2.4	17.0 ± 3.5	16.7 ± 3.0	16.3 ± 2.8
Age (y)	8.9 ± 1.7	8.8 ± 1.6	8.9 ± 1.7	8.9 ± 1.7
Attitude to the game (Q14_1 – Q18_1 & Q20_1-Q21_1)	12.2 ± 2.2	12.2 ± 2.2	12.1 ± 2.2	11.7 ± 2.5
Attitude to the brand (Q39_1 – Q44_1)	11.7 ± 2.3	11.7 ± 2.5	11.5 ± 2.3	11.4 ± 2.5
Total calorie intake (kcal)	149.5 ± 121.8	166.9 ± 132.0	150.3 ± 124.2	149.9 ± 118.4
Jelly cola bottles intake (kcal)	88.8 ± 87.4	97.8 ± 108.6	90.8 ± 94.9	100.0 ± 94.2
Milk chocolate snack shell intake (kcal)	60.7 ± 73.7	69.2 ± 79.3	59.5 ± 81.8	49.9 ± 62.2
Remembering PM (yes)	n.a.	4 %	n.a.	1%
Recognizing PM (yes)	n.a.	31 %	n.a.	39 %

The causal relations between type of advergames and food intake was examined with regard to the research questions with multivariate analyses of covariance (MANCOVA). Post hoc Bonferroni tests were conducted to examine the differences between the advergames. To correct for the multiple comparisons, Bonferroni adjusted significance levels were used. The one-sided adjusted p-value that was considered significant was .05.

5.6.1.3 Effects of advergame on snack intake

MANCOVAs were conducted to examine to what degree advergames affected eating behaviour among children. Covariates that were included in the analyses were gender and hunger, because gender and hunger were significantly related to food intake. BMI was not significantly related to food intake, so this was not included as a covariate in the analyses. The results show that type of advergame (energy-dense vs. non-food) influenced total snack intake among children in the Netherlands, F (1, 210) = 41.330, p = .000, but not in Spain, F (1, 346) = 0.088, p = .767. The results are shown in the following table. Dutch children who played the advergame promoting energy-dense snacks ate significantly more energy-dense snacks than children who played the advergame promoting non-food products.

Table 12 Kcal intake by condition and country

	Dutch Children		Spanish Children	
	Energy-dense advergame (n = 52)	Non-food advergame (n = 52)	Energy-dense advergame (n = 83)	Non-food advergame (n = 88)
Total calorie intake (kcal)	196.9 ± 143.1	82.4 ± 140.5	157.7 ± 127.7	150.1 ± 120.9

In addition, separate MANCOVAs were conducted to examine the effects of advergames between age-groups. Two different age groups were made for the Netherlands (6-8 years and 9-11 years) and for Spain (6-8 years and 9-12 years). The results are shown in Table 13. For the Dutch children between 6 and 8 years, we found that type of advergame has an effect on total snack intake, F (1,76) = 24.743, p = .000. The same was the case for the children between 9 and 11, F (1,133) = 17.444, p = .000. Post hoc Bonferonni tests showed that Dutch children, between 6 and 8 years old and between 9 and 11 years old, who played the energy-dense advergame, ate significantly more than the children who played the non-food advergame. For the Spanish children between 6 and 8 years, it was found that type of advergame had no statistically significant effect on total snack intake, F (1,155) = 2.034, p = .078, although the effect was almost significant. For the children between 9 and 12 it was found that type of advergame had a significant effect on total snack intake, F (1,190) = 3.251, p = 0.036. Post hoc Bonferroni tests showed that Spanish children between 9 and 12 years old who played the energy-dense advergame ate significantly more than the children who played the non-food advergame.

Table 13 Kcal intake by condition, age and country

	Dutch Children			
	Children 6-8 y		Children 9-11 y	
	Energy-dense advergame (n = 33)	Non-food advergame (n = 43)	Energy-dense advergame (n = 73)	Non-food advergame (n =61)
Total calorie intake (kcal)	181.6 ± 149.2	53.7 ± 67.5	204.1 ± 141.7	102.9 ± 130.9
	Spanish Children			
	Children 6-8 y		Children 9-12 y	
	Energy-dense advergame (n = 79)	Non-food advergame (n = 80)	Energy-dense advergame (n = 94)	Non-food advergame (n = 98)
Total calorie intake (kcal)	186.1 ± 134.0	153.8 ± 118.1	190.4 ± 125.4	143.9 ± 116.5

5.6.1.4 Effects of protective measures

After children finished playing the advergame, memory and recognition of the text of the protective measure was measured. In the questionnaire, after they played one of the games, the children were immediately asked whether they remembered what message was shown in the top of the screen, and subsequently we showed the children the exact text and asked whether they had seen it.

Remarkably, only 5 % of the Dutch children and 4 % of the Spanish children who played the energy-dense advergame with the protective measure remembered the text of the protective measure. The protective measure was a sentence placed in the upper centre part of the screen that said: "*Remember: This game is an advertisement for X.*". Children who remembered the message said something like "*This game is an advertisement from X",* or "*This game is made by X".* Most children, regardless of their age, answered simply "No, I have no idea" to the question.

When presented with the actual text, only 40 % of the Dutch children and 31 % of the Spanish children who played the energy-dense advergame said that they recognized the text of the protective measure, and only 33 % of the Dutch children and 39 % of the Spanish children who played the non-food advergame said that they recognized the text of the protective measure.

No significant differences were found in either of the countries between the four conditions on attitude to the advergame ($p > .05$), attitude to the brand ($p > .05$), and attitude to the product ($p > .05$). Also, no effect on brand recognition was revealed ($p > .05$). It was however found that Dutch children who recognised the protective measure afterwards reported to have more knowledge about the persuasive intent of the game. No differences emerged between age groups. Dutch children who recognized the protective measure in the advergame promoting energy-dense snacks reported more often that the game was designed to make children like the energy-dense snacks from the advertised brand more, F (1, 54) = 5.374, p = .024, and that the game was designed so that children would crave the advertised energy-dense snacks, F (1, 54) = 4.597, p = .037, compared to children who did not recognize the warning message in the advergame promoting energy-dense snacks. Spanish children who recognized the protective measure in the advergame promoting energy-dense snacks did not show any difference when the persuasive intent of the game was measured ($p > 0.05$) compared to children who did not recognize the protective measure message.

Next, MANCOVAs were conducted to examine to the extent to which including a protective measure in an advergame promoting energy-dense snacks influenced eating behaviour.

The results showed that the interaction effect between type of advergame (energy-dense vs. non-food) and the protective measure (with vs. without) was not significant on total snack intake among children in the Netherlands, F (1, 210) = 2.416, p = .122, and not among children in Spain, F (1, 346) = 0.439, p = .508.

It was concluded that adding a protective measure in the advergame promoting energy-dense snacks did not lead to a significant effect on total snack intake compared to the advergame promoting non-food products.

An interaction effect among Dutch children between type of advergame and the protective measure on milk chocolate nut shells intake was also revealed, F (1, 210) = 5.678, p = .009. Post hoc Bonferroni tests showed that Dutch children who played the advergame promoting energy-dense snacks without the protective measure (M = 86.9 kcal, SD = 100.9 kcal) ate less milk-chocolate candy shells than children who played the advergame promoting energy-dense snacks with the protective measure (M = 124.9 kcal, SD = 126.9 kcal), while the results showed only a small difference in the opposite direction for the children who played the advergame promoting non-food products

without the protective measure (*M* = 54.3 kcal, *SD* = 112.9 kcal) and the children who played the advergame promoting non-food products with the protective measure (*M* = 34.1 kcal, *SD* = 50.0 kcal). For the Spanish children we found no effects.

Separate MANCOVAs were conducted to examine the effects of the protective measure on total snack intake across the different age-groups. For the Dutch children between 6 and 8 years, an interaction was highlighted between type of advergame and the protective measure on total snack intake, *F* (1,75) = 3.418, *p* = .035. For the children between 9 and 11 the interaction between type of advergame and the protective measure had no significant effect on total snack intake, *F* (1,133) = 0.759, *p* = .192. Post hoc Bonferroni tests showed that Dutch children between 6 and 8 years old who played the advergame promoting energy-dense snacks without the protective measure (*M* = 142.8 kcal, *SD* = 124.0 kcal) ate significantly (*p* = .015) less than the children who played the advergame promoting energy-dense snacks with the protective measure (*M* = 228.1 kcal, *SD* = 167.2 kcal), while the children who played the advergame promoting non-food products without the protective measure (*M* = 57.6 kcal, *SD* = 88.2 kcal) ate almost the same amount (*p* = .399) as children who played the advergame promoting non-food products with the protective measure (*M* = 50.3 kcal, *SD* = 44.0 kcal).

For the Spanish children between 6 and 8 years, it was discovered that the interaction between type of advergame and the protective measure on total snack intake was significant, *F* (1,158) = 3.032, *p* = .042. The interaction had no significant effect on total snack intake on children aged between 9 and 11, *F* (1,190) = .023, *p* = 0.440. Post hoc Bonferroni tests showed that Spanish children between 6 and 8 years old who played the advergame promoting energy-dense snacks without the protective measure (*M* = 98.7 kcal, *SD* = 96.5 kcal) ate significantly (*p* = .020) less than children who played the advergame promoting energy-dense snacks with the protective measure (*M* = 145.9 kcal, *SD* = 119.3 kcal), while the children who played the advergame promoting non-food products without the protective measure (*M* = 158.3 kcal, *SD* = 134.3 kcal) ate not significantly (*p* = .240) more than children who played the advergame promoting non-food products with the protective measure (*M* = 133.6 kcal, *SD* = 115.8 kcal).

No different effects on snack intake between those who recognized the protective measure in the advergame promoting energy-dense snacks and those who did not was discovered when comparing Dutch and Spanish children.

5.6.2 In-app purchase

5.6.2.1 Rationale of the experiment

The regulatory landscape and companies' practices regarding in-app purchasing is evolving. A recent press release by the European Commission[49] indicated that consumer protection is improving, following collaborative efforts by the Commission, Member States and market players. Progress has been made in terms of transparency, for instance with the changes by Google whereby the word "free" is no longer used for games with in-app purchases and by Apple that now specifies whether a game contains in-app purchases. Furthermore, both Apple and Google have added parental mediation measures ensuring that children do not have a one click access to in-app purchase as the default option. Explicit consent is compulsory, through information request (warning signs) when making purchases. Nevertheless, our preliminary interviews with parents' associations indicated that parents were not fully satisfied with measures that were only targeted at their own intervention, and would like to see more protective measures that help children understand the issues related to online behaviour and discourage spending excessive amounts of money on virtual goods. Through the experiment on in-app purchases, the effectiveness of three different protective measures embedded in an online game mock-up offering in-app purchases was analysed[50].

[49] http://europa.eu/rapid/press-release_IP-14-847_en.htm

[50] A detailed description of the methodology used is provided in section **Error! Reference source not found.**

5.6.2.2 Descriptive statistics

Children aged 8-12 years (N=485) were tested in the Netherlands (N=223) and in Spain (N=262) at their schools during regular school hours. In Spain, children were tested at four different primary schools in the Barcelona region: Voramar (101), Virolai (51), Escola Progrés (40), Escola Josep Carner (35) and Jesuïtes Gràcia – Kostka (35). Thirty additional children were tested but excluded from analysis due to 5 being previously tested with the advergame, 12 due to experimental and software errors, 9 who did not reach the minimum age to participate and 4 presented doubtful behaviour considering their age. In the Netherlands, children were tested at Mozaiek School in Roermond (133) and Terebint in Apeldoorn (90). For this analysis 9 children were excluded due to experimental and software errors.

The mean age (± *SD*) of the children tested in Spain was 9.75 (± 1.55), while in the Netherlands it was 9.64 (± 1.34). In terms of gender, in Spain 48.28% were female, while in the Netherlands the female share was 55.20%.

The distribution by condition was the following: (Spain) 68 children were randomly assigned to the baseline condition, 68 to the multiple alternatives treatment, 35 to the warning message treatment, and 61 to the disengagement treatment. In the Netherlands, 58 children were in the control group, 61 in the multiple alternatives treatment, 37 in the warning message treatment, and 58 in the disengagement treatment. As it was explained in the research method section, all the children were randomly assigned to one of the four experimental conditions. The following table describes these conditions:

Table 14 Treatment description

Treatment/Condition	Description
Baseline experiment (control condition)	Children played the game and were exposed to the purchase options directly.
Multiple alternatives treatment	The aim of the intervention was to test whether the possibility of comparing the alternatives reduced children's tendency to spend gold during the transactions. The game stopped at two different purchase situations, and a screen displayed four possible alternative ways of spending the gold. The alternatives were always presented with a voice narrating this text and appropriate visual cues appearing after each presented alternative: *"Before spending gold think of how many things you could do with this gold. You could have more balloons, or more stickers, or more rubber bands… Or perhaps you could even use it to play another game".*
Disengagement treatment	The flow of game was interrupted at the last two purchase situations by a complex picture. Before being able to continue, children had to locate Wally, a well-known cartoon character. The aim was to explore whether disengaging children from the current task, by interrupting the flow and washing out their current visual-spatial focus on the game, could reduce their tendency to spend gold during the transactions. Children were asked to look for Wally and click on the character when they found him.
Warning message treatment	At the same times preceding the final transactions, children were exposed to the following message before entering the transaction: ***'Think for a moment. Is it worth buying extra features?'***

Table 15 reports descriptive statistics of the behaviour of the participants in Spain. Our measure for in-app purchase is the number of pixels of the gold bar, which has been 'spent' by the participant in the three purchase situations. The children started with a certain amount of gold, and then at three different moments of the game they could freely spend some of the gold to buy certain features. Gold was returned to them when passing to the new levels, randomly between a minimum and a maximum amount. The protective measures (experimental conditions) were introduced in the two final purchase

situations, except for the control condition. Both the average amounts spent across the three purchase situations and the single amount of gold spent in each purchase situation was reported. The results showed that younger children tended to spend more gold in the purchase situations compared to older children. Moreover, the amounts of gold spent increased from the first to the last purchase situation.

Table 15 Descriptive statistics for purchase scenario variables: Spain

	Stats	Average gold spent	First purchase situation	Second purchase situation	Third purchase situation
Whole Sample	Min	1.33	1.00	1.00	1.00
	Max	227.67	274.00	409.00	595.00
	Median	25.17	19.50	20.00	26.00
	Mean	44.64	36.51	47.06	50.36
	Sd	47.54	44.80	65.50	73.55
8-9 y.o	Min	1.33	1.00	1.00	1.00
	Max	223.33	221.00	406.00	304.00
	Median	34.67	25.00	29.00	33.00
	Mean	52.23	39.68	56.82	60.19
	Sd	49.96	46.30	69.57	69.32
10-12 y.o	Min	2.00	1.00	1.00	1.00
	Max	227.67	274.00	409.00	595.00
	Median	19.33	18.00	15.00	15.00
	Mean	37.44	33.50	37.79	41.03
	Sd	44.13	43.58	60.23	76.48

Table 16 reports the basic characteristics of the children in Spain: 55% play mostly with a tablet, a percentage as high as 62% for the younger group (8-9 years old). The average share of children playing mostly with the phone was 30% but it increased with age. 84% said they played a lot of games, increasing up to 93% in the younger group. In terms of initial choice, around 50% of the children chose the version with the "In App" purchase label, while very few chose the "Pay" version. A chi^2 test indicate that younger children were significantly less likely to select the "free" version compared to the older group of children (chi2=7.881; p=.005).

Table 16 Descriptive statistics: Spain

	Female	Gamers	Device	Initial choice
Whole Sample	48.28	84.48	Tablet: 55.17	InApp: 49.57
			Phone: 30.17	Pay: 5.17 Free: 45.26
8-9 y.o	51.33	92.92	Tablet: 61.95	InApp: 52.21
			Phone: 20.35	Pay: 7.96 Free: 39.83
10-12 y.o	45.38	76.47	Tablet: 48.74	InApp: 47.06
			Phone: 39.50	Pay: 2.52 Free: 50.42

Table 17 show the same descriptive statistics for the Netherlands. In terms of behavioural choice, in the Netherlands the average amount of gold spent and the difference in the amounts of gold spent between the purchase scenarios were larger than in Spain.

Table 17 Descriptive statistics for choice variables: the Netherlands

	Stats	Average Gold spent	First purchase situation	Second purchase situation	Third purchase situation
Whole Sample	Min	1.00	1.00	1.00	1.00
	Max	589.00	512.00	389.00	589.00
	Median	53.00	47.00	55.50	65
	Mean	88.24	67.85	92.10	104.77
	Sd	94.43	74.20	92.10	108.37
8-9 y.o	Min	2.00	4.00	3.00	2.00
	Max	564.00	512.00	387.00	564.00
	Median	59.50	52.00	59.00	69.50
	Mean	92.64	78.74	93.00	106.19
	Sd	91.48	87.12	87.11	98.55
10-11 y.o	Min	1.00	1.00	1.00	1.00
	Max	589.00	298.00	389.00	589.00
	Median	44.50	40.00	51.50	49.00
	Mean	84.23	57.93	91.28	103.47
	Sd	96.99	58.73	100.63	117.02

Furthermore, in the Netherlands, the proportion of children saying that they played a lot of games was lower than in Spain and was more or less constant across age groups. Fewer children played with a tablet or phone compared to Spain and the large majority chose the game labelled as free. In the Netherlands the probability to choose a "Free" game was not dependent on the age of the child (chi2=0.103, p=0.748).

Table 18 Descriptive statistics: Netherlands

	Female	Gamers	Device	Type of Game
Whole Sample	44.39	63.08	Tablet: 47.20	InApp: 17.29
			Phone: 18.69	Pay: 4.46 Free: 78.25
8-9 y.o	31.37	64.71	Tablet: 50.98	InApp: 31.37
			Phone: 13.73	Pay: 11.76 Free: 56.87
10-11 y.o	56.25	61.61	Tablet: 56.25	InApp: 4.46
			Phone: 23.21	Pay: 16.07 Free: 79.47

Finally, the following figures show histograms of the average amount of gold spent in the purchase situations. Both the total amount of gold spent and the total amount spent per condition are shown. Figure 6 shows that the distributions were more similar across conditions in the Netherlands than in Spain. The next section unpacks the impact of the different experimental conditions.

Figure 6 Histograms of average gold given to children in Spain

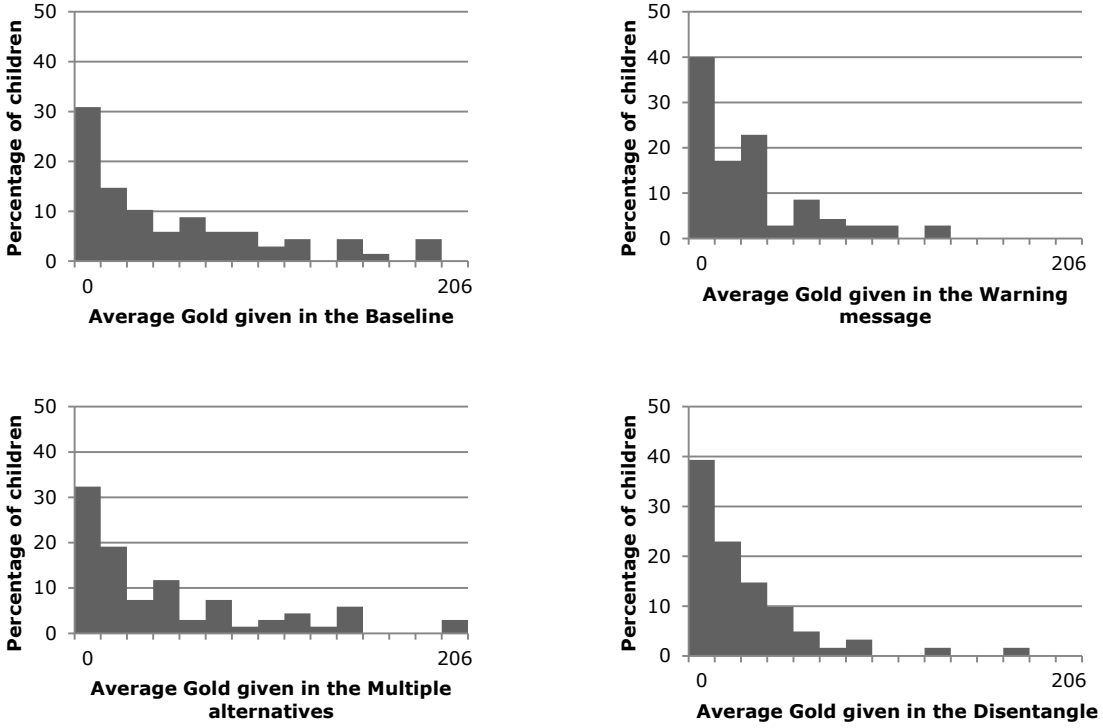
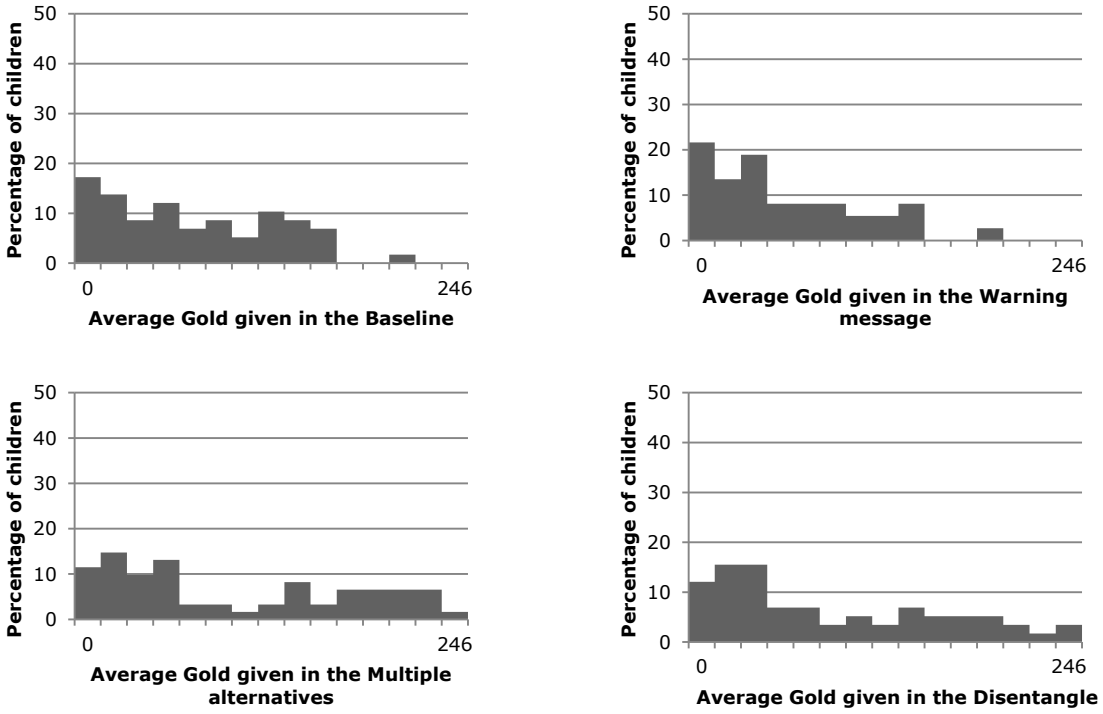


Figure 7 Histograms of average gold given to children in the Netherlands



5.6.2.3 Effect of the protective measure

The following tables show the outcomes of regression analyses on the amounts of gold spent in the different purchase situations. Since there were multiple choices by the same subject, linear panel data regression was used with random effect. The omitted category in all cases was the baseline group. Only the second and third purchase decisions were taken into consideration, because the first purchase took place before the treatment in the experimental conditions.

In the case of Spain (see Table 19) significant effects were shown. In column (1) it can be seen that both the warning message and the disengagement treatments had a statistically significant impact. Both significantly reduced the amount of gold spent. Column two shows that the effect was robust when other key variables, such as gender, age, use of gaming device and gaming experience, were controlled for. The results show that older children spent less gold in the purchase situations compared to younger children. In column (3) the initial choice of which game to play was added as a control variable, at the moment were the children chose between games labelled as "In-App", "Free" and "Pay". This made it possible to detect whether this choice had an impact on the amounts of gold spent in the game. The results show that children selecting both the "In-App" and the "Free" game spent significantly less than the children who initially selected the "Pay" game.

Table 19 Regression analysis of the in-app choices (Spain)

	(1) Gold Spent	(2) Gold Spent	(3) Gold Spent
Multiple alternatives	-0.640	-1.489	-2.396
	(11.63)	(11.20)	(11.08)
Warning message	-25.76*	-29.28**	-28.56**
	(10.05)	(10.03)	(10.20)
Disentangle	-29.30**	-28.69**	-29.42**
	(9.121)	(9.308)	(9.368)
Female		6.249	7.910
		(7.590)	(7.552)
Age (years)		-4.955*	-4.257*
		(2.529)	(2.561)
Phone		8.256	8.402
		(10.07)	(10.64)
Tablet		17.58	19.40
		(9.855)	(10.16)
Gamers		6.336	5.310
		(9.352)	(8.917)
In App			-43.43*
			(21.52)
Free			-44.87*
			(21.50)
Constant	60.49**	88.90**	123.3**
	(7.809)	(27.51)	(33.66)
Observations	464	464	464
Number of children	232	232	232

Note: White-Huber heteroscedasticity-robust standard errors in parenthesis. * p<0.05, ** p<0.01

The results from the Spanish experiment were not replicated in the Netherlands.

Table 20 shows that the children in the multiple alternatives treatment group actually exhibited greater propensity to spend gold than children in the control condition group. The effects of the other protective measures were not statistically significant. The results were not influenced by the introduction of other control variables.

Table 20 Regression analysis of the in-app choices (The Netherlands)

	(1) Gold Spent	(2) Gold Spent	(3) Gold Spent
Multiple alternatives	34.34*	32.54*	32.40*
	(15.81)	(16.21)	(16.36)
Warning message	-16.21	-19.77	-18.78
	(13.57)	(14.61)	(14.75)
Disentangle	11.87	6.309	5.791
	(14.96)	(15.25)	(15.39)
Female		17.93	18.79
		(12.18)	(12.38)
Age (years)		-2.623	-0.717
		(5.191)	(5.424)
Phone		2.043	0.372
		(16.90)	(16.57)
Tablet		26.22*	26.58*
		(13.28)	(13.30)
Gamers		1.944	3.973
		(12.14)	(12.31)
In App			15.32
			(17.15)
Free			6.750
			(13.53)
Constant	88.23**	94.19**	69.47
	(8.842)	(46.62)	(52.12)
Observations	428	428	428
Number of children	214	214	214

Note: White-Huber heteroscedasticity-robust standard errors in parenthesis. * p<0.05, ** p<0.01

Table 21 presents the findings of a variance analysis with the average gold spent in the last two choices as the dependent variable. This made it possible to isolate the effect of the treatment, for the Spanish and Dutch samples. As can be seen, in Spain the protective measure condition was a significant determinant of the differences in the behaviour in the experiment (F=4,68, p=0.00). In the case of the Netherlands, the main effect of the protective measure condition was significant (F=2,77, p=0.04), but this reflected the fact that, as we saw in the regressions, the multiple choices condition performed worse than the control condition, while the message condition was the best performer but it was not statistically different from the control condition.

Table 21 Analysis of Variance

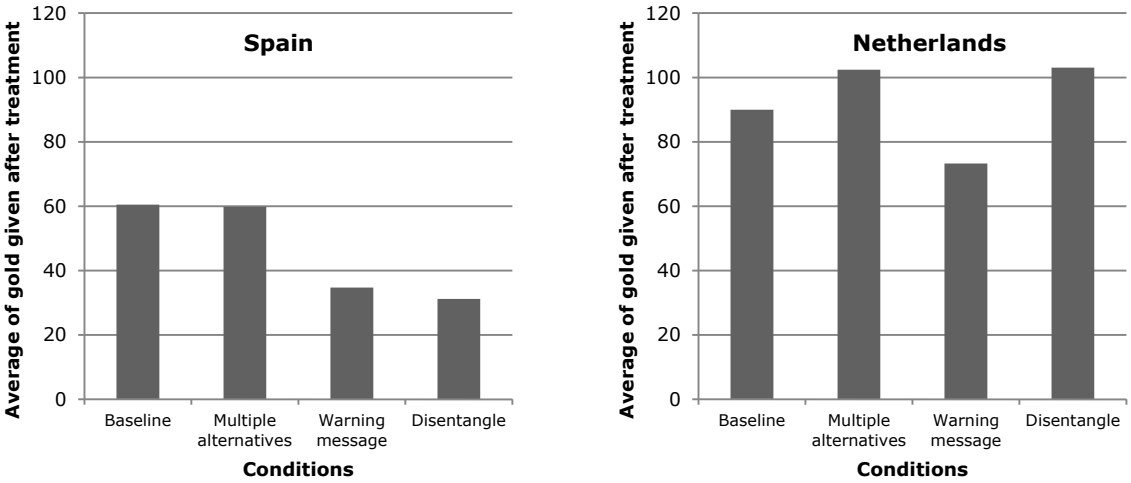
	Spain		The Netherlands	
	F	P value	F	P value
Model	1.83	0.01	1.44	0.06
Condition	4.68	0.00	2.25	0.08
Female	0.26	0.61	4.49	0.03
Age (years)	1.37	0.25	0.24	0.24
Device	1.86	0.16	1.90	0.15
Type of game	0.79	0.46	2.40	0.09
Type of game # Condition	2.14	0.05	1.39	0.21
Device # Condition	1.13	0.35	0.37	0.89
Age # Condition	0.83	0.60	1.38	0.18

Note: ANOVA test. Dependent variable is the average gold spent in the last two choices. Condition is the variable which identifies the experimental treatment. Device is the variable capturing the preference to play at home (Tablet, Computer, or Phone). Type of game is the variable capturing the initial choice of the kid to play with In-app, Free or Pay game.

There were no significant interaction effects across possible interactions between device and treatment, between age and treatment and between initial choice and treatment (although for Spain this was at the very threshold of statistical significance).

The treatment condition did not interact with age in either sample. Results were reported in the figure below. The results imply that the initial choice ("In app", "Free", "Pay"), although related to their purchasing decisions (as seen in the regressions), did not interact with the overall effect of the protective measures and did not generate different behaviour across conditions.

Figure 8 Average amount of gold spent by treatment



To disentangle the effects of the interventions a series of Wilcoxon rank sum test were performed for paired response. This compared the first with the second choice and the first with the third choice. Results are reported in the following table:

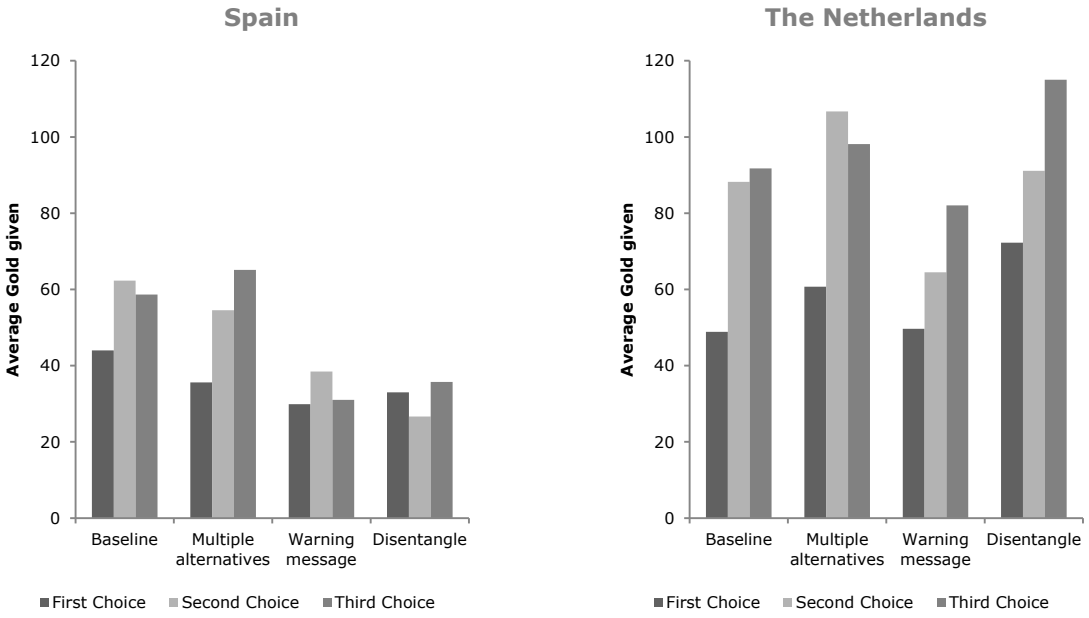
Table 22 Wilcoxon rank sum test for paired choices

	(2) Gold Spent Second purchase situation versus first purchase situation		(3) Gold Spent Third purchase situation versus first purchase situation	
	z	p	z	z
	Spain			
Control	-1.81	0.07	-2.06	0.03
Choices	-1.00	0.31	-1.91	0.05
Message	-1.55	0.24	0.52	0.60
Wally	2.04	0.04	0.15	0.88
	The Netherlands			
Control	-1.82	0.07	-2.79	0.00
Choices	-3.25	0.00	-3.08	0.00
Message	-1.95	0.05	-1.86	0.06
Wally	0.66	0.50	-2.22	0.02

The elements of the designs were either balanced or constant across the purchase situations, thus the only thing that changes is the presence of the experimental intervention. As a result, it was interesting to see whether and how the presence of a protective measure influenced the children's choices. In future studies it would be advisable to compare this change to the baseline of the control condition (as a difference-in-difference approach).

Figure 9 compares the first purchase decision with the second and third purchase decisions.

Figure 9 The three choices by condition



As can be seen from the previous figure, in Spain pre-treatment behaviour was balanced across conditions (F=1.03, p=0.38), however, the amount of gold spent in the second purchase situation was larger than in the first purchase situation across all conditions except in the disengagement condition. In this latter case, the difference was statistically significant, while in all other treatment conditions there was no statistically significant difference between the amounts spent in the first and the second purchase situation in Spain. On comparison, the first and the third purchase situations revealed no statistically significant difference in the amounts spent between the two purchase situations in the case of the message and the disengagement condition, while there was a significant increase in the amounts spent from the first to the third purchase situation for the control and the multiple choices condition. In the Netherlands, the first choice was also balanced across conditions (F=2.03, p=0.07). However, the amounts of gold spent statistically significantly increased from the first to the second purchase situation in all conditions except from the disentanglement condition (where the initial choice was in any case larger). In the third purchase situation, the amount of gold spent continued to increase compared to the first purchase situation, and in all cases (except for the Message condition) it was statistically significant. These findings indicate that the type of in-app purchase offered (be it purchase of a different character or purchase of faster game play) also influenced the effect of the protective measures.

5.7 Summary of key results

This chapter has explored the results of the experimental phase supported by insights from the systematic review and the focus groups with children in answer to research questions 2, 3 and 4. First, the degree and ways that sophisticated marketing techniques influences children's behaviour was analysed. This was followed by an exploration of the children's ability to recognise and understand the implications of different marketing/market research content embedded in online games, social media sites and mobile applications directed at them. The behavioural experiments conducted provided important insights on the children's ability to identify problematic online marketing practices and the behavioural effects of sophisticated marketing practices.

Impact of online marketing

While findings from the systematic review suggested that research on online marketing was still in an early phase, general theories on advertising to children have pointed to

three age groups of children with different capacities to process advertising content: a) below 7 'limited processors; b) 7-11 'cued processors'; c) above 12 'strategic processors.

While online games, social media and mobile applications (OGSMMAs) are interactive it is reasonable to assume that their potential for affective involvement of children is higher than traditional TV advertising since playing a game takes a considerable amount of cognitive resources compared to what is needed to process TV commercials. Based on previous research and our empirical findings, this study suggests that when playing an online game, using social media or using a mobile application, a child's information processing capabilities are hindered. Furthermore, the cognitive load and the affective dimensions of advertisements in these platforms increase the children's difficulties related to recognition and defence from advertisements. This seems to be particularly salient in advergames. Thus, if the games affectively involve children, the emotional engagement could also trigger full activation of the cognitive resources. This is similar to a Nudge strategy called *De-biasing,* it occurs when a choice architecture intervenes to manipulate the emotional state to deactivate the bias and re-activate the reflexive system. Since in the case of children the cognitive resources are limited, whether this mechanism is at work deserve further research. The findings from this study as well as other academic literature have pointed to the fact that children are more likely to be affected by online marketing practices and have more difficulties in recognising the advertising content. This implies that children, and especially young children, are particularly vulnerable to problematic marketing practices.

Children's perceptions of online marketing

The analysis of the focus groups revealed that children in general had a negative opinion of online advertising, but particularly disliked advertisements because they regarded them as a disturbance and distraction to their activities, often the playing of online games. However, children stated that advertisements were clearly recognisable and that it was easy to distinguish advertisement from other online content, while they believed they were not affected by online advertisements at all. A number of children said that they had already made in-app purchases to get extra features or to get to higher levels. Children appeared to be considerate of their decision, and often expressed doubts about spending money on intangible and unknown things. As opposed to in-app purchases, children appeared to be rather unfamiliar with the concepts of *advergames*, with a number of children saying they had never played an advergame. Most children that were exposed to an advergame were unaware of the commercial intent, but once they were made aware of the commercial intent, they expressed negative opinions about it.

Effects of embedded advertisements on children's behaviour

In the advergame experiment the effects of advergames promoting energy-dense snacks on eating behaviour among children in the Netherlands and in Spain were tested. In addition, the possibility of a protective measure reducing the effect of the advergame promoting energy-dense snacks on children's snack intake was explored. It was found that advergames promoting energy-dense snacks increased the snack consumption among Dutch and Spanish children, which is in line with earlier findings (Folkvord et al., 2013, 2014, 2015; Harris et al., 2012; Pempek & Calvert, 2009). Furthermore, we found that including a protective measure to make children aware of the persuasive intent of the advertisement was not effective in reducing calorie intake. In addition, children who played the advergame promoting energy-dense did not have a different attitude to the game, brand or products. Dutch children who recognized the protective measure in the advergame promoting energy-dense snacks reported more knowledge about the persuasive intent of the advergame than children who did not recognise the protective measure. This result suggests that some children became more aware of marketers' intentions by the inclusion of the protective measure. This effect was not found for Spanish children. However, children from both countries who remembered to have seen the protective measure when presented with it afterwards did not eat less of the energy-dense snacks.

Most children could not remember the protective message that was displayed in the upper centre part of the screen and more than half of the children reported that they had not seen the protective measure when they were shown the text of the protective measure after they had finished playing the game. This does, however, not mean that they did not see or register the protective message subconsciously, which might have affected their eating behaviour. Because eye-movements were not recorded, it is not possible to say with certainty that the children saw the message. In summary, the most important conclusion from this experiment is that children, both in the Netherlands and in Spain, ate more energy-dense snack while playing a game that promoted such snacks compared to children who played a game promoting a toy brand. Furthermore, the warning message tested as a protective measure did not make the children eat less of the energy-dense snacks. On the contrary, younger children even ate more of the energy-dense snacks when exposed to the warning message.

As other studies have shown, when food cues are embedded within the content of an advergame, children seem less ready to critically process the persuasive message of the food advertisement. Children are focused on playing the game, and they may subconsciously and automatically process the food cues (Owen et al., 2009; Panic et al., 2013). Terlutter & Capella (2013) showed that advergames had the highest level of embedded advertising. The positive effect that was associated with the entertaining aspect of playing the advergames was transferred to the brand outside of conscious control, thereby influencing children's food choices without deliberation. Adding the protective measure to the advergame did not affect children's attitude to the advergame, advertised brand or products, but it did affect the knowledge of persuasive intent of the game among Dutch children. Children's cognitive resources were allocated largely to the game they were playing, and food cues thus became elaborated on an automatic level (Buijzen et al., 2010), directly leading to physiological and psychological reactions (Carter & Tiffany, 1999).

It has been shown that children who play advergames face a fundamentally different type of brand exposure than exposure to television or print media (Moore, 2006; Thomson, 2010). Online games provide a more involving brand experience than conventional media (Buijzen et al., 2010; Nairn & Hang, 2012; Thomson, 2010; Weber et al., 2006), thereby possibly increasing the effect on snack consumption (Folkvord et al., 2013, 2014, 2015). The embedded food marketing cues in an advergame achieve the marketing practitioners' intended main effect of reducing scepticism among children, as well as a greater openness to a food brand message and consumption of the advertised food (Lindstrom & Seybold, 2003). Children use a minimal level of cognitive elaboration to critically process food cues in the advergames as their cognitive resources are employed in playing the game.

The current study and the wider literature amply demonstrate that advergames are effective in stimulating the consumption of unhealthy foods. In this study, it has been found that persuasion knowledge alone does not reduce the effects of advergames, because children who played the energy-dense advergame and did remember or recognised the protective measure did not eat less snacks. Some of them were, however, more aware of the commercial intent of the game. It is thus not likely that certain types of protective measures, (Panic et al., 2013; Rozendaal et al., 2011), such as ad breaks (An & Stern, 2011) or a character that reminded children of the commercial intention of the advergame, would be very effective in reducing the impact of online food advertisements. Food cues in advergames may curb the effectiveness of these forms of protective measures, irrespective of the fact that children recognise the persuasive intent.

Effects of prompts to make in-app purchases and potential protective measures

The evidence from the literature review indicated that children were particularly vulnerable to online marketing techniques and in particular, to exhortations to make purchases. Experimental studies that have investigated the impact of age have concluded that younger children were more inclined to purchase virtual goods. The desire to buy increased with the frequency of game play, and was also positively related to expected

performance. Existing evidence on the impact of protective measures within the games was very limited, and showed that ad breaks did not appear to strengthen children's knowledge of persuasion tactics, although they did appear to dampen the desire to buy the products. In our experiment the purchasing behaviour of children in a gaming environment was investigated and different protective measures that aimed to alter the purchasing behaviour were tested. Three different protective measures were investigated: a multiple alternative treatment, a warning message treatment, and disengagement treatment.

A key finding of the experiment is that it is possible to residually infer that in-app purchase have an effect on children's behaviour from the fact that children included in the control group, not exposed to any protective measures, spent more of the 'reward medium' (i.e. the gold that they could eventually exchange into a pre-selected reward when the experiment was concluded) than their peers who played the game with different types of protective measures. The focus groups further confirmed these findings for in-app purchase in that: a) several children reported having purchased extra features without fully realising that this would cost real money; and b) the majority of children participating to the focus groups expressed that they find it difficult to make a decision when prompted to do an in-app purchase.

The examination of the effects of the protective measures was not consistent across the two countries in which the experiments were conducted. In Spain, both the warning message and the disengagement treatments had statistically significant effects. Both significantly reduced the amounts of gold spent. However, the results from the experiment in Spain were not replicated in the Netherlands. There, one of the protective measures (*multiple alternatives*) actually led to increased spending compared to the control condition. Simulating children's in-app purchasing behaviour in a laboratory setting and introducing protective measures was a challenging undertaking due to the absence of previous research in this field. Therefore, the results should be interpreted cautiously.

6 Parents' perspectives and their regulatory strategies

This chapter presents the findings of the parents' survey supported by insights from the focus groups and the systematic literature review. As part of the data collection, a representative sample survey was conducted to to gather information from parents in eight selected European countries (UK, Spain, France, Italy, Netherlands, Germany, Poland, Sweden). The survey included questions on online marketing practices, their consequences and potential remedies. The findings are pertinent to research question 5: "To what degree are parents with different socio-demographic characteristics able to recognise and understand the implications of different marketing / market research content embedded in online games, social media sites and mobile applications directed at online active children?", to research question 6: "To what degree, and in which ways, do parents with different socio-demographic characteristics worry about and attempt to regulate the online commercial activities of their children?", and to research question 10: "What are the barriers to implementing effective measures for alleviating children's vulnerability in relation to online marketing, including cultural and socio-economic aspects?".

The following sections presents evidence from the systematic review, the parent's survey and the focus groups with parents about their approaches to the problematic practices and how they regulate their children's online activities. Finally, the parent's views regarding what should be done and who is responsible for protecting children online are presented and discussed.[51]

6.1 Parents' regulation of their children's online activities

Previous studies have found that parents' opportunity to regulate their children online is limited. Firstly, their intervention is rarely required when children are online and exposed to marketing practices. For example, Henry & Story (2009) found that in sites featuring designated children's areas protective measures such as ad-breaks and reminders of a requirement for parental permission were present in only one third of the websites investigated. Likewise, Kelly et al. (2008) indicated in their study that no child protective features could be detected on websites with branded food references. They found no information for parents or requirement for parental consent to enter the sites, nor were age restricton present that would inhibit access to websites with such content. Similar results were obtained in our in-depth analysis of games (see chapter 4).

Moreover, some of the measures already in place appear to be ineffective. Cai & Zhao (2013) analysed the US Children's Online Privacy Protection Act (COPPA) of 2000. This act specified that any commercial website that collected information from children under 13 years must post a privacy policy note and seek parental permission. Cai & Zhao found that almost one third of websites directed to children collected personal information. Among them, most featured a privacy policy link, but less than half of them sought parental permission.

Lwin et al. (2008) also focussed on COPPA. They found that the website safeguards defined in COPPA did reduce information disclosure by children between 10 and 14 years. However, the effect was less strong in the presence of restrictive (or regulated) parental mediation, while active (instructive) parental mediation could further reinforce the effects of website safeguards. Another quasi-experimental study by Miyazaki et al. (2009) confirmed the risk of boomerang effects on website safeguards (children doing the opposite of what is intended). They also reported that augmenting safeguards with

[51] Annex 13 Parents' survey descriptive statistics whole weighted **sample** and Annex 14 Parents' survey descriptive statistics by country contain a full detailed description of all the variables gathered.

threats of consequences of disclosure, such as notifications to parents, did reduce disclosure of personal information by children. Shin & Huh (2011) found that parental mediation was not a significant predictor of children's information disclosure online. Similarly, Shin et al. (2012) found that parental mediation style had no significant impact on children's disclosure behaviour. However, according to Youn & Hall (2008) teenagers from families that encouraged them to develop their own views were more likely to engage in family discussions on privacy which, in turn, tended to enhance their concern for privacy and limit their information disclosure.

Tsai et al. (2012) showed that parents were not particularly engaged in regulating their children's behaviour online. They found that only one in seven families currently used filtering software for blocking inappropriate content. Attitude, subjective norms and perceived behaviour control were key factors to affect parental intention of adopting Internet filter software. Many authors stressed that more involvement of parents was needed (Jain, 2010; Moreno, 2014).

6.2 What are parents concerned about?

6.2.1 Parents' perceptions of risks

The first section of the survey elicited information about parents' risk perception. Risk perception is operationalised in terms of measuring the perceived harm of a number of online hazards and their perception of the likelihood of the harm to occur. This is a now widely accepted approach from the literature on risk perception (e.g. Slovic, 2000). The ratings of perceived harm and likelihood can be combined in a single risk score for each hazard. The risk score for each hazard is computed multiplying the perceived harm score (from 1 to 7) and the perceived likelihood of it happening to their children (from 1 to 7). For each respondent this combined risk score for each hazard is normalised using the formula:

$$\frac{[Risk\ Score_n\ - Col\ Minimum\ (Risk\ Score_n)]}{[Col\ Maximum(Risk\ Score_n) - Col\ Minimum(Risk\ Score_n)]}$$

Here, Risk Score$_n$ was the combined score for each hazard with a value between 0 (no risk) to 1 (very high risk). The following table presents parents' risk scores for each online hazard. Generally, all scores were rather high. The hazards that were considered the riskiest were 'being exposed to violent images' and 'being a victim of online bullying'. This was not surprising, given the psychological consequences on children that these hazards may have. However, in general, marketing practices also scored very high. 'Data tracking', 'digital identity theft' and various forms of online advertisements were indeed causes of serious concerns among parents in the context of unfair marketing practices online.

Table 23 Parents' evaluation of online hazards in terms of risk perception

Online hazards	Mean N	Value
Violent Images	Mean	0.56
	N	6132
Exposed to targeted Ads	Mean	0.48
	N	6093
Bullied online	Mean	0.52
	N	6084
Money in games-in-app	Mean	0.40
	N	6084
Incentives in-app	Mean	0.47
	N	6113
Hidden ads/Advergames	Mean	0.48
	N	6102
Data Tracking	Mean	0.51
	N	6069

Online hazards	Mean N	Value
Ads unhealthy lifestyle	Mean	0.50
	N	6116
Ads unhealthy food	Mean	0.48
	N	6121
Digital identity theft/fraud	Mean	0.51
	N	6049

The risk scores rank ordered the perceived seriousness of the range of online hazards. However, the risk score did not identify qualitative difference between the type of hazards and parents' risk perception. Looking at the breakdown of ratings in terms of harm (Table 24) and likelihood (Table 25), it is possible to see that some hazards were considered high in harm but lower in likelihood while others were perceived less harmful but high in the likelihood of occurrence.

Table 24 Parents' rating in terms of harm of online hazards

	1 (Not harmful at all)	2	3	4	5	6	7 (Very harmful)	Mean	N
Violent Images	1.28%	1.22%	2.72%	8.54%	13.21%	20.05%	52.97%	6.03	6243
Exposed to targeted Ads	2.65%	3.68%	7.74%	19.46%	23.77%	21.26%	21.43%	5.07	6217
Bullied Online	1.30%	1.56%	2.97%	8.24%	12.95%	20.47%	52.51%	6.01	6224
Spending too much money in games in-app purchases	3.44%	2.39%	4.51%	11.61%	14.78%	20.51%	42.76%	5.64	6186
Incentives in in-app purchases	3.01%	2.74%	4.92%	12.78%	18.99%	22.93%	34.64%	5.49	6215
Hidden ads and advergames	2.65%	3.65%	7.20%	17.35%	22.88%	21.21%	25.06%	5.18	6220
Data tracking	1.51%	1.82%	3.60%	11.37%	16.13%	21.68%	43.88%	5.79	6217
Ads unhealthy lifestyle	2.71%	2.92%	5.24%	12.73%	16.08%	20.89%	39.44%	5.56	6238
Ads unhealthy food	3.72%	4.17%	7.32%	17.65%	21.33%	21.16%	24.65%	5.10	6239
Digital identity theft or fraud	1.56%	1.58%	3.32%	8.68%	12.23%	17.74%	54.90%	6.01	6213

Table 25 Parents' rating of online hazards likelihood to occur

	1 (Not likely at all)	2	3	4	5	6	7 (Very likely)	Mean	N
Violent Images	9.42%	7.91%	9.92%	17.40%	19.88%	17.11%	18.37%	4.55	6191
Exposed to targeted Ads	8.49%	7.19%	8.75%	17.08%	21.51%	19.20%	17.79%	4.64	6161
Bullied Online	12.17%	10.61%	10.74%	19.18%	17.65%	14.29%	15.36%	4.23	6157
Spending too much money in games in-app purchases	27.46%	13.61%	9.86%	13.76%	12.48%	11.24%	11.58%	3.50	6208
Incentives in in-app purchases	14.62%	9.96%	10.15%	16.36%	17.49%	15.60%	15.81%	4.22	6197
Hidden ads and advergames	9.22%	7.27%	10.30%	17.95%	20.72%	18.16%	16.36%	4.53	6172
Data tracking	12.56%	8.74%	10.43%	17.93%	17.62%	16.11%	16.60%	4.34	6145
Ads unhealthy lifestyle	10.67%	9.07%	11.42%	18.74%	18.87%	16.23%	15.00%	4.32	6174
Ads unhealthy food	8.80%	6.93%	10.42%	19.48%	19.95%	18.41%	16.00%	4.54	6180
Digital identity theft or fraud	13.61%	11.65%	11.34%	17.89%	16.96%	13.71%	14.84%	4.55	6127

For parents in the focus groups, social networks were not experienced as a problem when they and/or other relatives were also on the networks in which their children were active (mainly Facebook), because they believed that they could control their children's activity. Moreover, friends, parents or even teachers might also have a profile in the same network, and they could also contribute to controlling their children's activities. A few of the parents even had access to their children's password and/or had become friends with their children's friends. Some children visited social network sites less frequently because of this, whilst some opened two accounts, one for their friends and one for their family, to avoid being monitored so closely by their parents. For the same reason, according to parents, some children refused to add their parents as friends on their social networking pages. Many parents reported educating their children in being cautious regarding what they post and warning them that whatever they post stay on the Internet forever. Some parents thought their children were wise enough to manage their online presences properly, but some parents mentioned bad experiences within their family or their social network, some of which had ended up with police complaints. Some parents were concerned about the frivolous behaviours that tended to be promoted online and expressed fears that this might lead to too much exhibitionism and voyeurism. Some children appeared to be constantly looking for "likes" and "followers", posting about their new possessions and their daily activities all the time. However, some other children thought this kind of behaviour was excessive and potentially dangerous.

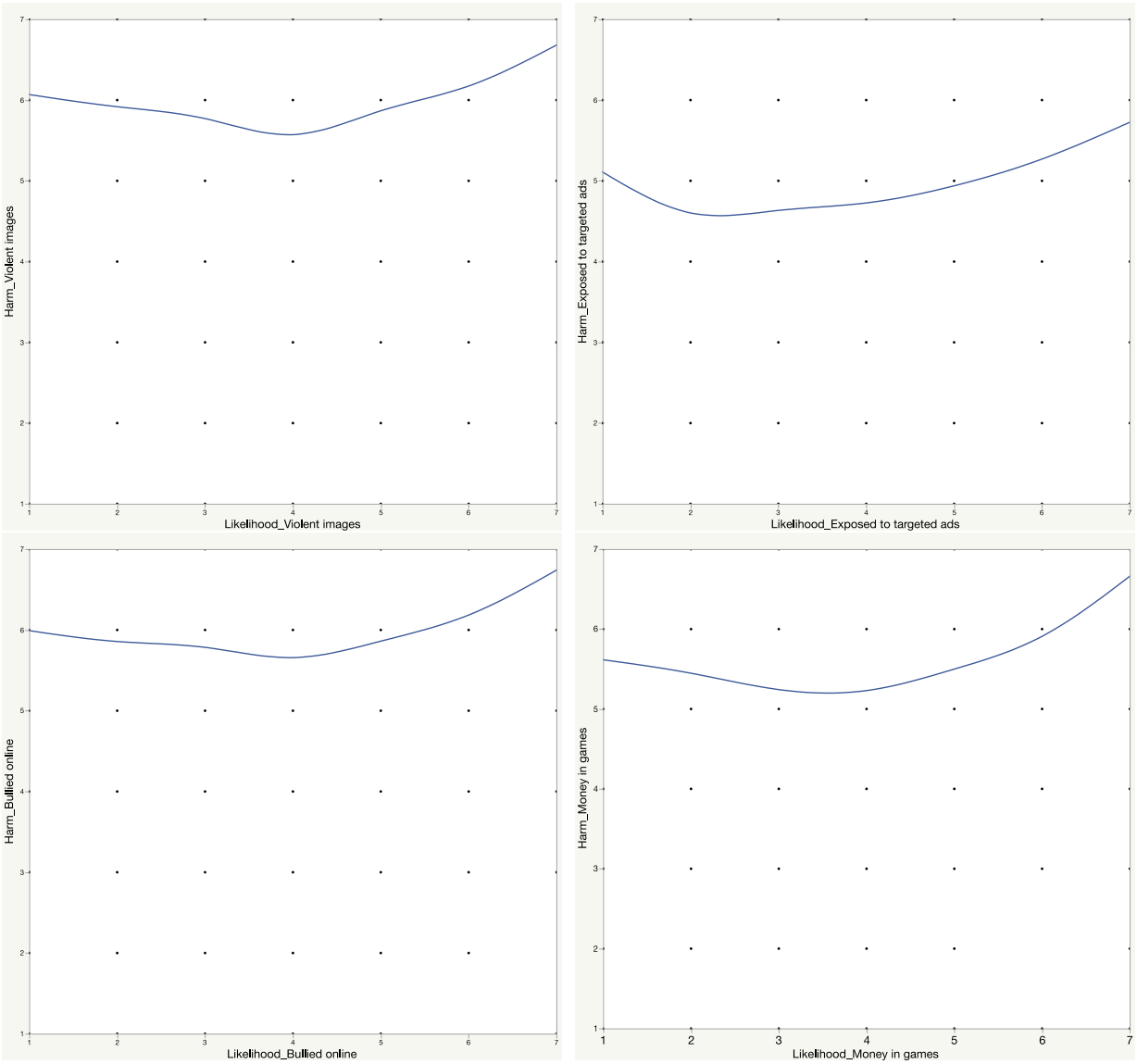
Parents did not generally like their children being on social networks, except if they were there to communicate with relatives living abroad. A few parents did not allow them to register, despite intense peer-pressure. Overall, parents often told children to avoid:

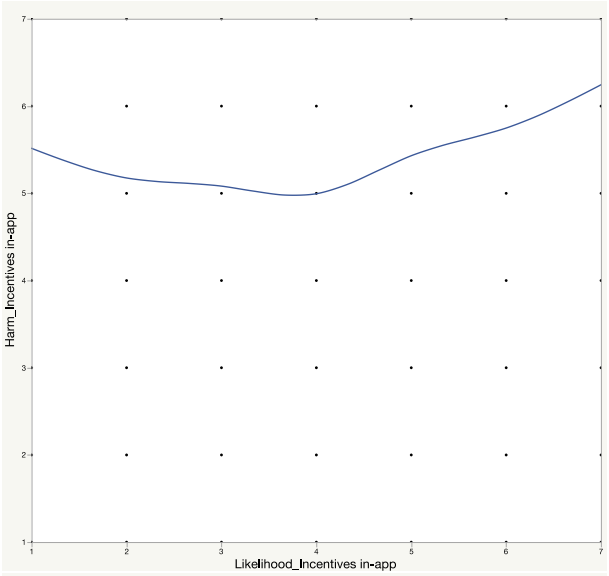
- Accepting unknown people as friends (however a few children did so nonetheless in order to have more "followers" and more "likes" to compete with their friends).
- Sharing any kind of private information, in particular their home address, phone number and intimate photos or videos.
- Creating a public profile that could be accessed by people other than friends and relatives.

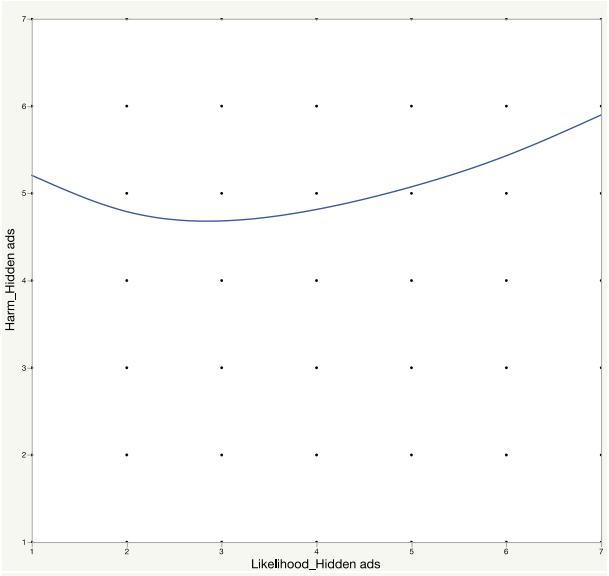
6.2.2 The relationship between perceived risk and likelihood of online hazards

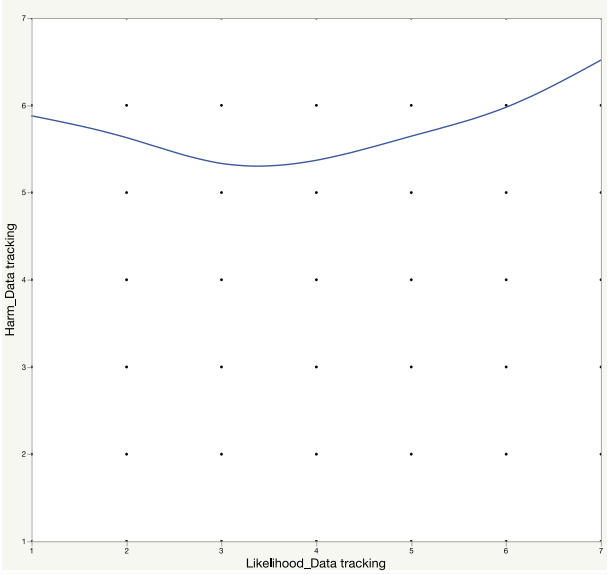
The following figure plots participants' scores of perceived harm next to the likelihood of each online hazard actually occurring. The line indicates the shape of the relationship between the two variables. The figures show, for example, that children being exposed to violent images online were perceived as producing a great deal of harm and were relatively likely to happen. They also demonstrate that hidden advertisements and advergames were considered fairly high on harm and also very likely to happen.

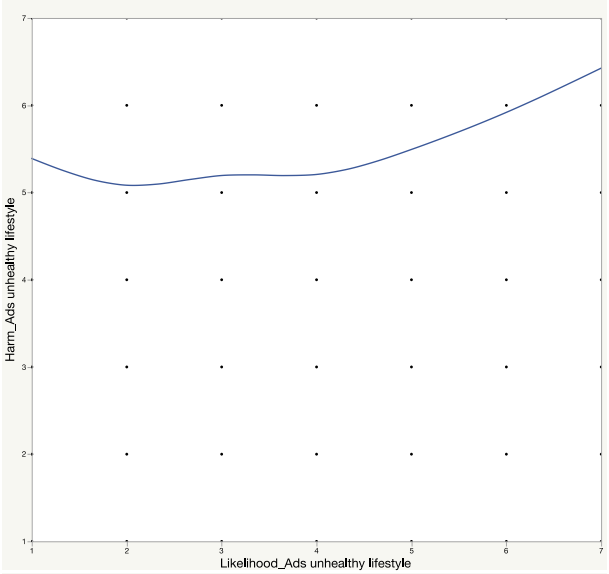
Figure 10 Participants' scores of perceived harm and likelihood (to occur) scatterplot matrix

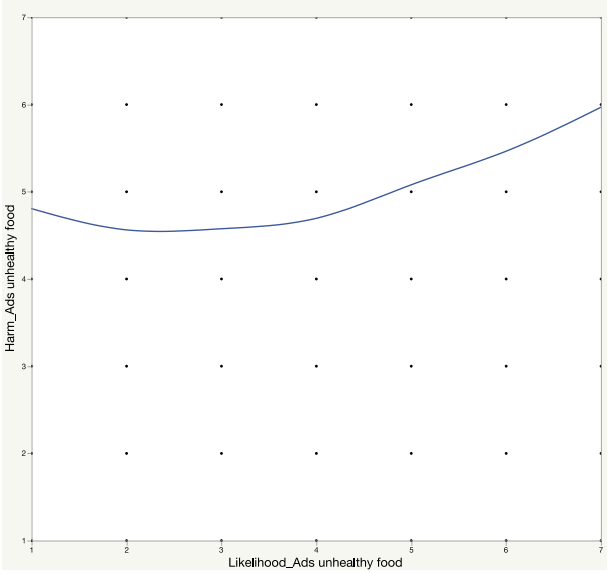


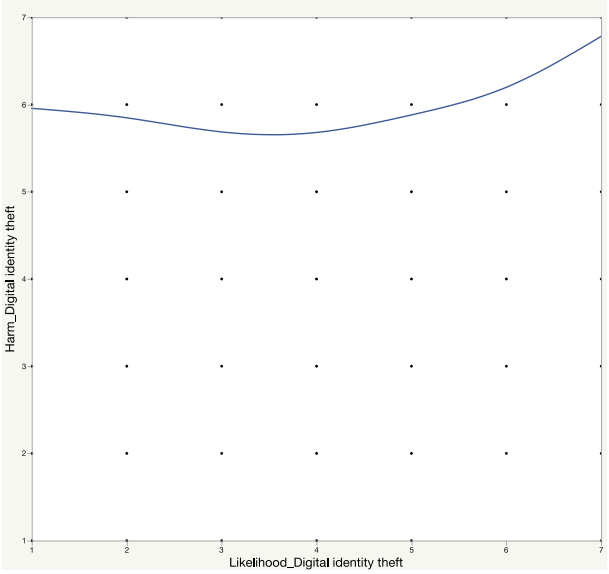

Harm_Incentives in-app
Likelihood_Incentives in-app


Harm_Hidden ads
Likelihood_Hidden ads


Harm_Data tracking
Likelihood_Data tracking


Harm_Ads unhealthy lifestyle
Likelihood_Ads unhealthy lifestyle


Harm_Ads unhealthy food
Likelihood_Ads unhealthy food


Harm_Digital identity theft
Likelihood_Digital identity theft

These results were consistent with the insights coming from the focus groups. In general, parents did not seem to be very worried about online advertisements. Many thought that their children were not interested in ads and that they were annoyed by them. They said that their children clicked away the advertisements and did not pay much attention to their content. For example, a German father stated that "*children handle the internet in a conscious way. I think the risk of clicking something wrong is low*". Others saw advertisements as something normal and unavoidable: "*They are going to come across things in life, they are going to come across things online and then you have to talk about it*". Nevertheless, some did have concerns regarding online advertisements, particularly inappropriate adverts; ads that led to websites that asked people to pay and ads that popped up while playing. A British man considered that these ads were "*brainwashing their children*". In order to avoid problems, an Italian woman advised her daughter "*to stop playing when an ad comes up*". In general, it is possible summarise the information about the parents' risk perception of online hazards in the following points:

- Risk perception of online hazards was in general rather high, driven both by the potential harm and likelihood of occurrence.
- Hazards related to violence both in terms of content and likelihood of exposure were considered the most harmful.
- Hazards related to marketing practices were considered somewhat less harmful, but considerably more frequent.
- Among online marketing practice hazards, data tracking and online advertisements promoting unhealthy food and lifestyles scored highest in terms of perceived risk.
- Digital identity theft scored very high in terms of perceived risk.

6.2.3 Online games and advergames

In the focus groups most parents were able to give examples of online games, including advergames. However, some parents were not aware of their existence. A French father admitted "*I have learned today that they have ads when they play*." During the discussion, the moderator also showed examples of the Coca-Cola cans advergame[52]. Most parents realised that the game contained advertising. Moreover, some parents thought that the main topic of the Coca-Cola game was recycling, which gave them a better opinion of the game. One parent liked this game because "*It catches their attention about recycling*". Some parents also expressed positive opinions about other advergames that they knew. One liked a game launched by a bank that taught children about money. A Dutch father thought that an advergame "*might be a perfect mix between an expensive game and a free game full of commercials"* and added "*I would rather have the commercials from a company I appreciate, than random commercials in a free game*." Another Spanish parent said that he would have no problem with these games "*as long as there are no obscure products such as drugs, weapons, alcohol, betting or gambling*".

Even though they realised that they were advergames, most parents were not especially concerned about them and thought that it would not influence their children. A Dutch woman considered the Coca-Cola game as "*rather innocent*". One mother explained "*I drink coke all the time, so I have no problem with the game*" and another parent indicated "*I do not think it is that bad for children. Children are not so susceptible to advertising*." In the case of the bartender game[52], parents gave several reasons for not being that concerned. Firstly, some felt that their children were already familiar with these products. For example, a German mother explained "*We have a drinks cabinet in our living room, my daughter sees alcohol there every day and does not reach for a bottle*." Secondly, parents thought that children were so focused on playing that they did not pay much attention to the issue of alcohol. Some said that they might even fail to realise that there was alcohol in the game: "*I think he just sees green and blue, the colours*". Moreover, some parents believed that their children were still "*too young to*

[52] See Annex 7 Focus group stimuli materials

understand or get influenced by alcohol, and one even thought that "*they do not know what alcohol is*". Other parents underlined that there was a difference between game and real life, so they believed that "*if they play this game, it does not mean they will start drinking", because as a Polish father indicates "children differentiate very much in their head between the real world and the fictional world*". Two parents indicated that they would be more negative if the advertising was more explicit. For example, if the game had alcohol commercials in the introduction or between the game levels. A Spanish father said that we were worrying too much: "*It is only a video game. We are too over-protective when it comes to children*". Another one added: "*It is the society that makes us look at it bad."*

Nonetheless, many parents thought that advergames had an influence on their children. A French woman was sure that "*It has an impact on visual senses. They stay there for a long time. They are conditioned*". Similarly, a man held that advergames "*enter children's intimacy. If they play it they are practically connected to this brand. It can influence them to buy this brand*". Some parents explained that their children had wanted to get something they had seen in a game and one stressed that "*they do not know that they want something because of the advertising. They do not really want to buy the product; they just want the gift that is advertised*". Related to the examples shown to the parents in the focus groups, some parents were sure that their main intention was commercial: "*It is a logo of Coca-Cola and people recycling Coca-Cola. It is subliminal advertising. They want to get us hooked on the product*". Similarly, a German mother thought that this game "*Brainwashes people. Children are manipulated here because maybe they do not quite understand what is behind it yet*." Two other women were worried about the effect that these games could have on an unconscious level. Likewise, a Dutch man considered this marketing technique "*a cunning way of advertising, because you do not realise it, you are influenced without noticing that you are*". Likewise, an Italian woman was particularly worried by these hidden ads "*I prefer the type of advertisement where the companies clearly show their intention to advertise rather than the hidden advertisements that we can find in certain online games*".

Some parents made a distinction between the two games and accepted the Coca-Cola game while they rejected the bartender game featuring alcohol because they thought that alcohol was more harmful and were particularly afraid that the game could create an interest in it. Some stated: "*As long as they are not exposed to anything worse or more dangerous than Coke commercials, I would not mind my child playing it*", "*If it is Coke advertising it would not be a problem for me, but if it was advertising for alcohol, packaged as a child's game, then of course I would not think it is acceptable."* However, a Swedish father did not like the Coca-Cola game because he considered coke too unhealthy.

6.2.4 In-app purchase

Even though the results of the survey did not reveal much concern regarding in-app purchases, the insights from the focus group showed that there are parents who worry, as one explained "*once, my son asked me for money because he finished his 5 lives on Candy Crush but I prevented it*". Others did not have an issue with paying if the amount was reasonable: "*It is a gift like any other*", "*if he works well at school, I do not mind giving 5 euros but not 50*". Moreover, they considered that it was fair to pay for extra features: "*They are honest about the fact that you have to pay", "there is a price and we agree to pay it*".

Parents' main concern regarding in-app purchases seemed to be the costs. One admitted that their biggest fear was getting huge bills and another stressed that "*potentially these games could make you destitute*". This fear was amplified by the lack of clear information, "*It is not clear, when it is written in small print. After installing you can discover that it costs X euros per game*". Some had already experienced problems: "*When the mobile bills arrived from 200 Euro upwards, it was clear that something was wrong. Then it turned out "Oh yes, we always bought a little bit via our phones, that is*

possible". A Swedish mother did not like a game on Facebook presented during the focus group because it involved spending money: "*Any reason that leads them into spending money is in my opinion very negative*". Others were worried that these games could create addiction. Some pointed out that it is usually difficult to resist the temptation to purchase, because it meant stopping the game when you were enjoying it, "*I think the problem is that they start, and once they have reached a certain level they want to continue, and then the temptation is great*". Another parent explained the motivation to purchase as impatience: "*I think it is often just impatience which tempts people to buy extras so they get ahead more quickly*".

When the moderator showed them examples of games with in-app purchases[53], some parents did not notice which in-app purchases that could be made. Others did appreciate that information indicated that payment was involved. However, some stressed that it was difficult to see, especially for children: "*A child would press the green button immediately*".

6.3 What influences parental concerns?

After exploring the topics of concern, the next step was to investigate the most important determinants of parents' risk perception. The analysis revealed the following significant factors:

- *Past experience*: past experience with a particular hazard led to heightened risks perceptions for all hazards and across all countries.
- *Country differences*: different countries tended to rank the risks in the same order of magnitude but the absolute level of risk perceptions differed between countries.
- *Child's age*: the age of child exposed did not affect the level of risks much but it did partially modify their rank ordering.
- *Education/Social status*: parents' level of education affected their risk perception of some of the online hazards.

However, it is important to note that the following indicators had no statistically significant effect on parents' risk perception as demonstrated by an analysis of covariance (ANCOVA):

- Parents' age.
- Number of children in household.
- Number of people living in the household
- Parents' self-reported digital skills.
- Parents' perception of the child's digital skills.
- Parents' mediation style

6.3.1 Experience

Past experience with a hazard significantly increased parents' risk perception of the hazard. It increased both the perceived harm and perceived likelihood of occurrence. Table 26 summarise the past experiences of different online hazards: almost 50% of the respondents had experienced their children being exposed to targeted and hidden ads also in the form of advergames. Unhealthy food advertisements were also common according to the parents. Past experience with each of the online hazards led to a statistically significant increase in the risk perception score of around 7 to 10 percentage points on average.

[53] See Annex 7 Focus group stimuli materials

Table 26 Past experiences of online hazards

Online hazards past experience	No	Yes	N
(Being exposed to) Violent images	67.48%	32.52%	5477
Exposed to targeted Ads	50.31%	**49.69%**	5422
Bullied Online	83.48%	16.52%	5775
Spending too much money in games in-app purchases	89.96%	10.04%	6047
Incentives in in-app purchases	56.21%	43.79%	5791
Hidden ads and advergames	50.56%	**49.44%**	5516
Data tracking	83.46%	16.54%	5338
Ads unhealthy lifestyle	70.62%	29.38%	5399
Ads unhealthy food	54.28%	**45.72%**	5416
Digital identity theft or fraud	90.38%	9.62%	5592

Table 27 shows the contrast between risk perception scores for the 10 hazards for those with and without past experience. It is apparent that the past experience with a hazard increased parent's risk perceptions. Given that more and more people – children and adults - are likely to be exposed to these online problems it is reasonable to expect higher levels of risk perception and concern in the future.

Table 27 Risk perception score for each online hazard by past experience

Online hazards	Mean Risk Score		*N*	*p*-value of mean differences
	Past Experience			
	No	Yes		
Violent images	0.51	0.65	5332	p < .0001
Exposed to targeted ads	0.42	0.54	5277	p < .0001
Bullied online	0.49	0.64	5583	p < .0001
Money in games-in-app	0.38	0.57	5830	p < .0001
Incentives in in-app	0.42	0.55	5627	p < .0001
Hidden ads or advergames	0.44	0.53	5368	p < .0001
Data tracking	0.48	0.61	5171	p < .0001
Ads unhealthy lifestyle	0.45	0.60	5270	p < .0001
Ads unhealthy food	0.42	0.54	5297	p < .0001
Digital identity theft	0.48	0.61	5395	p < .0001

6.3.2 Country differences in risk perception of online hazards

In this section, we report how risk perception of online hazards varied across countries, Table 28 summarises the survey findings. The first clear difference is that parents in the UK, Netherlands, Germany and Sweden had lower risk perception scores than parents in the other countries, while Polish parents were most concerned. There were also differences in the relative ranking of risks. Beside the common concern about children being exposed to violent images, parents in Spain and Italy were also concerned about unhealthy lifestyle ads. For French and German parents, the second and third highest concerns were data tracking and digital identity theft/fraud.

Table 28 Means: Risk perception scores and country differences for each online hazard

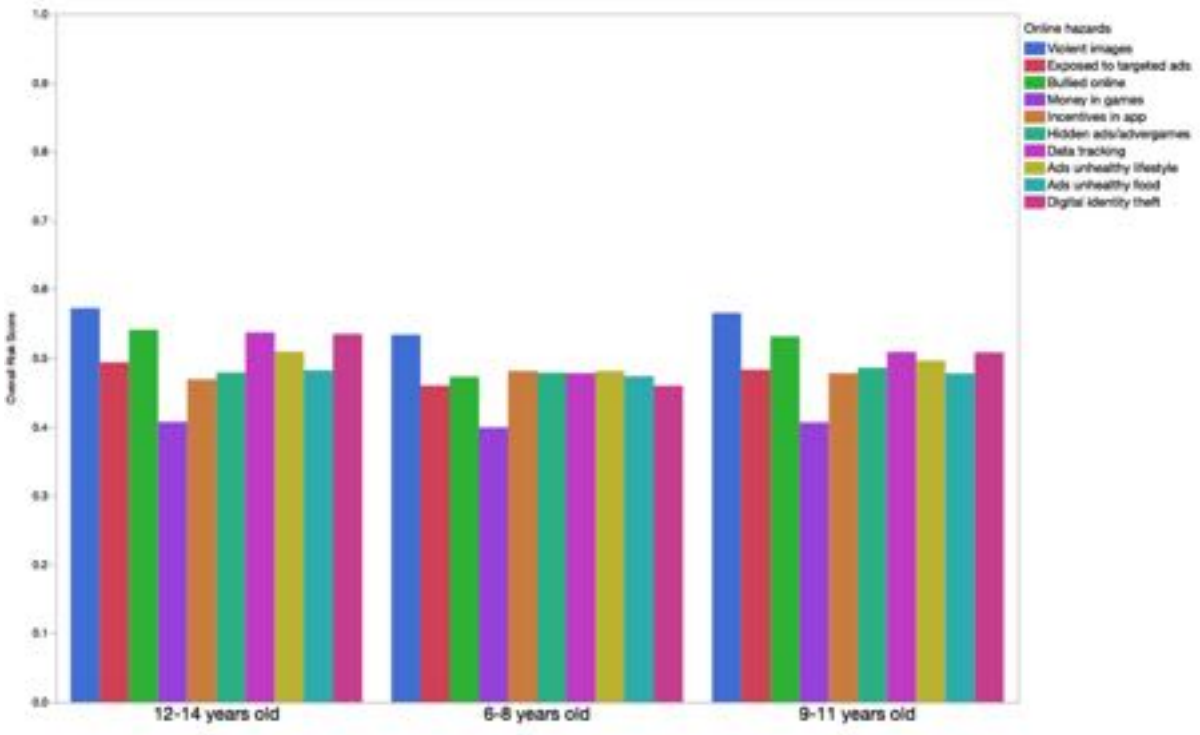
		COUNTRY								
		UK	SP	FR	IT	NL	DE	PL	SE	All
Violent images	Mean	0.52	0.57	0.60	0.61	0.52	0.50	0.64	0.52	0.56
	N	759	785	759	782	752	757	765	773	6132
Exposed to targeted Ads	Mean	0.43	0.50	0.51	0.54	0.43	0.45	0.56	0.42	0.48
	N	765	780	755	786	743	753	752	759	6093
Bullied online	Mean	0.49	0.51	0.53	0.53	0.52	0.46	0.61	0.50	0.52
	N	757	780	758	782	741	751	753	762	6084
Money in games-in-app	Mean	0.37	0.41	0.43	0.44	0.40	0.37	0.49	0.32	0.40
	N	749	783	758	776	730	758	767	763	6084
Incentives in-app	Mean	0.46	0.47	0.47	0.52	0.44	0.43	0.56	0.45	0.47
	N	757	784	758	782	741	758	759	774	6113
Hidden ads/Advergames	Mean	0.44	0.49	0.52	0.54	0.44	0.44	0.54	0.44	0.48
	N	758	783	756	777	735	759	760	774	6102
Data Tracking	Mean	0.48	0.50	0.54	0.54	0.49	0.48	0.60	0.48	0.51
	N	760	781	748	783	737	751	754	755	6069
Ads unhealthy lifestyle	Mean	0.44	0.53	0.53	0.57	0.46	0.43	0.59	0.45	0.50
	N	762	781	757	781	751	758	761	765	6116
Ads unhealthy food	Mean	0.44	0.50	0.50	0.55	0.45	0.41	0.56	0.42	0.48
	N	765	789	755	783	748	762	752	767	6121
Digital identity theft/fraud	Mean	0.45	0.51	0.53	0.54	0.48	0.48	0.61	0.45	0.51
	N	754	781	750	778	735	756	746	749	6049

These country differences are likely to be the result of a combination of factors including national regulations and different forms of support for parents and for children. Later in this section it is shown that country differences were also prevalent in parental preferences for protective measures. However, it is fair to say that the similarities in online risk perception across the eight countries were greater than the differences.

6.3.3 Children's age

Another determinant of parents' level of concern, both in terms of overall risk perception and in differences in the ranking of hazards, was their child's age. On the one hand, parents saw older children as having a higher level of sophistication in using online resources, but on the other they may well be exposed to more risks compared to their younger counterparts. Figure 11 illustrate the parents' risk perception levels by the age of their children. In general, the older the child the higher was the parent's perception of online risks. In particular, older children were perceived to be more exposed to data tracking and digital identity theft or fraud. Concerns for bullying and advertisements for unhealthy food also increased with the children's age.

Figure 11 Means: Parents' risk perception of online hazards by children's age groups



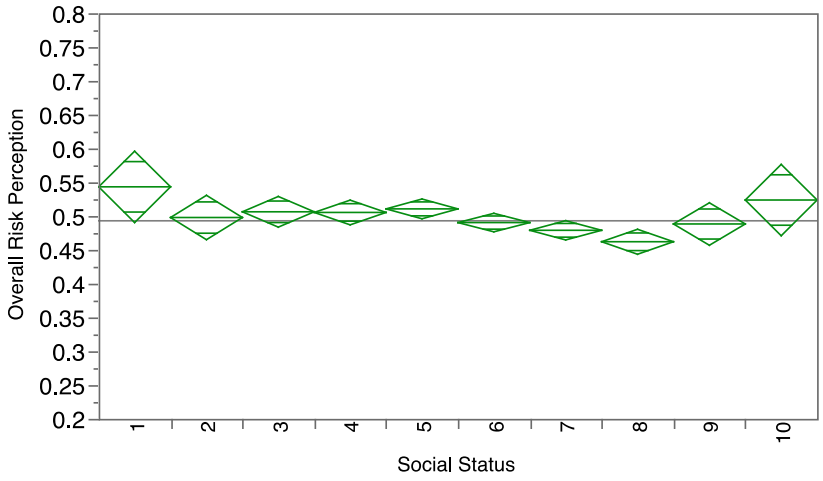
The following age differences were statistically significant:

- *Violent images.* There was a significant effect of the children's age on the parents' risk perception of their children being exposed to violent images ($p < .0001$, $F(2, 6131) = 9.7316$, $p = < .0001$). Older children were associated with higher risk.
- *Exposed to targeted Ads.* There was a significant effect of the children's age on the parents' risk perception of their children being exposed to targeted ads ($p < .001$, $F(2, 6092) = 8.03554$, $p = < .001$). Older children were associated with higher risk.
- *Bullied online.* There was a significant effect of the children's age on the parents' risk perception of their children being bullied online ($p < .0001$, $F(2, 6083) = 30.7857$, $p = < .0001$). Older children were associated with higher risk.
- *Data tracking.* There was a significant effect of the children's age on the parents' risk perception of their children being victims of data tracking ($p < .0001$, $F(2, 6068) = 21.3610$, $p = < .0001$). Older children were associated with higher risk.
- *Ads about unhealthy lifestyle.* There was a significant effect of the children's age on the parents' risk perception of their children being exposed to advertisements promoting unhealthy lifestyles ($p < .001$, $F(2, 6115) = 4.9680$, $p = < .001$). Older children were associated with higher risk.
- *Digital identity theft/fraud.* There was a significant effect of their children's age on the parents' risk perception of their children being victim of digital identity theft ($p < .000$, $F(2, 6048) = 33.1032$, $p = < .0001$). Older children were associated with higher risk.

6.3.4 Social status

Parents were asked to position themselves on a 'social ladder' from 1 = low to 10 = high. Parents' self-assessed social status was found to have a significant effect on their overall risk perception level at the p < .0001 level [F (9, 5663) = 3.1466, p = < .001]. As shown in the figure below, parents placing themselves at the bottom and parents placing themselves at the top of the social ladder reported somewhat higher risk perception than other parents. This may be interpreted in several ways. One possibility is that higher risk was associated in both cases as parents lacked the time to monitor their children, something that may happen to working class parents and equally to professionals at the other end of the social scale.

Figure 12 Means: Overall risk perception of online hazards by self-classified social status (*N*=5664)



- *Violent images.* Parents' self-perceived social status significantly affected their risk perception of violent images at the p < .0001. The lower, but not the lowest, social statuses were associated with higher risk perception.
- *Targeted advertisements.* Parents' self-perceived social status significantly affected their risk perception regarding targeted advertisements at the p < .001. The lowest and highest social status were associated with higher risk perception.
- *Online bullying.* Parents' social self-perceived status significantly affected their risk perception of the risks of being bullied online at the p < .005. The lowest and highest social status were associated with higher risk perception.
- *Hidden ads and advergames.* Parents' self-perceived social status significantly affected their risk perception of hidden ads/advergames at the p < .005. The lowest and highest social status are associated with higher risk perception.
- *Data tracking.* Parents' self-perceived social status significantly affected their risk perception of data tracking at the p < .001. The lowest social status was associated with higher risk perception.
- *Advertisements promoting unhealthy lifestyles.* Parents' social status group significantly affected the risk perception of unhealthy lifestyle ads at the p < .0001. The lower and highest social status were associated with higher risk perception.
- *Advertisements promoting unhealthy food.* Parents' self-perceived social status significantly affected their risk perception of unhealthy food ads at the p < .005 level. The lowest and highest social status were associated with higher risk perception.
- *Digital identity theft/fraud.* Parents' self-perceived social status significantly their risk perception of bullied online at the p < .001. The highest social status was associated with higher risk perception.

Table 29 shows the rankings of the risks by social status. For lower and middle social status parents, data tracking, digital identity theft, children being exposed to violent images and advertisements promoting unhealthy lifestyles were perceived as the major

risks. Spending too much money on in-app purchases was also higher than in other groups. Amongst the higher social status parents, concerns focussed in addition on data tracking and digital identity theft.

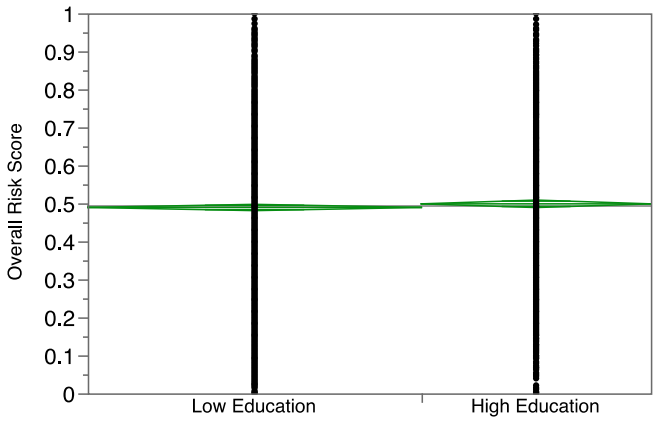
Table 29 Risk perception by self-classified social status (1=low; 10=high)

		SOCIAL STATUS LADDER										
		1	2	3	4	5	6	7	8	9	10	All
Violent images	Mean	0.54	0.58	0.59	0.57	0.58	0.56	0.55	0.52	0.54	0.55	0.56
	N	92	236	471	732	1124	1280	1173	699	239	86	6132
Exposed to targeted Ads	Mean	0.53	0.49	0.50	0.50	0.50	0.47	0.47	0.45	0.47	0.51	0.48
	N	90	236	464	723	1114	1262	1175	702	240	87	6093
Bullied online	Mean	0.55	0.53	0.55	0.53	0.54	0.51	0.51	0.49	0.52	0.53	0.52
	N	92	234	471	730	1111	1267	1164	692	236	87	6084
Money in games-in-app	Mean	0.43	0.39	0.40	0.41	0.42	0.41	0.39	0.39	0.41	0.49	0.40
	N	90	232	471	728	1116	1265	1166	692	238	86.00	6084
Incentives in-app	Mean	0.50	0.48	0.47	0.48	0.49	0.48	0.46	0.45	0.49	0.51	0.47
	N	90	234	468	732	1124	1273	1169	698	239	86	6113
Hidden ads/advergames	Mean	0.51	0.48	0.49	0.50	0.49	0.48	0.47	0.45	0.48	0.50	0.48
	N	89	232	463	723	1121	1281	1169	697	240	87	6102
Data tracking	Mean	0.57	0.49	0.54	0.53	0.52	0.51	0.51	0.48	0.50	0.52	0.51
	N	90	233	469	724	1112	1261	1163	694	237	86	6069
Ads unhealthy lifestyle	Mean	0.55	0.52	0.51	0.51	0.52	0.49	0.48	0.47	0.47	0.51	0.50
	N	91	232	468	731	1117	1277	1173	701	239	87	6116
Ads unhealthy food	Mean	0.52	0.48	0.49	0.48	0.49	0.48	0.46	0.45	0.48	0.50	0.48
	N	90	235	467	727	1113	1282	1177	702	241	87	6121
Digital identity theft/fraud	Mean	0.56	0.51	0.53	0.52	0.53	0.51	0.49	0.47	0.48	0.53	0.51
	N	91	231	469	715	1108	1260	1165	686	237	87	6049

6.3.5 Education

High and low education levels amongst the parents involved in the study were broken down by grouping the top 4 levels of education attainments in the ISCED classification as 'high' and the remaining four as 'low'. As shown in Figure 13 there were no statistically significant differences in overall risk perception of parents with high and low education.

Figure 13 Means: Overall risk perception by parents' level of education (self-reported)

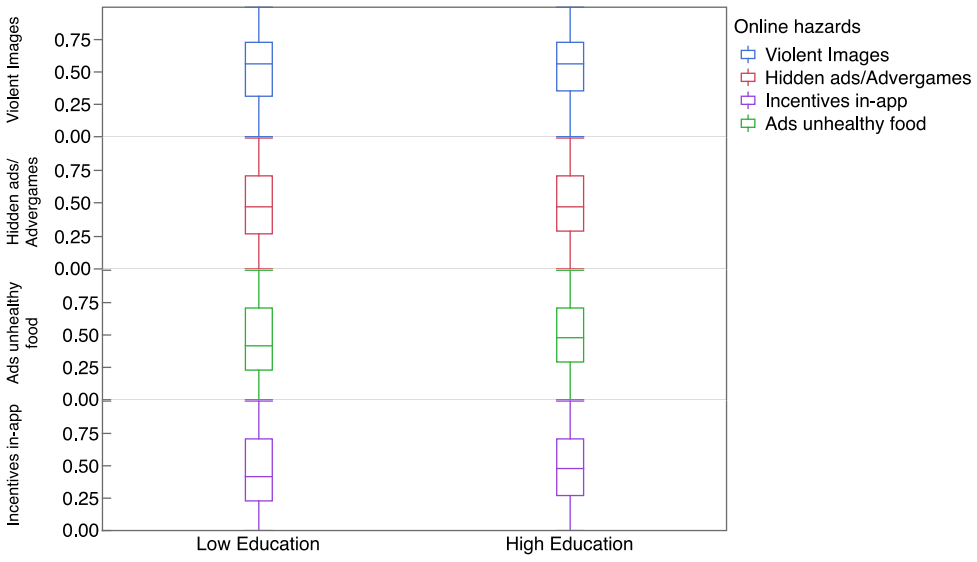


Y axis reports the mean value of the risk score, while the X axis the two educational level groups *(N* =5673).

There were, however, statistically significant differences in risk perception between parents with high and low education for four of the hazards:

1. Violent images. Parents with higher education level were more concerned about their children being exposed online to violent images, $p < .05$.
2. Hidden advertisements and advergames. Parents with higher education level were more concerned about hidden advertisements and advergames, $p < .01$.
3. Incentives to make in-app purchases. Parents with higher education level were more concerned about incentives to make in-app purchases, $p < .05$.
4. Advertisements promoting unhealthy food. Parents with higher education level were more worried about online advertisements promoting unhealthy food. $p < .05$.

Figure 14 Means: Perceived risk for different online hazards by parents' level of education



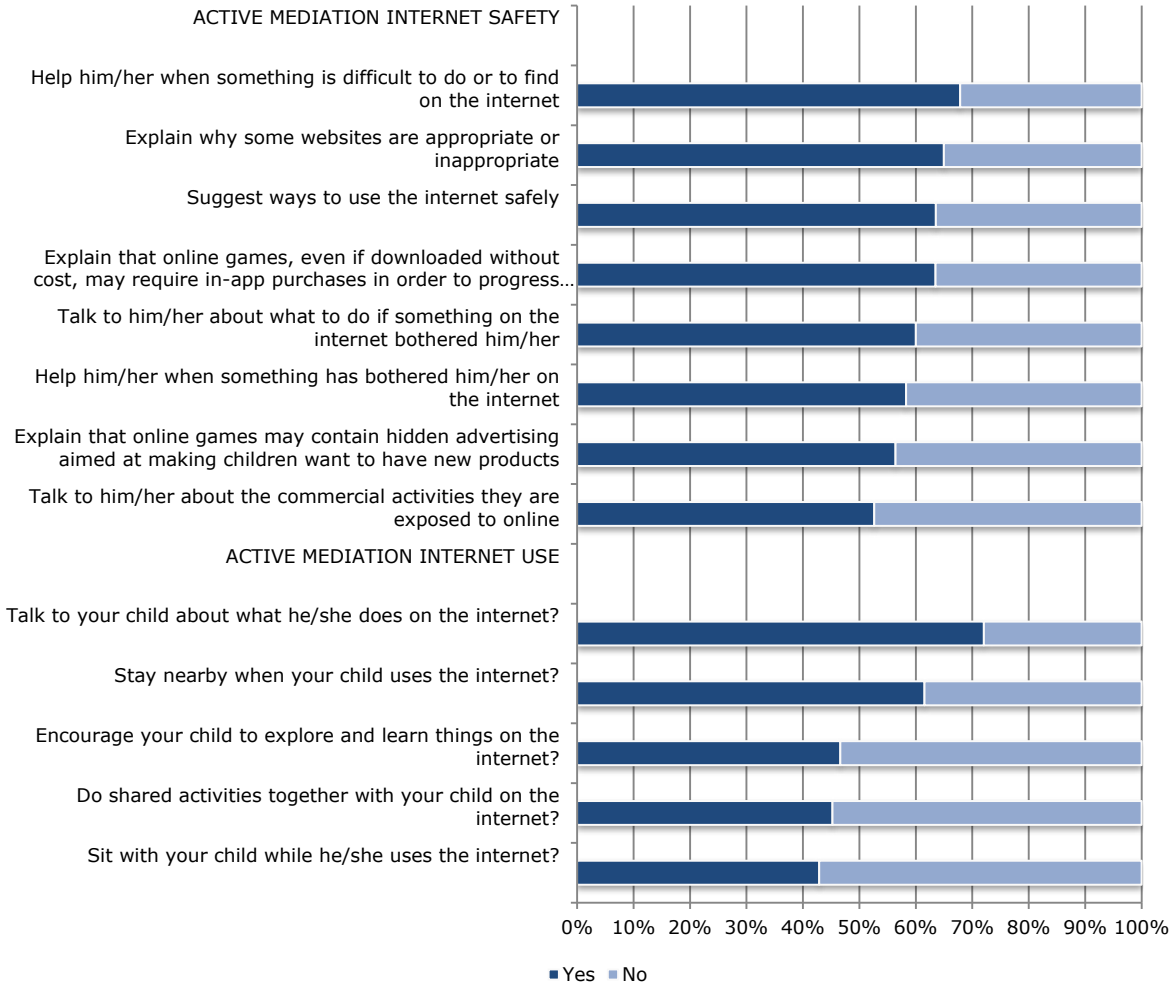
6.3.6 Parents' mediation style

A further dimension explored in the survey concerned parents' mediation style in managing and controlling children online. Our categorisation is based on Livingstone and Helsper (2008) who again built on the classifications of parental mediation previously proposed by Nathanson (1999, 2001) and Valkenburg et al. (1999) in their analyses of mediation of children's television use. Nathanson (1999, 2000) and Valkenburg et al. (1999) categorised mediation styles as follows: "Active mediation" referring to discussing media content, "restrictive mediation" referring to setting rules that restricts the use of the medium, and "co-viewing" or "co-using", referring to being present while the child was watching television. Similarly, Valcke et al. (2010) distinguished between two Internet parenting style dimensions, namely "parental control" and "parental warmth". The former defined the extent to which parents imposed rules and limits, and the latter examined the level of their personal effort and involvement in their children's activities. On the basis of these previous studies Livingstone and Helsper (2008) empirically identified four parenting styles which were used in this study. Parents were classified as 'permissive', 'authoritative', 'authoritarian' or 'laissez-faire'. The permissive parenting style involved parental warmth without imposing explicit boundaries or providing guidance. The authoritative style set clear, practical rules while at the same time expecting children to be responsible and behave in a self-regulated way. The "laissez-faire" style left the children as the main determinants of their online behaviour, and the authoritarian style demanded unconditional obedience to their rules. Following this approach, parents were classified as 'permissive', 'authoritative', 'authoritarian' and 'laissez-faire', using the responses from two different blocks of questions concerning active and restrictive mediation[54].

[54] See Annex 13 Parents' survey descriptive statistics whole weighted **sample** and Annex 14 Parents' survey descriptive statistics by country for a detailed description of the variables used: Active mediation (Q11 and Q14) and Restrictive mediation (Q13, Q15 and Q16)

The following figure shows the components of the scales developed as indicators of active parental mediation of Internet use[55] and Internet safety[56]

Figure 15 Active mediation

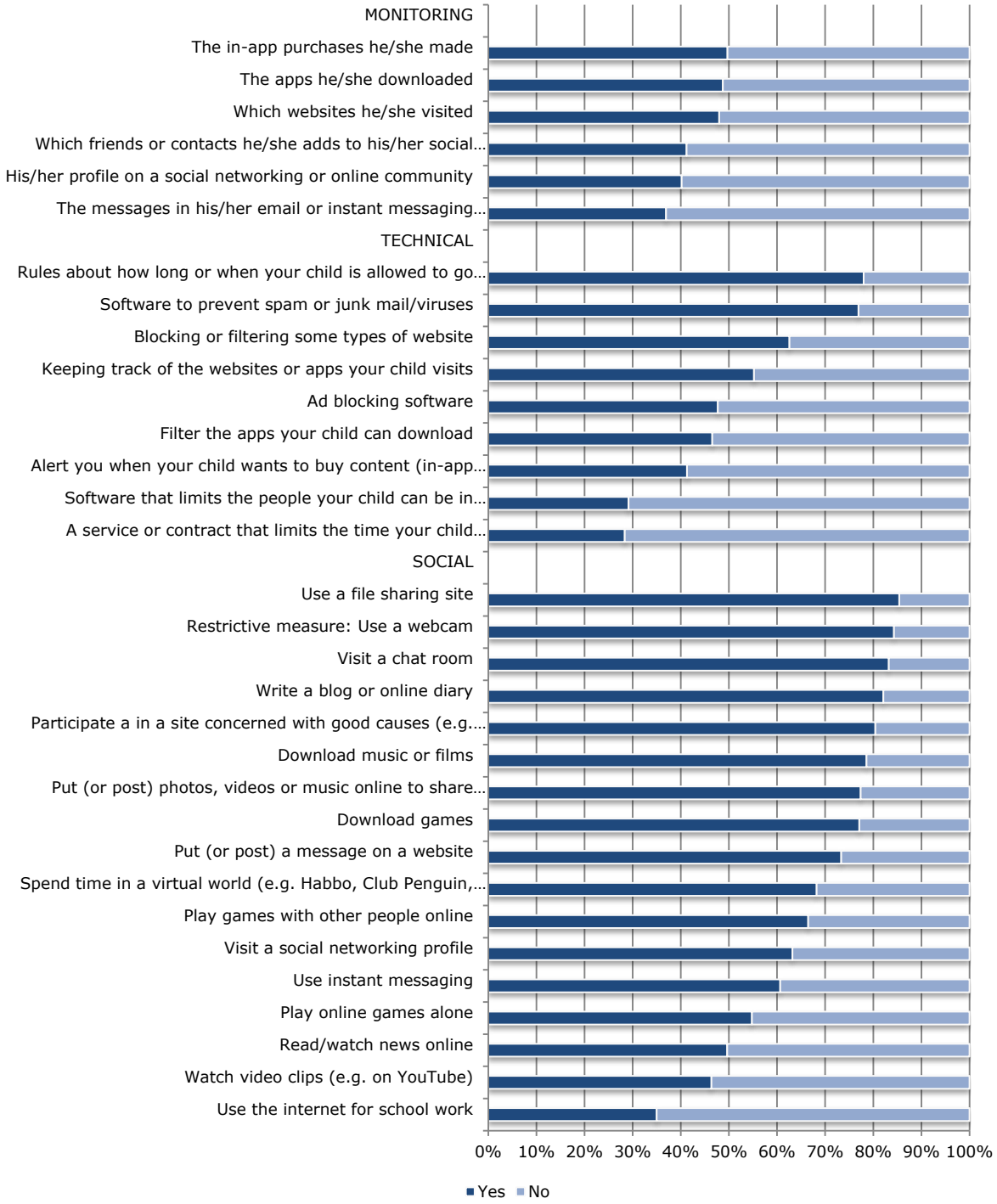


[55] Q11 contains five scaled items on active mediation of internet use. These individual items have been coded as binary and then summed for subscale score. Binary variables have been created as follow: Always/very often (1) vs. sometimes/rarely/never (0). Creating dichotomous scales based on never vs. other responses result in a ceiling effect so not recommended). The subscale will have a score from 0 to 5.

[56] Same exercise as above but using Q14 eight scaled items on active mediation of internet safety. Subscale score from 0 to 8.

The same procedure was performed to develop three sub- scales for restrictive mediation - social restriction[57], technical restriction[58] and parental monitoring[59].

Figure 16 Restrictive mediation



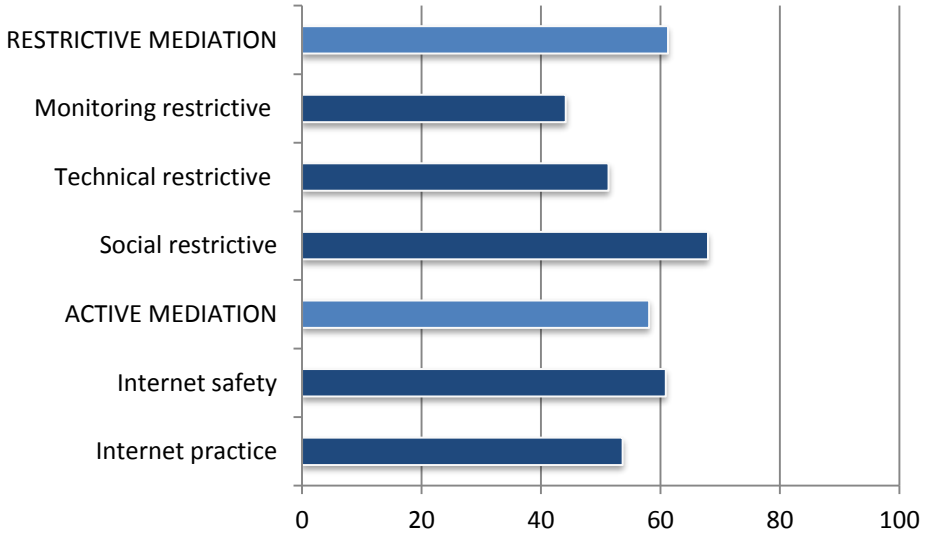
[57] Q13 contains 17 items on social restrictions. Binary recode 'can do this anytime' (0) vs. 'can only do this with permission or supervision'/'can never do this (1)' (i.e. permissive =0 vs. restrictive=1). Subscale score from 0 to 17.

[58] Q15 contains 9 binary items on technical restrictions. Sum scores. Subscale score from 0 to 9.

[59] Q16 contains 6 scaled items on parental monitoring. Make into binary scores (as for Q13) and sum. Subscale score from 0 to 6.

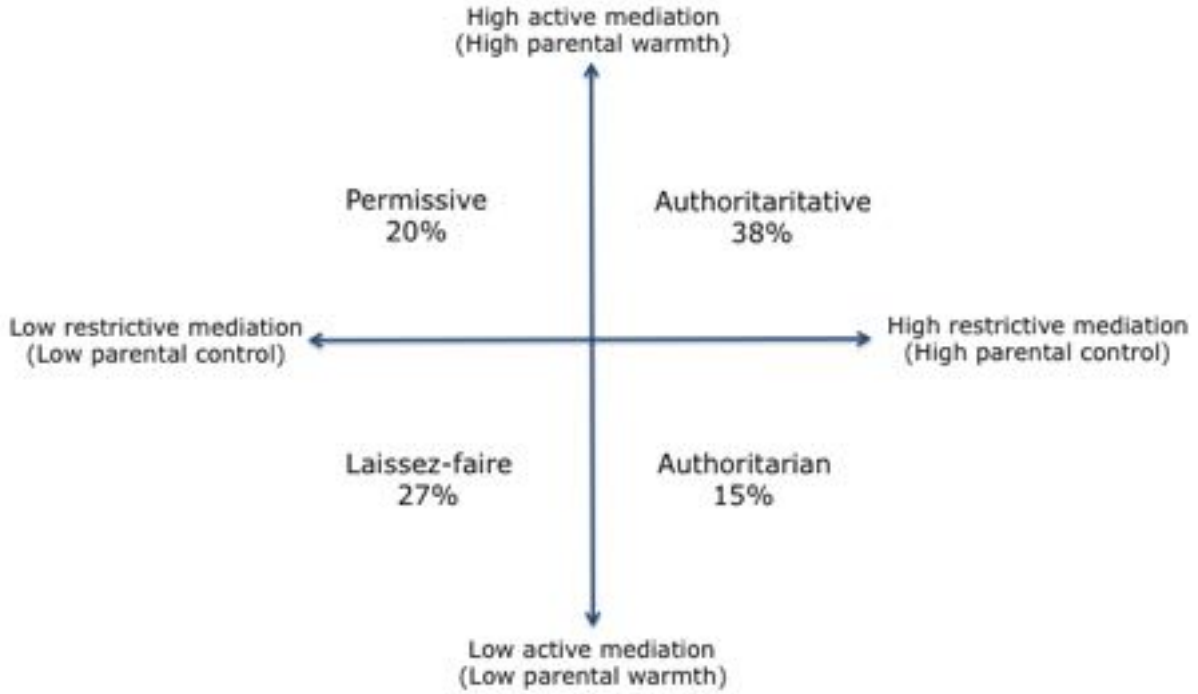
Figure 17 shows the normalised results for active and restrictive mediation and their sub-dimensions.

Figure 17 Active and Restrictive mediation average



To develop the typology of parenting mediation style, individual parents were classified into one of four quadrants, based on whether they were below or above the average score for active and restrictive mediation in each country. Figure 18 show that the majority of parents, 38 %, were categorised as having an authoritative mediation style with their children. The second largest group was the 'laissez-faire' mediation style with 27 %, while 20 % of parents were categorised as 'permissive' and 15 % were categorised as 'authoritarian'.

Figure 18 Parenting mediation style, cumulative percentages across all countries (N=6400)

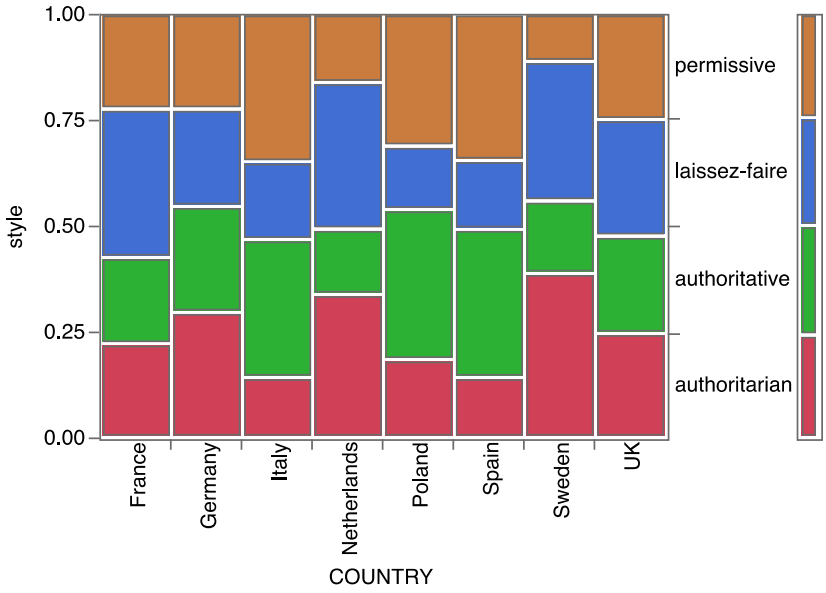


In terms of country differences, both Table 30 and Figure 19 present statistically significant differences ($p < .0001$) in prevalence of the four different parenting mediation styles. The results show that, though some of the differences within countries were marginal, the authoritarian mediation style (low active mediation combined with high restrictive mediation) was the most common mediation style in Sweden and Germany. The permissive mediation style (high active mediation combined with low restrictive mediation) was the most common mediation style in Italy. The laissez-fair mediation style (low active mediation and low restrictive mediation) was the most common mediation study among parents in the United Kingdom, the Netherlands and France, while the authoritaritative mediation style (high active mediation combined with high restrictive mediation) was the most common mediation style in Poland and Spain. The study by Duerager and Livingstone (2012) explored the impact of parents' mediation in the EU Kids Online survey of 25,142 children aged between 9 and 16. The analyses found that most parents did exert some form of mediation, and that parents of higher socio-economic status tended to use active mediation strategies, including talking about the Internet and sharing online activities, while parents of lower socio-economic status, lower Internet use and digital confidence, tended to rely more on restrictive mediation. Northern European parents stood out in terms of the prevalence of active mediation and low frequency of restrictive mediation, while the opposite was found in Turkey, Austria, Italy and Belgium. High prevalence of both styles was found in Southern Europe (Portugal, Spain and Greece) and in larger countries such as Germany, France and the UK.

Table 30 Mediation style and countries differences, table of counts and percentages

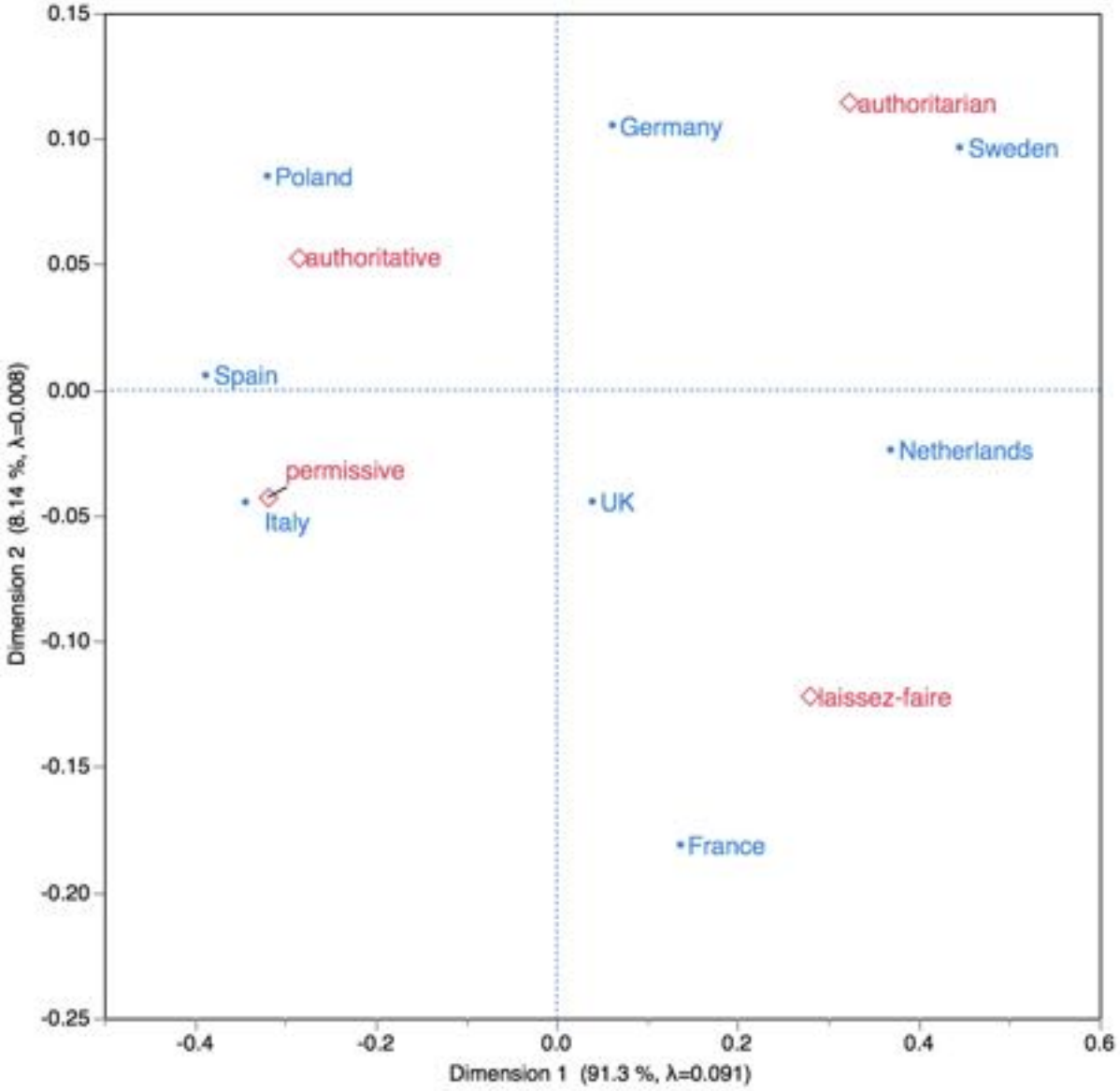
	Authoritarian		Authoritative		Laissez-faire		Permissive		All	
	%	N	%	N	%	N	%	N	%	N
FR	22.13%	177	20.50%	164	35.25%	282	22.13%	177	100%	800
DE	29.75%	238	24.88%	199	23.00%	184	22.38%	179	100%	800
IT	14.38%	115	32.38%	259	18.63%	149	34.63%	277	100%	800
NL	33.88%	271	15.50%	124	34.63%	277	16.00%	128	100%	800
PL	18.38%	147	35.38%	283	15.38%	123	30.88%	247	100%	800
ES	14.50%	116	34.88%	279	16.13%	129	34.50%	276	100%	800
SE	39.00%	312	17.00%	136	32.88%	263	11.13%	89	100%	800
UK	24.63%	197	22.88%	183	27.50%	220	25.00%	200	100%	800

Figure 19 Mosaic plot of cross tabulation between parenting styles and countries



In addition, we carried out a Multiple Correspondence Analysis (MCA) between the parenting style categories and countries from which participants were from. MCA is an extension of correspondence analysis (CA). It analyses the pattern of relationships between several categorical dependent variables. In MCA, the proximity between categorical variables indicates the strength of the relationship between them. In the following figure, geometric proximity between a country and a style indicates the prevalence of the same style in that country, the four quadrants help identity clusters.

Figure 20 MCA of parenting styles and countries.

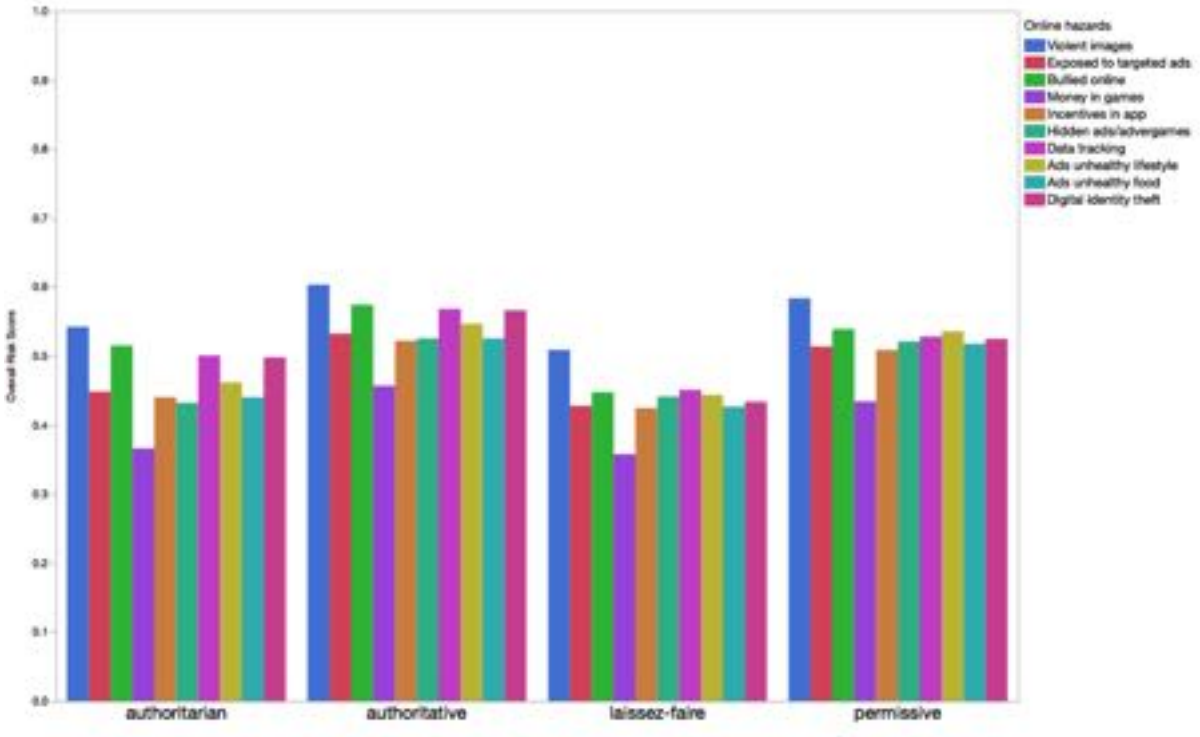


We can identity the countries that are firmly in the authoritarian parenting style - Sweden and Germany, although Germany also evidences the authoritative style. Poland is typified by the authoritative style, Italy the permissive and France the laissez-fair style. Spain is typified by both the authoritative and permissive styles, and the Netherlands by both the laissez-faire and authoritarian styles. The UK is positioned almost at the center of the four parental mediation styles, leaning somewhat towards the permissive and laissez-faire styles.

Lastly, overall, there is a statistically significant association between parental mediation style and the overall risk score, although a mild one ($p < .0001$ level, $F (3, 5664) = 60.9178$). Moreover, there are statistically significant associations in the case of specific hazards. The following figure shows the differences across the ten risks. The ranking of the hazards in terms of risk perception is very similar across the four parental mediation styles. Violent images and bullying online are the major concerns of all parents. However, parents adopting the 'authoritative' and 'permissive' style score systematically higher on risk perception across all the hazards in comparison to the other two styles ($p <.000$).[60]

[60] Violent images: $p < .0001$ level, $F (3, 6132) = 34.3857$; Targeted Ads : $p < .0001$ level, $F (3, 6093) = 55.1700$; Bullied online : $p < .0001$ level, $F (3, 6084) = 53.7880$; Money in games in-app : $p < .0001$ level, F

Figure 21 Means: parenting mediation style and risk perception of each online hazards



(3, 6084) = 41.8351; Incentives in apps : p < .0001 level, F (3, 6113) = 43.6962; Hidden ads, p < .0001 level, F (3, 6102) = 53.3033; Data tracking : p < .0001 level, F (3, 6069) = 44.9105; Ads unhealthy lifestyle : p < .0001 level, F (3, 6116) = 51.1193; Ads unhealthy food : p < .0001 level, F (3, 6121) = 54.2144; Digital identity theft : p < .0001 level, F (3, 6049) = 55.9255.

6.4 Parents' view as to what should be done? And who should do it?

6.4.1 Protective measures

Table 31 looks at the parents' assessment of the effectiveness of a range of possible protective measures. Overall, only a few parents thought the measures would not contribute at all, and some protective measures were considered more effective than others. Stricter regulation of business and more education for children was seen by the parents as the most effective protective measures, while training sessions for parents and contact points, such as help lines, were considered the least effective. Other measures such as awareness campaigns and better parental control software were also seen as effective.

Table 31 Safer and more effective use of the internet for your child measures

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	N
More/better teaching and guidance in schools	2.66%	9.10%	38.95%	**49.28%**	6043
More/better information and advice for parents	3.54%	13.12%	44.84%	38.50%	6021
Training sessions organised for parents	**5.46%**	**21.37%**	44.22%	28.95%	5914
Improved availability/performance of parental control software	3.65%	13.35%	41.63%	41.37%	5971
Stricter regulation for businesses	3.32%	10.95%	34.40%	**51.33%**	6026
More awareness-raising campaigns on online risks	3.41%	13.11%	42.17%	41.31%	6042
Contact points such as helplines	**6.01%**	**22.27%**	43.57%	28.15%	5940
More/better information on consumer rights and the risks of internet cost-traps	3.72%	14.90%	43.72%	37.67%	6000

In terms of country differences, the following figures summarise the results for each protective measure. By and large, parents in France, Germany and Sweden were the ones least persuaded of the contribution of the listed protective measures. Yet, there was still a majority in these countries agreeing that they would make a contribution to child protection. In all eight countries, training sessions for parents and contact points attracted the highest number of unconvinced parents.

Figure 22 Protective measures: teaching and guidance at school by country (N = 6043)

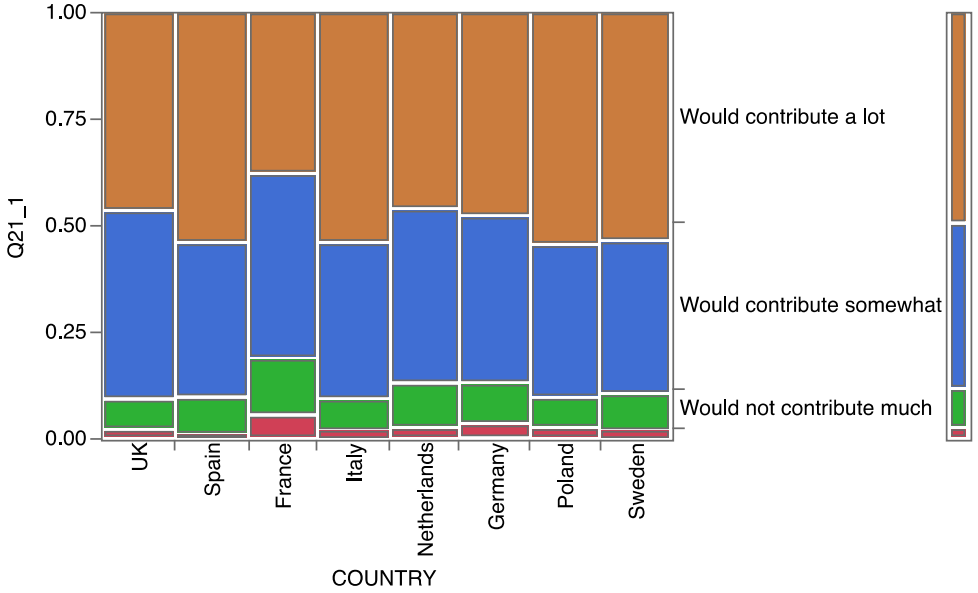


Figure 23 Protective measures: teaching and guidance at school by country (N = 6043)

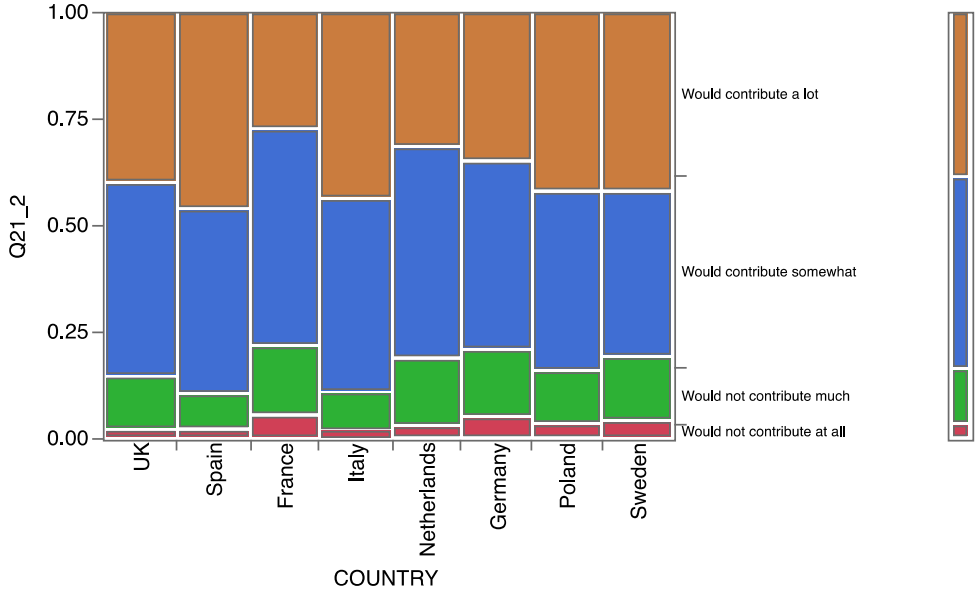


Figure 24 Protective measures: teaching and guidance at school by country (N = 6043)

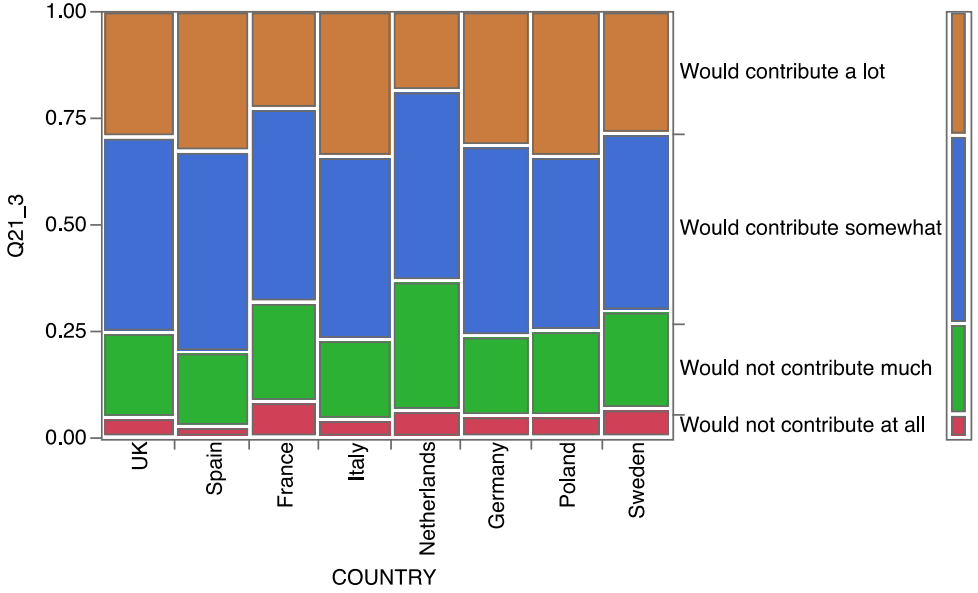


Figure 25 Protective measures: information advice for parents by country (N =6021)

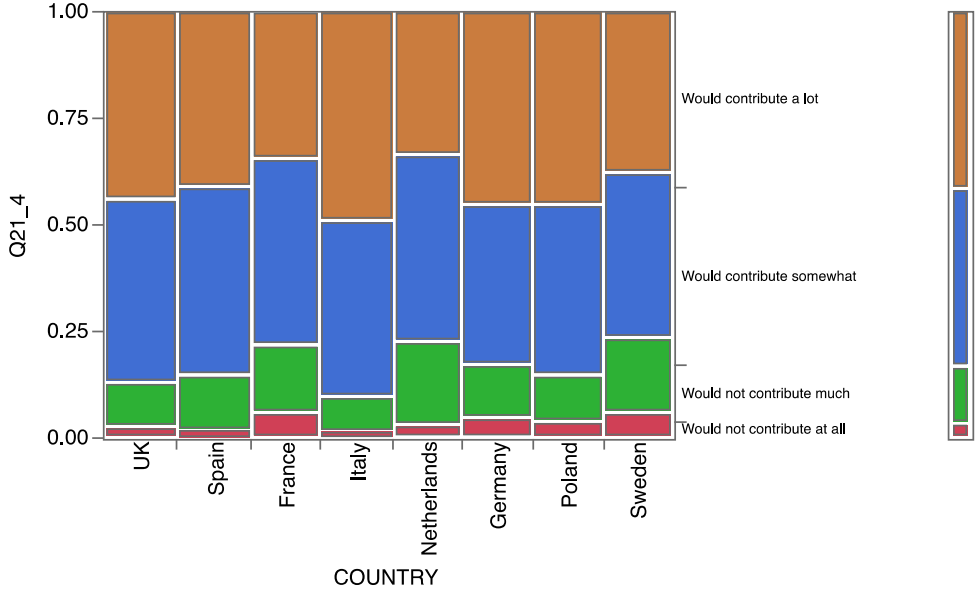


Figure 26 Protective measures: training session for parents by country (N=5914)

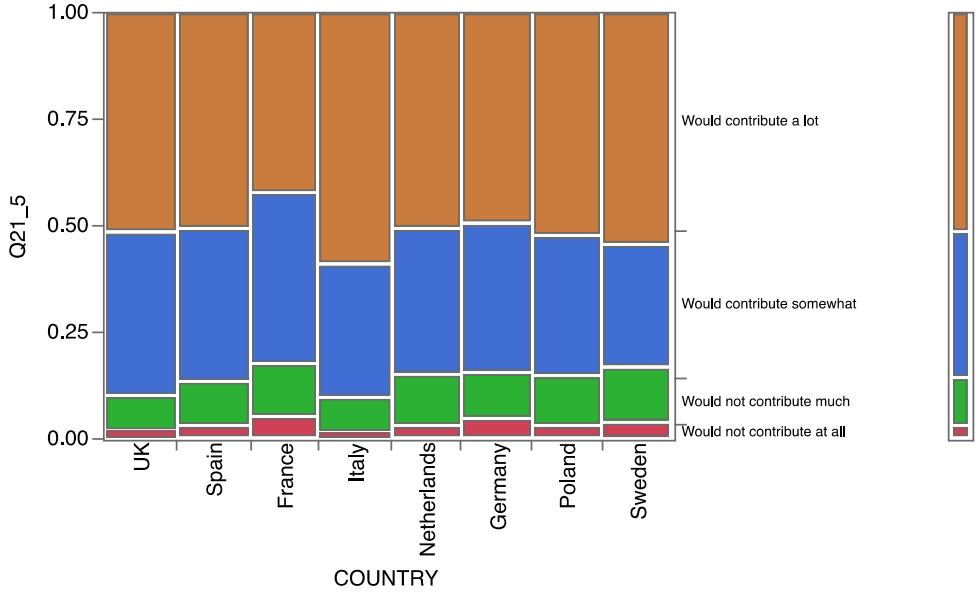


Figure 27 Protective measures: awareness-raising campaigns about online risks by country (N =6042)

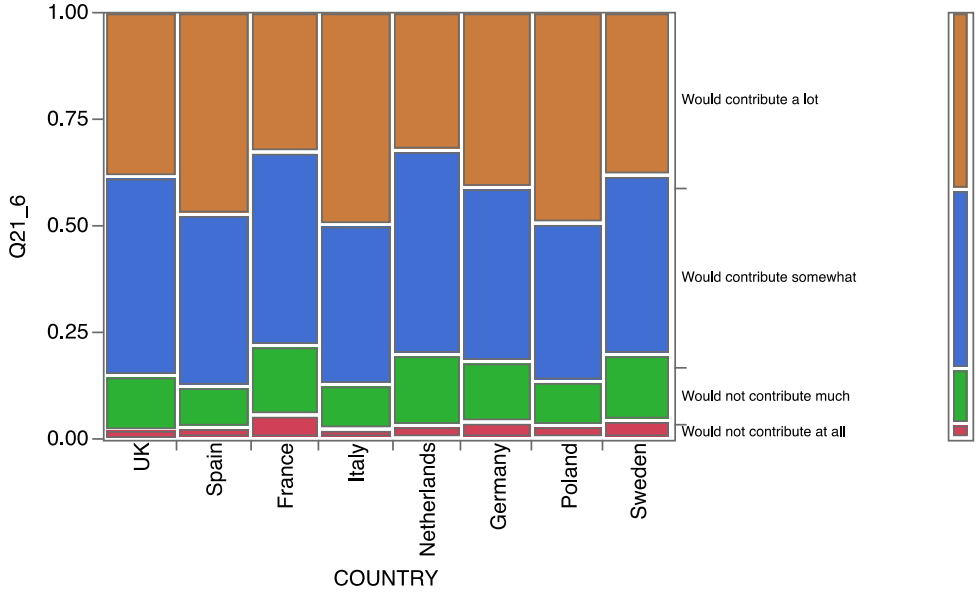


Figure 28 Protective measures: Contact points / helplines by country (N =5940)

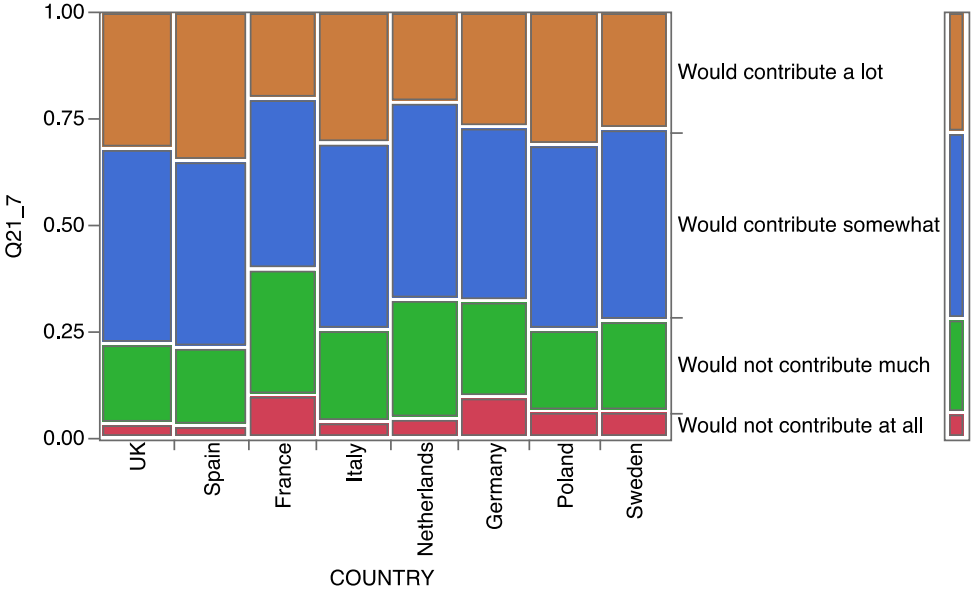
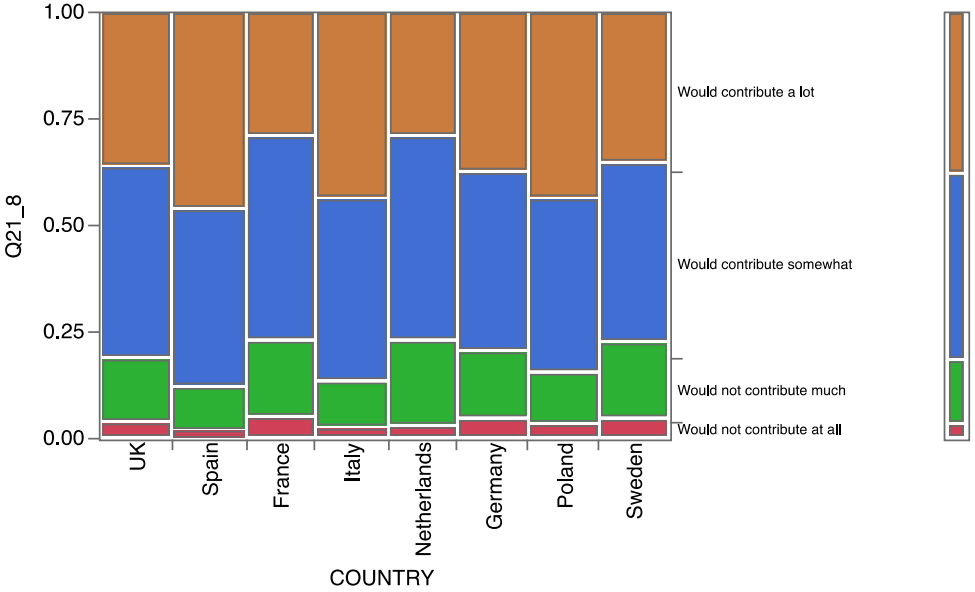


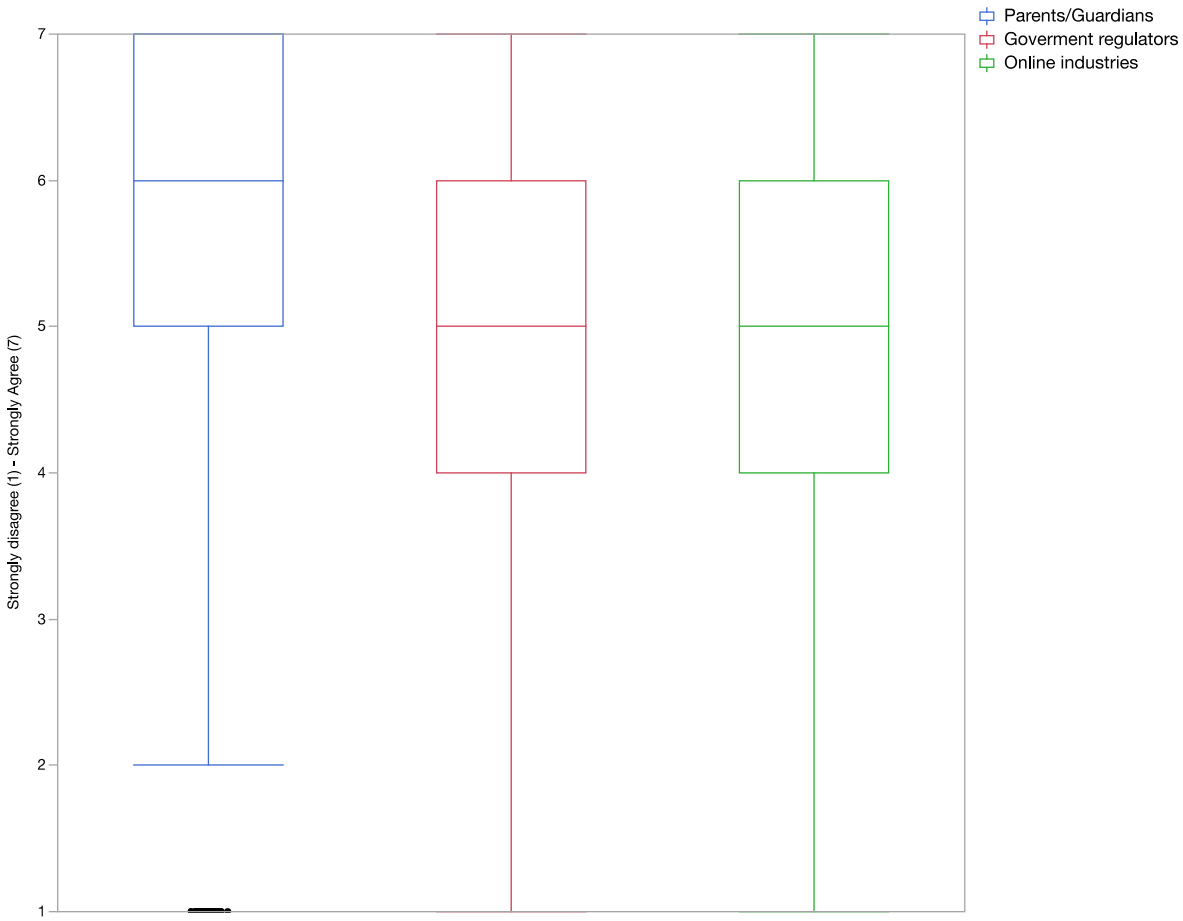
Figure 29 Protective measures: more information by country (N =6000)



6.4.2 Locus of responsibility

Parents were asked to say who, in their perception, was mostly responsible for ensuring that their children were safe from online marketing. As shown in Figure 30, a majority of parents saw themselves as the main responsible actor. But it was clear that parents thought that government regulators and the industry had clear responsibilities.

Figure 30 Means: responsibility of safety



Q32. It is mostly up to… (safety of children online)
Parents or guardians (N=6255); Government (N=6210); Industry or self regulation (6199)

As shown in Table 32 the parents' education level only marginally impacted their perceptions of responsibility. Parents with low education were slightly more likely than parents with high education to think that the online industry was responsible, but the difference was very small.

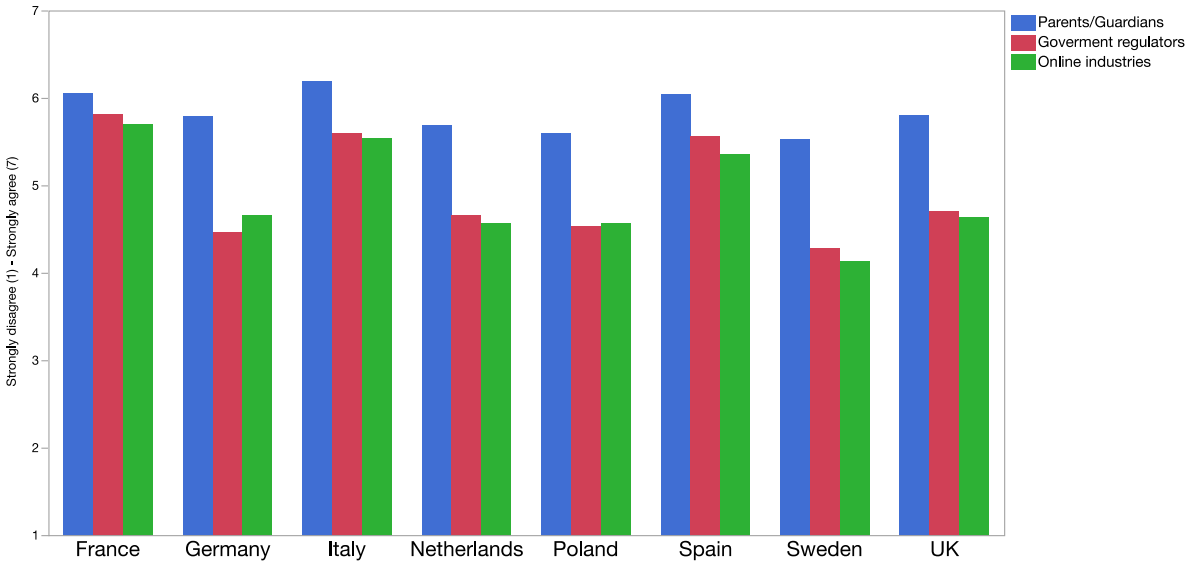
Table 32 Locus of responsibility and education

		Low education	Higher education
Parents or guardians	Mean	5.84	5.84
	N	3727	2528
Government regulators	Mean	5.02	4.87
	N	3707	2503
Online industries	Mean	4.98	4.79
	N	3685	2514

Furthermore, there were some country differences in the parents' attributions of responsibility. In all countries parents saw themselves as the most responsible actor, but parents in Spain, France and Italy attributed a greater responsibility to government

regulators and industry than parents in the other countries. In Germany and Poland, the online industry was seen as slightly more responsible than government regulators.[61]

Figure 31 Means: Parents' view on responsibility for online children safety by country

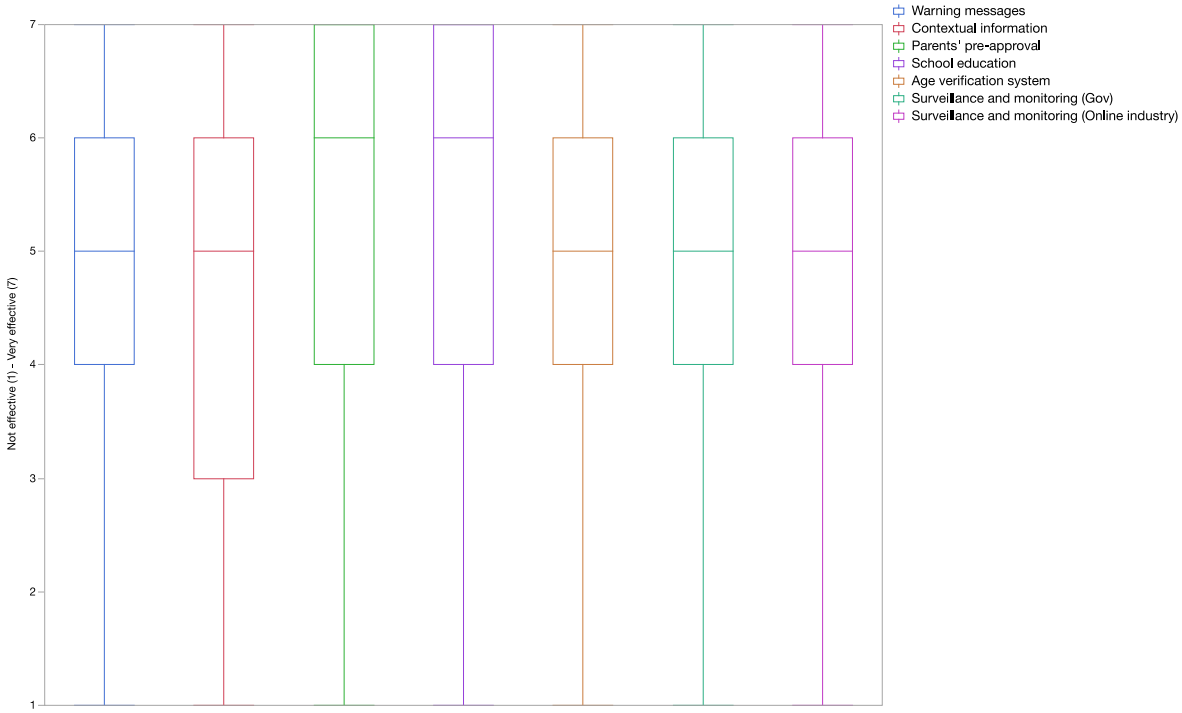


[61] Parents or guardians, p < .0001 level [F (7, 6255) = 23.4513; Government regulators, p < .0001 level [F (7, 6210) = 110.0973; Industry p < .0001 level [F (7, 6199) = 89.3890.

6.4.3 Protective measures related to advertising in online games

Parents were also asked to assess the effectiveness of specific measures aimed at protecting children in the context of advertising in online games or advergames. Figure 32 shows that two protective measures were seen as the most effective: namely parental pre-approval and school education for children about online advertising. All the other measures were seen as equally effective, but less so than the top two options[62].

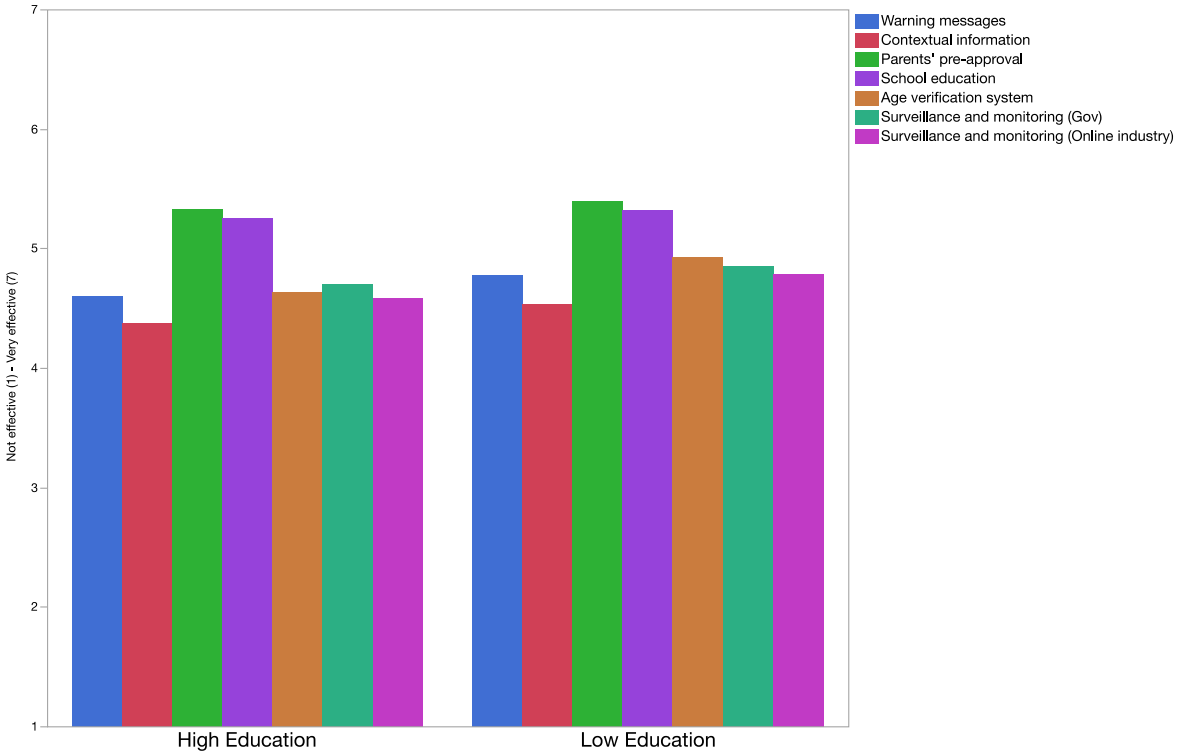
Figure 32 Means: parents' preferences of protective measures in online games



The assessed effectiveness of protective measures online did not depend on the parents' education level. However, it is worth noting that parents with lower levels of education consistently rated each protective measure as a little more effective than the parents with higher education levels. For parental pre-approval the difference was not statistically significant.

[62] Q23. In general, how effective do you think the following protective measures related to advertising in online games for children are? Warning messages (N= 5932); Contextual information (N=5783); Parent's pre-approval (N= 6022); School Education (N= 5999); Age verification (N=5980); Surveillance Gov (N=5836); Surveillance companies (N=5833)

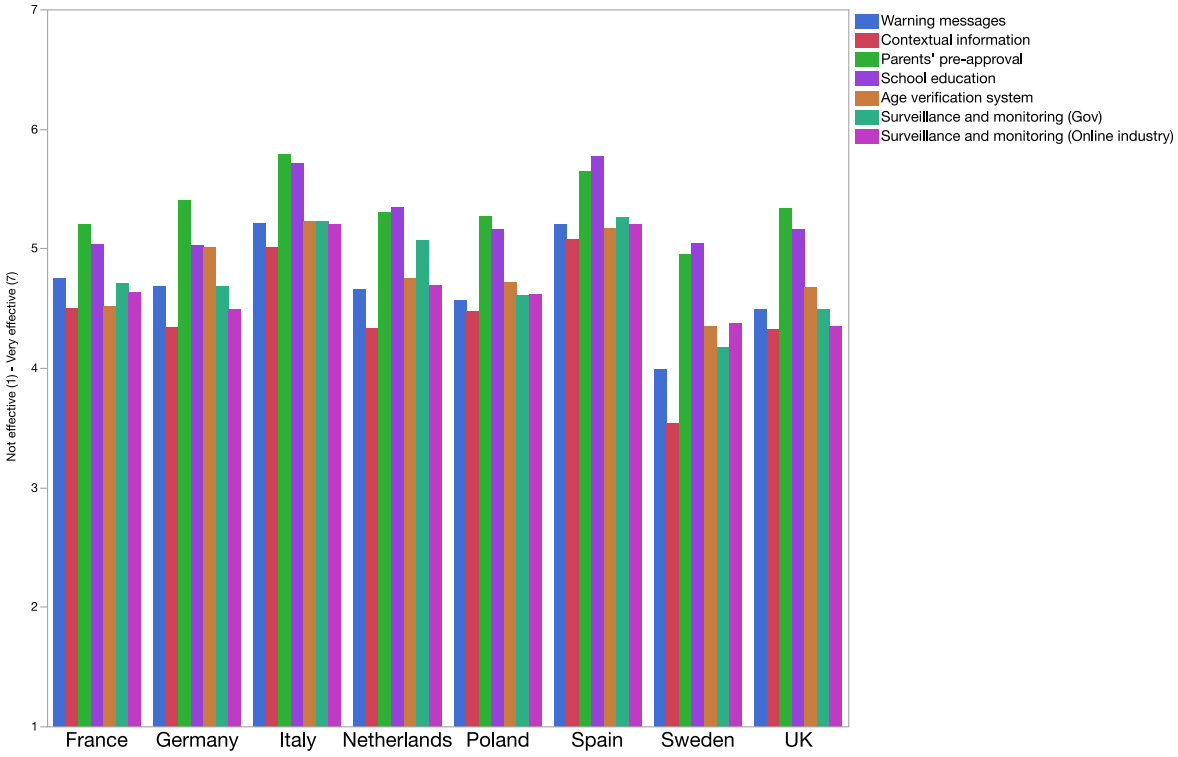
Figure 33 Means: parents' preferences of protective measures in online games by education level (of parents)



Regarding country differences in the assessment of the effectiveness of the protective measures, parental pre-approval and school education were judged most effective in all countries (see Figure 34). There were some minor differences, for example German parents opted for parents' pre-approval, while in Spain, Sweden and the Netherlands parents perceived for school education as the most effective protective measure.[63]

[63] Q23. In general, how effective do you think the following protective measures related to advertising in online games for children are? Warning messages, $p < .0001$ level [$F(7, 5932) = 40.5116$; Contextual information, $p < .0001$ level [$F(7, 5783) = 57.5688$;Parent's pre-approval, $p < .0001$ level [$F(7, 6021) = 19.3535$; School Education, $p < .0001$ level [$F(7, 5999) = 31.8608$; Age verification, $p < .0001$ level [$F(7, 5980) = 21.2296$; Surveillance by government, $p < .0001$ level [$F(7, 5836) = 35.4378$; Surveillance by companies, $p < .0001$ level [$F(7, 5833) = 28.5810$.

Figure 34 Means: parents' preferences of protective measures in online games by country



6.4.4 Protective measures related to in-app purchases

Parents were also asked about their perception of the effectiveness of a number of protective measures in the context of in-app purchases. Figure 35 shows that two measures stood out from the rest. Parental pre-approval and having a password as a default option were seen as most effective.[64]

Figure 35 Means: Parents' preferences of protective measures for in-app purchases

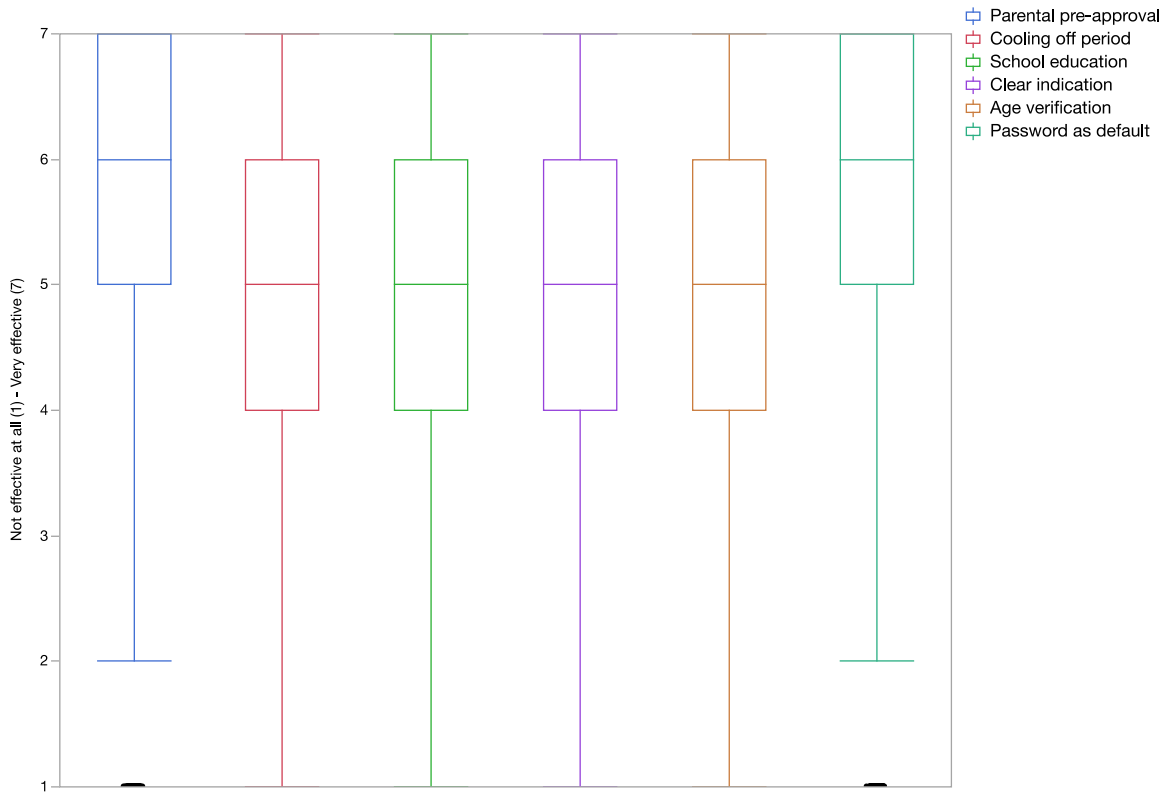


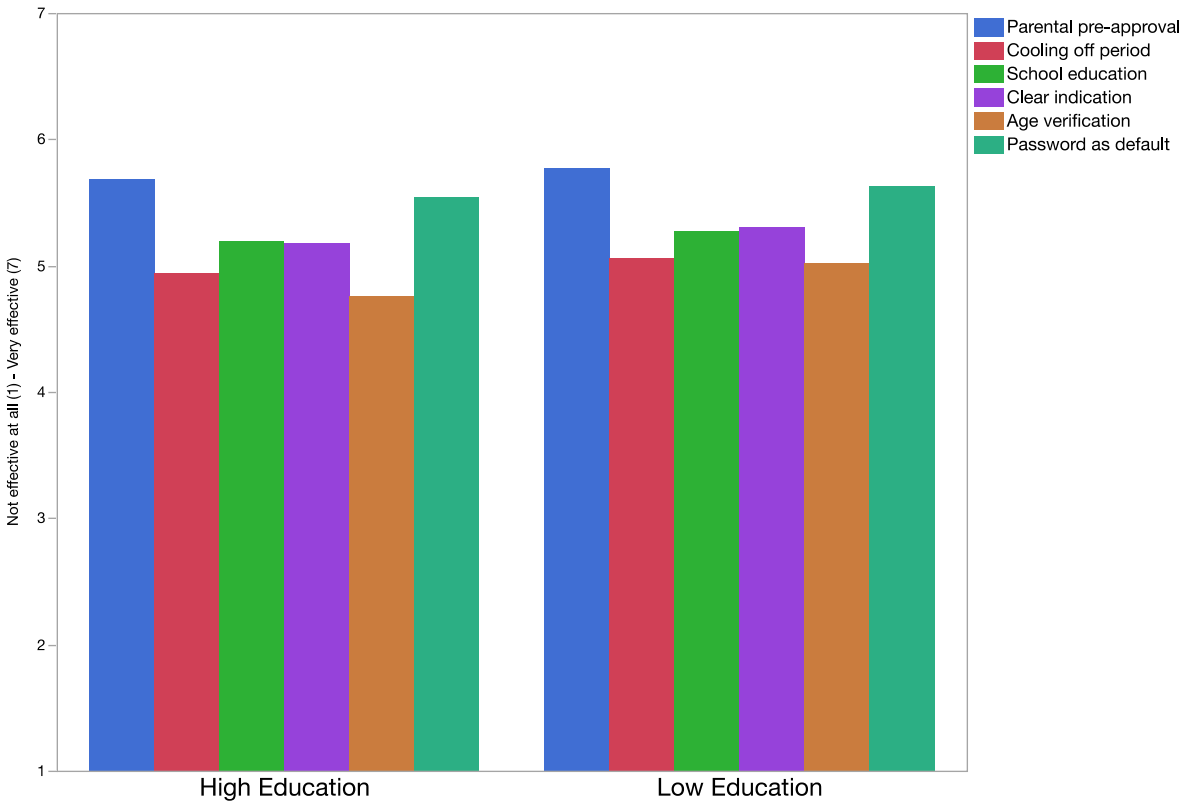
Figure 36 shows how education level is associated with judgements of the effectiveness of the protective measures[65]. The first point to note is that the ranking of the six protective measures in terms of effectiveness was the same for parents with high and low education. As was found with protective measures for online games, parents with lower levels of education consistently assessed all the protective measures for in-app purchases as slightly more effective than parents with high education[66]

[64] Q25. In general, how effective do you think the following protective measures related to in-app purchases for children's applications are? Parent's pre-approval, (N = 6068); Cooling off period (N = 5849); School Education (N = 5945); Clear indication, (N = 5974); Age verification, (N = 5980) ; Password as default, (N = 5988).

[65] Q23. In general, how effective do you think the following protective measures related to in-app purchase for children for children's app are?. Parent's pre-approval, $p < .0001$ level, $F(7, 6068) = 15.7811$; Cooling off period, $p < .0001$ level, $F(7, 5849) = 23.2131$; School Education, $p < .0001$ level, $F(7, 5945) = 32.1542$; Clear indication, $p < .0001$ level, $F(7, 5974) = 18.3293$; Age verification, $p < .0001$ level, $F(7, 5980) = 22.0160$; ; Password as default, $p < .0001$ level, $F(7, 5988) = 19.4953$.

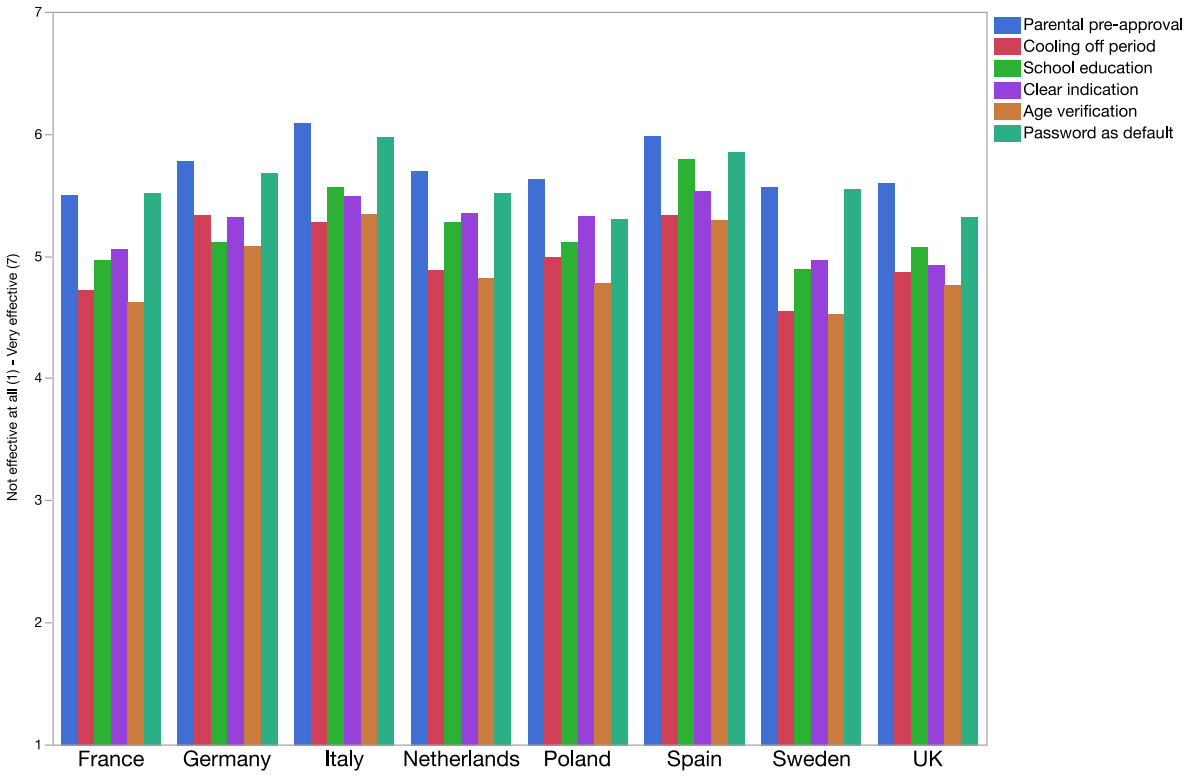
[66] All differences are in the same direction (lower education group has slightly larger means than the higher educated one): parental pre-approval, $p < .05$ level, $F(1, 6077) = 5.9728$; cooling off, $p < .001$ level, $F(1, 5884) = 9.0121$; school education, $p < .05$ level, $F(1, 5955) = 6.2036$; clear indication; $p < .0001$ level, $F(1, 5990) = 16.9644$; age verification, $p < .0001$ level, $F(1, 6008) = 45.1870$; passwords, $p < .001$ level, $F(1, 5993) = 7.5817$.

Figure 36 Means: Association between effectiveness of in-app purchases protective measures and parents' level of education



In terms of country differences, the following figure shows that of the protective measures, parental pre-approval and password as default were seen as the most effective. The other measures were not dismissed as ineffective, they were just perceived as less effective than parental pre-approval and password as default. It was also apparent that school education was more important for parents in Spain and Italy, and that a cooling off period was seen as more effective by parents in Germany compared to parents in the other countries.

Figure 37 Means: Parents' preferences of protective measures for in-app purchases by country



6.4.5 Protective measures and parents' mediating style

Parents' judgement of the effectiveness of different protective measures for in-app purchases and online games was analysed. Figure 38 shows the results for the protective measures for online games. Parents with a 'laissez-faire' style consistently judged the protective measures, apart from parental pre-approval, as more effective than parents adopting the other three styles of mediation[67]. For all four parental mediation styles the picture was consistent. Schooling and parental pre-approval were seen as most effective.

Figure 38 Means: Parenting mediation style and protective measures for online games

[67] Warning messages, $p < .0001$, level $F (3, 4693) = 15.3783$; Contextual information, $p < .0001$ level, $F (3, 4592) = 21.7752$; Parent's pre-approval, $p = 0.1607$ not significant, $F (3, 4778) = 1.7196$; School Education, $p < .0001$, level, $F (3, 4727) = 16.7455$; Age verification, $p < .001$ level $F (3, 4745) = 6.5332$; Surveillance by government, $p < .0001$ level, $F (3, 4624) = 19.3967$; Surveillance by companies, $p < .0001$, level $F (3, 4598) = 21.5355$.

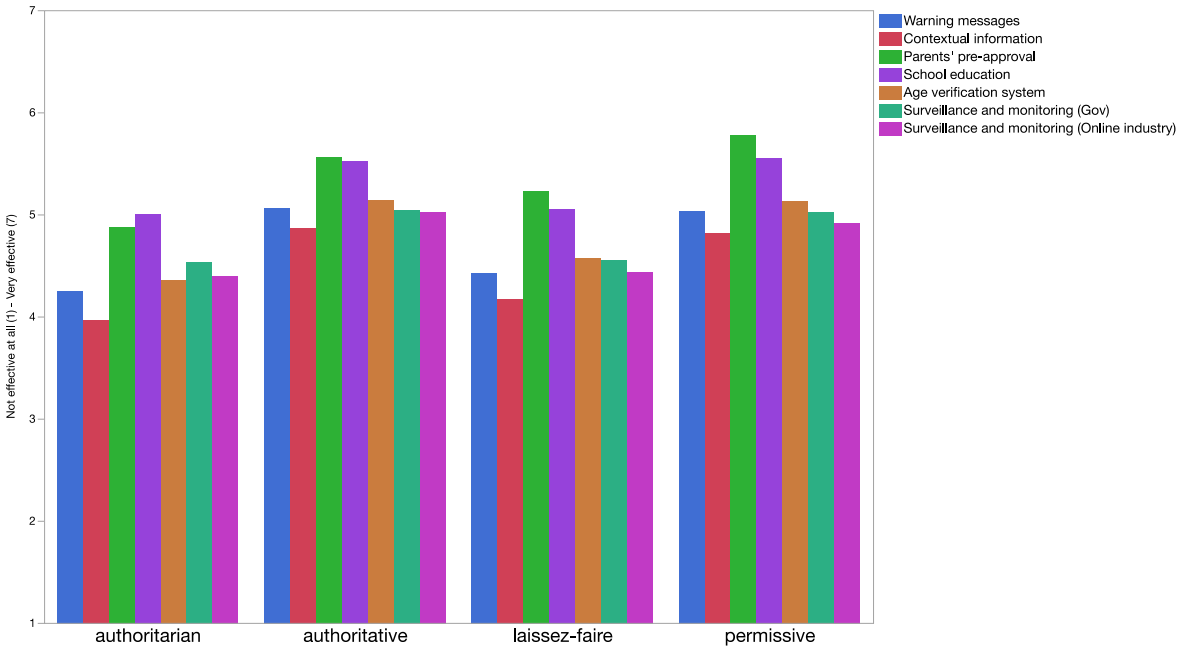
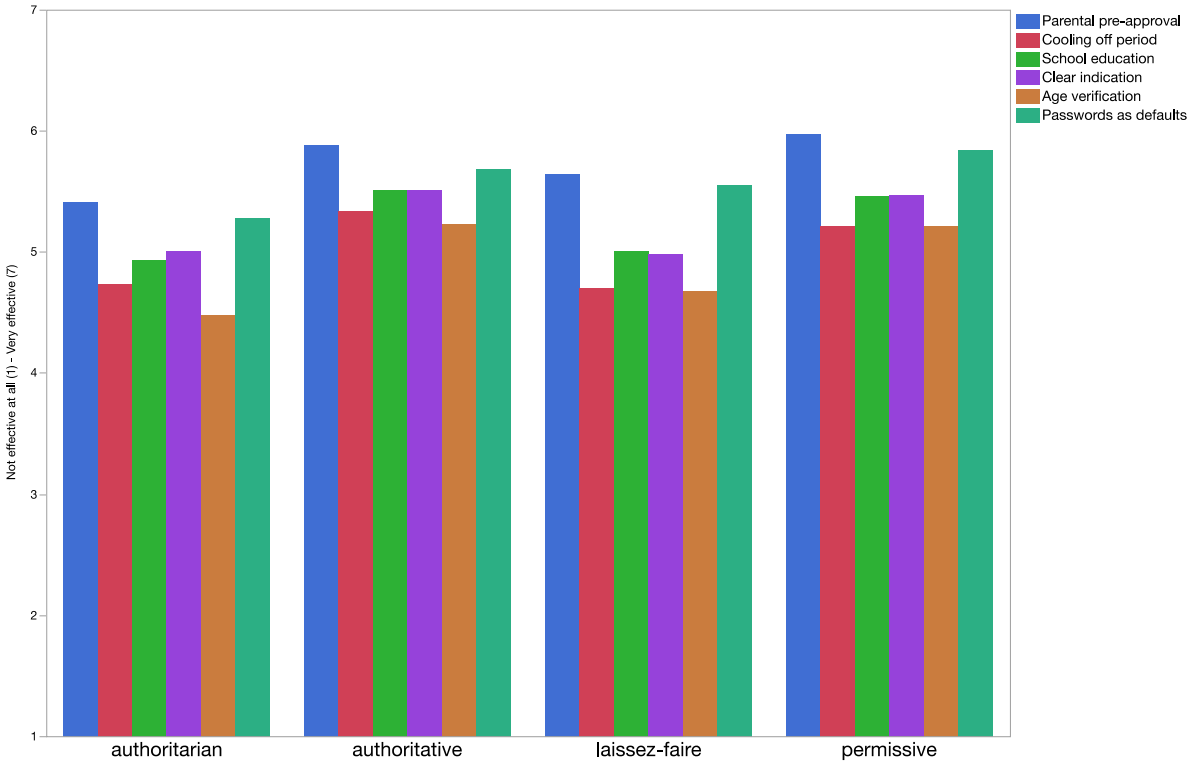


Figure 39 shows the findings for parental mediation style and the evaluation of the effectiveness of protective measures for in-app purchases. While the parents with an 'authoritarian' mediation style systematically evaluated all the measures as slightly less effective than the other parents[68], the difference was small. On the whole, it was the similarity of assessments across the parental mediation styles that stood out, rather than the differences.

[68] Parent's pre-approval, p =0.059 not significant, F (3, 4793) = 2.4833; Cooling off period, p < .0001 level, F (3, 4636) = 8.6982; School Education, p < .0001 level, F (3, 4684) = 16.1149; Clear indication, p < .0001 level, F (3, 4722) = 19.9949; Age verification, p < .001 level, F (3, 4735) = 5.9206; ; Password as default, p < .0001 level, F (3, 4709) = 13.0034.

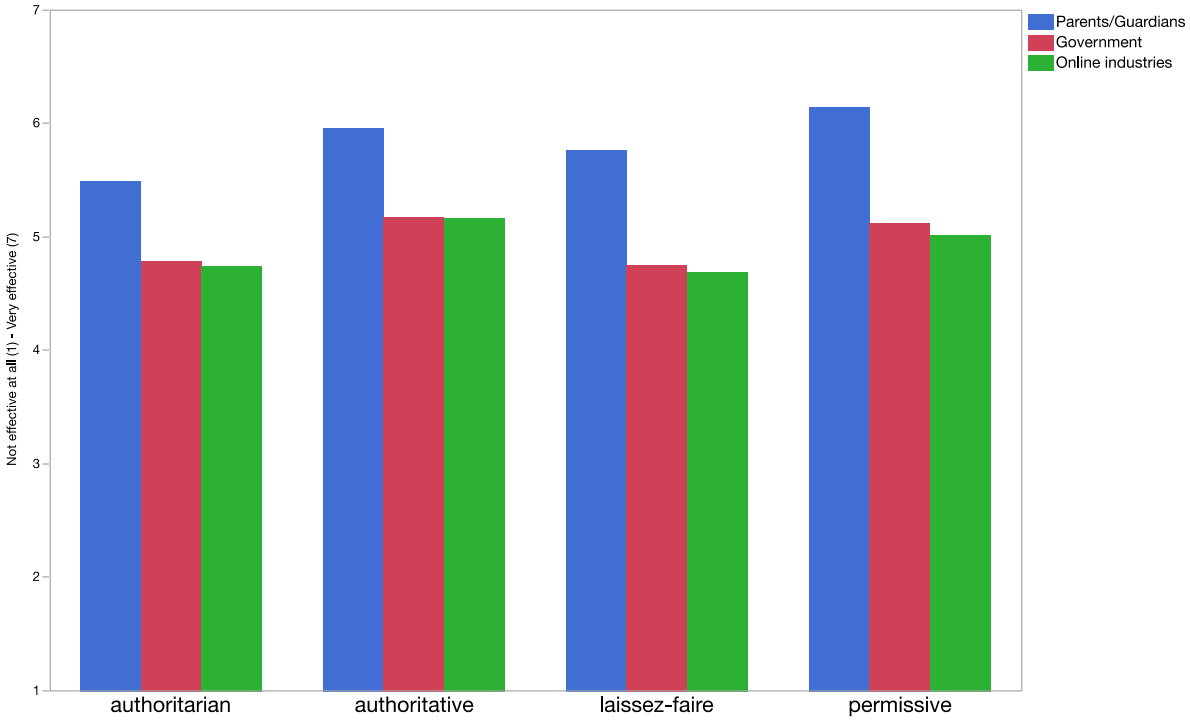
Figure 39 Means: Association between parents' mediating style and preferences for in app purchases protective measures



Finally, the association between the parental mediation style and the preferred locus of responsibility for ensuring online children safety was explored. There were two significant[69] and noticeable differences here. The 'laissez-faire' style parents attributed higher responsibility to all three actors, and in particular to government regulators and the online industry than parents using with other mediation styles. There were no differences between the other parental mediation styles.

Figure 40 Means: Association between locus of responsibility and parenting mediation style

[69] Parents or guardians, $p < .0001$ level, $F(3, 4915) = 11.8545$; government, $p < .0001$ level, $F(3, 4878) = 84.6628$; industry, $p < .0001$ level, $F(3,4872) = 51.6691$



Overall, the analyses suggested that parental mediation style was not strongly associated with a preference for a particular set of protective measures for online games or for in-app purchases.

6.5 Focus Group: Parents' own regulation of their children's online activates

Results from the focus groups revealed that most parents exercised some control over their children's Internet activities. However, some did not because they did not find it necessary or because they consider the available protective measures effective. Many indicated that the best option is to rely on trust.

Some parents were assiduous monitors. A French mother attempted to control everything. "We have to supervise everything they do, even games, social media. She is not allowed to go to all the social media when she is on Instagram, I go there to see what she does. I search her cell phone. I played all the games she plays at least 1000 times." This approach was not common but many parents did check their children' phones, e-mails and social media accounts. A common practice was to check the browser history. However, some children knew how to delete it. A Spanish father explained that there were programmes that constantly observed users' activity but he considered it would be too obsessive to make use of them.

A woman explained that it was very important to know children's password because then "they can see that you are controlling them. We are a form of authority." Another agreed that, "it is important that they know that we are above them, that we are watching". Similarly, a parent believed that, "the fact that they can be monitored might put them off".

Some parents were reluctant to perform this kind of control because they preferred to maintain children' privacy. One parent explained "I do not do searches. I prefer to engage in dialogue, which brings things up. When we search, they will look at it as betrayal". Indeed, many parents indicated that the best way to protect children was to trust them and to constantly talk to them in order to discuss the problems that they may encounter on the Internet. For example, a German woman believed that "it is better to talk about these things, because of course I can protect them at home, but then they will

go to their neighbour" She felt that prohibitions were not that effective: "The more I ban, the more I tempt them to try it." An Italian man maintained that "education is the most important aspect because they can easily escape any kind of control or protective measure".

Some parents said they relied on used parental controls or filters. However, one parent said that their children knew how to get rid of parental controls and another said that she used to have filters at the beginning but her children deleted them. A Spanish father explained that it was easy to get rid of restrictions: "You Google it and they show you how to get rid of them. There are thousands of tutorials". An Italian mother stressed that, "the problem is that they can use technology better than us". Similarly, a German father indicated "they know more than we do. I would not recommend anyone to do a great deal with regard to limitations". Therefore, the measure that he took was "talking to them. Because any protective measures I take can be circumvented if they want to."

Other measures that some parents applied were as follows: Sharing the same password between all the household members, receiving e-mails whenever the child downloads, linking the child's iPhone to the parent's iPad to check the downloads; controlling the time that they spent online, and establishing conditions to the children' Internet activities (prohibition to give their name, to accept invitations from strangers, to publish publicly pictures in social media, etc.) Age restrictions were usually perceived as ineffective for online games. One parent admitted that "what happens via smartphone is of course publicly accessible, you can download something for 18 year olds. You cannot control it at all". Similarly, another parent indicated that age limitations "are powerless, because they also swap games between themselves".

Regarding in-app purchases, many parents felt that they had control over them because they needed to introduce their credit card details in order to pay for them. Therefore, children were obliged to ask their parents before making an in-app purchase. Some parents indicated that even if children knew their password they asked before purchasing: "She still asks when she spends money. She would not go into my purse and take out 10 Euros either" Another parent felt confident because "I see it on my credit card statement. I know exactly what is happening where". However, parents also gave some examples in which children were able to make purchases without their consent. A French woman explained "my daughter ended up with a monstrous debt because she bought horses and accessories. They charged the telephone line directly. We were not asked for parental authorisation."

Some parents felt that it was not necessary to apply more protective measures. They said they might consider doing that in the future if they saw worrying signs such as a change in their child's behaviour. However, others would like to have more tools to protect their children, although they recognised that this was difficult. One said: "I would not know which type of filter to use but it is sure that we need something more". Some would like to be able to monitor further what their children do, to receive alerts if they were engaging in something dangerous and to have an organisation aimed at protecting children from online marketing risks. Some parents asked for more involvement of schools in providing information on the problematic practices related to Internet.

6.6 Summary of key results

The survey data – a cross-sectional multi-country dataset – did provide interesting insights:

- Risk perception of online hazards was in general rather high, driven both by the potential harm and likelihood of occurrence.
- Hazards related to violence both in terms of exposure and being object of it were considered the most harmful.
- Hazards related to marketing practices were considered slightly less harmful, but considerably more likely to occur.

- Among online marketing practice hazards, data tracking, and different forms of online advertisements (about unhealthy lifestyles and foods) were those that scored the highest in terms of perceived risk.
- Digital identity theft scored very high in terms of perceived risk.
- Past experience with each of the online hazards led to a statistically significant increase in risk perception.

In terms of country differences, there were clear differences across countries: parents in the UK, Netherlands, Germany and Sweden had overall lower risk perception scores than parents in the other countries.

We also looked at parent's preferences about protective measures. Overall, every measure was welcomed but some were considered more effective than others. Stricter regulations for business and more education for children were considered the most effective ones. On the contrary, training sessions for parents and contact points or help lines were considerered the least effective. When we investigated country differences, we found that parents in France, Germany and Sweden were the ones least persuaded by the effectiveness of the protective measures that they were asked to evaluate. In all eight countries, training session for parents and contact points were consideres the least effective.

Associated to the questions about protective measures, we asked parents to identity the locus of responsibility about keeping children safe online. While, parents saw themselves as the main responsible actors, they also considered government regulators and the industry has highly responsible as well. In all countries, parents attributed highest responsibility to themselves but there were differences across countries regarding the attribution of responsibility to the other two actors. Parents from France, Spain and Italy attributed greater responsibility to government regulators and industry than parents in other countries. In Germany and Poland, parents considered the online industry as slightly more responsible than government regulators.

The next stage of the analysis was to analyse whether and how a number of different parent's characteristics influenced their risk perception. We tested a number of correlates of with risk perception but overall their impact was small in statistical terms:

- In the case of **social status**, parents placing themselves at the bottom and parents placing themselves at the top of the social ladder reported slightly higher risk perception than other parents.
- There was no statistically significant difference between parents with low and high level of **education** in terms of overall risk perception.
    - Parents with higher education level were slightly more concerned compared those with lower education about their children being exposed online to violent images, hidden advertisements and advergames, incentives in to do in-app purchases, and online advertisements of unhealthy food.
    - Parents with low education were more in favour of the online industry being in charge of protecting their children from online marketing compared to parents with high education, although the difference is very small.
- For several online hazards (being exposed to violent images, targeted ads, ads about unhealthy lifestyle, and the risk of being bullied online or being object of digitial identity theft), we found a higher risk perception associated with having **older children**.

Another correlate of interest was parents' mediation style'. Derived from previous research on this area, parent's ways of copying with children and their use of online resources has been categorized in four 'styles' based on two dimensions – the level of *active* (engaging in childrens' online activities) and *restrictive* (providing restrictions on use) mediation. The *authoritarian* style is characterised by low active mediation and high

restrictive mediation; the *authoratitive* style is characterised by high active mediation and high restrictive mediation; the *permissive* style is characterised by high active mediation and low restrictive mediation; while the *laissez faire* style is characterised by low active mediation and low restrictive mediation.

When we looked at the relationship between parenting style and risk perception, we found:

- The 'permissive' parents systematically scored higher on risk perception for each hazard compared to parents making use of the other three styles (laissez-faire, authoritarian, authoritative).
- Overall, the data suggested that parental mediating style was not strongly associated with a particular set of preferred protective measures for online games.
- Parents with a laissez-faire mediation style consistently assessed the suggested protective measures for online games as more effective than the other parents.
- Parents with an authoritarian mediation style systematically assessed the suggested protective measures for in-app purchases as slightly less effective than the other parents. Differences between parents with the laissez-faire, authoritative and permissive mediation styles were minimal.
- Parents with the laissez-faire mediation style attributed more responsibility to government regulators and the online industry, than parents with other mediation styles.

7 Mapping and classification of policy interventions

This chapter presents the results of the review of the legislation and the regulatory framework addressing *"How to map and classify the policy interventions in place in Member States and at EU level to alleviate children's vulnerability in an operational manner (legislation, guidance documents, self-regulatory tools, inspections, complaints mechanisms, help-lines, education and information provision, work of relevant NGOs, etc.)?"* (Research question 7) and *"How to identify the most effective intervention tools and prepare the ground for proposing effective and evidence based policies? How to identify whether a policy initiative would be effective to mitigate children's vulnerability vis-à-vis sophisticated marketing techniques in online games, mobile applications and social media sites?"* (Research question 8).

It is important to emphasise that, as mentioned in the limitations of the study, no specific evidence or studies identifying and assessing the most effective intervention at a Member State level has been found in this review. Nevertheless, the effectiveness of the intervention tools was addressed in the systematic review and in the experiments conducted for this study.

The following sections start with a review of policy approaches and then outlines the regulatory framework established by the European Union, as well as self-regulatory initiatives at EU level. It then provides an overview of initiatives at Member State level in the field.

7.1 Background

One of the main issues with online marketing is that it involves a wide range of newly emerging marketing practices and techniques that make the application of existing legislation to such commercial practices particularly challenging. A number of self-regulatory initiatives exist that have been put forward by the industry, but the effectiveness of self-regulatory measures especially in terms of protecting children from unfair commercial practices has been questioned by various authors. For example, Cheyne et al. (2013) have stated that self-regulatory mechanisms such as the US Children's Food and Beverage Advertising Initiative (CFBAI) pledge appear insufficient to curb the dangers of online marketing of unhealthy food aimed at children. Paek et al. (2014) have argued that self-regulatory initiatives are beset by inconsistencies in the definitions of nutrition quality and the inclusion of allegedly "healthy lifestyle" messages in media placements. Their report shows that about 87% of food advergames do not include age limit specifications, 71% include ad breaks and about half include healthy lifestyle information.

Dahl et al. (2009) have stated that although regulators and the industry itself have attempted to restrict advertising to children through self-regulation and pledged to adhere to "responsible marketing" guidelines, advertisers appear to forget the promises as soon as they are operating online. Galbraith-Emami & Lobstein (2013) have reviewed the impact of initiatives to restrict advertising of food and beverage products to children in EU countries and globally, and concluded that the pledges made by food and beverage manufacturers appear to have had only small or no impact so far. Similarly, Nairn & Hang (2012) have indicated that measures to mediate the effects of advergames, such as labelling of advergames as advertisements or voluntary pledges by industry have been proven to be ineffective to protect children adequately in the UK. Hastings & Sheron's (2013) paper on alcohol marketing strategies also mentioned that there was a failure of voluntary codes and measures on side of the industry. On this basis, they urged for increased protection of children from alcohol marketing in the UK.

Given the inadequacies of self-regulatory measures to ensure a sufficient level of protection for children, Thomson (2011) has argued that health authorities should stop

relying on industry self-regulation and should introduce stricter regulation on online advertising practices. Similarly, Potvin et al. (2012) have called for enhancing restrictions on internet marketing directed at children below 12 years of age, and criticise the absence of mandatory pre-clearance. In their study they found that the Canadian industry-led initiative (CAI) did not limit child-directed content and so they called for strengthening the initiative as well as instituting government regulations. Quilliam et al. (2011), have proposed that, as self-regulatory measures have not resulted in the abolishion of unhealthy food promotion in online environments, government regulations addressing marketing to children through advergames are needed. Schwartz et al. (2013) have also asked for improved regulation of online marketing and Moreno (2014) has called on authorities to enhance regulations protecting children's privacy and safety online.

On the other hand, a number of authors have suggested measures other than stricter regulation. Blades et al. (2013) have proposed awareness-raising activities on food and other product advertising in newer media as an alternative to restricting advertising to young children on the Internet. Staiano & Calvert (2012) have suggested the development and usage of digital games that promote healthy food products instead of unhealthy products. According to them, this would be an innovative and effective tool to combat the negative effects caused by targeted advertising of unhealthy foods to children's health. It would also capitalise on the strength of digital games to promote positive behavioural outcomes.

Harris & Graff (2011) have proposed that, in absence of a genuine commitment by the food industries to limit the effects of marketing on children, municipalities could play a critical role in developing, implementing and evaluating policies that could improve the marketing environment for children in their communities and across countries. As the authors have admitted, protecting children from the harmful effects of food marketing requires a range of policy interventions at all levels of government, but also a change in social norms and behaviour. In order to promote action to limit beverage industries' social media marketing to adolescents, Williams (2013) has suggested federal regulation and the encouragement of social media companies to extend their own advertising guidelines to make better use of social media in the promotion of countervailing messages for more healthy dietary habits among young people.

Policy environments on online marketing differ significantly across countries, particularly across the EU and the US. Lascu et al. (2013) have found that French food companies place significant emphasis on nutrition-related features in their websites unlike Spanish and US companies, and that these differences stemmed from the socio-cultural and regulatory contexts. They suggested that US regulations tend to be more permissive than those found in the two European countries, while regulations and their enforcement by public authorities are much stricter in France than in Spain. Flowers et al. (2010) have compared online advertising directed at children in the UK and Hungary. They indicated that in the UK, NGOs and government health organisations were exerting significant pressure on the communication regulator Ofcom to strengthen restrictions and on the industry to address the content of websites and in particular, of advergames. By contrast, the efforts of the Hungarian government were mainly targeted towards small groups and professionals (e.g. dieticians).

7.2 Regulatory Framework

Beside EU legislation adopted and implemented by the Member States in the area of media services and consumer protection, co- or self-regulation for media and advertisement exists in most of the Member States of the European Union. In some countries the systems have been in place for several decades already (EASA, 2014). In 2003, the European Commission, Council of the European Union and European Parliament adopted the Inter-institutional Agreement on Better Law-making (IIA), emphasising the importance of self-regulation and co-regulation as mechanisms complementing the European regulatory framework. The IIA includes the following definitions of self-regulation (SR) and co-regulation (CO):

> *"Self-regulation is defined as the possibility for economic operators, the social partners, non-governmental organisations or associations to adopt amongst themselves and for themselves common guidelines at European level (particularly codes of practice or sectorial agreements)".*
>
> *"Co-regulation means the mechanism whereby a Community legislative act entrusts the attainment of the objectives defined by the legislative authority to parties which are recognised in the field such as economic operators, the social partners, non-governmental organisations, or associations"* (European Parliament, Council and the Commission, 2003).

The following elaborates on the regulatory framework applicable in the European Member States in the area of online marketing practices directed at children and then turns to self-regulatory measures initiated in the area of advertising practices complementing the regulatory framework.

7.2.1 Directive 2011/83/EU on Consumer Rights (CRD)

Policy makers are challenged to ensure that consumers enjoy the same level of protection in the online world that they receive when they buy at their local store, commercial centres or when ordering from a catalogue. The Directive 2011/83/EU on Consumer Rights (CRD) forms the backbone of consumer protection in both traditional shopping and online environments. It establishes links to other directives governing business-to-consumer transactions, which are further discussed in the Directive's Guidance (European Commission, 2014).

The Directive strengthens and harmonises certain consumer rights across Member States. A single set of core rules for distance contracts (sales by phone, post or internet) and off-premises contracts (sales away from a company's premises, such as in the street or the doorstep) in the European Union should provide important benefits to both consumers and businesses. It should contribute to reduction of costs for cross-border traders, especially in terms of sales practices conducted in the Internet, and thus contribute to the development of the Single Market.

Furthermore, the Directive is a step towards greater market transparency. It requires that traders disclose the total price of their goods or service, as well as any extra fees. Online consumers should be properly informed before they place an order about the total price of their order. The Directive further requires that traders ask for the expressed consent of consumers with any additional payment. Pre-ticked boxes are prohibited. The right to pre-contractual information ensures increased transparency and should also avoid misleading consumers regarding services, which are advertised to be free of charge, but require payment.

Information on digital content should also be clear, including with regard to its compatibility with hardware and software and the application of any technical protection measures, for example limiting the right for the consumers to make copies of the content. In addition, consumers have a right to withdraw from purchases of digital content, such as music or video downloads, but only until the actual downloading process begins.

Apart from the fact that information should be provided in a 'clear and comprehensible manner', the recitals of the Directive take particular account of vulnerable consumers, requiring that the trader should take into account "the specific needs of consumers who are particularly vulnerable because of their mental, physical or psychological infirmity, age or credulity in a way which the trader could reasonably be expected to foresee. However, taking into account such specific needs should not lead to different levels of consumer protection" (Recital 34). It should be noted, however, that the requirements for off-premises and distance contracts are more extensive and build on those provided for on-premises contracts. This implies that consumers, and notably children, should be better protected online than when buying at a store or in a shopping centre.

The deadline to transpose the Directive into national laws of the Member States was set on 13 December 2013 and the national laws transposing the Directive were to be applied as of 13 June 2014. The Directorate General for Justice has also issued a Guidance document for the effective application of the Directive[70], including an optional model for the provision of consumer information on digital products. The model specifically provides traders with information on pre-contractual information requirements about digital products in accordance with the provision of the Directive, so as to ensure that consumers receive information in a uniform and comparable manner, without prejudice to other legal ways to provide the required information.

With the transposition of the CRD, several benefits are expected for consumers and traders. In these terms, the pre-contractual information provisions will give consumers engaged in on-line transactions a clearer and fuller idea of the goods, services, digital content, or utility purchased, which facilitates better-informed purchasing decisions and, in turn, reduced levels of consumer detriment. Further, there are important new information requirements in particular regarding the functionality and inter-operability of digital content. As the number of consumers engaging in distance transactions and, particularly, online transactions has increased continuously, the CRD strives to reduce barriers to the willingness of traders to engage in cross-border trade, which is expected to enhance consumer choice and welfare.

7.2.2 Directive 2010/13/EU on Audiovisual Media Services (AVMSD)

At the EU level, protection of children online is currently being discussed in the context of a revision of Directive 2010/13/EU on Audiovisual Media Services (AVMSD). The consultation on AVMSD closed on 30 September and was conducted as part of the Regulatory Fitness and Performance Programme[71] (REFIT). REFIT is part of the Better Regulation Framework[72].

The current version of AVMSD foresees a system of "graduated regulation", meaning that more stringent rules for broadcast services than for on-demand services should be applied, in particular for advertising and programmes that may be harmful to children. illustrates the differences between the regulation of linear (TV) services and non-linear (on-demand) services. As a rule of thumb it is assumed that the less control a viewer has, and the more harmful a specific content could be, the more restrictions apply. For that reason, content which might seriously impair minors must not be included in any TV programme (see the red field in figure 5). That said, content which is provided via linear (TV) services is currently more strictly regulated than content released via non-linear (on-demand) services.

The future version of AVMSD should take into account the fact that consumer video-on-demand traffic is projected to double by 2019 (Cisco, 2015). Consumers, and thus

[70] http://ec.europa.eu/justice/consumer-marketing/files/crd_guidance_en.pdf

[71] The Regulatory Fitness and Performance Programme (REFIT) is the Commission's programme for ensuring that EU legislation remains fit for purpose and delivers the results intended by EU law makers.

[72] The AVMSD REFIT evaluation is announced in the Commission Staff Working Document "REFIT: Initial results of the mapping of the acquis" (SWD(2013) 401 final) and is part of the Commission's 2015 Work Programme (Annex 3 (COM2014) 910 final of 16.12.2014).

children, are likely to use the Internet as a medium to watch programmes or films more frequently than on TV. Such developments also imply changes in the advertising industry. The Internet outpaced TV as a medium for advertising in Europe from 2008 to 2013 and is quickly catching up (IAB Adex Benchmark, IAB 2015)[73]. From 2012 to 2013, an increase of 45.1% was observed for online video advertising. The rapid growth of advertising on the Internet has direct implications for the protection of minors because video viewing was one of the earliest Internet activities carried out by young children. According to UKCCIS (2012), for example, YouTube is the second favourite site for children under 5 in the UK.

Figure 41 Overview of graduated regulation

	Linear (TV) services	Non-linear (on-demand) services
Content which might seriously impair minors must …	… not be included in any programme (total ban) Article 27(1)	… only be made available in such a way that ensures that minors will not normally hear or see such on-demand audiovisual media services Article 12
Content which is likely to impair minors must …	… be ensured, by selecting the time of the broadcast or by any technical measure (e.g. encryption), that minors in the area of transmission will not normally hear or see such broadcasts. Article 27(2),(3)	No restrictions

Source: http://ec.europa.eu/archives/information_society/avpolicy/reg/tvwf/protection/index_en.htm

With regard to advertising, the current version of AVMS Directive provides provisions on alcohol advertisements. It specifies that audiovisual commercial communications for alcoholic beverages should not be aimed specifically at minors and should not encourage immoderate consumption of such beverages. These provisions are currently being reviewed in relation to newly emerging marketing practices. In order to appeal to younger users, these marketing practices are often connected to other brands, movies and music popular among youth, and also make use of animated content and other aesthetic techniques, such as competitions, use of humour, and so forth.

The European Parliament launched a Motion for a European Parliament Resolution on the Implementation of the AVMSD in early 2013, noting that the Member States had implemented the AVMSD in particularly diverse manners and stressing that in the particular field of protection of children in the media, it was necessary to find the right balance between voluntary measures and mandatory regulation (European Parliament, 2012). It further called on the Commission to examine the AVMSD for possible uncertainties or inaccuracies in the definitions that could have led to difficulties in the implementation in the Member States. Under Article 33 of the AVMSD, the Commission is required to report to the EP every three years, starting in 2011.

In its first report on the implementation of the AVSMD in 2012[74], the Commission ruled that the directive had been fully transposed into national legislation by 25 member states, while two Member States – Poland and Belgium, still needed to adapt their legislation. The report indicated that the provisions of the AVMSD performed well, but due to the constantly changing technology and business practices, concerns about

[73] https://ec.europa.eu/digital-agenda/en/news/commission-seeks-views-europes-audiovisual-media-rules

[74] REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS First Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the application of Directive 2010/13/EU "Audiovisual Media Service Directive" Audiovisual Media Services and Connected Devices: Past and Future Perspectives /* COM/2012/0203 final */ http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52012DC0203

commercial communications had arisen that would need further attention. It particularly noted that advertising techniques targeting minors were used on a frequent basis. The report noted that in all but two member states' self- or co-regulatory measures had been included in the national media regulations in line with the provisions of Article 4 (1) AVMSD. However, as regards the specific area of audiovisual commercial communications (ACCs), the Commission called on the Member States to encourage audiovisual media service providers to develop codes of conduct regarding inappropriate audiovisual communications in children's programmes. With particular regard to these self-regulating initiatives of Member States, the EP's Committee on Culture and Education stressed that these initiatives, envisaged to limit minors' exposure to food advertising and marketing practices, could not replace legally binding instruments, and urged the Commission to closely monitor developments in that area.

In line with Article 30 AVMSD, an informal group of national regulators has been in operation since 2003, in recognition of the key role that independent regulatory authorities can play in the effective enforcement of national measures transposing the rules of the directive. Based on a report from the High Level Group on Media Freedom and Pluralism, and its recommendation for the formalization of cooperation between regulatory bodies in the field of audiovisual media services to share common good practice and setting quality standards, the European Commission formally established a group of EU Regulatory Authorities in the field of the Audiovisual Media Services on 3 February 2014. The purpose of the group is to advise the EC on the implementation of the AVMSD. The group will guarantee closer cooperation between the national regulatory bodies of the Member States and allow for an exchange of experience and good practices of national measures

In line with the requirements of the Directive, a large number of countries have successfully developed codes of conduct regarding inappropriate audiovisual communications in children's programmes, but also for communications relating to alcoholic beverages as well as sugary, salty or fatty food products and beverages. In implementing the AVMSD requirements of alcohol advertising, at least 22 Member States have put in place somewhat stricter rules for alcohol advertising involving channels, advertised products or time slots.

There are a number of different provisions aimed at protecting children at the national level. Greek legislation, through Law 2251/1994 prohibits advertising for toys on TV between 07.00 and 22.00, while Sweden has a general prohibition on TV advertising during programmes that appeal to children under the age of 12. However, there is comparatively little children-specific EU-wide legislation focussed on children and advertising, and only some EU Member States have incorporated specific national provisions on the issue. Five Member States prohibit advertising in children's programmes; four impose a partial ban or other restrictions on advertising in children's programmes, either during specific time slots or specific products; and seven prohibit the showing of sponsorship logos in children's programmes.

7.2.3 Directive 2005/29/EC on Unfair Commercial Practices (UCPD)

The Directive on Unfair Commercial Practices (UCPD) was adopted in 2005 and took effect in Member States after a transition period of two years. The main goal of the Directive is to contribute to the proper functioning of the internal market and achieve a high level of consumer protection. The UCPD is a horizontal directive which applies to all business-to-consumer transactions. It aims at facilitating cross-border trade by creating a single set of rules on the prohibition of unfair commercial practices. It is based on full harmonisation, meaning that Member States may not retain or introduce stricter consumer protection rules, except in the areas of financial services and immovable property.

Article 5(3) of the Directive provides for specific protection of vulnerable consumers. According to this Article, marketing that is likely to materially distort the economic behaviour of children as a "clearly identifiable group" shall be assessed from the perspective of the average child. In addition, children benefit from specific protection through the black-listed ban on direct exhortations in Annex I No 28 UCPD. This ban

includes putting pressure on a child to buy a product directly or to persuade an adult to buy items for them (the "pester power").

The application of the UCPD was assessed in *Commission Communication COM (2013) 138 final* and its accompanying *Report COM (2013) 139 final*, both issued on 14 April 2013. The main conclusion was that it did not seem appropriate at the time to amend the Directive and that it has considerably improved consumer protection in and across the Member States, while better protecting legitimate businesses from competitors who do not play by the rules. Concerns raised by some stakeholders in relation to the application of this Directive to certain specific unfair commercial practices could be addressed by initiatives to improve enforcement in the Member States.

This assessement did not signal significant problems in relation to vulnerable consumers. Without calling for a revision of the Directive, one Member State commented that, if the Directive were to be reviewed, then it may be worth adding provisions to specifically protect the elderly from certain aggressive practices. Another Member State pointed out that frequent aggressive practices target children in the field of online games. Only two Member States supported further regulation to improve contractual protection for children, which is not an issue that can be addressed by the UCPD.

The SWEEPS conduced in 2012 by national enforcers in the framework of the CPC regulation showed, for instance, that more than half of the investigated websites specifically targeted teenagers and children. In many cases, these websites did not comply with consumer protection rules, and consumers were frequently lured into purchasing items related to supposedly free games[75]. The results of the second sweep were particularly alarming as unfair commercial practices were identified in over 50% of websites after the first investigation that required around 70% of investigated websites to be either corrected or closed. The results of the investigations imply that enforcement of UCPD should be improved, notably in relation to children and their use of digital-content products, in a national context but particularly at cross-border level.

Also consumer protection authorities reportedly receive complaints related to unfair commercial practices. Many parents reported that they had to pay huge phone bills due to their children's purchasing of virtual items or points to play online games. Furthermore, it can be difficult for children to understand that even though they have downloaded a free app, they still might have to pay additional real money during the game (for example to play the game faster or to gain access to new levels or features). These so-called in-app purchases, where one spends real money to buy virtual items, can be difficult for children when they are engaged in a game universe and where the line between fantasy and reality is blurred. In light of this, national consumer protection authorities from EU countries joined forces with the European Commission to ask main industry players to propose concrete solutions on the issue of in-app purchases in online games advertised as free under the Consumer Protection Cooperation (CPC) regulation, with real progress and tangible results reported in the area so far in terms of better protection for consumers in online games.

The Member States had to publish and transpose the directive into national law by June 2007 at the latest. However, only a few Member States managed to transpose the provisions of the directive in time, with the majority of national transpositions being implemented during 2008 and 2009. The technical choices made by Member States to transpose the provisions of the directive can be grouped into two main categories, largely depending on whether the state in question already had in place national legislation or not. Some Member States could incorporate the provisions into existing law on acts against unfair competition (Germany, Austria, Denmark, and Spain), others incorporated them in consumer codes (France, Italy, Bulgaria, Czech Republic, Malta), civil codes (Netherlands) or other existing acts (Belgium, Finland, Sweden). Other countries had to

[75] http://ec.europa.eu/consumers/enforcement/sweeps/digital_contents/index_en.htm

adopt new laws to transpose the provisions of the directive into national law (UK, Portugal, Romania, Hungary, Cyprus, Poland, Slovenia, Slovakia, Estonia, Ireland, Luxembourg, Latvia, Lithuania, and Greece).

With particular regard to the protection of vulnerable consumers, the Report on the Implementation of the UCPD Directive[76] noted that there had not been significant attempts to provide protection to vulnerable consumer groups under Article 5(3) and Annex I No 28, but that further efforts should be directed to the enforcement of the UCPD in relation to these consumer groups. In that regard, Denmark noted frequent aggressive practices targeted at children in the field of online games.

Within the framework of the CPC Regulation, national enforcers have investigated websites selling games, books, videos and music that are downloadable to the computer or mobile device under "Digital Content Sweeps"[77]. It was found that over 75% of the websites did not appear to comply with consumer protection rules and that more than half of those websites were specifically targeted at teenagers and children. This gave rise to concerns, especially with regard to practices that induce children to purchase items in supposedly free games. Of particular concern was the missing contact information for relevant after-sales services, which were found to be missing in more than 30% of the websites. After an 18-month investigation at national level, whereby companies were approached in order to allow them to clarify their position, 70% of those websites were corrected or closed.

The issue of aggressive practices outlined in the Directive was already covered by other legislation in the Member States, including those regarding contracts and criminal law. The aim of the Directive in this case was to add an additional layer to the protection, which could be activated through public enforcement means but without necessarily having to start criminal or civil law proceedings[78].

The Directive does not harmonise enforcement systems, but leaves the choice to the respective Member States to establish the enforcement mechanism that suits their legal tradition best. Accordingly, a wide variety of enforcement systems regimes are evidenced.

Within the public enforcement systems we see that in some countries enforcement is the duty of the consumer ombudsmen (e.g. Denmark, Sweden and Finland); consumer competition authorities (e.g. Italy, Ireland, the Netherlands, Romania and the United Kingdom); or dedicated departments of Ministers (e.g. Portugal and Belgium). Other Member States have chosen a private enforcement scheme led by competitors based on self-regulatory enforcement schemes (e.g. Austria and Germany). Nevertheless, in most Member States we find a combination of elements from both public and private systems to ensure enforcement of relevant provisions and ethical standards (EASA Bluebook 6th Edition, 2010).

7.2.4 Directive 95/46/EC on Data Protection (DPD)

Another important aspect of engaging children with digital-content products relates to privacy issues. Personal data protection is key to building trust in the online environment. Nevertheless, vulnerable groups of consumers, including children, may not be in position to properly understand the risks related to sharing their personal information online and thus may become victims of legal breaches under the Directive 95/46/EC on Data Protection. The general obligation in the Directive is to regulate the processing of personal data within the European Union.

While it is an important component of EU privacy and human rights law, the Directive was developed at the times when, for example, the social networking sites (SNS) were

[76] http://ec.europa.eu/justice/consumer-marketing/files/ucpd_report_en.pdf

[77] http://europa.eu/rapid/press-release_IP-12-1320_en.pdf

[78] http://ec.europa.eu/consumers/enforcement/sweeps/index_en.htm

not common. These sites are, however, often visited by children and may be used to spread commercial messages. By granting users discounts, prizes and other advantages, businesses encourage children to share commercial messages with other social media users. Children may also be urged to "pay" to play online games with their recommendations (likes) or with information about themselves or their network, instead of with real money.

Furthermore, the Directive does not fully respond to cross-border data flows, which are increasingly prevalent. In this context, the issue of behavioural advertising targeting children has been discussed in Europe and on a global level[79]. Online behavioural advertising has become an important force on the Internet. At the core of this technique lays tracking of consumer activities and related information on line. It provides benefits to consumers, as they are often able to get free content in exchange for allowing targeted advertising. One of the drawbacks of this technique is, however, that consumers' personal data might be stored and used for other purposes, of which consumers may not be aware and/or may not approve. For children, sharing of personal data from an early age means that businesses may be capable to develop very sophisticated and comprehensive consumer profiles, which may be used against their interests in the future.

In December 2015, an agreement was reached by the Commision with the European Parliament and the Council on the EU DATA Protection reform package, following final negotiations between the three institutions (so-called 'trilogue' meetings). The reform package includes the General Data Protection Regulation and the data Protection Directive for Police and Criminal Justice Authorities, updating and replacing the Data protection rules that are based on the 1995 Data Protection Directive and the 2008 Framework Decision for the police and criminal justice sector. After this political agreement on the issue, the final text is pending adoption by the European Parliament and the Council at the beginning of 2016.

7.2.5 Directive 2000/31/EC on Electronic Commerce (ECD)

The Electronic Commerce Directive (ECD), adopted in 2000, sets up an Internal Market framework for electronic commerce, including intermediaries. It aims to provide legal certainty for businesses and consumers, by establishing harmonised rules on issues such as transparency and information requirements for online service providers, commercial communications, electronic contracts and limitations of intermediary service providers.

Under this Directive, for example, traders are obliged to provide general information, such as their identity, geographical location and e-mail address on their website. Findings from the EU wide sweeps conducted in 2012 showed, however, that there is often a lack of contact details where one can ask for information or complain if something happens on websites. Some online games where children can make purchases with mobile phones or credit cards, do not have any complaints possibilities or follow up mechanisms.

Although the Directive does not provide a legal definition of "online intermediaries", the notion is defined through the limitations of liability of intermediaries for a third-party illegal content. The liability limitations apply to all forms of illegal activities (including copyright and trademark infringements, defamation, or misleading advertising). It should be noted, however, that the Directive does not apply to gambling activities or data protection. Nevertheless, when game advertisements are provided on the websites of intermediaries, such as social network sites, its provisions should apply.

A preliminary evaluation by the Commission on the transposition of the E-commerce Directive conducted in 2003 concluded that implementation has been satisfactory, but that the final laws adopted by the Member States would have to be subject to further scrutiny (European Commission, 2003). As far as commercial communications were concerned, the Commission outlined that the Directive supplements existing Directives in

[79] http://www.oecd.org/sti/ieconomy/45061590.pdf

the field of consumer protection by means of adding to the transparency requirements in Community law to which commercial communications, and games as explicitly mentioned, must comply. With specific regard to article 6 of the directive regarding the identification of commercial communications, which is similar to the provision outlined under article 10 (1) of the Television without Frontiers Directive (repealed and amended by the AVMSD), the Commission claimed that Member States had transposed the article "quasi literally" into their respective national laws.

With regard to the codes of conduct which the Directive called upon, the Commission noted that several associations had established sector-specific codes and trustmark schemes at the European level, with many other forms of monitoring and regulation established at the national level. Given the fact that after the initial phase of the directive these national efforts slowed down, the Commission increased its appeals to business and consumer organisations, as well as Member States to continue to actively promote initiatives in this regard.

A report issued by the European Parliament on completing the internal market for e-commerce in 2010 stressed that standardized rules offering high protection of minors were still needed and encouraged the launching of information campaigns for parents, teachers and guardians so as to ensure that children were adequately educated about the risks in the use of e-commerce (European Parliament, 2010). It further called on the Commission and Member States to take action against illegal online services at variance with rules on consumer protection and the protection of minors. The report outlined six priority actions crucial for increasing and strengthening cross-border e-commerce, among which it acknowledged that the fragmentation of rules of consumer protection still posed a challenge to which the new Directive on consumer rights would help to overcome problems as a first step, as well as increased efforts to guarantee the security of minors while using the Internet. In the latter case, it called for effective mechanisms to be regulated at the European level to protect minors from harmful content.

In light of this report, the Commission adopted the suggestions outlined in the communication on e-commerce and other online services identifying the principle obstacles to the development of e-commerce and online services as well as priority measures, together with an Action Plan for 2012-2015 (European Commission, 2012). It reinforced its commitment to support the CPC network in ensuring that the relevant legislation was implemented in a digital environment at European level.

According to this preliminary evaluation, national transpositions have closely followed the form and content of the Directive. Member States, with the exception of the Netherlands, decided to transpose the Directive through a horizontal e-commerce law in order to create a national framework that would be clear and user-friendly. Germany was the only Member State that already had a horizontal legal framework in place at national level due to the Teleservices Act 1997.

A number of provisions adopted in the Member States were identified that had directly addressed the subject, especially those that included online commercial communications. Austria has included provisions on data protection and unsolicited communications sent by electronic mail and SMS messages in its Telecommunications Act 2003 (Telekommunikationgesetz)[80]. In article 107(2) it states that "The sending of electronic mail – including SMS messages – without the recipient's prior consent shall not be permitted if: 1. The message is sent for purposes of direct marketing; or 2. the message is addressed to more than 50 recipients".

Another example is the German regulation established through the Treaty of the Federal States (Länder) concerning the protection of minors in electronic media

[80] https://www.rtr.at/en/tk/TKG2003

(Jugenmedienschutz-Staatsvertrag, JMStV)[81] of 2002. This Treaty includes wide provisions on the protection of minors from unsuitable content in electronic media and communication media, advertising; teleshopping; scheduling restrictions; programme trailers and labelling (identification at the start as unsuitable for the respective age groups by acoustic means, or by visual means for the entire duration) and the use of technical systems for the protection of minors to make access and perception of the content impossible or very difficult for children or adolescents of the respective age group to access unsuitable content.

In Slovenia, the Electronic Communications Act, 2004 (Zakon o elektronskih komunikacijah)[82], covers the topic of unsolicited communications[83] as well as data protection collected data and its use (e.g.obligation of information on directories).

Lithuania prohibits advertising by telephone, fax or e-mail (Advertising Law 2006) while Romanian statutes provide that e-mail as direct marketing instrument is prohibited without the prior consent of the recipient. Slovakia has provisions banning advertising by telephone or computer network (Advertising Law, Zakón o reklame 2001) as well.

7.3 Self-regulatory initiatives at EU level

Both self-regulation and co-regulation play an important role in shaping business–to-consumer relations and enhancing consumer protection (OECD, 2014). Their role is likely to increase over time according to the objectives of the Commission's simplification programme (REFIT[84]) aimed at reducing regulatory burdens in the EU. According to the REFIT programme, "self-regulation and co-regulation can be simpler alternatives to imposing detailed rules in legally binding agreements". They cover a number of market sectors and can take various geographical forms (OECD, 2014), but for the purposes of this report only initiatives at EU and Member States' levels will be discussed. The following section outlines a number of these initiatives.

7.3.1 Self-Regulation in the EU Advertising Sector

According to the International Guide to Developing a Self-regulatory Organisation issued by the International Council on Ad Self-regulation (2014), self-regulation in the area of advertising "is a system by which the advertising industry actively regulates itself ". This involves industry – the advertisers who pay for the advertising, the advertising agencies responsible for form and content, and the media that carry it – establishing standards for advertising together with a system that ensures correction or removal of advertisements that do not fulfil the agreed standards. Standards and principles of best practices that the advertising industry agrees upon are enforced by the advertising industry through the established self-regulatory organisation (SRO) that have been set up by the industry for this purpose and funded by the industry itself.

Advertising practices worldwide are frequently regulated by codes of conduct and other types of non-legislative measures. The majority of European self-regulatory organisations (SROs) have incorporated the rules set out under the codes established by the International Chamber of Commerce (ICC) into their national codes, while in some countries additional rules regarding advertising, especially in the area of advertising to children, have been adopted by the industries. Overall, the ICC codes should apply to all forms of advertising, and should also be applicable to newly emerging forms of digital advertising and techniques, such as advergames.

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[81] http://www.diemedienanstalten.de/fileadmin/Download/Rechtsgrundlagen/Gesetze_aktuell/_JMStV_Stand_13_RStV_mit_Titel_english.pdf

[82] http://www.akos-rs.si/files/APEK_eng/Legislation/electronic-communications-act-zekom1.pdf

[83] E.g. prior consent; obligation to give to consumers the possibility to preventing use of their electronic address; prohibition of the sending of electronic mail for the purpose of direct marketing disguising the identity of the sender or a valid address to which the recipient may send a request to cease

[84] http://ec.europa.eu/smart-regulation/refit/simplification/index_en.htm

Under Art. 18, the ICC codes[85] outlines specific provisions that have to be taken into consideration in marketing communications directed to, or featuring, children and young people. As a general principle, the following provisions apply to marketing communications addressed to children and young people:

- Such communications should not undermine positive social behaviour, lifestyles, and attitudes;
- Products unsuitable for children or young people should not be advertised in media targeted to them, and advertisements directed to children or young people should not be inserted in media where editorial matter is unsuitable for them.

The guidelines set out under Article 18 fall under three main headings: 1) inexperience and credulity, 2) avoidance of harm and 3) social values. In light of constantly changing technologies and the need for children to adapt to these, the European Advertising Standards Authority (EASA) has been engaged in the development of a communication on digital marketing communications in consideration of these concerns. In that context, the EASA published guidelines[86] on best practices in 2008 with regard to digital marketing communications and the remit of self-regulatory organisations. The document has been forwarded to all SROs, as well as advertising industry representatives for respective national discussions on the SRO remit. With special regard to the vulnerability of children in an online environment, the ICC principles set out guidelines to be taken into account of in digital communications and children under Article D5. The ICC code[87] foresees that:

- Parents and/or guardians should be encouraged to participate and /or supervise their children´s interactive activities;
- Identifiable personal information about individuals known to be children should only be disclosed to third parties after obtaining consent from a parent or legal guardian where disclosure is authorized by law. Third parties do not include agents or others who provide support for operational purposes of the websites and who do not use or disclose a child´s personal information for any other purpose;
- Websites devoted to products or services that are subject to age restrictions such as alcoholic beverages, gambling, and tobacco products should undertake measures to restrict access to such websites by children;
- Digital marketing communications directed at children in a particular age group should be appropriate and suitable for children.

Furthermore, the European Commission released the so-called "Madelin Report" in 2006[88], which identifies the developments in the field of self-regulation at EU level. It reflects the discussions held at the Round Table on Advertising Self-Regulation (European Commission, 2006). The Round Table aimed at identifying best practices in the SR field. It brought together representatives of the European Advertising Standards Alliance (EASA), other NGOs, and the European Commission. The basic components for a Best Practice SR model on advertising that were agreed upon comprise:

- Effectiveness:
  - Provision of copy advice
  - Complaint Handling
  - Sanctions
  - Consumer Awareness
- Independence:

[85] http://www.iccwbo.org/advocacy-codes-and-rules/document-centre/2011/advertising-and-marketing-communication-practice-%28consolidated-icc-code%29/

[86] http://www.easa-alliance.org/page.aspx/97

[87] http://www.iccwbo.org/advocacy-codes-and-rules/document-centre/2011/advertising-and-marketing-communication-practice-%28consolidated-icc-code%29/

[88] https://www.google.es/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0ahUKEwik9s-l2J7JAhVHUhQKHYOtAC8QFgg5MAQ&url=http%3A%2F%2Fwww.asa.co.nz%2Fwp-content%2Fuploads%2F2015%2F06%2F8.-Self-regulation-in-the-EU-advertising-sector-The-Madelin-Report.pdf&usg=AFQjCNG_no2HnkZ1nx8uTsZHDHJwh7io-w&bvm=bv.108194040,d.d24&cad=rja

  - Involvement of interested parties in Code drafting
  - Involvement of independent persons in the complaints adjudication process
- Coverage
- Funding.

The European Advertising Standards Alliance's (EASA) summons self-regulatory organisations and since 2001 also industry organisations supportive of self-regulation on advertising. There are currently 38 SROs forming members of the EASA, with 27 of these originating from 25 European countries and 11 members from non-European countries. Its other members comprise of 16 industry members that can be divided under Advertisers, Agencies, Media and others[89]. As the single authoritative voice on advertising self-regulation issues, the EASA promotes high ethical standards in commercial communications through self-regulation, taking into account national differences of culture, legal and commercial practice. These standards are promoted for example via EASA's Advertising Self-Regulatory Charter and EASA's Best Practice Recommendations.

7.3.2 The Responsible Marketing Pact

In the field of alcohol advertising, the Responsible Marketing Pact (RMP) created common standards supported by major beer, wine and spirits producers throughout the European Union in 2012. The Responsible Marketing Pact takes the form of a commitment by the World Federation of Advertisers (WFA) and the companies to the European Alcohol and Health Forum (EAHF). The EAHF is the flagship programme of the European Strategy to support Member States in reducing alcohol-related harm. Chaired by the European Commission, it brings together alcohol beverage producers, civil society and consumer representatives, the medical profession, the advertising and retail sectors and others to promote voluntary actions to help reduce alcohol-related harm in Europe.

The main objective of RMP is to provide means to prevent minors from inadvertently seeing alcohol beverage marketing communications on social media. In practice, this should include common standards for effective age-controls, Facebook sponsored stories, user-generated content, sharing/forwarding functionality, etc. Furthermore, the initiative sets a common adult demographic standard for alcohol beverage marketing communications across all media, thereby limiting undue exposure of minors to advertisements promoting beverages. In this regard, ads should be placed only in media where at least 70% of the audience is reasonably expected to be above legal purchase age. Finally, RMP should prohibit any alcohol beverage marketing communications that might be particularly attractive to minors by ensuring that the content of ads appeals primarily to adults.

7.3.3 Media Smart

Media Smart[90] was created in the UK in November 2002 as a not-for-profit UK company that aims at helping young people (7-16 years old) think critically about advertising. It provides free educational materials for schools and youth clubs, teachers, parents and guardians. These materials use real examples of advertising and cover four core pillars: 1) Production (production processes, economics and functions of advertising in the media); 2) Language (the use of images, sounds, language, branding and product image, rhetoric and persuasion); 3) Representation (realism and fantasy, stereotyping, values, images of different social groups) and; 4) Audience (targeting of audiences, appeals and responses).

These country-specific initiatives were expanded to other European countries and nowadays it operates in Belgium, Finland, Germany, Hungary, Netherlands, Portugal,

[89] Iceland and Norway are not part of EASA

[90] http://mediasmart.uk.com/

Sweden and France.[91] These initiatives are funded by leading companies in the areas, amongst others, of Internet (Google, Facebook), food (McDonalds, Ferrero, Kellog, Nestlé, Danone), toys (Lego, Mattel) and television (Sky, Canal+)[92,] and are also supported by the UK and other Member States governments.[93]

7.3.4 CEO Coalition to make better Internet for kids

Another self-regulatory measure has been initiated by the EC through the "CEO Coalition to make a better Internet for kids". The CEO Coalition was introduced as a voluntary intervention designed to respond to emerging challenges arising from the diverging ways young people use the Internet under the European Strategy for a Better Internet for Children. Signatory companies include Apple, BSkyB, BT, Dailymotion, Deutsche Telekom, Facebook, France Telecom - Orange, Google, Hyves, KPN, Liberty Global, LG Electronics, Mediaset, Microsoft, Netlog, Nintendo, Nokia, Opera Software, Research In Motion, RTL Group, Samsung, Skyrock, Stardoll, Sulake, Telefonica, TeliaSonera, Telecom Italia, Telenor Group, Tuenti, Vivendi and Vodafone. The coalition was founded in 2011 and the signatory companies committed to take action in 5 key areas[94]:

- Simple and robust reporting tools for users, to enable effective reporting about content and contacts that seem harmful to kids.
- Age-appropriate privacy settings. These settings determine how widely available a user's information is; for example whether user's information is available only to close contacts rather than to the general public
- Wide use of content classification. To develop a generally valid approach to age-rating, which could be used across sectors and provide parents with understandable age categories
- Wider availability and use of parental controls. User-friendly tools actively promoted to achieve the widest possible take-up
- Effective take-down of child sexual abuse material, improving to improve cooperation with law enforcement and hotlines.

A working group in each area was established and after one year they produced a summary report with actions, results and recommendations for best practices or implementations. Moreover, companies committed individually to implement the recommendations of the Coalition in these areas and in January 2014 reported on the actions undertaken.[95]

Furthermore, the Coalition has elaborated two initiatives[96]. First, for content classification there are experiments ongoing on User-Generated Content (UGC), with rating agencies and companies. For example, You Rate It, developed by NICAM (Netherlands Institute for Classifying Audio-visual Media) and BBFC (The British Board of Film Classification), which is a simple rating tool to inform parents and children, on the content of user generated video[97]. A pilot is currently ongoing in Italy[98]. Second, the Task Force on Interoperability and Machine readability produced a data-model to be further explored in the Miracle

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[91] https://www.mediasmart.de/verein/ueber-uns/media-smart-europe.html, http://mediasmart.uk.com/about/supporters, https://www.mediasmart.de/verein/ueber-uns/media-smart-deutschland/die-mitglieder.html, http://www.mediasmart.com.pt/media_smart.1.html#seccao_patrocinios_e_apoios, http://www.pubmalin.fr/les_partenaires.php

[92] http://mediasmart.uk.com/about/supporters

[93] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - A European approach to media literacy in the digital environment /* COM/2007/0833 final */ http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52007DC0833

[94] http://europa.eu/rapid/press-release_IP-11-1485_en.htm?locale=en

[95] https://ec.europa.eu/digital-agenda/node/61973

[96] http://ec.europa.eu/digital-agenda/en/news/ceo-coalition-2014-progress-reports-actions-make-internet-better-place-kids

[97] http://www.yourateit.eu/

[98] See 16mm http://www.16mm.it

project[99] as well as setting up a community group site on W3C with the aim to propose a technology-neutral data model for electronic content labels[100].

7.3.5 Safer Social Networking Principles for the EU

Other measures include the Safer Social Networking Principles for the EU, which is a self-regulatory agreement signed by the major social networking sites in Europe in order to adhere to measures that ensure greater protection for children. Results of this agreement include guiding principles[101] for safer social networking, which have until now been signed by 21 companies. As a result of a discussion held in a High Level Group, there is now a European Framework setting out a series of measures committing its signatories to implement on their services, among others, access control for adult content; awareness raising campaigns for parents and children; classification and commercial content according to national standards of decency and appropriateness; and the fight against illegal content on mobiles. Based on this European Framework, national codes have been signed that lay down mobile operator codes of conduct on safer mobile use by children[102], with special emphasis on access control mechanisms, raising awareness and education, and classification of commercial content.

7.3.6 The EU Pledge: Nutrition criteria

Reviews conducted by the World Health Organisation (WHO, 2007; WHO, 2009), for the European Parliament (Guittard & Sjölin, 2008; Barnabè et al., 2008) and for national agencies have concluded that, despite the substantial gaps in evidence, advertising and promotional marketing of foods and beverages has a sufficiently negative effect on children's diets to merit action. Consumer groups, parents, teachers' professional associations and public health advocacy organizations have called for greater control on the marketing of foods and beverages to children, while food and beverage companies have embraced self-regulatory measures (Galbraith-Emami & Lobstein, 2013). Within this context, the leading food and beverage companies at EU level have made individual corporate commitments to change the advertisement directed at children on a voluntary basis using as a framework a common EU pledge[103].

The pledge constitutes a response from leading industries to the calls from EU institutions to take advantage of commercial communications in order to support healthy nutrition and diet for children. The EU Platform is owned by the World Federation of Advertisers (WFA) and reflects the European Commission's key objectives outlined in the EU Strategy on nutrition, overweight and obesity related to health issues (European Commission, 2010) on improving the consumer environment and promoting codes of conduct for responsible advertising and marketing.

A key commitment made by the member companies is the pledge not to advertise food and beverage products to children under twelve, or only to do so if the products advertised meet specific nutrition criteria. Any food or beverage company that is willing to subscribe to the EU pledge commitments can join the initiative.

Since the launch of the pledge as a commitment to the European Union Platform for Action on Diet, Physical Activity and Health in 2007, significant progress[104] was reported since it entered into force in 2009. Most notable progress had been achieved in terms of the definition of "advertising to children" so as to broaden the scope to include

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[99] MIRACLE is a pilot project co-funded by the European Commission. It aims at developing a data scheme for age classification information, providing an infrastructure for interoperable and machine-readable age labels online.

[100] https://www.w3.org/community/agelabels/

[101] https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/sn_principles.pdf

[102] European Framework for Safer Mobile Use by Younger Teenagers and Children Mobiles http://www.gsma.com/gsmaeurope/safer-mobile-use/national-measures/

[103] http://www.eu-pledge.eu/

[104] EU Pledge Nutrition White Paper November 2012.

programmes with 35% children under 12 or more in the audience, lowered from the original threshold of 50%. Also the scope of the commitment was extended to cover company-owned websites such as third-party online advertising, while membership has been expanded to 19 companies representing approximately 80% of advertising expenditure in the European Union.

In light of the provision of company-specific nutrition criteria and inherent problems related to transparency and consistency, the EU pledge envisaged a project to develop common criteria applicable to all companies using nutrition criteria, whereas those companies that did not target their advertisements to children under 12 would continue to refrain from doing so. The common nutrition criteria developed under the framework of the EU pledge have been established based on international guidance and following key principles, such as a solid scientific basis, comprehensiveness, ability to make a change, appropriateness in an EU-wide context, suitability for validation and a clear, communicable rationale. The common nutrition criteria have been applicable since the end of 2014, but companies will be allowed to use different nutrition criteria other than the common criteria, provided that they are more stringent than the common ones.

The eleven founding members of the EU Pledge are Burger King, Coca-Cola, Danone, Ferrero, General Mills, Kellogg, Kraft Foods, Mars, Nestlé, PepsiCo and Unilever. In 2010, they were joined by Estrella-Maarud, Intersnack, Lorenz Snack-World, Procter & Gamble, Unichips – San Carlo and Zweifel Pomy-Chip, followed by Chips Group in 2011, are all leading corporate members of the European Snacks Association. As a result of acquisition by other EU pledge members, Wrigley (acquired by Mars Inc. 2009) and Cadbury (acquired by Kraft Foods 2010) joined the initiative, followed by McDonalds in 2011 and Royal FrieslandCampina to summon 20 companies representing 80% of EU food and beverage advertising spending.

The key commitments made under the EU Pledge[105] are that:

- No advertising of products to children under 12 years, except for products, which fulfil specific nutrition criteria based on accepted scientific evidence and/or applicable national and international dietary guidelines.
- In the online sphere, the above commitment applies to marketing communications for food and beverage products on company-owned websites in addition to third-party Internet advertising.
- No communication related to products in primary schools, except where specifically requested by, or agreed with, the school administration for educational purposes.

As was the case with the original commitments set up under the EU pledge, the enhanced framework for voluntary commitments is subject to third party monitoring, such as Accenture Media Management[106], BDRC Continental[107], or the European Advertising Standards Alliance (EASA). The members of the EU Pledge have made their individual corporate commitments within the framework of the programme:

Table 33 EU Pledge

Company	Commitment overview
Burger King	One hundred percent (100%) of National Television, Print and Internet Advertising primarily directed to children under 12 years old will be for Kids' Meals that meet the Burger King Nutrition Criteria. For the purpose of this initiative, "advertising to children under 12 years" means advertising to media audiences with a minimum of 30% of children under 12 years. No particular reference to product placement or advergames.

[105] The EU Pledge launched enhanced framework voluntary commitments, applying as of 1 January 2012 to existing and new members.

[106] Accenture is a global management consulting, technology services and outsourcing company. Accenture Media Management helps companies measure and optimise investments in marketing, media, retail and digital.

[107] BDRC Continental is UK's largest independent full service market research agency.

Company	Commitment overview
Coca-Cola Europe	Product placement: Coca-Cola Europe will not feature beverages within editorial content on any medium primarily directed to children under 12. Interactive games: Coca-Cola Europe does not conduct promotional efforts on interactive games that are directed primarily to children under 12.
Danone	Danone will refrain from advertising on third-party brand websites aimed at children under the age of 12 of products that do meet the requirements of nutritional profile and portion size. No particular reference to product placement and advergames.
Ferrero	Ferrero refrains from directing advertising to children when they are most likely exposed to commercial communications without parental supervision. It will extend the commitment concerning third-party Internet advertising also to its company-owned websites. No particular reference to product placement and advergames.
General Mills	No specific commitment.
Kellogg´s	Product Placement: Kellogg´s will not pay for or seek out promotional product placement i.e., embedding their products within program or editorial content, as distinguished from general "Kellogg Company" sponsorship, for any product in any medium (such as video games, TV shows, books, movies) specifically designed to appeal to, or directed primarily to, children under 12, regardless of whether the product meets the Kellogg Global Nutrient Criteria (KGNC). This limitation helps to ensure that there is no confusion for children as to where program content ends and advertising begins. No specific reference to advergames.
Mars	Mars will not direct marketing communications for food, chocolate, confections and gum products primarily to children under 12, both in terms of ad content and media purchasing. Mars will not conduct research related to whether particular communication techniques appeal to or target children under 12. Online games: Are intended to appeal to consumers 12 and older. Product Placement: Mars will not undertake product placement in films or media programming where children under 12 are the primary intended audience.
McDonalds Europe	The food and beverage menu items advertised by McDonald's to children under the age of 12, on TV, print and Internet will fulfil specific nutrition criteria based on accepted scientific evidence No specific reference to product placement and advergames.
Mondelēz	Mondelēz (Kraft Foods) does not advertise at all in media primarily directed to children under 6. Kraft Foods does not advertise on web-sites where more than 35% of the total visitors are under 6 years old. In addition, on websites where more than 35% of the total visitors are children under 12, Kraft Foods will advertise only those products that meet its "better for you" nutrition criteria. No specific reference to product placement and advergames.
Nestlé	Communication to children must not create difficulty in distinguishing between programme content and advertising content. No advertising or marketing activity to be directed to children below 6 years of age; Advertising for children from 6 to 12 is restricted to products with a nutritional profile. No specific reference to product placement and advergames.
PepsiCo	PepsiCo commits that one hundred percent (100%) of advertising directed to children under 12 will be for products that meet specific criteria laid down by the company on the basis of advice taken from a wide group of internal and external nutritionists and other advisors. No specific reference to product placement and advergames.
Quick Group	No advertising of products to children under 12 years, meaning advertising to media audiences with a minimum of 35% of children under 12 years, except for products which fulfil specific nutrition criteria in TV, radio, print and Internet

Company	Commitment overview
	advertising. The Quick Group applies the criteria defined in the EU Pledge Nutrition White Paper published from November 2012 on. No specific reference to product placement or advergames.
Royal FrieslandCampina	Royal FrieslandCampina will only advertise and promote healthy foods to the specific target group of children under the age of 12. No specific reference to product placement or advergames.
Unilever	No marketing communications will be directed to children younger than six (6) years of age. All marketing communications directed at children between 6 and 12 years of age will meet Unilever's Nutrition Criteria. Marketing communications should not exploit the inexperience or credulity of children or young people. Sales promotions should be presented in such a way that children and parents are made aware before making a purchase of any conditions likely to affect their decision to purchase. No specific reference to product placement or advergames.

Source: Authors elaboration based on EU Pledge Commitments

In order to facilitate compliance with the EU pledge commitments, the member companies have developed detailed implementation guidance for all relevant staff in their marketing, media planning and corporate affairs departments in all EU markets.

The European Advertising Standards Alliance (EASA) was entrusted by the World Federation of Advertisers (WFA) and the Secretariat of the EU Pledge with the review of the food and beverage brand websites of the member companies of the EU pledge in 2013[108]. The EASA is the single authoritative voice on issues related to advertising self-regulation and engages in the promotion of high ethical standards in commercial communications through effective self-regulation, while taking into account country-specific differences related to cultural, legal and commercial practices.

Compliance with the pledge commitments was assessed on certain criteria, e.g. whether the website features marketing communications at all, and if this was the case, whether such marketing communications are promoting food or beverage products as opposed to a brand in general, the promoted food or beverage products meet or do not meet nutrition criteria, and ultimately, whether the marketing communications are targeted primarily at children under 12 years.

In this context, seven European self-regulatory organisations (SROs) were selected by the EASA and the EU Pledge Secretariat to engage in a monitoring exercise and to assess a total of 30 company-owned brand websites in each country on the basis of their appeal to children under age of 12. Selection of the SROs was made on the basis of size, geographical coverage and maturity of the respective organisations and covered the self-regulatory organisations from the Czech Republic (CRPR), France (ARPP), Germany (DW), Poland (RR), Spain (Autocontrol), Sweden (Ro), and UK (ASA).

The review undertaken by each SRO could include both national brand websites as well as promotional websites set up by the respective companies, but excluded the main corporate websites, given that they are by default used for public information purposes rather than service and entertainment, especially to children. The SROs were requested to review the selected marketer-owned websites on their compliance with EU Pledge criteria by means of a dedicated questionnaire and methodology.

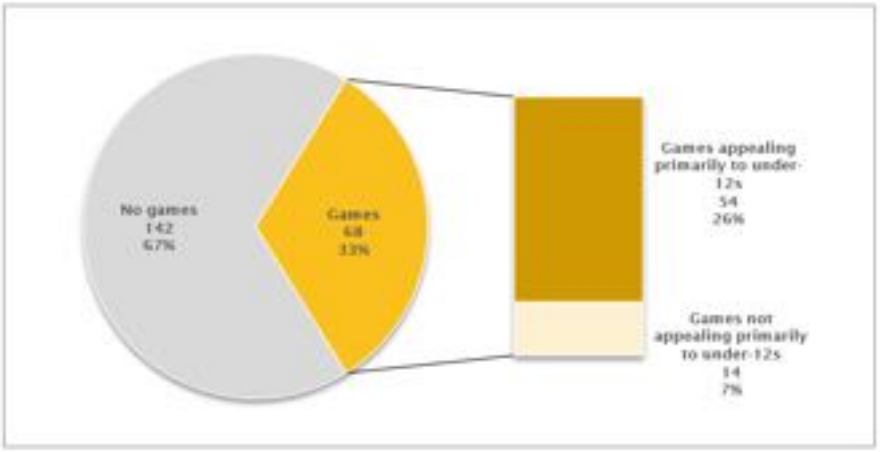
A total of 210 national brand-websites were monitored and reviewed by the respective SROs, of which 41 were considered as appealing to children younger than 12, accounting for a total of 20% of the websites analysed. In order to determine the appeal to children, the websites were assessed on the basis of a.o., deployment of games, toys and animations, as well as the ease of language and navigation. The most appealing element

[108] http://www.easa-alliance.org/binarydata.aspx?type=doc&sessionId=tadpcha2plgrjnyktibvqy55/EU_Pledge_2013_EASA_Monitoring_Report.pdf

to children deployed on these websites was games (on 38 websites) and animations (on 37 websites), followed by licensed characters and toys (on 9 websites) that clearly intend to make the marketing communications on the website appealing primarily to children below the age of 12.

It was found that the possibility to engage with online games was provided in 68 of the 210 websites, whereas the SROs considered that in 54 of these instances, the games were designed to appeal primarily to children below 12 years and 47 of these websites used games to promote respective food or beverages.

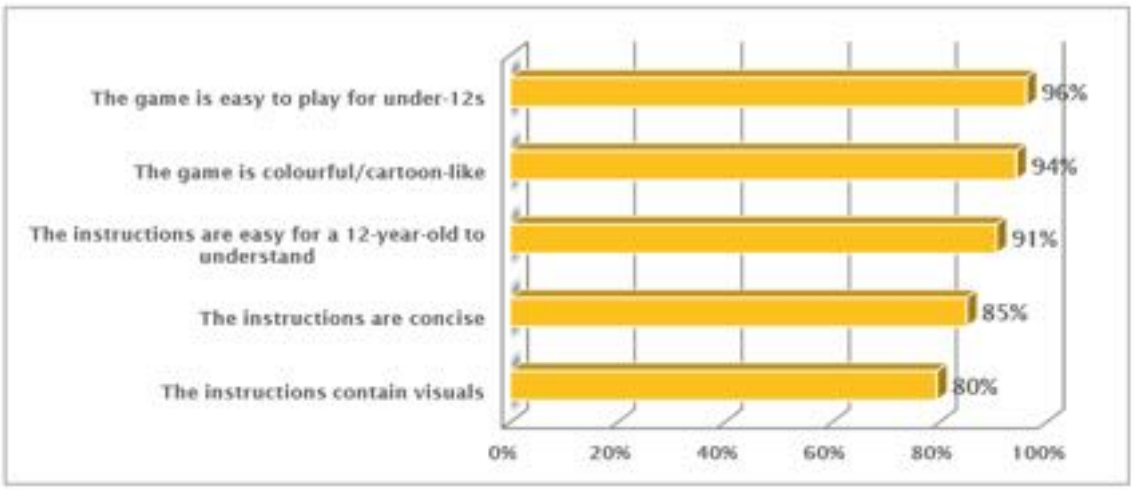
Figure 42 Number of websites featuring games (N=210)



Source: EASA (2012)

Games were judged to be appealing primarily to children under 12 years if the game deployed a combination of several criteria as shown in the figure below. 96% of the games were regarded as being easy for children to play, and 94% made use of colourful and cartoon-like illustrations and animations appealing to children. Instructions to play the game were regarded as easily comprehensible as they were concise (85%) and contained visuals (80%).

Figure 43 Indicators for games considered primarily appealing to children under 12 years (N=54)



Source: EASA (2012)

11 out of 41 websites appealing to children were found not to comply with the EU Pledge criteria, given their promotion of products did not meet the nutritional criteria of the companies specifically targeted to children. In addition, a number of websites were identified to be in breach with national advertising codes or relevant advertising laws. This instance resulted in the flagging of a total of 23 problematic websites by the SROs. Only about 14 of the 210 websites under review deployed an age screening as a mechanism to verify the age of the user and prevent children younger than a certain age to have access to potentially inappropriate content and/or advertising.

The review of the websites revealed that marketing targeting children had to a significant extent migrated to online environments as proven by the sheer amount of online advertisements directed at children. Children as potential customers have become more and more exposed to marketing strategies of companies via all sorts of online platforms, ranging from traditional e-commerce websites to more popular social networking sites (SNS).

7.4 Member States' regulatory approaches

Although a consensual and conclusive conceptual distinction between co- and self-regulation remains contested (Lievens et al., 2006), there are nonetheless some features that can be used to distinguish co-regulation from either state regulation (command-and control) or self-regulation. These include the degree of involvement and participation of the different stakeholders, the roles these stakeholders play, and the method of enforcing regulatory measures (Latzer et al., 2006). The main characteristic of co-regulation is the combination of binding legislative and regulatory measures with actions taken by the stakeholders, drawing on their practical expertise. The result is wider ownership of the policies in question by involving those most affected in the preparation, implementation and enforcement of rules. This often achieves better compliance, even where detailed rules are non-binding (European Commission, 2001). Therefore, in the following table, the degree of state involvement is analysed to distinguish co-regulation from self-regulation and traditional state regulation ("command-and-control"), and to identify different measures in these systems.

Table 34 Comparison of different regulatory regimes and instruments

	Command and Control	Co-regulation	Self-regulation
Involvement of the state	High (e.g. Law)	"Partnership" (e.g. as catalyst, facilitator, endorser, broker, provider of framework rules and regulatory support, direct participant)	None (e.g. voluntary agreement, codes of conduct)
Measures	Public authorities to establish, apply and enforce rules Detection and sanctioning of violations by public bodies/regulators	Monitoring/Sanction by SRO/Public Authority Broad consultation in code drafting	SRO's and tools: Guidance Documents Code of conduct Inspections/Monitoring Funding through SRO members Sanctioning by SRO

Source: Adapted from Lievens et al. (2006)

In traditional command-and-control regulation, the level of state involvement in the establishment, application and enforcement of legal provisions is high. Public authorities play the most prominent role in this system through the use of public agents to detect and sanction violators of respective laws. Legislative provisions are usually very detailed and leave limited scope for self-regulatory measures.

In co-regulatory systems, a mixed approach is undertaken, with self-regulatory tools in place that are established with broad consultation of stakeholders, while monitoring and sanctioning can be undertaken by both SRO's and public authorities, and the government acts as direct participant

By contrast, in self-regulatory systems, voluntary commitments and agreements established by the self-regulatory organisation in charge are the most important means of ensuring the adherence to agreed standards and practices in the area of advertising. Self-regulatory measures include guidance instruments directed at businesses, children or parents, codes of conduct that apply in general or are product/sector specific, inspections, monitoring exercises and sanctioning conducted by the SRO's in different media, as well as obliging businesses to fins their own systems of funding that do not rely on advertising.

According to Grimes (2008), it is unlikely that self-regulatory measures alone can provide adequate protection for children's special needs and online vulnerabilities. Within the advertising industry, self-regulatory codes are often ambiguous and restrict only the most extreme forms of manipulation. The effectiveness of self-regulation is further weakened by lack of compliance, weak (or non-existent) enforcement mechanisms, and undemocratic consumer complaint processes. While industry codes may provide an appealing framework for addressing emerging media forms, their utility is also severely limited by industry-bias and lack of accountability. In order to be more effective, industry self-regulation must therefore operate in conjunction with an independent review process, as well as a democratic system for handling consumer complaints. One way to ensure this is through the institutionalization of regular monitoring and enforcement strategies involving the direct participation of government or other democratically elected agencies.

Co-regulatory approaches provide the necessary system of checks and balances that industry alone cannot supply, while ensuring that guidelines are actually upheld and enforced. Also Lievens et al. (2006) argue that, given the frequently cited concerns regarding self-regulation, including the lack of credibility, transparency, and accountability of self-regulatory forums, as well as problems with the effectiveness and enforceability of sanctions, co-regulation is regarded as an alternative to more rigorous

regulatory provisions, which could ameliorate a number of these concerns providing certain guarantees are established and a greater degree of government involvement is ensured. In other words, co-regulation has the advantage that the public authorities can intervene if self-regulatory aims are not achieved or are not properly performed. According to Bakos (2011), this aspect makes this form of alternative regulations beneficial, mainly in field of children's protection because "state intervention is particularly justified in order to protect minors" (Gellén, 2010). The issue of children's protection is connected with fundamental rights, so public guarantees must be retained, but the detailed rules may be worked out by the industry itself (Bakos, 2011).

Table 35 Advantages and Disadvantages of different regulatory regimes

	Command and Control	Co-regulation	Self-regulation
Advantages	• Subjects of control do not remove themselves from the scope of regulation • Democratic and transparent control • Constitutional guarantees • Appropriate tools for imposing sanctions	• Combines advantages of state regulation and flexibility • Increase of acceptance of rules • Regulation expenses are paid by the industry and not by taxpayers	• Flexible rules are agreed by subjects of commitments • Increase of willingness to respect rules
Disadvantages	• Demanding • Not suitable in all policy areas • Not flexible • Difficult to modify	• Complex • Requires careful legislation	• Not working if lack of bodies • Adopted generally • Processes are not always transparent • Actors having greater market power may abuse their position • Subjects can remove themselves from norms • Lack of guarantees

Source: Fuente-Cobo & Ruiz-San Román (2011)

Across the EU Member States, national legislation in each country provides a set of rules that businesses must obey in the area of advertising, but also self-regulatory principles exist that govern advertising practice according to the local culture, economy, and society. These principles are often influenced by, or directly based on, the codes of the International Chamber of Commerce (ICC), while the ICC codes are also applicable to areas that are not covered by national laws or principles (EASA, 2014). Although they were once considered as purely self-regulatory, governments have become more and more interested in codes of conduct, which can also work as a co-regulatory tool. Codes of conduct have often been initiated by industry as a measure to counteract "*a lurking threat of government intervention*" (Lievens, Dumortier & Ryan, 2006), but government involvement has nonetheless increased to give rise to bottom up co-regulatory approaches in which the government has the competence to approve these industry-initiated codes of conduct.

The ICC code rests on the principle that advertising should be legal, decent, honest and truthful as well as have due respect for the principles of social responsibility (ICC Code Article 1 – Basic Principles). In addition, there exist sector-specific codes, such as those established by Breweries Associations for commercial communications of alcoholic beverages or those of leading food companies related to HFSS products.

In many instances, self-regulation provides an alternative to formal legislation, but this does not hold true for all legislative provisions: whereas statutory provisions lay down broad principles (e.g. as provided by the provisions of the UCPD in terms of a prohibition of unfair commercial practices including misleading advertising), self-regulatory codes have proven effective in dealing with issues related to individual advertisements and enabling a fast response in the event that advertising does not comply with relevant codes of conduct or principles. Self-regulation is therefore regarded as an essential complement to legislation, but does not function as a substitute, as framework legislation

should be invoked when dealing with fraudulent or illegal practices or when codes are repeatedly disobeyed (EASA, 2014). Also the European Commission (2007) acknowledges that self-regulation is not an alternative to regulation. On the contrary, it works best within a clear legal framework that allows non-legislative approaches but also backs them up. The self-regulatory advertising principles prevalent in the different Member States function as a complement to the provisions of national legislation transposing the EU Directives.

The concept of self-regulation is deeply enshrined in this framework legislation provided by the EU. Beyond obligatory rules, Member States and concerned sectors such as audiovisual media service providers or advertisers can adopt more detailed and stricter rules through co- or self-regulation, for example in the field of protection of underage consumers. Taking into consideration children's media consumption habits, their vulnerability and needs for safety, the Directive encourages this possibility in order to ensure higher level of protection that, as a public interest objective, could be achieved more easily with support of the service providers themselves. In the more specific area of audiovisual commercial communications in children's programmes for sweet, fatty or salty foods and drinks, the AVMSD holds under Article (9) 2 that Member States must encourage audiovisual media service providers to develop codes of conduct regarding inappropriate audiovisual commercial communications in children's programmes. The self-regulatory codes applicable in the Member States in turn, based on the ICC codes of conduct and applied by the industry itself apply to all forms of advertising. By implication, they should equally apply to newly emerging forms of advertising and advertising techniques (see Table 36).

It is therefore worthwhile to look at the co-or self-regulatory initiatives and measures that are established in the different EU Member States as a means to complement European and national legislative provisions on advertisements. In some countries, advertising regulation is handled primarily by the state authorities with no SRO's established (Denmark, Latvia, Malta), while other states can be classified as having adopted co-regulatory systems in the area of advertising, in which the industry and state collaborate more extensively in regulating advertisements and monitoring is conducted by state authorities. Greater discretion to regulate itself is granted to industry in countries that have opted primarily self-regulatory measures, but as Ginosar (2013) notes, it is assumed that there is no "pure" model of self-regulation or state regulation, rather a continuum of different regulatory regimes that are characterized by varying degrees of state and industry involvement. Similarly, as Lievens et al. (2006) point out, what constitutes self-regulation in one country can potentially qualify as co-regulation in another, such as for example in terms of level of involvement of stakeholders in code drafting, enforcement of codes or sanctioning.

Table 36 outlines the country-specific features of the EU28 Member States, including Iceland, Norway and Liechtenstein as provided by EASA Bluebook 6th Edition (2010) on the basis of which we classify measures adopted in countries along different regulatory regimes. As outlined in the table, in six countries (Denmark, Estonia, Latvia, Malta, Island and Liechtenstein) media law enforcement is enacted exclusively by public authorities. No self-regulatory organisations are established in these States that have been set up by the industry in order to monitor the implementation and adherence to self-regulatory codes in the area of advertisement. In the vast majority of the countries (24), self-regulatory organisations have been established, whereas the degree of state and stakeholder involvement in the code drafting process differs (EASA, 2010).

According to the information provided by the SRO's in the EASA Bluebook 6th Edition (2010), three countries could be identified as having national legislation on communications applicable to all media, including electronic or online environments (the Media Law of 1981 in Austria; the Treaty of the Federal States concerning the protection of minors in electronic media of 2002 in Germany; the Eletronic Communications Act of 2004 in Slovenia) with the result that these can potentially go further than prescribed through EU legialtion and nationally adopted provisions thereof. Another five countries were found to have specific categories of advertising prohibited by specific law, e.g. hidden advertisements (Protection of Children Act of 2000 in Bulgaria; Law of 1 August

1986 in France; Covert or Subliminal Advertising Act 48 of 2008 on fundamental rules and prohibitions of commercial communications in Hungary; Modifying law 148/2000 regarding advertising in Romania; Media Act of 2010 in Slovenia). Eleven countries were found to provide specific guidance documents for ethical advertising and business practices available, which may be addressed to businesses, parents, or children (e.g. Children and Online Advertising[109] issued by the Labour Chamber in Austria; GUIDANCE on the UK Regulations (May 2008) implementing the Unfair Commercial Practices Directive[110] in the UK).

The countries that have an established self-regulatory organisation have a number of self-regulatory tools at their disposal, including general codes for advertising practices, or codes for advertising practices directed specifically at children. The advertising codes implemented and monitored by the SRO's differ in the extent to which they are based on the ICC code. Further, there exist differences to the extent to which the SRO's monitor the application of codes by the advertising industry, but also in terms of funding and sanctioning mechanisms at their disposal. In a few cases, sanctioning can take place in close collaboration with public authorities. Almost all SRO's have complaint mechanisms at their disposal, which allows the handling of both consumer and competitor complaints to advertising practices. The vast majority of SRO's provide information and publications on advertising matters, as well as awareness raising activities and education for its members. As a self-regulatory system must be able to demonstrate that it can judge cases brought before it efficiently, professionally and above all impartially, they must be subject neither to the influence of the advertising industry, or any particular industry or company. Independent and impartial adjudication is ensured by independent jury members, which is the case in most SRO's identified (EASA, 2010).

[109] http://media.arbeiterkammer.at/PDF/Kinder_und_Onlinewerbung.pdf

[110] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284442/oft1008.pdf

Table 36 Main instruments in Member States

Instruments	AT	BE	BG	CY	CZ	DK	EE	FI	FR	DE	EL	HU	IE	IT	LT	LV	LU	MT	NL	PL	PT	RO	SK	SL	ES	SE	UK	IS	LI	NO
Public authority in charge of media law enforcement						✔	✔									✔		✔										✔	✔	
National Legislation on communications applicable to all media (including online)	✔									✔														✔						
National Legislation on hidden advertising			✔						✔			✔										✔		✔						
Guidance Docs	✔			✔	✔	✔		✔	✔	✔	✔			✔													✔			✔
SRO	✔	✔	✔	✔	✔		✖ [8]	✔	✔	✔	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔ [24]
SR Tools	✔	✔	✔	✔	✔			✔	✔	✔	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			
Code for advertising practice	✔	✔	✔	✔	✔ ✔	✔ [11]	✔ [7]	✔ [11]	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔ [11]	✔	✔ [25]		
Code for advertising to children	✔ [1]	✔ [1]	✔ [1]	✔ [1]	✔ [1]			✔ [1]	✔ [1]	✔ [14]	✔	✔ [1]	✔ [19]	✔ [1]	✔ [1]		✔ [1]		✔ [1]	✔ [1]	✔ [1]	✔ [1]	✔ [1]	✔ [23]	✔	✔ [1]	✔			
Inspections/Monitoring	✔ [2]	✔	✔	n/a	✔ [5]			✔ [12]	✔ [13]	✔	✔ [15]	✔	✔	✔ [13]	✔		✔		✔ [12]	✔	✔ [21]		✔ [22]		✔	✔ [13]	✔			
Complaints Handling	✔	✔ [3]	✔	✔	✔	✔ [6]		✔	✔	✔	✔	✔	✔	✔	✔	✔ [6]	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			✔ [25]
Education/Awareness	✔	✔		n/a	✔			✔	✔	✔	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			
Information	✔	✔	✔		✔			✔	✔	✔	✔	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			
Sanction by SRO	✔	✔	✔	✔	✔			✔	✔	✔	✔ [16]	✔	✔	✔	✔	✔ [9]	✔ [20]		✔	✔	✔	✔ [16]	✔	✔ [16]	✔	✔ [16]	✔ [16]			
Funding through SRO members	✔	✔ [4]	✔	✔	✔			✖ [26]	✔	✔	✔ [17]	✔	✔	✔	✔		✔		✔ [17]	✔ [4]	✔	✔	✔	✔	✔	✔ [17]	✔ [17]			✔ [4]
Broad consultation in code drafting	✔	✔	✔	✔		✔ [10]	✔ [10]	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔	✔	✔	✔			✔ [10]	✔			
Independent element in Jury	✔	✔	✔	✔	✔	✔ [7]	✔ [7]	✔	✔		✔ [18]	✔	✔	✔	✔		✔		✔	✔	✔	✔	✔	✔	✔	✔	✔			

[1] based on ICC Code [2] only in case of evidence of public concern [3] only for consumers [4] Indirect [5] In daily newspaper only [6] Self-regulatory system focusing only on alcohol advertising [7] Self-regulatory system focussing on alcohol content [8] In progress [9] Related to beer [10] Feature in progress [11] ICC Code [12] Upon request [13] In all media [14] Implicitly based on ICC Code [15] TV, Radio and Print [16] Public authorities involvement [17] Through levy system [18] Only in the Appeals Jury [19] Applies to all media [20] Only by consumers [21] TV [22] Print media [23] Partially based on the ICC Code [24] Only for the media [25] Ethic complaints in all media formats [25]Ethics Code of the Society of Iceland Advertising Agencies and ICC Code [26] Funded mostly by the Central Chamber of Commerce of Finland and partly by advertisers, agencies and media

7.4.1 Balancing regulation and self-regulation in the area of advertising

In a number of countries, advertising is subject to such detailed legislation that the scope for self-regulation is severely restricted. In these countries, independent national regulatory authorities are entrusted to ensure consumer protection and enforce relevant standards and law and often no official self-regulatory organisation has been established in the area of advertising.

According to the European Advertising Standards Alliance (2010), in countries where advertising content is subject to extensive legislation, there is likely to be less scope for self-regulation to function effectively in comparison to countries where legislation is limited to a framework of broad principles. EU countries where no self-regulatory organisations exist in the area of advertising and only national state authorities enforce prevalent regulation include Denmark, Latvia and Malta, together with the EEA Member States Iceland, Norway and Liechtenstein.

Characteristic of the system is the extensive control and monitoring of compliance with legal obligations through independent state authorities without self-regulatory organisations that have been established by the advertising industry. However, some of the countries nevertheless apply self-regulatory features such as the ICC Code (Denmark and Iceland) directly, or other codes that commit industries in these countries on a voluntary basis (e.g. Beer Industry in Estonia, Food Marketing in Denmark) despite the absence of an official SRO that is entrusted with the monitoring of compliance with these codes, which entails that no official monitoring takes place on these commitments.

In Norway, Iceland and Liechtenstein, national regulatory authorities are entrusted to enforce and monitor compliance with relevant statutory provisions on consumer protection related to marketing. In the specific case of Norway, the Norwegian Media Authority is an independent source of information and advice in the domain of media politics and regulations, contributing to the enforcement of the government's main goals in media politics. The Media Authority promotes freedom of expression across a comprehensive range of media. One of its main duties is to deal with licensing, monitoring and complaints concerning advertising and sponsorship rules, as well as European rulings on violence and pornography. Concerning self-regulation, there are no provisions regarding ethical standards of the media. However, the Media Authority publishes the ethical guidelines on its website and provides a forum for viewers to send in their commentaries, complaints, questions, etc. Furthermore, the Nordic consumer ombudsmen (2012) have agreed on coordinating efforts against hidden advertising in social media. The Ombudsmen in the Nordic countries have, in different ways, been working on the issue of hidden advertising in their respective countries. In Norway, the Norwegian Consumer Ombudsman's Guidelines for Labelling (2014) were issued in order to provide social media users with information on how advertisements in social media must be labelled so as not to conflict with the Marketing Control Act, along with information on what type of publications must be labelled. The guidelines apply to persons who receive payment or other benefits from a business in return for mentioning or spreading information about products or services on social media, with the purpose of increasing the business's sales.

The following outlines more examples of countries in which no official self-regulatory organisations exist and interventions are mainly implemented and enforced through independent national regulatory bodies.

Denmark

In Denmark, Advertising regulation is largely statutory, with a strict Marketing Practices Law enforced by a Consumer Ombudsman (EASA, 2014). The Marketing Practices Act is the single most important piece of legislation for Danish businesses and traders in the context of their marketing activities. The Danish national legal framework transposing the AVMSD further specifies that more detailed rules concerning the inclusion of

advertisements in programme services, including rules for the identification, scheduling, content and extent of radio and television advertisements and on-demand audiovisual media services may be laid down by the Ministry of Culture. These rules may affect in-app and online game purchases, and require proper identification ensuring informed choices by adult buyers. A complementary order[111] also includes rules reinforcing protection of children and young people, including the prohibition of marketing directed to them that promotes consumption of alcohol and other intoxicants. Amongst others, the order[112] mandates that "*an advertisement shall be framed in such a way that it will be clearly understood to be an advertisement irrespective of its form and irrespective of the medium in which it is couched*." In this case, advergames would not be allowed to contain marketing messages that are not clearly understood to be an advertisement, and there are no limitations regarding the media channelling of such messages.

The Consumer Ombudsman monitors compliance with the Act and the executive orders issued pursuant to this Act, especially in the interests of consumers. This is a priority rule, not a jurisdiction rule, which means the authority of the Consumer Ombudsman is not limited to issues regarding consumers. The Consumer Ombudsman may carry out inspections for the purpose of processing complaints forwarded from enforcement authorities in other EU countries pursuant to Regulation (EC) No 2006/2004 on consumer protection cooperation, and which concern infringements of directives for which the Consumer Ombudsman has been appointed the competent authority. The Consumer Ombudsman has to seek to influence traders to act in accordance with the principles of good marketing practice through negotiation.

In addition, the Consumer Ombudsman can issue guidelines for marketing in specified areas considered essential, especially in the interests of the consumers. The Consumer Ombudsman also has the authority to, on request, give a statement regarding the lawfulness of contemplated marketing arrangements, unless such an opinion would be subject to unusual doubt or other special circumstances exist.

Despite the absence of a formally established SRO in the area of advertising, the Danish Forum for Responsible Food Marketing Communication issued a code of conduct[113] aimed at children under the age of 13 intended to limit the marketing of unhealthy food. The organizations and media represented in the forum have formulated and agreed on the code concerning food commercials directed towards children on a basis of an informal cooperation. Since the Forum of Responsible Food Marketing Communication was established and the Code was signed in 2008, the number of advertisements for food products with a high content of sugar, fats and salt has fallen markedly. Through on-going evaluation of whether the Code is being observed, the involved players have been made aware of violations and have reacted by removing the advertisements (Forum of Responsible Food Marketing Communication, 2014).

[111] Order No. 1084 of 14 September 2007

[112] Section 4

[113] http://kodeksforfoedevarereklamer.di.dk/SiteCollectionDocuments/Code%20with%20guide%20english%20october%202014%20-%20endelig1.pdf

Guidance Document for businesses in Denmark

On the basis of increasing concerns of child overweight the Denmark, the Danish Food and Drink Federation in The Confederation of Danish Industries, The Danish Chamber of Commerce, The Federation of Retail Grocers in Denmark, TV2 | DANMARK, Danish Brewers´ Association, Danish Newspaper Publishers' Association, Association of Danish Advertisers, the Association of Danish internet medias, Danish Association of Advertising and Relationship Agencies, Danish Magazine Publishers' Association, have established an informal cooperation called Forum of responsible food marketing communication. The organizations and media represented in the forum have formulated and agreed on a code concerning food commercials directed towards children. The Code of Responsible Food Marketing Communication to Children is an addition to the existing Danish legislation. The Forum provides guidance on the correct application of this code.

Source:
http://kodeksforfoedevarereklamer.di.dk/SiteCollectionDocuments/Foreningssites/kodeksforfoedevarereklamer.di.dk/Downloadboks/Kodeks%20eng%20sep%202008%20samlet.pdf

Malta

Malta does not have a self-regulatory system for advertising yet, but proposals for introducing co- or self-regulatory structures for linear and non-linear media are under consideration by the competent authority (Broadcasting Authority Malta, 2015)[114]. Whereas advertising in broadcast media is controlled by relevant broadcasting legislation in Malta, there exist no restrictive provisions for other media. The Broadcasting Act [115]nevertheless provides that the Media Authority should encourage media service providers to develop codes of conduct regarding audiovisual commercial communications for HFSS foods targeted at children. The government has communicated plans to set up joint committees between the Broadcasting Authority, media service providers, government departments and NGOs in order to better regulate the area. There also exists subsidiary legislation[116] governing the requirements and methods of advertisement applicable to alcoholic drink advertising, sponsorship and teleshopping, with the objective of protection young people from advertisement of alcoholic drinks.

Latvia

As provided under Latvian legislation, the National Electronic Media Council functions as an independent, autonomous institution supervising mass media in the country to ensure compliance with relevant legislation and provisions, and representing the interests of the public (EASA, 2010). Under the Latvian Electronic Mass Media Law, the Council is entrusted to monitor compliance with the provisions of the Media Act through the examination of complaints, by controlling the registration of programmes, and by performing random examinations of the content and quality of distributed programmes. The financing necessary to fulfil the functions of the National Electronic Mass Media Council, including provision of the public service remit, is from the State budget. The Public Advisory Council is an advisory institution established by the National Mass Media Council, and supports the latter by issuing recommendations. Despite the absence of an

[114] http://www.ba-malta.org/the-authority visited in September 28.09.2015

[115] http://www.ba-malta.org/primary-sub. Pdf: "AVMSD Implementation - Legal Gap Analysis" – Implementation of avms directive In broadcasting legislation

[116] http://www.ba-malta.org/primary-sub. Pdf: "AVMSD Implementation - Legal Gap Analysis" – Implementation of avms directive In broadcasting legislation

official self-regulatory organisation in the area of advertising, national provisions foresee that electronic media providers shall draw up codes of conduct on audiovisual commercial communications for HFSS foods aimed at children, and the regulator has started monitoring actions in 2011. The Ministry of Health and the Latvian Food Enterprises Federation have further developed a consensus document in relation to advertising to children. A Memorandum of Cooperation with the Federation of Food Companies (LFFC)[117] and the soft drink businesses association was signed with the Ministry of Health in order to introduce changes to children oriented soft drink advertising. The country has therefore initiated steps towards the development of a co-regulatory system.

The Latvian Advertising Association, composed of advertisers, media and advertising agencies, adopted a code of ethics in 2001, which sets out advertising rules for advertising professionals (EASA, 2010). The code is, however, only binding on the Members of the Latvian Advertising Association, with the severest sanctioning mechanism being a non-binding recommendation to the advertising entity not to publish the advertisement in question. It therefore depends largely on the voluntary commitment of its members.

7.4.2 Co-regulatory initiatives in the area of advertising

There exist large differences across the co-regulatory initiatives prevalent in the EU Member States. In some countries, the state authorities can function as direct participants providing regulatory support and enforcement mechanisms in the area of advertising. In others, the government acts as a catalyst for self-regulatory measures by providing supportive provisions in relevant statutory instruments or engaging in consultations with the relevant stakeholders prior to code drafting or issuing relevant statutory provisions. The following sections give some examples of co-regulatory initiatives that have been identified. Specific focus is set on the cooperation between public authorities and self-regulatory organisations in the enforcement of statutory provisions and protective measures arising from self-regulatory codes and standards.

Bulgaria

In Bulgaria, the Council for Electronic Media is an independent body that regulates media services in the light of the relevant legislation (EASA, 2010). The Radio and Television Act foresees that the National Council for Electronic Media, the media service providers and the State Agency for Child Protection enter into a yearly agreement regarding the protection of children from content which is adverse to, or poses a risk of impairing, the physical, mental, morale and/or social development of young people. This agreement is published on the Internet sites of the Council for Electronic Media and of the State Agency for Child Protection. The Media Act further supports another form of co-regulation between the Council for Electronic Media and two self-regulatory bodies, the National Council for Journalistic Ethics and the National Council for Self-regulation: it is enshrined in relevant legislation in Bulgaria that the media has to adhere to the Ethical Code of Bulgarian Media established by the National Council for Journalistic Ethics and to the National Ethics Code for advertising and commercial communications from the National Council for Self-regulation.

The National Council for Self-regulation (NCSR) is the self-regulatory organisation in the area of advertising in Bulgaria and forms part of the European Advertising Standards Alliance (EASA). It was founded by the Bulgarian Association of Advertisers (BAA), the Association of the Advertising Agencies – Bulgaria (ARA) and the Association of the Bulgarian Radio and TV operators (ABBRO). The members of the NCSR, who join the organisation on a voluntary basis, comprise the entire spectrum of the advertising industry – advertisers, agencies, media, marketing specialists, as well as other legal

[117] http://www.lpuf.lv/en/about-lffc-0

entities and individuals active in the field of advertising (EASA, 2010). In principle, the codes developed by the NCSR are applicable to any form of advertising and marketing communication, which includes any activities that directly or indirectly promote any kinds of goods and services; promote trademarks and names, regardless of the communication channels, including online in-game advertising. The Code of Ethics developed by the NCSR is closely monitored by the National Network for Children, who advise parents and all interested parties to report to the NCSR and competent authorities when identifying commercial messages and programs that they believe are unsuitable for children and endanger children's health. The NCSR regularly consults statutory authorities such as the Ministry of Culture, the Council for Electronic Media, the Competition Committee, the Consumer Protection Committee and Municipalities on relevant matters of concern. Sanctioning mechanisms of the NCSR include publication of decisions, adverse publicity in the media and asking media to delete advertisements.

France

In France, the institution in charge of regulating content in audiovisual media services is the Conseil supérieur de l'audiovisuel (CSA). While exercising the supervisory powers in respect of advertising, the CSA takes account of recommendations issued by the self-regulatory bodies in the field of advertising. Its 14 December 2010 decision established supportive provisions regarding self-regulation in the area of minors and on-demand services.

Advertising in France is subject to extensive, detailed legislation, but the main self-regulatory body, the Autorité de Regulation Professionnelle de la Publicité (ARPP), performs an important function in the area of advertising. ARPP monitors published advertising in all media (which can result in formal intervention); handles complaints from both consumers and competitors; makes adjudications and provides copy advice; handles appeals and reviews from advertisers, agency or media, and imposes sanctions in case of non-compliance of the decisions. Some monitoring exercises are conducted in cooperation with public authorities and the results are published and disseminated widely among industry, regulators and stakeholders.

The ARPP has created many different codes and recommendations, one of which is the code for advertising digital communication. This aims to create an electronic environment in which consumers can feel safe and make use of all the possibilities offered by this environment. In response to the changing needs of society, the ARPP has created new services and initiatives through three different platforms: the Forum Pub et Cité organises a major public debate between the advertising industry and representatives of civil society on a topical subject on an annual basis; the Advertising Standards Council (Conseil de l'Ethique Publicitaire) is charged with identifying and considering major ethical questions around advertising; in parallel, the Joint Advertising Council (Conseil paritaire de la Publicité) was launched to discuss advertising ethics and to evaluate different aspects concerning advertising and self-regulation.

The main sanction of the ARPP is the 'name and shame principle', i.e. publication of adjudication, with the name of the advertiser, the agency that created the advertisement and the media that carried it. In case of non-compliance with a ruling, and after giving notice to the advertiser, the ARPP can ask the media concerned to withdraw the advertisement. The ARPP can expel a member that fails to comply with its decisions and can be involved in court cases against those it has found guilty of advertising misdemeanours. In cases of fraudulent behaviour, it may further issue an ad alert to warn consumers. Other co-regulatory measures include agreements, such as the Nutrition Charter[118], which has been established with support from public bodies, such as the Health and Sport Ministries, the Ministry of Culture and Communication, as well as

[118] http://www6.versailles-grignon.inra.fr/aliss/Media ... ers/WP-ALISS/2013-03

with support from the CSA by broadcasters, the advertising industry, TV producers and the Authors Union.

Ireland

In Ireland the regulatory authority engages in broad consultations with stakeholders in order to make informed decisions that take account of the views of parties affected by its decisions, which is typical for co-regulation. Consultations of this type were launched in Ireland in 2011 on child health to determine whether the promotion of food and beverages high in fat, salt and sugar (HFSS) should be restricted. As part of the consultation an Expert Working Group was convened to report and provide recommendations on this issue, while taking into account stakeholders´ views on the type of regulation applicable to the promotion of HFSS food and drinks to children. Following the consultation, the Broadcasting Authority of Ireland published a revised version of its General and Children´s Commercial Communications Code that have to be observed by advertising industries. Similarly, the rules governing advertising in Ireland are set out in the Code of Standards for Advertising, Promotional and Direct Marketing, drawn up by the Board of the Advertising Standards Authority for Ireland, following detailed consultation with all relevant interests, including consumer representatives and government departments.

The Netherlands

The Netherlands Institute for the Classification of Audio-visual Media (NICAM) Kijkwijzer scheme supports parents and educators through their age recommendations for films and programmes in terms of content. The government closely monitors compliance with the self-regulatory measures established through the Kijkwijzer scheme. This supervisory role is delegated to the Media Authority, which regularly investigates and evaluates the functioning of the system of self-regulation. NICAM itself also performs regular quality assessments of compliance with the rules. In addition, it regularly tests consumer perception and use of Kijkwijzer.

United Kingdom

The self-regulatory system in the UK is one of the most effective, well-resourced and high profile systems in Europe (EASA, 2010). Under a statutory scheme, Ofcom, the communications regulator, was given powers to regulate on-demand programme services, ensure that they comply with the minimum standards under law, and to designate one or more bodies to act as co-regulator(s). The independent co-regulator for editorial content of UK video on demand services that fall within the statutory definition of On-Demand-Programme Services is the Association for Television on Demand (ATVOD). The Advertising Standards Authority (ASA) is the co-regulator for advertising.

The success of the self-regulatory system led the government's communications regulator to delegate operational responsibility for regulating broadcast advertising to the national self-regulatory organisation in the area of advertising, the Advertising Standards Authority (ASA), thereby creating a one-stop-shop for all advertising complaints within a self-and co-regulatory framework.

The ASA was set up to administer a code for non-broadcast advertising formulated by the Committee of Advertising Practice (CAP) as well as Code for Broadcast Advertising (BCAP). The main activities of the ASA are to provide copy advice service to advertisers, agencies and media owners; to pre-clear broadcast advertisements; to monitor the compliance of advertising with the code; to handle complaints from competitors, consumers and other interested parties; to handle appeals and reviews against the ASA Council's rulings, and to impose sanctions from a variety at its disposal in the event of an advertiser refusing to comply with its ruling. Next to funding the non-broadcast system through collection of levies, the Advertising Standards Board of Finance (Asbof) sets the

framework for non-broadcast industry policy and is at the same time responsible for the Committee of Advertising Practice (CAP).

Together with the BCAP, the UK Code of Non-Broadcast Advertising, Sales Promotion and Direct Marketing in turn (CAP Code), covers non-broadcast advertisements, internet advertisements, sales promotions, direct marketing, TV and Radio advertisements, as well as supplementary rules. The rules set out general principles as well as sector and audience specific rules. All advertisers must ensure that their advertisements are in line with the spirit as well as the letter of the Codes and avoid misleading, harmful or offensive content. A full public consultation on the advertising codes was launched in 2009, in which all stakeholders were invited to participate in the revision of the codes. The ASA has a variety of sanctioning mechanisms at its disposal if an advertiser fails to comply with a ruling. The media may be asked to withdraw an advertisement; the CAP may issue an Ad alert, initiate adverse publicity or revoke recognition, or withdraw financial privileges. Non-broadcast advertisers whose advertisements are found repeatedly in breach of the codes and contain misleading claims may be referred to the Office of Fair Trading (OFT), who may impose statutory sanctions.

OFT view of online and app-based games industry's obligations

The OFT has published a set of principles that clarify its view of online and app-based games industry's obligations under consumer protection law. In light of industry-wide practices that were potentially misleading, commercially aggressive or otherwise unfair, concerns about these practices were articulated in eight principles:

1. "Information about the costs associated with a game should be provided clearly, accurately and prominently up-front, before the consumer begins to play, download or sign up to it or agrees to make a purchase.
2. All material information about a game should be provided clearly, accurately and prominently up-front, before the consumer begins to play, download or sign up to it or agrees to make a purchase. 'Material information' includes information about the main characteristics of the game and any other information necessary for the average consumer to take an informed decision to play, download or sign up to the game or to make a purchase.
3. Information about the game business should be provided clearly, accurately and prominently up-front, before the consumer begins to play, download or sign up to the game or agrees to make a purchase. It should be clear to the consumer whom he/she ought to contact in case of queries, complaints or to seek redress. The trader should be capable of being contacted rapidly and communicated with in a direct and effective manner. When placed under an obligation to pay, the consumer should be able to retain that information in a durable medium.
4. The commercial intent of an in-game promotion of paid-for content, or promotion of any other product or service, should be clear and distinguishable from gameplay. The younger he/she is, the more difficult it is likely to be for a consumer to identify the commercial intent of a commercial practice in certain contexts, and the language, design and structure of the game should take that into account.
5. A game should not mislead consumers by giving the false impression that payments are required or are an integral part of the way the game is played if that is not the case.
6. Games should not include practices that are aggressive, or which otherwise have the potential to exploit a child's inherent inexperience, vulnerability or credulity or to place undue influence or pressure on a child to make a purchase. The younger a child is, the greater the likely impact those practices will have, and the language, presentation, design and structure of the game should take account of that.
7. A game should not include direct exhortations to children to make a purchase or persuade others to make purchases for them.
8. Payments should not be taken from the payment account holder unless authorised. A payment made in a game is not authorised unless express, informed consent for that payment has been given by the payment account holder. The scope of the agreement and the amount to be debited should be made clear. Consent should not be assumed, for example through the use of opt-out provisions, and the payment account holder should positively indicate his/her express, informed consent. Traders must ensure that, at the point of each purchase, the consumer explicitly acknowledges his/her obligation to pay".

Sources: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288360/oft1519.pdf

7.4.3 Self-regulatory initiatives in the area of advertising

In countries relying on self-regulatory initiatives in the area of advertising, the advertising industry, which includes advertisers, agencies and media, writes and commits itself to specific rules and standards of practice. Responsibility for monitoring and ensuring compliance rests with self-regulatory organisations (SROs), which are specifically established for that purpose. Advertising self-regulatory standards complement legal frameworks on consumer protection, and can react flexibly to potential problems through the provision of copy advice on a proposed advertisement on a non-binding basis. However, as it largely depends on voluntary cooperation of responsible advertising practitioners, the self-regulatory system is often criticized for falling short of mechanisms to constrain activities of parties deliberately using unethical and misleading practices. In almost all EU Member States there exists some form of self-regulation, where it can respond to national, cultural, commercial and legal traditions on a national level, while the large dependence on the voluntary commitment by industry players is a disadvantage if monitoring by regulatory bodies is absent. The following elaborates on a few self-regulatory initiatives identified in more detail, while specifying the characteristics inherent to these regimes in terms of implementation and enforcement of protective measures in the area of advertising.

Czech Republic

Advertising self-regulation in the Czech Republic was established in 1994, with all aspects of non-broadcast advertising falling within the scope of self-regulation, together with the ethical aspects of broadcast advertising. As opposed to that, broadcast advertising, including misleading advertising, are subject to statutory controls (EASA, 2010). The Code of Advertising Practice[119] (Kodex reklamy) issued by the Czech Advertising Standards Council[120] (Rada pro reklamu, RPR) seeks to provide ethic principles and rules of professional behaviour to all non-broadcast advertising in the country and is designed to address all entities active in the field of advertising in the Czech Republic. At the same time, the Code aims to inform the general public about advertising standards that are accepted by entities on a voluntarily basis and which are engaged in or benefit from advertising. The Advertising code hosts a special section on advertising of alcoholic beverages, and sets out that advertising of alcoholic beverages must not be aimed at children, while commercial communications must not use graphics, symbols, music or cartoon characters that have a strong or evident appeal to children. Further, the Code encompasses a special section on advertising directed at children and youth, with the note that in the application of the Code of ethics, the PRP may also apply the principles and guidelines of the Code of Ethics of the international chamber of commerce (ICC).

In terms of sanctioning, the decisions of the Arbitration Board, which is constituted by representatives of the RPR member organisations, Members of Parliament of the Czech Republic, advertisers, advertising agencies and legal experts, are published quarterly on the RPR website and monthly to the advertising trade press. Under article 4 of the Advertising code it is established that enforcement shall take place exclusively through the Arbitration Board, while the RPR members pledge to observe the Code and undertake neither to produce nor accept any advertising that would be in violation of the Code.

However, while RPR members must comply with the adjudication of the Arbitration Committee, non-members do not (EASA, 2010). In the event of non-compliance with its rulings, the RPR may ask the media to refuse an advertisement or request assistance from an agency's professional body, but this form of sanction is applied in very rare cases. (EASA, 2010). The membership of the RPR consists of 26 entities: ten professional associations, nine major Czech advertisers, and seven media companies. The Czech Republic has other self-regulatory bodies such as The Czech Directive Marketing and Mail

[119] http://www.rpr.cz/download/rpren/The_Code_of_Advertising_Practice_2013.doc

[120] http://www.rpr.cz/cz/en.php

Order Trade Association, which is the interest group of the direct marketing and mail-order industry.

Lithuania

The current self-regulatory organisation in the area of advertising was set up in Lithuania in 2005, the year after the country's accession to the EU (EASA, 2010). The Lithuanian Advertising Bureau[121] (Lietuvos Reklamos Biuras, LRB) acts as a self-regulatory and independent organization that is entrusted with the application of the National Code of Advertising Practice, which is based on the Code of Advertising Practice of the ICC. Its aim is to develop fair and legitimate advertising practices in Lithuania in accordance with the Code. The Code of Advertising Standards (Lietuvos Reklamos etikos kodeskas) was adopted in 2002 by the Lithuanian Advertising Association and updated in 2005 prior to the launch of the new SRO. It includes general rules on comparative advertising, misleading advertising, protection of privacy, the use of persons in advertising and the use of the word "free" in advertising, to name a few. There is further a specific code in place for alcohol advertisement, which contains many strict limitations for beer promotion and commercial communications for alcoholic beverages.

The nine-member arbitration Committee investigates complaints submitted to the SRO and issues adjudications. It comprises members of the advertising industry (advertisers, agencies and media), as well as non-industry members representing the National Institute of Journalism, National Consumer Rights Protection Body, the Competition Council, the Equal Opportunities Ombudsman and the Children's Rights Protection Office (EASA, 2010). The decisions adopted by the Arbitration Committee are mandatory for the members of the LBR. Any legal or natural person, as well as Governmental or administrative institutions, may submit such applications to the Arbitration Committee. LBR advertiser members are important companies such as Kraft Foods Lietuva, Nestle Baltics, Danske Bankas, TEO LT, Ukio Bankas, Omnitel, Coca-Cola HBC Lietuva, Lietuvos Rytas. Advertising agencies are represented by the Lithuanian Association of Communication Agencies (KOMAA). There are important developments underway in the self-regulatory system in Lithuania, with important co-regulatory elements to be incorporated into the system. According to Article 39 of the Media Law (transposing the AVMSD), electronic media providers are required to draw up codes of conduct on audiovisual commercial communications for HFSS foods aimed at children. The Ministry of Culture, as well as the Radio and Television Commission of Lithuania are currently working in cooperation with Lithuanian Radio and TV associations on drafting such a code.

7.5 Summary of key results

In this chapter policy interventions that aim to alleviate children's vulnerability to sophisticated marketing techniques both at EU and Member States level were classified and mapped in response to Research Question 7. The findings of this chapter further support Research Question 8, in which refers to the identification of the most effective intervention tools and evidence-based policies.

As has been elaborated upon, a key issue of online marketing is that it involves a wide range of newly emerging marketing practices and techniques that make the application of existing legislation to such commercial practices particularly challenging. In this regard, the marketing and advertising practices conducted by businesses in the EU are mainly regulated horizontally by a broad framework of European directives such as the AVMSD, UCPD or ECD. These Directives encompass either general or specific provisions

[121] http://www.reklamosbiuras.lt/lt.php

on protection of minors in digital or online environments and aim to harmonize rules on the protection rules of minors in all EU/EEA countries. With the transposition of relevant Directives, the provisions of which strive to harmonize rules are enforced at the national level, it is clearly the case that Member States transpose the relevant Directives in diverse ways and that enforcement is fragmented across countries.

The European Commission committed itself to support the Consumer Protection Cooperation Network in the EU Member States in the implementation of the relevant legislation in the digital environment that would focus on administrative cooperation, consumer protection and the development of a legal market.

The concept of co-and self-regulation is deeply enshrined in the framework legislation provided by the EU, and specifically reffered to in Article 4 (7) of the AVMSD. At EU level, a number of self or co-regulatory initiatives have been established to complement legislation and present an alternative to the imposition of detailed rules to limit industry practices in order to protect children. We have outlined a number of these voluntary interventions designed to respond to emerging challenges arising from online environments. These initiatives have been established by various actors, such as the advertising industry, social networking platforms or associations, but have the common aim of alleviating risks for children arising from commercial contents.

Beyond obligatory rules, Member States and concerned sectors such as audio-visual media service providers and advertisers have adopted more detailed and stricter rules in the field of protection of underage consumers. Taking into consideration children's media consumption habits, their vulnerability and needs for safety, the AVMS Directive explicitly encourage this possibility in order to ensure higher level of protection that, as a public interest objective, could be achieved more easily with support of the service providers themselves.

However, in some countries advertising is subject to very detailed legislation, leaving the scope for self-regulatory initiatives rather limited. In other countries, instead of stricter or more detailed legislation, the advertising industry has committed itself to voluntary codes and standards in order to ensure ethical advertising and the protection of minors from unsuitable commercial contents. The Codes established by the International Chamber of Commerce (ICC) are at the basis of many codes applied by relevant industries in many Member States. These codes should be applicable and applied to newly emerging forms of advertising and advertising techniques, including embedded advertising.

The broad portfolio of legally binding and non-binding measures and initiatives, and the engagement of various stakeholders, including industry, consumers and governments, are crucial in protecting children in online environments. In this chapter a classification of initiatives at Member State level along the level of government involvement and measures adopted in regulatory systems has been presented. In some countries, advertising regulation is handled primarily by the state authorities with no Self-Regulatory Organisations (SRO's) established, while in other countries, co-regulatory initiatives are identified in the area of advertising, in which the industry and state collaborate more extensively in regulating advertisements and monitoring is conducted by state authorities. Monitoring and enforcement of codes that actors commit themselves to on a voluntary basis is undertaken exclusively by the respective SRO in self-regulatory systems.

As has been shown, the co-and self-regulatory initiatives in the Member States are strikingly diverse, which raises question about the adequacy and harmonisation of the protection of children across all EU/EEA countries.

8 Conclusions

In this concluding chapter the findings of this study are synthetically connected back to the research questions set out at the beginning of the study.

8.1 Problematic practices in online games

Children are exposed to a number of problematic practices in online games, mobile applications and social media sites. Findings from previous studies suggested that children are often not aware of being exposed to marketing practices and believed they were not affected by them. However, this and previous studies shows that these marketing practices can have subliminal effects on children. The following research questions guides this section:

> *"What are the most common, effective and questionable marketing techniques employed by the industry to impact consumer behaviour of children in different* age groups in online games, mobile applications and on social media sites?"
>
> (research question 1)
>
> *"How to identify unfair commercial practises in online games, social media and mobile applications directed at children, and substantiate why they are unfair?"*
>
> (research question 9)

Evidence from previous studies suggest that companies are making use of sophisticated and highly engaging marketing techniques, including neuro-marketing, placing much online marketing outside the scope of existing regulatory frameworks as well as creating situations in which children are unprotected. In this study, marketing techniques used in online games were analysed and grouped under four main dimensions: advertisement features, game features, user engagement and protective measures.

8.1.1 How problematic practices in online games can be identified

This study investigated a number of different types of advertisement (embedded or contextual), their attributes (picture of the product, logo or product symbol and link for product information) and the type of embeddedness (sponsorship, pre-game, inter-game, post-game, product placement or advergame).

The game features addressed game attributes, including genres and the existence of purchase requirements and/or inducements to extend game playing as well as personalization options. This dimension also covered the play themes such as activities that contributed to learning and provided educational value to users; activities that motivated users to learn and read more about the brand or its products/services, or activities that helped users pit their knowledge, skill, beauty, or other types of competition against others. Lastly, this dimension also considered the revenue model - paid downloads, in-app advertising, in-app purchases, freemium, promotion of non-digital goods and resale of data collected via app use.

User engagement identified the social media components, including the community (register or create an account or member sign-in) and viral elements (messages passed on via social networks, sending an e-mail greeting to a friend and inviting a friend to play or join the web site).

Lastly, the protective measure dimension identified the presence or absence of the following elements: Prompts (for repeat visits, for prolonged visits, for buying virtual goods, for buying goods, protective measures and Ad breaks / Ad alerts, including their format, presence and content); Legal information (Privacy policy and Terms of usage); age limitation (age limit suggested and present and age limit enforced, must enter birthdate); parental control (parental permission required statement, parental section, and parental warning); content rating and labelling schemes and mechanisms to contact the firm (forms, email, report a problem and phone numbers).

This framework helped the investigators to screen the marketing techniques employed by the industry to impact consumer behaviour of children and to identify unfair commercial practises in online games, social media and mobile applications directed at children.

8.1.2 Marketing practices employed by the industry

The results of the study show that all advergames as well as almost half of the social media and mobile application games analysed included some kind of embedded or contextual advertisement. These advertisements included pre-game and post-game advertisements, product placement in the forms of pictures and logos of the products and embedded links to more information about the advertised products

The inclusion of advertisements, and how it was done, was clearly related to the business models of the social media and mobile applications, where either the user had to pay or he or she would be exposed to some kind of advertisement or marketing practice that generated revenue. In this regard, in-app purchases could be considered as the main revenue model in the mobile ecosystem but, as has also been identified, practices related to product placement and in-game contextual advertising seemed to be another important source of revenue for developers. Moveover the study found that even when the users were paying they were often exposed to contextual advertisement.

Another practice common in all games were inducement to extend game playing. These inducements were mainly messages challenging users to continue playing. In addition, most of the games included some social media components. This practice was most common in advergames where the social media were used to spread the brand across the network achieving a viral effect.

8.1.3 Protective measures present in online games

The results of the in-depth analysis of games revealed that none of the games analysed used ad breaks/ad alerts that included an introductory explanation about the ad break itself or literacy components to differentiate between the content and the advertisement. However, most of the games, including advergames, provided links to a privacy policy and terms of usage. The content of both measures included age limit suggestions, but age limit enforcement was limited to the specific conditions of each platform (Apple I-Tunes, Google Play and Facebook). These links also provided the contact information of the developers, often an email address.

It is worth noting that these three platforms were active in the field of filtering and helping parents/guardians to cope with their children and new technologies[122]. Both Apple iTunes and Google Play have developed a range of filters and parental control tools within their devices or software to prevent children's access to certain types of content and put restrictions on the in-app purchase process. However, these would only work if

[122] Google Safety Center https://www.google.com/safetycenter/families/start/, Facebook Family Safety Centre https://www.facebook.com/safety and Apple https://support.apple.com/en-us/HT204396 http://support.apple.com/en-us/ht6088

parents/guardians were aware of them and activate them. In this regard, there was a lack of parental control features in many games. In a few cases a parental section or parental permission requirement was found, even though both platforms provided a content rating system and allowed users to report problems with the apps. No kinds of labelling schemes were identified in the games analysed. Games offered by Apple iTunes, Google Play and Facebook contained more protective measures than advergames since these platforms had put in place several protective measures specially addressing the concerns of parents.

8.2 Impact of marketing on children and their behaviour

Previous studies suggest that marketing impact children's behaviour, especially in terms of food intake. In order to gain more insights on this, the following research questions were asked:

"To what degree, and in which ways, do these sophisticated marketing techniques influence the consumer behaviour of children with different socio-demographic characteristics and in different age groups?"

(research question 2)

To what degree are children with different socio-demographic characteristics and in different age groups able to recognise and understand the implications of different marketing /market research content embedded in online games, social media sites and mobile applications directed at them?"

(research question 3)

"How to best test (through behavioural experiments) what behaviour and skills are assumed to be those of an average child in a certain age-group in relation to problematic online marketing practices? Are there certain characteristics which make some children more susceptible to problematic marketing practices in specific gaming situations?"

(research question 4)

8.2.1 The consumer behaviour of an average child

For the discussion of average behaviour, the number of empirical studies currently available was not sufficient to perform a quantitative meta-analysis that would be required to answer this specific question. Furthermore, due to the limited external validity it was not possible to extrapolate any generalisations about average behaviour and skills from our experiments and focus groups. As regards specific sources of vulnerability and susceptibility, the evidence from the literature is inconclusive. For instance, regarding socio-demographic characteristics (gender, age) a conclusive effect was not found following the experiments and only three experimental studies were found which, in addition, reported contrasting evidence (see section 6.3). This made it impossible to draw any firm conclusions about the effect of socio-economic status on the basis of experimental evidence. With regard to the age thresholds for the activation of persuasion knowledge no clear systematic age effects were found in the experiments; the evidence gathered from other experimental studies reviewed was also found to be inconclusive. It must be stressed that even for TV advertisement different thresholds were found in different studies. On the other hand, An & Stern (2011) suggested that: 7- to 11-year-olds are cued processors in that if prompted by a cue, they activate their persuasion knowledge. Hence, in light of the partial evidence from the experiments it is reasonable to propose as a preliminary finding that: a) children aged below 7 years are 'limited processors', not recognising advertisement in games; b) children aged 7-11 years are 'cued processors', due to their need to be prompted to retrieve persuasion knowledge; c) and children above the age of 12 are 'strategic processors', who possess a

high level of persuasion knowledge as well as the skills necessary to retrieve and use such knowledge.

Furthermore, the in-app purchase experiment provided some additional, but non-systematic evidence on possible sources of susceptibility: a) on average, younger children tended to spend more money on in-app purchases, b) children who said they used tablets at home tended to spend more, probably due to the fact that in these households, parents provided children with devices that enabled them to have increased access to the Internet, and c) gender, using a mobile phone, and being an experienced gamer did not have any significant effects on the amount of money spent.

Thus, by triangulating the evidence from the literature review with the experiments conducted, and the focus groups carried out, it is possible to conclude that: a) online marketing practices have an impact on children's behaviour; and b) children have difficulties in recognising marketing practices, in activating defence mechanisms, and in taking decisions (especially when prompted in to buy features as part of in-app purchase practices), and c) these effects are age-dependent as younger children were found to be particularly vulnerable to online marketing practices.

8.2.2 Impact of marketing on children's behaviour

Both previous experimental studies and the experiments conducted as part of this study clearly document the effects of advergames on actual behaviour in the domain of advertising of energy dense food. The food related advergame induced higher energy dense snacks intake regardless of age (although with a stronger effect on the younger cohort) in the Netherlands. In Spain the effect was statistically significant only for the older cohorts, but results indicated the same for younger cohorts although this was not statistically significant[123]. Furthermore, it is possible to infer that in-app purchase had an effect on children's behaviour from the fact that children included in the control group (not exposed to any protective measures), spent more of the 'reward medium' (i.e. the gold that they could eventually exchange for a reward at the end of the experiment) than their peers who played the game with different types of protective measures. The focus group results further confirmed these findings for in-app purchase in that: a) several children reported having purchased extra features without fully realising that this would cost real money; and b) the majority of children participating in the focus groups said that they found it difficult to make a decision when prompted to do an in-app purchase.

On the issue of children's capacity to recognise online advertising and to activate defense mechanisms, the experimental studies reviewed as part of the literature review confirmed the tenets of both the Persuasion Knowledge Model (PKM) and of the Limited Capacity Model of Attention (LCA). There was clear evidence that in many cases children (especially younger ones) did not show and/or activate persuasion knowledge, meaning that they either they did not distinguish the advertising from content or that they did not activate any cognitive defences. Moreover, several more recent experiments that integrated the PKM approach with the LCA have shown that even when persuasion knowledge exists, the confounding cognitive and affective experience of playing caused the advertising message to be received subconsciously (below the level of awareness).

Our experiment on advergames confirmed this finding as most children exposed to an advergame reported in the post-experimental questionnaire that they had not noticed the commercial intent of the game. This was further corroborated by the different effects that the same kind of protective measure had when used for advergames as compared to in-

[123] This is an inconclusive result that may be due to insufficient statistical power and cannot be used to infer any conclusión about the age effect, in that it documents an effect for older cohorts but does not mean that there is no effect at all for younger ones.

app purchase. A warning message was ineffective in the advergame experiments. As the results of the experiments showed, Dutch and Spanish children between 6 and 8 years actually ate more energy-dense snacks in total after playing the energy-dense advergame with protective measure. However, the measure was found to be fairly effective in the in-app purchase experiment. A possible interpretation is that advertising in games works at a more subliminal level than explicit prompts which seek to convince people to make an in-app purchase during a game. Whereas in both cases children were playing a game that engages cognitive and affective resources and may lead them to a state of flow, the prompt to buy was in itself an interruption of the flow (i.e., in the focus groups some children reported being annoyed by it and responded by switching to another game). On the other hand, the advergame was a seamless experience with no interruption as the warning message appeared on the screen while children were playing without interrupting the game.

In other words, in the in-app purchase situation the prompt to buy was a crossroad forcing the children to stop and make a decision and at that time they were exposed to the warning message (when they were not playing but thinking about what to do), whereas when the warning message appeared in the advergame children could ignore it and keep playing.

As a result, once the flow was interrupted by the prompt to make an in-app purchase, then it was more likely that a warning message or any other protective measure could have an impact on children. When playing an advergame, the tunnelling experience of the flow rendered warning messages invisible and thereby facilitated the impact of the advertising at a subliminal level. In this respect, it seems that the impact of prompts to make in-app purchase can be more easily contained than the impact of advertisements in games. The fact that the negative effects of prompts to make in-app purchases were very tangible in the short term, and could be documented by the invoice that parents receive, was significant; whereas in the case of advergames the consequences were less immediate. Parents' complaints about the amount of money spent by their children led to immediate actions (i.e., the settlement imposed by the FTC on Apple in the US, as well as the deal reached between the Commission and platforms such as Google and Apple), whereas on advergames and on other practices, where the effects are not immediately tangible and visible (alcohol advertisement, exposure to inappropriate contents, and gathering and re-used of personal data) no action has been undertaken.

8.2.3 Children's own perceptions of online marketing

During the discussion in the focus groups, children expressed negative opinions about online advertising and in general considered adverts to be the most annoying thing on the Internet. They thought that advertisements were clearly recognisable and easy to distinguish, but less so in advergames. As a matter of fact, most children only understood what advergames were only after the moderator showed them an example. Most children did not appear to recognise the persuasive intent of advergames, which could be exemplified by the fact that when prompted by the moderator, they just evaluated them in terms of how funny or boring they were. On the other hand, they did not express concerns and did not seem to be worried about advertisements. As concerns their experience of particular games, many reported having seen games promoting unhealthy lifestyles and products, such as Coca-Cola. However, they seemed to be more familiar with the practice of in-app purchases and some had already made purchases in games to get extra features. Nonetheless, they tended to be frustrated when asked to pay and, as a strategy, many said they switched to another free game. The views on in-app purchase were, however, mixed, since some saw them negatively and others considered them to be an opportunity to customise and enjoy the games more. Most children believed that they were not or would not be affected in their choices and behaviours by advertisements in games – only a few recognised the possibility of buying a product as a result of the advertisement in games. In sum, the focus groups showed

that children did not fully recognise the commercial intent of advertisement in games, they needed guidance to handle prompts to do in-app purchases, and that these marketing practices did influence children choices and behaviours. The focus groups confirmed the findings of the literature review and of the experiments with regard to the capacity of children to recognise online marketing practices.

8.3 Parents' risk perceptions and regulatory strategies

Parents play an important role in mediating their children's behaviour online. The following research questions were designed for this study in order to gain more insights on parents' roles and how they regulate children's online activities:

> *"To what degree are parents with different socio-demographic characteristics able to recognise and understand the implications of different marketing /market research content embedded in online games, social media sites and mobile applications directed at online active children?*
>
> (research question 5)
>
> *"To what degree, and in which ways, do parents with different socio-demographic characteristics worry about and attempt to regulate the online commercial activities of their children?"*
>
> (research question 6)

8.3.1 Risk perception

From the survey results, which were often confirmed by findings from the focus groups, it is possible to summarise the findings on parents' risk perception of online hazards as follows:

- Risk perception of online hazards was in general rather high, driven both by the potential harm and likelihood of the children experiencing the hazard / problematic practice.
- Hazards related to violence both in terms of exposure and being subjected to it were considered the most harmful.
- Hazards related to marketing practices were considered slightly less harmful, but considerably more frequent.
- Among the online marketing practice hazards, data tracking, and different form of online ads (about unhealthy lifestyle and food) advertisements were perceived as the highest risk.
- Digital identity theft was considered a high risk.

The most important determinants of parents' risk perception are the following:

- *Past experience*: past experience led to heightened risk perceptions for all hazards and in all countries;
- *Country differences*: different countries tended to rank risks similarly, but their levels were different;
- *Child age*: the age of a child did not greatly affect the level of perceived risk, but it did partially modify the ranking of hazards;
- *Education/Social status*: parents' level of education affected their risk perception of some of the online hazards.

Regarding socio-demographic characteristics, results from the survey showed a significant effect of parents' self-assessed social status on the overall risk perception, with the bottom and top social statuses perceiving higher risks. Parents who saw themselves as part of the lowest social status groups tended to worry more about data

tracking, digital identity theft, unhealthy lifestyle ads and spending too much money on in-app purchases. Parents of higher social status groups showed more concern about targeted advertisements in addition to data tracking and digital identity theft. Concerning education level, parents with a masters or a postgraduate (non-PhD) degree, tended to have a higher risk perception than parents with lower education.

8.3.2 Regulatory strategies

The literature review made it possible to provide a few insights concerning these questions. Firstly, parents don't get involved (unless they are very proactive), because many of the problematic practices that occur on websites does not prompt the children for parental permission/approval. In the cases where this occurred, the literature indicated that parents were not particularly engaged in regulating their children's behaviour. Evidence from previous studies suggests that only one in seven families currently used filtering software in order to block inappropriate contents, and overall the engagement level among parents seemed to be low. Some studies also cast doubt on the effectiveness of parental mediation. It has been found that such mediation is not a significant predictor of children's information disclosure online, which means that children's decisions (for the better or the worse) are not much influenced by parents. The focus groups revealed that in general parents applied some online restrictions on their children, but they did not extensively control them. Some indicated that they did not find it necessary or that the available protective measures were not effective. Moreover, many emphasised that the best option was to trust their children.

The results from the survey with parents show that parents' regulatory strategies can be categorised according to how actively parents engage in discussing online content and the extent of restrictions on their children's use of the Internet. Previous studies (e.g. Duerager & Livingstone, 2012) have found that most parents exert some kind of mediation, and that parents with high socio-economic status tended to use active mediation strategies while parents with lower socio-economic status tended to rely more on restrictive mediation. The results from this study show that parent's regulation strategies also significantly differed between the eight countries studied, and that parents using active mediation tended to have higher risk perceptions compared to parents using more restrictive mediation strategies.

Finally, results from the online survey revealed that stricter regulations for business and more education for children were considered by the parents as the most effective protective measures. On the contrary, training sessions for parents and contact points or help lines were considerered as the least effective protective measures.

8.3.3 Parents' perceptions of what should be done

The results from the survey, partially corroborated by the focus groups show that parents consider stricter regulation of businesses and more education for children about online risks as the most effective protective measures, while training sessions for parents and contact point lines were seen as the least effective. Parents also expressed favourable opinions about awareness campaigns and better parental control software to mediate risks for their children.

The large majority of parents saw themselves as the main responsible actor in protecting their children from online marketing, while it was clear that they also placed responsibility on government regulators and the online industry. However, there were significant cross-country differences. While parents in all countries saw themselves as the main actors responsible for protecting their children, parents in Spain, France and Italy allocated more responsibility to government regulators and the online industry than parents in the other countries. Parents in Germany and Poland attributed somewhat more

responsibility to the online industry than government regulators. Furthermore, the results show that two protective measures for online advertisements were preferred over the others: namely parents' pre-approval and school education for children about online advertising. In terms of country differences it was found that the same two measures were seen as the most effective by parents across all countries. Slight differences, such as parents in Germany seeing parents' pre-approval as the most effective, while Spanish, Swedish and Dutch parents seeing school education about advertisements for their children as the most effective, could nevertheless be identified.

The analysis on in-app purchases show that two protective measures were seen as most effective by parents, namely parents' pre-approval and having a password as a default option. In terms of country differences, the same two measures were seen as the most effective by parents in all countries. Minor differences were detected between countries, such as German parents seeing a cooling off period measure as rather effective.

8.4 Mapping of policy interventions in place in EU Member States

In this section the following research question is addressed:

> *"How to map and classify the policy interventions in place in Member States and at EU level to alleviate children's vulnerability in an operational manner (legislation, guidance documents, self-regulatory tools, inspections, complaints mechanisms, help-lines, education and information provision, work of relevant NGOs, etc.)?"*
>
> *Research Question 7*

This study distinguishes between three high level policy approaches: a) state regulation, b) self-regulation, and c) co-regulation. The literature suggested that self-regulation israther ineffective in ensuring sufficient protection of children engaging in online environments. Furthermore, studies have pointed to much inconsistency in the current self-regulatory frameworks that industries employ to reduce the amount of advertising to which children are exposed. The review of regulatory frameworks at both EU and MS level indicate that there has been a move away from self-regulation to, at least, co-regulation, but in many instances, monitoring and enforcement of relevant provisions is still left to the industry itself.

Through the analysis of the regulatory framework at EU level it was found that several EU directives have been implemented in the Member States that aligns national legislation with EU provisions in terms of identification and separation of audio-visual commercial content from media content, information requirements for providers, price transparency, prohibition of unfair and misleading commercial practices, a prohibition of content causing physical and moral impairment, as well as a prohibition of audio-visual commercial content for alcoholic beverages targeting children. In addition, the transposition of relevant EU directives alignes national consumer protection frameworks – also in the area of online advertisement and marketing directed at children – to a large extent. Member States are further encouraged to adopt stricter measures for the protection of minors under the AVMSD Article 4(1). This encourages self-regulation in certain fields in combination with government intervention (co-regulation), but also calls for extensive parental control to prevent children´s exposure to harmful content. In order for self-regulatory measures to be effective, measures have to be broadly accepted by the main stakeholders concerned, while the Member States authorities ultimately provides for effective enforcement of self-regulatory initiatives through co-regulation.

Differences were found between the co- and self-regulatory systems present in the different EU Member States. In some co-regulatory systems, the state authorities could function as direct participants providing regulatory support and enforcement

mechanisms. In other forms of co-regulation systems the government acted solely as a catalyst for self-regulatory measures. In addition to direct cooperation between regulatory and self-regulatory authorities, initiatives have been launched by governments, media providers and media distributors to guide businesses and parents on media use, and support them in ensuring that children are safe from online marketing. In almost all EU Member States some form of self-regulation exist which could respond to national, cultural, commercial and legal traditions on a national level. The advertising industry, which included advertisers, advertising agencies, media and writers, have committed itself to specific rules and standards of practice, whereas these standards served to complement legal frameworks on consumer protection and enable flexible reaction to potential problems. A major drawback of this system, however, is that it largely depended on voluntary cooperation of advertising practitioners, and is therefore often criticized of falling short of sufficiently restricting unethical and misleading online marketing practices. Thus, in order to effectively protect children from these practices, more control should be exerted by public authorities to establish and enforce provisions on consumer protection that corresponded to challenges emerging in light of new technological developments.

A broad range of policy interventions was identified, ranging from purely voluntary commitments initiated and enforced by the industry to guidance documents provided and enforced by the government in order to ensure protection of children. The co-and self-regulatory initiatives in the Member States were found to be particularly diverse, which casts doubt on the uniform protection of children across all EU/EEA countries.

9 Policy recommendations

9.1 Making marketing and advertisements more transparent to consumers and enhancing protection of children

The study has shown that online marketing to children and young people is widespread. Children are often not aware that they are being exposed to marketing practices, but the evidence has shown that their behaviour is nonetheless influenced. Furthermore, parents are often unaware of the extent to which children are exposed to marketing online.

An in-depth analysis of marketing practices in online games conducted as part of this study found that a large proportion of the most popular games included embedded and/or contextual advertisements. Other marketing techniques, such as inducements to extend game play and prompts to share the game through social media were also found to be common. The games included few protective measures, and those protective measures that were included targeted parents, rather than children.

A key recommendation from this study is that more should be done to protect children against online marketing. Children should not be exposed to online marketing when it is likely that they will not understand the persuasive intent of the marketing practice and are likely to be misled by the commercial practice. Online marketing should be made more transparent to child consumers, and more should be done to empower children to recognise and respond appropriately to online marketing techniques. It should also be considered whether potentially harmful practices, other than the direct exhortation to children to buy advertised products that is addressed in Annex 1 of the UCPD, should be further regulated and/or banned through legislation.

The remainder of this chapter elaborates on measures that can be implemented to achieve better protection of children as consumers online, both regarding protective measures targeting children directly and potential regulatory changes.

9.2 Introduce protective measures targeting children directly

The protective measures that were found in the most popular online games were mostly directed towards parents, such as links to privacy policy and terms of usage and information about parental controls. However, it was also found that many parents were not ready to take on this responsibility and that the general engagement among parents were low. Furthermore, if the games are free and without age limits, parents may never be aware of the marketing practices used in the games. This was found to lead to an uneven protection of children online, at the risk of increasing the gap between children with highly engaged parents and children with less engaged parents.

Protective measures should not exclusively target parents. Protective measures that target children directly have the dual advantage that they can function both as a way to empower children to recognise the commercial intent of the marketing practice and, if this is achieved, as a way to protect children against these practices. This study assessed the effectiveness of some potential protective measures targeting children, which are addressed below.

Examples of potentially effective protective measures targeting children

The study investigated, through behavioural experiments, the effect of various protective measures directed at children in increasing children's understanding of the commercial intent of advergames and of prompts to make in-app purchases. It was challenging to devise operational and effective protective measures targeting children directly, and thus further research is needed to confirm the study's findings.

Nevertheless, the study found positive effects of protective measures that were based on making the children aware of the commercial intent of the marketing practice (labelled "conscious cognition" in table 37 below) and of protective measures aiming to break the flow of the game (labelled "breaking the flow" in table 37 below). Protective measures based on conscious cognition, such as a warning message, were found to have an effect in reducing the amount children spent on in-app purchases, but had no effect in reducing the behavioural impact[124] of advertisements in online games. Protective measures aiming to break the flow of the game, such as adding a distractive task, were found to be effective in reducing the amount children spent on in-app purchases[125].

A recommendation based on these findings is that **mandatory protective measures targeting children directly in games that include advertisements or other marketing practices should be considered and further researched as these can increase the protection of children online.**

Table 37 Classification of protective measure

	Conscious cognition	Breaking the flow	Delegation
Examples	• Warnings messages • Ad breaks	• Alternative task/choice	• Parental approval • Parental control
Strategy	Induce rational thinking via a conscious channel	Cognitive wash to activate conscious channel	Distributed cognition and gatekeeping
Technical implementation	Very easy	Difficult to standardise (highly game dependent)	Easy
Effectiveness*	Apparently effective for in-app purchase (but replication of study needed) Not at all or very limited for advergames and online marketing in general	Worked for in-app purchase (but in need of replication) Uncertain for advergames**	Uncertain. It is a function of parental mediation skills and possibilities.

* Based on evidence or ex ante hypotheses ** May not work for very young children

9.3 Need to update the Regulatory framework

This study found that a majority of the parents in the countries investigated thought that they were primarily responsible for protecting their children from online marketing, but they also expected regulators and the online industry to take action and assume responsibility for making the online environment safe and appropriate for children.

[124] In this case behavioural impact means impact on the amount of energy-dense snacks consumed by the children while playing.

[125] This type of protective measure was not investigated on advertisements in online games.

Online marketing to children is addressed by various EU Directives, national legislation, as well as through industry self-regulatory initiatives. This study found that the level of protection differed between EU Member States as some countries go further than others in protecting children online. The study concludes that many of the problematic practices to which children are exposed online are, to varying extents, not covered by the current legislative framework.

As self-regulation has been put forward as a way to respond flexibly to technological advancements, industry self-regulatory initiatives regulating online marketing to children are prevalent in almost all EU Member States. This enables businesses to respond to national, cultural, commercial and legal traditions in the country. However, these initiatives are often criticized for (i) falling short of sufficiently restricting commercial activities or actors that make use of marketing practices whose commercial intent is disguised or not disclosed, or that are not easily identified as such and (ii) that the extent and reach of these initiatives varies between countries.

Thus, the consequence of the current regulatory situation is that children across Europe do not receive the same level of protection, and that self-regulation does not necessarily guarantee sufficient protection of children online. To address these issues, we propose the following three policy recommendations:

Legislative review

The Commission's work programme for 2015 announced a fitness check of the legislative framework related to consumer rights and commercial practices, as part of European Commission's Regulatory Fitness and Performance programme (REFIT) under the Better Regulation Agenda. This includes an assessment of whether legal acts particularly relevant for this study, such as the Unfair Commercial Practices Directive (UCPD), are fit for purpose. Furthermore, the Audiovisual Media Services Directive (AVMSD) is also being evaluated as part of REFIT.

It is recommended that **the fitness checks of these key legislative instruments should pay particular attention to the results of this study and the protection of children with regard to disguised marketing and other problematic online marketing practices.**

For the AVMSD this can be done by assessing the need to review the understanding of non-linear audio-visual media services to include important channels of commercial communication to children. Children's use of online games and games provided through mobile applications and social media sites (which include marketing to children), advergames, as well as social media and streaming services, such as YouTube, is widespread. A possible revision of the AVMSD should take this into account, as well as address the need to ensure that commercial content is clearly identified as such. Finally, although it may be difficult due to the level of subsidiarity in this area, increasing the degree of harmonisation in some of the fields of the AVMSD could contribute to the goal of providing an equivalent level of protection to children across Europe.

For the review of the consumer acquis, particular attention should be paid to the protection of children against online marketing by further developing the understanding of the concept of children as a particularly vulnerable consumer group. Children constitute a distinct group of online consumers, and their particular rights and needs should be taken into account. The findings of this study illustrate that it is difficult to identify an "average consumer" among children. Their capacities and needs will depend on both their age and maturity and also on contextual factors, for example parental' involvement. Such issues need to be acknowledged.

The review should also take into account the fact that children's vulnerability to marketing practices is also dependent upon the medium in which the

advertisement/marketing is sent. Children are more likely to understand the commercial intent of an advertisement shown on TV than that of advertisements in online games. In addition, they are less likely to notice and understand the commercial intent of so-called embedded advertisements and other marketing practices whose commercial intent is not clearly identified compared to more direct advertisements.

Improving enforcement

To protect children effectively from problematic marketing practices in a uniform manner, it is of key importance that the enforcement of the existing legislation is strengthened. The European enforcement network (CPC Network), a network of national Competent Authorities across the European Economic Area, has put much effort into addressing some specific unfair commercial practices, especially in-app purchases, in the field of online games targeting teenagers and children, and these efforts have resulted in better protection of children online[126].

It is recommended that regular EU coordinated enforcement actions or sweeps are undertaken to monitor and investigate the practices of the online industry regarding online marketing practices towards children. Embedded advertisements and other marketing practices whose commercial intent is not clearly identified, whether in online games, in social media and in mobile applications, stand out as a particular area of concern. The results of this study indicate that this type of marketing can be considered to be in breach of the UCPD, since it has a direct impact on children's behaviour and since children are not always able to detect the commercial intent of the content.

Effective industry self-regulation

The extent to which self-regulation should be relied upon in future regulation of the online industry should be based on the proven effectiveness of self-regulatory measures. Self-regulatory initiatives should be required to demonstrate effective impacts on children's behaviour. The effectiveness of this type of initiative could be assessed through accompanying monitoring mechanisms. Public authorities could facilitate this work by e.g. issuing guidelines for the industry to follow.

[126] http://europa.eu/rapid/press-release_IP-14-847_en.htm

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Annexes

Annex 1 Systematic review selection process

Search	Pubmed	Scopus	ISI Web of Science	Business Source Complete (EBSCO)	Communication & Mass Media Complete (EBSCO)	Total
#1	1/6	4/12	6/13	3/14	5/14	19/59
#2	4/6	3/9	4/17	1/12	1/8	13/53
#3	3/15	3/17	2/15	4/9	1/7	13/63
#4	9/12	6/11	6/13	7/13	5/9	33/58
#5	48/195	13/120	27/159	18/105	14/113	120/692
#6	4/8	1/11	45/299	4/19	2/19	56/356
#7	2/37	2/81	10/264	3/108	3/113	18/603
#8	95/328	22/251	64/538	13/258	18/258	212/1633
Total	166/607	54/512	164/1318	53/538	49/541	486/3517

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Annex 3 Systematic review references classification

Reference	Method	Topic	Artefacts
Ali et al., 2009	Experimental study	Marketing	Internet/Websites
Alvy & Calvert, 2008	Content analysis	Public Health	Internet/Websites
An et al., 2014	Experimental study	Marketing	Advergames
An & Kang, 2013	Content analysis	Regulation / Protective measures including parents	Advergames
An & Stern, 2011	Experimental study	Regulation / Protective measures including parents	Advergames
Araujo & Neijens, 2012	Content analysis	Marketing	Games / SNS
Arredondo et al., 2009	Experimental study	Public Health	Internet/Websites
Barrientos-Gutiérrez et al., 2012	Miscellaneous	Public Health	Advergames
Bati & Atici, 2010	Survey	Marketing	Advergames
Blades et al., 2013	Miscellaneous	Public Health	Internet/Websites
Brady et al., 2010	Content analysis	Public Health	Internet/Websites
Buijzen et al., 2010	Miscellaneous	Marketing	Media
Büttner et al., 2014	Miscellaneous	Marketing	Media
Cai & Zhao, 2013	Content analysis	Regulation / Protective measures including parents	Internet/Websites
Cairns, 2013	Miscellaneous	Public Health	Media
Cairns et al., 2013	Miscellaneous	Public Health	Media
Carter et al., 2011	Experimental study	Public Health	Media
Chen et al., 2013	Content analysis	Regulation / Protective measures including parents	Apps/Mobile
Chen et al., 2013	Content analysis	Marketing	Apps/Mobile
Cheyne et al., 2013	Content analysis	Public Health	Internet/Websites
Cicchirillo & Lin, 2011	Content analysis	Public Health	Advergames
Culp et al., 2010	Content analysis	Public Health	Advergames
Dahl et al., 2009	Content analysis	Public Health	Advergames
De Lima & Legge, 2014	Miscellaneous	Regulation / Protective measures including parents	Internet/Websites
Dias & Agante, 2011	Experimental study	Public Health	Advergames
Flowers et al., 2010	Content analysis	Public Health	Advergames
Folkvord et al., 2013	Experimental study	Public Health	Advergames
Forsyth et al., 2013	Miscellaneous	Public Health	Internet/Websites
Galbraith-Emami & Lobstein, 2013	Miscellaneous	Public Health	Media
Gao et al., 2013	Survey	Marketing	Apps/Mobile
Griffiths & Caswell,	Content analysis	Public Health	Internet/Websites

Reference	Method	Topic	Artefacts
2010			
Hang,2012	Experimental study	Marketing	Games / SNS
Harris & Graff, 2011	Miscellaneous	Public Health	Media
Hastings & Sheron, 2013	Miscellaneous	Public Health	Media
Henry & Story, 2009	Content analysis	Public Health	Internet/Websites
Jain, 2010	Miscellaneous	Public Health	Internet/Websites
Jenssen et al., 2009	Content analysis	Public Health	Internet/Websites
Jerningan & Rushman, 2014	Content analysis	Public Health	Games / SNS
Jones & Magee, 2011	Survey	Public Health	Media
Jones et al., 2014	Miscellaneous	Public Health	Internet/Websites
Kelly et al., 2008	Content analysis	Public Health	Internet/Websites
Kelly et al., 2013	Miscellaneous	Public Health	Media
Kent et al., 2013	Content analysis	Public Health	Internet/Websites
Kervin et al., 2012	Content analysis	Marketing	Internet/Websites
Lascu et al., 2013	Content analysis	Public Health	Internet/Websites
Lee et al., 2009	Content analysis	Public Health	Advergames
Lin & Wang, 2008	Survey	Marketing	Internet/Websites
Lingas et al., 2009	Content analysis	Public Health	Internet/Websites
Livingstone, 2009	Miscellaneous	Marketing	Media
Lobstein, 2013	Miscellaneous	Public Health	Media
Lu & Wang, 2008	Survey	Public Health	Internet/Websites
Lwin et al., 2008	Experimental study	Regulation / Protective measures including parents	Internet/Websites
Mac Sithigh, 2013	Miscellaneous	Regulation / Protective measures including parents	Apps/Mobile
Malik, 2012	Miscellaneous	Public Health	Media
Martí-Parreño et al., 2013	Survey	Marketing	Apps/Mobile
Martínez et al., 2013	Inteviews/Focus groups	Marketing	Internet/Websites
Mau et al., 2014	Miscellaneous	Marketing	Internet/Websites
Mehta et al., 2014	Inteviews/Focus groups	Public Health	Internet/Websites
Miyazaki et al., 2009	Experimental study	Regulation / Protective measures including parents	Internet/Websites
Monaghan et al., 2008	Miscellaneous	Regulation / Protective measures including parents	Internet/Websites
Montgomery & Chester, 2009	Miscellaneous	Public Health	Internet/Websites
Moreno, 2014	Miscellaneous	Regulation / Protective	Internet/Websites

Reference	Method	Topic	Artefacts
		measures including parents	
Nairn, 2008	Miscellaneous	Marketing	Internet/Websites
Nair & Hang, 2012	Miscellaneous	Marketing	Advergames
Nicholls, 2012	Content analysis	Public Health	Games / SNS
Okazaki, 2008	Survey	Marketing	Apps/Mobile
Okazaki, 2009	Survey	Marketing	Apps/Mobile
Owen et al., 2013	Experimental study	Marketing	Internet/Websites
Paek et al., 2014	Content analysis	Public Health	Advergames
Panic et al., 2013	Experimental study	Marketing	Advergames
Pempek & Calvert, 2009	Experimental study	Public Health	Advergames
Quilliam et al., 2011	Miscellaneous	Public Health	Advergames
Redondo, 2012	Experimental study	Marketing	Advergames
Rose et al., 2013	Survey	Regulation / Protective measures including parents	Internet/Websites
Rozendaal et al., 2011	Survey	Marketing	Media
Rozendaal et al., 2013	Experimental study	Marketing	Games / SNS
Schwartz et al., 2013	Miscellaneous	Public Health	Media
Shin & Hug, 2011	Miscellaneous	Regulation / Protective measures including parents	Internet/Websites
Shin et al., 2012	Survey	Marketing	Internet/Websites
Slater et al., 2012	Content analysis	Marketing	Internet/Websites
Smit et al., 2014	Survey	Marketing	Internet/Websites
Smith, 2012	Survey	Marketing	Internet/Websites
Staiano & Calvert, 2012	Miscellaneous	Public Health	Internet/Websites
Sultan & Rohm, 2008	Miscellaneous	Marketing	Apps/Mobile
Te'eni-Harari, 2013	Experimental study	Marketing	Media
Terlutter & Capella, 2013	Miscellaneous	Marketing	Internet/Websites
Thomson, 2010	Miscellaneous	Public Health	Advergames
Thomson, 2011	Miscellaneous	Public Health	Advergames
Tsai et al., 2012	Survey	Regulation / Protective measures including parents	Internet/Websites
Ueda et al., 2012	Experimental study	Public Health	Internet/Websites
Ünal et al., 2011	Survey	Marketing	Apps/Mobile
Van Reijmersda et al., 2010	Experimental study	Marketing	Advergames
Van Reijmersda et	Experimental study	Marketing	Advergames

Reference	Method	Topic	Artefacts
al., 2012			
Verhellen et al., 2014	Experimental study	Marketing	Advergames
Weatherspoon et al., 2013	Content analysis	Public Health	Media
White et al., 2010	Miscellaneous	Public Health	Internet/Websites
Williams, 2013	Miscellaneous	Public Health	Internet/Websites
Winpenny et al., 2013	Content analysis	Public Health	Internet/Websites
Youn & Hall, 2008	Survey	Regulation / Protective measures including parents	Internet/Websites
Zhang et al., 2010	Content analysis	Marketing	Games / SNS

Annex 4 Regulation and protective measures – online survey with stakeholders

Dear Sir/Madam,

As children are increasingly using the Internet and other new media, they are increasingly becoming users and consumers of online contents and services. Within this context, the European Consumer Agenda identified children as a particularly vulnerable group, and the buying or using of digital content by children as a particular area of concern.

The European Commission is funding the "Study on the impact of marketing through social media, online games and mobile applications on children's behaviour" that is currently conducted by the London School of Economics Partners Consortium. The study – covering all EU Member States plus Iceland and Norway – includes a review of the relevant regulation and protective measures. An overall aim of the study is to provide insights that can be used in the European Commission's work on ensuring that all children across the EU/EEA enjoy an equally high level of protection, both as regards authorised and safe offers, and against illegal offers which are accessible in an inherently cross-border activity.

We would appreciate if you could spare 15 minutes of your time to fill in the attached questionnaire. We would be grateful if you could indicate the main relevant regulation, decision, guidance or self-regulatory initiatives and any other instance of (effective) protective measures **IN YOUR COUNTRY** with regard to nine specific practices targeting children through social media, online games and mobile applications. The information you provide will enable us to identify country specific information on how online marketing to children is tackled.

Please note that we are not asking you to report on how relevant EU regulations have been transposed into national law. We are interested in whether you know about national laws that goes further than EU regulation on the issues studied and whether you are aware of any other soft regulations or self-regulatory initiatives that are relevant.

In the survey we ask about protective measures. By protective measures we mean any measure that is targeted towards protecting children against marketing through social media, online games and mobile applications. The measures can be mandatory or voluntary and can include filters, warnings, infrastructure enabling parental control, warnings etc.

All the responses will be treated confidentially. Your answers will be used for research purposes only and will not be forwarded to third parties.

This study is undertaken by the LSE Partners Consortium on behalf of European Commission (Chafea, DG JUST). Any questions concerning the survey should be directed to Francisco Lupiáñez-Villanueva (flupianez@open-evidence.com)

Please indicate the COUNTRY of reference:

Embedded advertising (or advergames).

The practice of blending advertising messages with interactive games and competitions makes it more difficult, especially for children, to discern the marketing element.

Q1. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates the practice of advergames and other similar practices of online embedded advertising?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

In-app purchases in online games. In mobile applications and online games marketed as "free", players can often access only segments of such games, while new levels or features, such as faster game play require a payment. It can be difficult for children to understand that even if they have downloaded a "free" app, they may still have to pay for items during the game to be able to fully enjoy the game.

Q2. Is there any law, decision, guidance, self-regulatory intitative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates the practice of in-app purchases in online games?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Data privacy issues. When children buy goods and services, especially over the Internet, they are commonly asked to provide a number of personal details. It can be difficult for children to understand the possible consequences of sharing personal data, and it may be unclear how the seller uses the information.

Q3. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates data privacy issues when minors buy goods and services over the internet?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

New wallets (credit cards, mobile wallet). When children purchase digital content (apps, music and entertainment over the Internet or mobile phone) they may use a variety of payment means, such as value codes (for iTunes), parent's debit or credit cards or (mobile) telephone bills. This means that link between making a purchase and spending "real" money is becoming more blurred, in particular for children who do not always understand that they are spending real money when purchasing digital content.

Q4. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates the use of new payment means such as mobile wallet or credit?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Price and contract transparency. Also adult consumers are often experiencing difficulties to figure out how much an item purchased online cost, what is included in the price, what the duration of the contract is, etc. For children, this situation may be more complex because of lack of reasoning skills and purchasing experience.

Q5. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates price and contract transparency for children?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Age verification systems. Some online games have an age limit of for instance 12 or 13 years to sign up. At the same time, there may not be an age verification system on the site that would ensure that the age limit is adhered to.

Q6. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates age verification?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any examples of age verification systems being used and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Contact information of the traders. There is often a lack of contact details at disposal in case of information requests or complaints. Some games in which children can make purchases with mobile phones or credit cards do not have sufficient complaint possibilities or follow-up mechanisms in place.

Q7. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates contact information of providers and means of redress?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including specific initiatives to reinforce access to contact information of providers.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Alcohol advertisement. Advertisements of alcohol in social media sites and in other websites popular for children also represent an area of concern in the context of online marketing. Hidden Internet advertising that is not covered by the UCPD Directive can occur in the form of comments posted on social networks, forums, blogs and in games.

Q8. Is there any law, decision, guidance, self-regulatory initiatives or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates alcohol advertisement in the form of comments posted on social networks, forums, blogs and in games?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Inappropriate contents. Websites specifically targeting children may require different sets of rules. On such web pages, the level of protection against problematic advertisement should be checked thoroughly, as parents and children trust that these websites are safe spaces. It is important to not only look at the way in which advertisements incite children to make purchases on these sites, but also on the content and appropriateness of advertisement.

Q9. Is there any law, decision, guidance, self-regulatory initiative or declaration by the Ombudsman (or similar bodies) in your country that directly or indirectly regulates inappropriate contents?

a. **Yes**, please provide reference to the relevant laws and documents and explain the main rules in place, including any specific protective measures and whether they have been effective.

b. **No**, please explain how the practice is perceived in the context of minors in your country.

Please provide us with your contact information. We may need to contact you for clarification and if needed, to discuss answers that you have provided in depth.

Name and Surname:

Position:

Company/ Institution:

Country of reference:

Email:
Phone number:

Lastly, we would like to ask you whether or not you would like to be acknowledged as a contributor in the final report?

- Yes
- No

Any questions concerning the survey should be directed to Francisco Lupiáñez-Villanueva (flupianez@open-evidence.com)

Annex 5 Selection of games

App Store

Table 38 shows the games ranked as 1st in each category per country in the App Store. Within each category we selected the first two most popular games. Thus, in the first category of Paid games, we selected **Geometry Dash**, ranked in the 1st position in six different countries, and **Stickman Soccer 2014**, ranked in the 1st position in four different countries. Following the same criteria, **Fish Out Of Water!** ranked 1st in seven countries, and **Angry Birds Epic**, ranked 1st in four countries, were selected in the Free category while **Clash of Clans** (20) and **Candy Crush** (3) were selected in the Grossing category.

Table 38 App Store (1st game)

Country	Paid	Free	Grossing
AT	Stickman Soccer 2014	TwoDots	Clash of Clans
BE	Geometry Dash	I.Q. Test®	Clash of Clans
BG	Card Wars - Adventure Time	Отговори на Въпроса	Clash of Clans
CY	Teenage Mutant Ninja Turtles: Rooftop Run	Beauty Piercing - Nose, Belly button,Ear	Clash of Clans
CZ	Blueprint 3D	Kdo chce být milionářem?	Clash of Clans
DE	Stickman Soccer 2014	Bubble Shooter! Kostenlos	Clash of Clans
DK	Geometry Dash	The Test: Fun for Friends!	Candy Crush Saga
EE	Geometry Dash	Angry Birds Epic	Secret Passages: Hidden Objects
ES	Geometry Dash	I.Q. Test®	Clash of Clans
FI	Geometry Dash	Bubble Witch 2 Saga	Clash of Clans
FR	Stickman Soccer 2014	Piano Tiles (Don't Tap The White Tile)	Clash of Clans
UK	Stickman Soccer 2014	TwoDots	Clash of Clans
EL	Τι είναν	Fish Out Of Water!	Clash of Clans
HR	The Sims 3 Ambitions	Flick Soccer Brazil	Clash of Clans
HU	Need for Speed ™ Most Wanted	Fish Out Of Water!	Clash of Clans
IE	Minecraft – Pocket Edition	TwoDots	Candy Crush Saga
IT	Geometry Dash	Fish Out Of Water!	Clash of Clans
LT	Gangstar Vegas	Fish Out Of Water!	Clash of Clans
LU	Hänk Dech Op!	Head Soccer - Brazil Cup 2014	Clash of Clans
LV	King of Opera - Multiplayer Party Game!	Angry Birds Epic	The Simpsons ™: Tapped Out
MT	Super Hexagon	Fish Out Of Water!	Clash of Clans
NL	RollerCoaster Tycoon ® 4 Mobile ™	TapDot	Clash of Clans
PL	Godfire ™	Angry Birds Epic	Clash of Clans
PT	Pou	Fish Out Of Water!	Clash of Clans
RO	Need for Speed ™ Most Wanted	Think	Boom Beach
SE	RollerCoaster Tycoon ® 4 Mobile ™	Helix Game	Candy Crush Saga
SI	Angry Birds	Fish Out Of Water!	Slotomania - FREE Slots
SK	Godfire ™	Angry Birds Epic	MARVEL War of Heroes

Google Play store

Table 39 shows the results for the same analysis of Google Play. In this case, and due to the distribution of the games ranked in the top position in the Grossing games category, we also added the games ranked as 2nd. To select the final games we followed the same

procedure, but replaced the game when it had already been chosen to be analysed in Facebook. The most popular game in Google Play in the Paid category is **Minecraft - Pocket Edition** - in nineteen countries it ranked 1st The second game, ranked as first in two countries, was **The Sims™ 3**.

Regarding the Free category, Angry Birds was excluded because it has been previously selected, so the most popular game is **Don't Tap The White Tile** (7 countries) and **Angry Cats** (2 countries). Lastly, the analysis of the Grossing category showed that the most popular game in 27 countries was Clash of Clans, already selected, and Growtopia popular in only one country. We present the results for the 2nd position to select two games in this category. Having excluded games already chosen this led to the selection of **Hay Day** (9 countries) and **Castle Clash** (3 countries).

Table 39 Google Play Apps

Country	Paid (1st game)	Free (1st game)	Grossing (1st game)	Grossing (2nd game)
AT	Minecraft - Pocket Ed.	Don't Tap The White Tile	Clash of Clans	Hay Day
BE	Minecraft - Pocket Ed.	Don't Tap The White Tile	Clash of Clans	Candy Crush Saga
BG	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Hay Day
CY	*	*	*	*
CZ	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Hay Day
DE	Quizduell PREMIUM	Don't Tap The White Tile	Clash of Clans	Hay Day
DK	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Candy Crush Saga
EE	Minecraft - Pocket Ed.	Angry Birds Epic	Growtopia	Clash of Clans
ES	The Sims™ 3	Angry Birds Epic	Clash of Clans	Candy Crush Saga
FI	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Hay Day
FR	Duel Quiz PREMIUM	Don't Tap The White Tile	Clash of Clans	Candy Crush Saga
UK	**	Angry Cats	**	**
EL	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Candy Crush Saga
HR	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Castle Clash
HU	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Castle Clash
IE	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Candy Crush Saga
IT	The Sims™ 3	Angry Birds Epic	Clash of Clans	Candy Crush Saga
LT	Quizduell PREMIUM	Don’t Tap The White Tile	Clash of Clans	Hay Day
LU	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Candy Crush Saga
LV	**	Angry Cats	**	**
MT	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Heroes of Camelot
NL	Minecraft - Pocket Ed.	Volg de Lijn	Clash of Clans	Hay Day
PL	Need for Speed™ Most Wanted	Angry Birds Epic	Clash of Clans	Empire: Four Kingdoms (Polska)
PT	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Hay Day
RO	Minecraft - Pocket Ed.	Don’t Tap The White Tile	Clash of Clans	Candy Crush Saga
SE	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Candy Crush Saga
SI	Minecraft - Pocket Ed.	Don’t Tap The White Tile	Clash of Clans	Hay Day

Country	Paid (1st game)	Free (1st game)	Grossing (1st game)	Grossing (2nd game)
SK	Minecraft - Pocket Ed.	Angry Birds Epic	Clash of Clans	Castle Clash

* There are no public available exit nodes in Cyprus

** Only Free applications are available in the Google Play UK store and Google Play Latvia store

Facebook

Table 40 shows the Top 10 games in Facebook for Most popular and Top Grossing categories. To be coherent with the number of games selected in Google and Apple (6 games in each platform), we selected the first three top ranked games in each category, excluding those games already selected. Thus **Farm Heroes Saga, Pet Rescue Saga, Bubble Witch 2 Saga** (Most popular) and **DoubleDown Casino - Free Slots**, as well as **FarmVille 2** and **Slotomania Slot Machines** (Top Grossing) were selected for in-depth analysis.

Table 40 Facebook games

Rank	Facebook Most popular	Facebook Top Grossing
1	Candy Crush Saga	Candy Crush Saga
2	Farm Heroes Saga	DoubleDown Casino - Free Slots
3	Pet Rescue Saga	FarmVille 2
4	Bubble Witch 2 Saga	Slotomania Slot Machines
5	Dragon City	Farm Heroes Saga
6	Criminal Case	Texas HoldEm Poker
7	Preguntados	Battle Pirates
8	FarmVille 2	Pet Rescue Saga
9	8 Ball Pool	BINGO Blitz
10	Texas HoldEm Poker	War Commander

Advergames

Advergames were selected from the top ten brands ranked by Forbes. All these companies have individual corporate websites for each country but it was outside the scope of this study to analyse sites in separate countries. Thus, we have identified the advergames performing the following search in Google "name of the brand" AND "games" OR "online games". If the first page of Google results did not contain any official advergame, the brand was dropped and replaced for another brand until seven advergames were identified. The following table shows the selected brands and their sites:

Table 41 Advergames

Forbes rank	Brand	Game – URL
3	Coca-Cola	Coke Recycling - www.cokerecycling.com/Coke-Recycling-Game
6	McDonald's	Happy Meal - www.happymeal.com
39	Nestle	Crunch - www.nestlecrunch.com/playground.aspx
40	Frito-Lay	Doritos - www.doritos.co.uk/dip-desperado/game.html
42	Danone	Trust Danone - http://trust.danone.com/
58	Kellogg's	Club Kelloggs - www.clubkelloggs.ca/en/games.html
61	Adidas	Fast or Fail - www.adidas.com/en/apps/fastorfail/

Coke Recycling; Happy Meal; Nestle Crunch and Club Kelloggs sites contain several games. Thus, these sites can be considered as catalogues of casual games. As all the

games displayed in these sites are quite similar we carried out our analysis for the whole site. Trust Danone and Fast or Fail sites are focused on a single game. It is important to note that Fast of Fail advergame has been removed from the original site. Nevertheless, the trial of the game is still available at http://www.mediamonks.com/case/adidas-fast-or-fail.

Annex 6 Focus group screening criteria and guidelines

Screening criteria

- All kids must come with one of their parents (mother or father), no exceptions
- All kids are 11 or 12 years old on the date of the group discussion, no exceptions
- 50% of kids are female and 50% are male
- 50% of parents are female and 50% or parents are male
- 50% of kids must own a smartphone for their own private use (data plan is not mandatory, as they can use WiFi)
- All kids must spend at least 30 min connected to the Internet on a typical day, either from their smartphone or from a computer (laptop, desktop)
- At least 3 kids per group must play games online with other players ("risky explorers"), 3 kids must play games alone ("intensive gamers"), and 3 kids must intensively communicate with people via chat or social media networks ("experienced networkers").
- At least 2 kids per group must have purchased at least 1 app or game online

QUESTIONNAIRE:

Good morning/afternoon/evening, my name is _____ and I call you on behalf of _____, an independent market research firm. We are conducting a sociological study on the use of internet and mobile phones by kids and teenagers. We would like to speak to either one of the parents in this household. Are you one of them?

INTERVIEWER: If foreign accent and/or difficulty of expression in local language is detected, please ask about respondent's citizenship as subtly as possible. *(Write down)*

Citizenship: _____

Proceed with screener only if respondent confirms local citizenship and is articulate enough for a group discussion. Otherwise, thank & close.

Q1. Gender *(do not ask)*

□ Female (mother) CHECK QUOTAS (50%)

□ Male (father) CHECK QUOTAS (50%)

Q2. How many children under 18 years old live in your household? *(Write down)*

_____ children

Q3. How old are they and what is their gender?

_____ years old □ female □ male

_____ years old □ female □ male

_____ years old □ female □ male

_____ years old □ female □ male

→ THANK & CLOSE IF NONE IS 11 OR 12 YEARS OLD

Q4. Does your 11-12 year old kid have a phone of his/her own with connection to the Internet?

□ Yes CHECK QUOTAS (50%) & VERIFY PHONE TYPE (Q5)

□ No CHECK QUOTAS (50%)

Q5. [IF KID OWNS A SMARTPHONE ON Q4] What phone brand and/or model is it? What operating system does it have? *(Probe if does not know)*

□ Brand:
_____

□ Model:
_____

□ Operating system:
_____

Q6. From what device(s) does your 11-12 y.o. kid access Internet? *(Multiple answer)*

□ Desktop computer
□ Laptop computed
□ Smartphone GO TO Q7
□ Tablet
□ Console

→ CHECK QUOTA: AT LEAST 50% (KIDS) ACCESS INTERNET FROM THEIR SMARTPHONE

Q7. How does your 11-12 y.o. connect to the Internet with his/her smartphone? *(Multiple answer)*

□ 3G/4G (data plan)
□ WiFi
□ Other. Specify: _____

Q8. From where does your 11-12 y.o. kid access Internet? *(Multiple answer)*

□ Home
□ School
□ Transportation: Car / bus / train / tram / subway
□ Friend or relatives' homes
□ Public library or other public facilities
□ Other. Specify: _____

Q9a. How long does your 11-12 y.o. kid spend online on a weekday? *(Single answer)*

□ Less than 30 min per day THANK & CLOSE
□ between 30 and 60 min per day CHECK QUOTAS FOR "NETWORKERS"
□ between 1 and 2 hours per day CHECK QUOTAS FOR "EXPLORERS"
□ between 2 and 3 hours per day CHECK QUOTAS FOR "EXPLORERS"
□ more than 3 hours per day CHECK QUOTAS FOR "GAMERS"

Q9b. How long does your 11-12 y.o. kid spend online on a day of the weekend? *(Single answer)*

□ Less than 30 min per day THANK & CLOSE
□ between 30 and 60 min per day
□ between 1 and 2 hours per day
□ between 2 and 3 hours per day
□ more than 3 hours per day

Q10. [PREFERABLY ASK PARENT & KID TOGETHER] Out of the overall time your 11-12 y.o. kid spends online, how much of that time does he/she spend doing the following activities? *(Single answer)*

□ Playing games alone (on their own or against the device) .....% of the time
□ Playing games with others (remotely) .....% of the time

- □ Watching video clips .....% of the time
- □ Wide variety of activities: at least 4 of the following: .....% of the time
  - □ reading/watching news
  - □ downloading music or films
  - □ sending or receiving emails
  - □ using a webcam
  - □ creating avatars
  - □ using file-sharing sites
  - □ spending time in virtual worlds
  - □ writing blogs or diaries
- □ Communicating with people via social media networks (such as Facebook, Twitter, Hangouts etc.) .....% of the time
- □ Other .....% of the time

NOTE: CHECK THAT ALL ITEMS ADD UP TO..... 100% of the time

NOTE: CLASSIFY ACCORDING TO THE HIGHEST PERCENTAGE

1. If highest percentage is "Playing games with others" and second highest is "Wide variety of activities" → CLASSIFY AS "RISKY EXPLORER"
2. If highest percentage is "Playing games alone" and second highest is "watching video clips " → CLASSIFY AS "INTENSIVE GAMERS"
3. If highest percentage is "Communicating with people" and does not play games online (whether alone or with others) or plays very little (<20%) → CLASSIFY AS "EXPERIENCED NETWORKER"
4. If "Other" is above 50% → THANK & CLOSE. If "Other" is the highest percentage but below 50% → USE SECOND HIGHEST PERCENTAGE AS REFERENCE. Only respondents that match one of the three profiles afore mentioned can be selected for interview. Thank you and close if the respondents do not match one of the three profiles

Q11. [PREFERABLY ASK PARENT & KID TOGETHER] What games does your 11-12 y.o. kid play online? *(Probe for more than 1 game)*

- □ Game 1: _____
- □ Game 2: _____
- □ Game 3: _____
- □ Game 4: _____
- □ Game 5: _____

Q12. [PREFERABLY ASK PARENT & KID TOGETHER] Of the following 5 popular games for kids in your country, which one(s) does your 11-12 y.o. kid play? *(Read list; Multiple answer) [INPUT COUNTRY LIST FROM DATABASE]*

- □ 100 Ballz
- □ Angry Cats
- □ Avoid The Circles
- □ Bubble Witch 2 Saga
- □ Don't Tap The White Tile
- □ Fish Out Of Water!
- □ Flick Soccer Brazil
- □ Jungle Monkey Saga
- □ Stickman Death Room
- □ TwoDots

Q13. Has your 11-12 y.o. kid ever purchased an online app or an online game from the Internet? *(Single answer)*

- □ Yes
- □ No
- □ I don't know

→ AT LEAST 2 KIDS PER GROUP MUST HAVE PURCHASED AN ONLINE APP OR GAME

Q14. How would you characterise your digital skills? *(Single answer)*

- □ I am tech-savvy and try to adopt the latest Internet tools and programmes
- □ I have a standard knowledge and command of Internet tools
- □ I have a basic Internet knowledge and use tools sparsely

Q15. What is your education level? *(Single answer)*

- □ Primary mandatory education (or country equivalent)
- □ Secondary education (or country equivalent)
- □ Technical or vocational training
- □ University degree (or country equivalent)
- □ Postgraduate degree (Master's, PhD, other equivalent)

Q16. What is your current occupation? *(Write down occupation and classify)*

Occupation: _____

Classification:

□ Blue collar employee (manual worker)
□ White collar employee (office/qualified worker)

□ Freelancer / business owner
□ Unemployed

Q17. Now a light-hearted question: If you were a tree, what part of the tree would you be? Why so? *(Write down and evaluate clarity of discourse)*

_____

_____

_____

Q18. [ASK TO SPEAK DIRECTLY TO THE 11-12 Y.O. KID] What famous character (real or fiction, alive or dead) would you like to be? Why? How would your life change if you were X?
VERIFY WHETHER KID:

1. Is willing to talk (no shyness): □ Yes □ No
2. Speaks properly (no communication/speech issues): □ Yes □ No

Q19. Do you think your 11-12 y.o. kid would feel comfortable speaking about online gaming in a group discussion with other kids of the same age? *(Single answer)*

□ No THANK & CLOSE

□ Yes ASK FOR CONTACT INFORMATION

IF ABLE TO SPEAK TO KID AND IS SUITABLE FOR GROUP DISCUSSION ("YES" TO BOTH IN Q19), INVITE TO FOCUS GROUP.

IF KID DOES NOT SEEM SUITABLE (AT LEAST ONE "NO" IN Q18 OR Q19), THANK & CLOSE.

INVITATION:

THANK KID AND ASK TO SPEAK TO HIS/HER PARENT AGAIN:

We would like to invite you and your 11-12 y.o. kid to participate in a 2-hour group discussion with other parents and their children of the same age about online games. This study has a sociological purpose, so there will be no sales involved, only a lively exchange of opinions. These 2 groups will take place simultaneously (parents with parents and kids with kids) on ..... from ..... until ..... at this address: .....

For your participation, you will receive and incentive of ..... (insert amount and format).

We need your contact information for reconfirming. It will be treated as confidential and thus will not be shared with any third party. May you kindly give it to us?

Parent's full name: _____
_____

Gender: □ female □ male CHECK QUOTAS: 50% MOTHERS – 50% FATHERS

Parent's age: _____

Phone number (s): _____
_____

Email address: _____
__

Kid's first name: _____

Gender: □ female □ male CHECK QUOTAS: 50% GIRLS – 50% BOYS

Thank you for your time. We will call you 1-2 days before the focus group to re-confirm your attendance and directions on how to reach the venue.

Guidelines

DISCUSSION GUIDE FOR PARENTS

- This discussion guideline is meant to safeguard that all relevant research topics will be covered in the focus groups.
- Listed questions are main research questions. The moderators will adjust wording and order of questions according to discussion situation, atmosphere and dynamic group processes.
- Each research topic will first be approached openly. This entails that participants will indirectly influence and control content and depth of discussion according their own requirements –unaided approach.
- Once participants have exhausted their "own agenda" for each topic, the moderators will explore relevant topic details that might not have been discussed – aided approach.

Main objectives of this session are to explore the level of awareness of their children being exposed to problematic practices in the Internet and the level of involvement in protecting their children from this risk.

WELCOMING AND INTRODUCTION (10 min.)

- Introduction of the moderator and the setting (drinks, toilet, etc.)
- Introduction of the topic of discussion: children and the Internet (moderator: DO NOT provide any further explanations at this point)
- Explanation of the need for audio-visual recording
- Reassurance of respondents about data security and privacy issues (no uploading of the recording to the Internet, anonymous analysis)
- Reference to attending observers and the one-way mirror, or TV internal circuit, when it is the case
- Explanation of the rules of communication
    - Spontaneous and open discussion
    - No right nor wrong answers; no judgements
    - No need for agreement with each other; different points of view will be stimulated
    - A balanced intervention of all participants is expected
    - Listening to each other is a must

Introduction of participants

- First name (no surname) and age
- Introduction of their children: how many they have, what gender and age they are; doing a special reference to the kid being interviewed in parallel

MODERATOR: please put a sticker with the participant's name on his / her chest so that it is visible at all times (the transcription needs to differentiate the participants)

WARMING UP (10 min.)

Being a parent nowadays: main gratifications and concerns

Moderator: The objectives are:

- **To create an atmosphere of spontaneity and confidence.**
- **To check whether internet issues or concerns related with playing online or on the phone/tablet come up spontaneously, and in this case, which these issues and concerns are.**

Focus on their own personal gratifications and concerns - not on others' or general issues.

Focus on their children between 4 and 16 y.o., with a special focus on the child who is being interviewed in parallel (11-12 y.o.) throughout the whole discussion - not only in this section.

Let us start by talking about being a father or a mother nowadays...what it is like...what is good and bad about it, etc.

- How do you see yourselves as fathers / mothers? What kind of parents do you think you are?
- What are the positive and the negative things of parenting and raising your children nowadays, in 2014?
- What are the things that make you feel more satisfied? How come?
- What are the things that make you feel more concerned? How come?
- ...

PART I: ATTITUDES AND BEHAVIOURS REGARDING THE USE OF THE INTERNET AMONG THEIR CHILDREN (20 min.)

Moderator: The main objective is to explore the level of awareness of their children being exposed to problematic practices on the Internet and the level of involvement in protecting their children from these risks.

- Check whether problematic practices come up spontaneously and what parents worry about regarding these practices (such as advertisement, in-app purchases or social media platforms issues).
- Probe to get the maximum of information regarding the eventual protective measures they might apply.

1.1. Knowledge of their children's use of the internet: exploration of children's habits

We will discuss what your children do when they get into the internet now; what do they use it for, when do they connect and how often, etc.

- What do your children (under 16 y.o.) do on the internet? What do they use it for?
- When do they connect? How often? For how long?
- Where are they when they connect? At home? Out of home? Where at home? (in their own room, in shared rooms, etc.) Where out of home? (at school, friends' homes, on the street, etc.)
- Do they usually surf alone or with somebody else? Who? How come?
- What devices do they usually use? (computer, laptop, tablet, smartphone, console)
- Are there any differences when using these different devices regarding what they do with them? What are these differences? (e.g. using the computer to study and the tablet to play)
- ...

1.2. Attitudes and behaviours regarding their children's use of the internet

- What are the likes and the dislikes about your children using the internet?
- What is your attitude regarding them using the internet?
- How do you feel about it?
- Do you feel that your kids know more about the Internet than yourself?
- Do you have any concerns about your children using the internet? Which ones?
- Do your concerns differ depending on the kid's age or gender? How come?
- Do you allow them to use the internet freely? Or do you put some restrictions?
- What are these restrictions? How do you deal with them?
- How do your children react to these restrictions?
- At what age did you start putting restrictions? How come?
- At what age will you stop putting these restrictions? How come?
- ...

PART II: KNOWLEDGE AND PERCEPTION OF ONLINE GAMES (35 min.)

Moderator:
The main objective is to check to what extend parents are aware of problematic practices, with a special focus on advertisement, in-app purchases and social media platforms issues (e.g. privacy, targeted advertising etc.).
Write down on the flip-chart or board the names of the games parents mention.

Now, we will particularly talk about the games your children play on the internet and/or on their phone/tablet...

2.1. Knowledge of the games their children play on the internet and/or on phones/tablets

- What are the games your children play online or on phones/tablets?
- Can you remember their names? (moderator: write down the names)
- What are these games about?
- When do they play them? How often? For how long each time?
- Where are the kids when they play? At home? Out of home? Where at home? (in their own room, in shared rooms, etc.) Where out of home? (at school, friends' homes, on the street, etc.)
- What devices do they usually use? (computer, laptop, tablet, smartphone, console)
- Are there any differences when using these different devices regarding the way they play with them?
- Do they usually play these games alone or with somebody else? Who? How come?
- Do you ever play with them? How come/why not?
- How do they get these games?
- Do they download them for free or do they pay for them? How do they pay for them? How does this work? (moderator: probe to get the maximum of information about what they know)
- ...

2.2. Evaluation of the games their children play on the online and/or on phones/tablets

- What do you think of these games?
- What are your likes and dislikes regarding them?
- Are there any concerns with regard to them? What are they? How come?
- ...

2.3. Projective exercise: The Fairy and the Ideal online games

Moderator:
Main objective is to explore whether problematic practices and protective measures pop up spontaneously when dealing with the ideal online games (Internet, phone, tablets) for their kids.

Let's play a game using our imagination...Let's imagine a Fairy visits us with her wand and all her powers...she has come to provide us with the ideal online games for our children...Let's tell her what these games would be like...

- What would you ask for? What would these games be like?
- What would the kids get out of these games?
- How would your kids get these games?
- What kind of things would this Fairy protect your kids from when playing?
- ...

PART III: LEVEL OF AWARENESS REGARDING PROBLEMATIC PRACTICES AND INVOLVEMENT IN PROTECTIVE MEASURES (30 min.)

Moderator:
Objective 1: to explore the level of awareness of 9 problematic practices: 1) embedded advertising (advergames), 2) in-app and online game purchases, 3) data privacy issues, 4) spending money online or "new wallet", 5) lack of price and contract transparency, 6) lack of age verification system, 7) lack of contact information about suppliers, 8) alcohol advertisement and 9) inappropriate content.

Objective 2: to explore the involvement of parents in checking self-regulatory protective measures (from side of the company) and / or in themselves, and to develop mediation strategies to prevent their kids being exposed to these problematic practices.

Now we'll focus on the bad practices your children might encounter when playing online or on phones/tablets and what is done to protect them…

3.1. Awareness regarding problematic practices

3.1.1. Problematic practices in general

- Are there any negative things your kids might be exposed to when playing online or surfing the Internet, including social media sites? What are they?
- What are the negative things your kids might be exposed to, including alcohol ads or other inappropriate content, when using these platforms? (**Please show at this stage Figure 9 so the alcohol topic is explicitly addressed by parents. Please make sure that this is sufficiently discussed).**
- What are your specific concerns?
- Do you think the Internet can influence your children's behaviour? How come?
- Have you experienced some example of influence on your own kids? Which one/s?
- Can playing online bring any risk to your kids? What are these risks?
- Can playing on phones/tablets bring any risk to your kids? What are these risks?
- …

3.1.2. Advertisement in general and advergames in particular

Moderator:
If no respondent is fully aware of what an advergame is, let the group first make assumptions about it. If they are not able to come up with what an advergame is, then explain it to them.

Advergames are games specifically designed for advertising. These games are a marketing-communication sui generis, normally assigned by the marketing department of a company or organisation to promote its own brand or product. Advergames are specifically designed for the sole purpose of marketing a single brand or product. The brand or product is the protagonist, the central character or feature of the game.

Probe to get the maximum of information regarding concerns.

- What do you know about online advertisements?
- What kind of online advertisements do you think they are exposed to? Alcohol advertisements? Where are they? How does this work?
- Are there any concerns about them? Which ones? How come?
- What do you know about online advertisements in social media?
- What do you know about online advertisements in the games your kids play?
- (If not arisen spontaneously) Do you know what an advergame is?
- Are there any concerns about them? Which ones? How come?
- Do you think advertisements or advergames have influence on your kids? How come? In what ways?
- …

3.1.3. In-app purchases

Moderator: if no respondent is fully aware of what an in-app is, let the group first make assumptions about it. If they are not able to come up with what an in-app is, then explain it to them.
In-app purchases are purchases made from within a mobile/tablet application. Users typically make an in-app purchase in order to access special content or features in an app such as power-ups, restricted levels, virtual money, special characters, boosts, etc. The purchasing process is completed directly from within the app and is seamless to the user in most cases,
Probe to get the maximum of information regarding concerns.

- Do you know what in-app purchases are?
- What kind of in-app purchases do you think your kids are exposed to?
- Are there any concerns about in-app purchases? (data privacy/market research content; Lack of price and contract transparency;….) Which ones? How come?
- Do your kids buy extra functionalities while playing?
- How do they pay for them? (credit card, new wallet systems, redeem promotional codes, etc.)
- …

3.1.4. Social media platforms

Moderator: if no respondent is fully aware of what a social media platform is, let the group first make assumptions about it. If they are not able to come up with what a social media platform is, then put examples such as Facebook, Twitter, Blogs, Youtube...
Probe to get the maximum of information regarding concerns.

- Do your kids have a profile in any social media platform? Which one/s? How come?
- What are the negative things your kids might be exposed to, including alcohol advertisements or other inappropriate content, when using these platforms?
- What are your specific concerns?
- Can using a social media platform (such as Facebook or any other platform relevant in the country) provide any risk to your kids? What are these risks?

- (If not arisen spontaneously) Are there any concerns regarding privacy? Which one/s?
- Are there any concerns regarding advertisements? Which one/s?
- ….

3.2. Involvement in protective measures

Now, we will talk about the ways of preventing your kids from being exposed to any of these bad practices that we have been talking about…

3.2.1. (Self-regulatory) Protective measures

- Do games contain any measure to protect kids from these bad practices that we have been talking about? Which one/s?
- (If not arisen spontaneously) Do they contain age limit enforcement or any other barriers to access?
- How do your kids react to this control?
- What other things do you think should be done to protect your kids from these bad practices?
- ...

3.2.2. Parental mediation safeguards

- Is there any way/s you can protect your kids from these bad practices? Which one/s?
- Do you use any? Which one/s?
- (If not arisen spontaneously) Do you use any filters or parental control tools within their devices or software so as to limit the access of your kids to certain types of contents?
- And to limit/restrict the in-app purchase process?
- How do your kids react to this control? How do you manage?
- What are the things that help you to control them regarding these issues?
- What are the barriers that hinder you from controlling them regarding these issues?
- What other things could be done in order to help you to prevent your kids from being exposed to these bad practices?
- …

PART IV: REACTIONS TO SOME PROBLEMATIC PRACTICES (15 min.)

Moderator:

Check whether the parallel children's group has finished in order to mix up the parents with their children. Make two new groups: choose the 4 parents who are least sensitive to protective measures to stay with you and then go gather their children. By "least sensitive to protective measures" we mean they hardly control or do not control at all their kids' activity on the internet. The "more sensitive" parents go to the room with the kids group.

Project the material on a big screen and watch the spontaneous reactions, while they are being shown (some bad practices will be shown; a copy of this material indicating these bad practices will be given to the moderator). SHOW FIGURES 5 AND 8.

The objectives of this section are:

- **To observe the reactions of parents and kids to a particular problematic practice**
- **To observe the interactions between parents and kids regarding this issue**
- **Get some further input to develop protective measures**

To finish this discussion we will meet your kids and we will all watch some online material to see what you think of it…

- What have we seen?

- Have you noticed anything that you do not like?
- Have you notice anything that might be bad for your kids? What is it?
- What is bad about it?
- (If not arisen spontaneously) Have you seen X? What is it? What is bad about it? (moderator: repeat for every indicated bad practice)
- What could be done to avoid or neutralize these negative practices?
- ...

THANK & CLOSE

DISCUSSION GUIDE FOR CHILDREN

- This discussion guideline is meant to safeguard that all relevant research topics will be covered in the focus groups.
- The listed questions are the main research questions. The moderators will adjust wording and order of questions according to discussion situation, atmosphere and dynamic group processes.
- Each research topic will first be approached openly. This entails that participants will indirectly influence and control content and depth of the discussion according to their own requirements – unaided approach.
- Once participants have exhausted their "own agenda" for each topic, the moderators will explore relevant topic details that might not have been discussed – aided approach.

The main objectives of this session are to explore to what degree children recognize online embedded marketing and other online problematic practices, understand its implications or show persuasion knowledge, and receive protection against these problematic practices.

WELCOMING AND INTRODUCTION (10 min.)

Moderator:

The setting must be informal: no table and no chairs, but comfortable and colourful cushions or bin bags for everybody (including the moderator).

- Introduction of the moderator and the setting (drinks, toilet, etc.)
- Introduction of the topic of discussion: HOW DO CHILDREN LIKE YOU USE THE INTERNET, WHAT YOU LIKE, WHAT YOU DON'T LIKE, ETC. (moderator: DO NOT provide any further explanations at this point)
- Explanation of the need for audio-visual recording
- Reassurance of respondents about data security and privacy issues: no upload of the recording to the internet, AND CONFIRMATION THAT NOTHING SAID DURING THE GROUP DISCUSSION WILL BE TOLD TO PARENTS, TEACHERS OR ANYBODY ELSE
- Reference to attending observers and the one-way mirror, or TV internal circuit, when it is the case
- Explanation of the rules of communication
    - Spontaneous and open discussion
    - No right nor wrong answers: IT IS NOT AN EXAMINATION, THIS IS NOT THE SCHOOL
    - No need for agreement with each other: EACH ONE OF YOU HAS HER/HIS OWN IDEAS, LIKES AND DISLIKES, AND ALL IDEAS ARE ACCEPTED
    - A balanced intervention of all participants is expected: WE WANT TO HEAR AND GET TO KNOW ALL OF YOU
    - Listening to each other is a must: PLEASE, KEEP TURNS TO TALK, DO NOT TALK ALL AT THE SAME TIME!

Introduction of participants

- First name (no surname), age, school term, and number of siblings and what position they occupy (the oldest one, the youngest one, in the middle)

MODERATOR: please put a sticker with the participant's name on his / her chest so that it is visible at all times (the transcription needs to differentiate the participants)

WARMING UP (10 min.)

Getting to know the children

Moderator: Main objectives are:

- **To create an atmosphere of spontaneity and confidence.**
- **To explore whether they are more progressive or more regressive Children.**

Focus on their own personal experiences (not on others' or general issues) throughout the whole discussion - not only in this section.

Let us start by talking about the things you like and don't like in general... things you're good at, etc.

- What are the things you like to do the most, the coolest ones? How come?
- What are the things you like to do the least, the dullest ones? How come?
- What are the things you do the best at school?
- What are your favourite characters (real or fiction)? What is so good about them?
- What are the characters that you do not like at all (real or fiction)? What is so bad about them?
- If we asked your best friend how you are, what kind of boy/girl you are, what would he/she tell us? How come?
- And if we asked it to your parents? What would they tell us? How come?
- ...

PART I: USE AND EXPERIENCE OF THE INTERNET IN GENERAL (30 min.)

Moderator: Main objectives are:

- **To explore children's habits and attitudes regarding the Internet in general.**
- **To detect possible exposure to problematic practices when using the Internet.**

Focus on websites, not on particular games at this point (e.g. respondents can choose games websites as their favourite websites, but not a particular game)

Pay special attention if anything related with advertisement, privacy issues or any other problematic practice pops up spontaneously.

1.1. Meaning of the Internet
1.2.

Moderator:

- **Write down on the flip-chart / board the sentence "Surfing on the Internet makes me feel…" and ask the Children to complete it spontaneously.**

- **Show the projective set of cards called "General" to them and ask the Children to choose the 2 images that best show how they understand and experience the Internet. Then ask each kid to explain her/his selection. Say the number of each photo loud and clear.**
- **Take a photo of each pair of selected images with the name of the kid who chose them**

From now on, we will discuss about the Internet; what you use it for, when you connect, what your favourite websites are, etc. Let's start by completing the sentence you can see on the board...

- What do you mean by feeling "x"?
- ...

Let us choose the two images that better fit with what the Internet means to us from all these images we have here...if more than one person chooses the same image, that is ok, the meaning you attribute to it might be different anyway...

- What do you mean with image number "x"?
- ...

1.3. Exploration of habits

Let us go on by thinking about the last time you surfed on the Internet...

The last time they surfed

- When was the last time you surfed on the internet?
- What was your reason to connect? What did you do?
- Where were you?
- Which device did you use? (desktop computer, laptop computer, tablet, smartphone, console)
- How did you feel? How come?
- ...

General habits

- What do you usually do on the Internet? What do you use it for?
- Do you purchase any apps (e.g. in Google Play or in App Store?)? Which ones?
- Do you have a profile in any social platform? Which one/s?
- When do you connect? How often? For how long each time?
- Where are you when you connect? At home? Out of home? Where at home? (in their own room, in shared rooms, etc.) Where out of home? (at school, friends' homes, on the street, etc.)
- Do you usually surf alone or with somebody else? Who? How come?
- What devices do you usually use? (computer, laptop, tablet, smartphone, console)
- What is similar and different regarding these devices?
- Do you use them in different ways? Explain

Preferences and grouping

Moderator:

- **Ask each kid to write down their 5 top favourite WEBSITES on cards / small papers (one website per card)**
- **Ask each kid to explain his / her selection**
- **Take a photo of each group of selected images with the name of the kid who chose them**

Now we will write down your top 5 favourite websites, they can be of any kind...

- What makes these 5 websites so good for you?

- What are they about? **(moderator: make a quick review of each website)**
- ...
- What are the websites you do not like at all? Can you write down their names on the flip-chart / board?
- What is so bad about them? **(moderator: probe if anything related with advertisement or other problematic practices comes up)**
- ...

1.4. Interaction with their parents / adults

Moderator: probe to get the maximum of information regarding protective measures.

- What do your parents think about the Internet?
- Do they allow you to use it freely? Or do they control what you do in the Internet? What things do they control? How do they control them?
- Why do you think they want to control these things?
- How do you feel about it?
- Do you negotiate this with them? What are the negotiations like?
- ...
- And what about your teachers, do they allow you to use the Internet freely? Or do they control what you do in it? What things do they control? How do they control them?
- Why do you think they want to control these things?
- ...

PART II: USE AND EXPERIENCE OF ONLINE GAMES (25 min.)

Main objectives are:

- **To explore children's habits and attitudes regarding online gaming in particular.**
- **To detect possible exposure to problematic practices when playing online.**

2.1. Exploration of habits

- Which games do you play online? **(moderator write down their names on the flip-chart / board)**
- What are these games about?
- What do you like and dislike about them?
- When do you play these games? How often? For how long each time?
- Where are you when you play? At home? Out of home? Where at home? (in their own room, in shared rooms, etc.) Where out of home? (at school, friends' homes, on the street, etc.)
- ...
- What devices do you usually use? (computer, laptop, tablet, smartphone, console)
- Are there any differences when using these different devices regarding the way you play with them? Explain
- (If not arisen spontaneously) How do you play with the desktop **computer or laptop computer**?
- (If not arisen spontaneously) How do you play using **mobile applications**?
- (If not arisen spontaneously) How do you play in **social platforms**?
- ...
- Do you usually play these games alone or with somebody else? Who? How come?
- Do you ever play with your parents? How come/why not?

- Or any other adult? How come/why not?
- ...
- How do you get these games?
- Do you download them free or do you pay for them? How do you pay for them? How does this work? **(moderator: probe to get the maximum of information about what they know)**
- ...
- Which different types of online games do you know? How would you classify the ones we wrote on the board? **(moderator: make the groups by assigning a number to each one and take a photo to the flip-chart with all the groups)**

2.2. Projective exercise: The Fairy and the Ideal online game

Moderator:
Main objective is to explore whether problematic practices pop up spontaneously.

Let's play a game using our imagination...Let's imagine a Magician visits us with all his / her powers... he/she has come to provide us with the ideal online game for us...Let's tell him/her what this game would be like...

- What would you ask for? What would this game be like?
- What would you get out of this game?
- How would you get it?
- What kind of things would this Magician prevent you from doing when playing?
- ...

2.3. Preferences

Moderator:

1. **Ask each kid to write down their 5 top favourite ONLINE AND/OR APPLICATION GAMES on a cards / small papers (one game per card)**
2. **Then ask each kid to explain his / her choice**
3. **Take a photo of each group with the name of the kid in it**

Let's see what your favourite online and/or application games are...

- How come you chose these five games? What is so good about them?
- ...
- What are the games that you do not like at all? Can you write down their names on the flip-chart / board?
- What is so bad about them?
- ...

PART III: LEVEL OF AWARENESS REGARDING PROBLEMATIC PRACTICES AND PROTECTIVE MEASURES (30 min.)

Moderator:
Objective 1: to explore the level of awareness of 9 problematic practices: 1) embedded advertising (advergames), 2) in-app and online game purchases, 3)

data privacy issues, 4) spending money online or "new wallet", 5) lack of price and contract transparency, 6) lack of age verification system, 7) lack of contact information about suppliers, 8) alcohol advertisement and 9) inappropriate content (see p.8). A special focus is set on 3 main areas:

Advertisement

- **Particular focus on advergames (games especially designed for advertisement)**
- **Product placement (insertion of a brand or product in an entertainment medium, such as an online game) and sponsorships**
- **Pre-game, inter-level, and post-game advertising**

- **In-app purchases (from Google Play, App Store, etc.) with a particular focus on:**
  - **Paid downloads – charging money for downloads of their apps**
  - **In-app advertising – including advertisements within the applications/games**
  - **In-app purchases of digital content**
  - **Freemium (free-to-premium)**
  - **Promotion of non-digital goods (e.g. Nike, restaurants, food products)**
  - **Resale of data collected via app use.**
- **Social platforms issues**
  - **Particular focus on privacy and age accessibility**

Objective 2: to explore to what extent Children are protected when being exposed to these problematic practices.

If no respondent is fully aware of what an advergame, an in-app or privacy is, let the group make assumptions about it. If they are not able to come up with what some concept means, then explain it to them.

Use the emoticon cards to express the feelings

3.1. Spontaneous reactions

- Are there any things that worry or annoy you about the Internet? Which ones? How come?
- Are there any things that you think can be bad for you? Which ones? (**Please show here Figure 9 if alcohol topic is not explicitly mentioned by Children. Please make sure that this is sufficiently discussed).**
- In what sense can they be bad for you?
- What do you do if you encounter something you think is not good for you?
- ...

3.2. Advertisement and advergames

- What is advertisement for you?
- What do you think of it?
- Where can you find advertisements in general?
- How do you know it is an advertisement?
- And where can you find advertisements on the Internet in particular? (moderator probe to get the maximum of information (banners, blogs, social media, games…)
- How do you know it is an advertisement? Is it easy to distinguish the advertisements from the rest of the things in the websites? How come?
- What are these advertisements about? Any content that you may consider inappropriate like alcohol, violence, etc.? Which ones can you remember?

- How do you feel when you see an advertisement on the Internet? (moderator: show the cards)
- What do you do?
- Do you know what an advergame is?
- Where can you find them? (moderator probe to get the maximum of information)
- How can you know it is an advergame? Is it easy to distinguish the advergames from the rest of the things in the websites? How come?
- What are these advergames about? Which ones can you remember?
- How do you feel when you see an advergame on the Internet? (moderator: show the cards)
- What do you do?
- ...

3.3. In-app purchases

- What about in-app purchase, do you know what it is? Explain
- What do you think of it?
- Where can you find it? (moderator probe to get the maximum of information)
- How do you know that the application contains in-app purchases? Is it easy to distinguish them from the rest of apps? How come?
- How do you feel when you are using an application that offers in-app purchases? (moderator: show the cards)
- What do you do?
- Do you pay for extra functionalities or to go on playing? How do you pay?

3.4. Privacy issues

- What is privacy for you?
- What is its relation with the Internet in general? And with the social platforms, such as Facebook? (OR ANY OTHER SOCIAL NETWORKING SITE POPULAR IN THE COUNTRY)
- Is there any personal information that you usually share, even with unknown people? What is it?
- Have you been requested to share/give some information?
- Is there information that you would never share in social media?
- Are your profiles open to anybody or do you select who has access to your profiles? How come?
- ...
- Are there websites that ask about your age? Which ones?
- What do you do?
- ...

3.5. Projective exercise: The Animals

Moderator:

Ask the Children to choose from the projective set of cards called "Animals" the animal that better represents each group of problematic practices (advertisements, advergames, in-app purchases and privacy)

1. **Then ask each kid to explain her/his selection for each issue.**
2. **Take a photo of the animals associated with each issue with the label in it.**

Here we have a collection of animals…each animal conveys different ideas and sensations to us…you have to choose the animal that better fits with what each of these issues represent to you…

- Which animal fits with what the advertisements make you feel?
- Which animal fits with what the advergames make you feel?
- Which animal fits with what the in-app purchases (or the games that offers in-app purchases) make you feel?
- Which animal fits with what the privacy issues make you feel?

3.6. Parents' or adults involvement in protective measures

Moderator: probe to get the maximum of detail

- What do your parents think about the games you play?
- Do they allow you to play any game you want? Or do they control what you play on the Internet? What games do they control?
- Why do you think they want to control these things?
- How do you feel about it? How do you negotiate this with them?
- ...
- And what about your teachers, do they allow you to play games on the Internet freely? Or do they control what you play? What games do they control?
- Why do you think they want to control these things?
- ...
- Are there any things that worry YOU about these games? Which ones? How come?
- ...
- Are there any way/s your parents control any of the issues we've been talking about? (advertisements, advergames, in-app purchases, privacy)
- (If not arisen spontaneously) Do they use any filters or parental control tools within their devices or software so as to limit their access to certain things?
- (If not arisen spontaneously) And to limit the in-app purchase process?
- How do you react to this control? Do you negotiate with your parents on the restrictions they put to you?
- What other things could your parents do in order to avoid the things that can be bad for you?
- …
- And YOU? What can you do not to be deceived on the Internet?
- …

PART IV: REACTIONS TO SOME PROBLEMATIC PRACTICES (15 min.)

Check whether the parallel parent's group has finished in order to mix up the Children with their parents.

Make up 2 new groups: pick up the 4 parents who are more sensitive to protective measures to come with their Children and the other Children go with the parents that have been left (the less sensitive ones). By "more sensitive to protective measures" we mean the parents who tend to control or supervise their Children' activity on the internet more often or regularly than the other parents (the less sensitive ones) do.

Project the material on a big screen and watch the spontaneous reactions to it while it is being shown (some bad practices will be shown; a copy of this material indicating these bad practices will be given to the moderator). SHOW FIGURES 4, 6 AND 7

The objectives are:

- **To observe the reactions of Children and parents to a particular problematic practice**
- **To observe the interactions between Children and parents regarding this issue**
- **Get some further input to develop protective measures**

To finish this discussion we'll meet your parents and we'll all watch some online material to see what you think of it…

- What have we seen?
- Have you noticed anything that you do not like?
- Have you notice anything that might be bad for you? What is it?
- What is bad about it?
- (If not arisen spontaneously) Have you seen X? What is it? What is bad about it**? (moderator: repeat for every indicated bad practice)**
- What about other problematic practices such as inappropriate content (sexual content, violent content, marketing of adult products and services), alcohol ads, lack of price and contract transparency, data privacy…?
- What could be done to avoid you to see / have access to this?

THANK & CLOSE

Annex 7 Focus group stimuli materials

Figure 44 Alcohol related game

Figure 45 Advergame

Figure 46 Social media game and advertisement

Figure 47 In-app purchase game

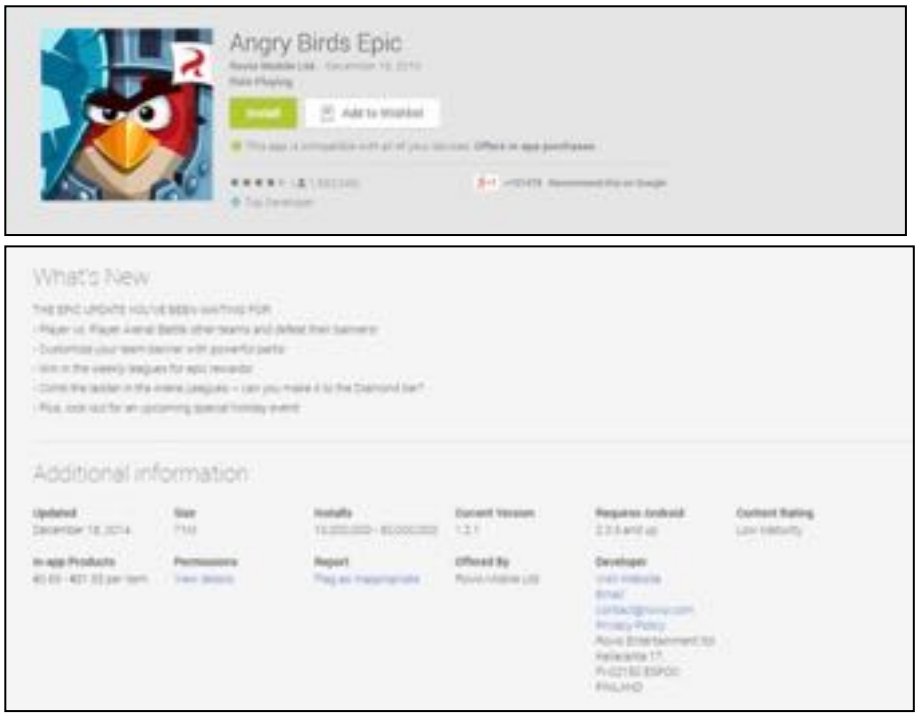
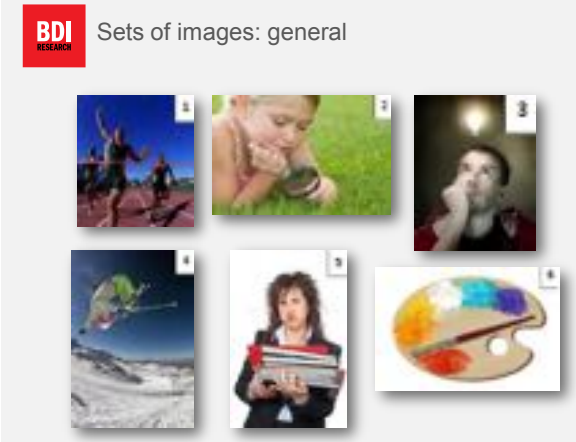


Figure 48 In-app purchase protective measure

Figure 49 In-app purchase restrictions

Figure 50 General set of images



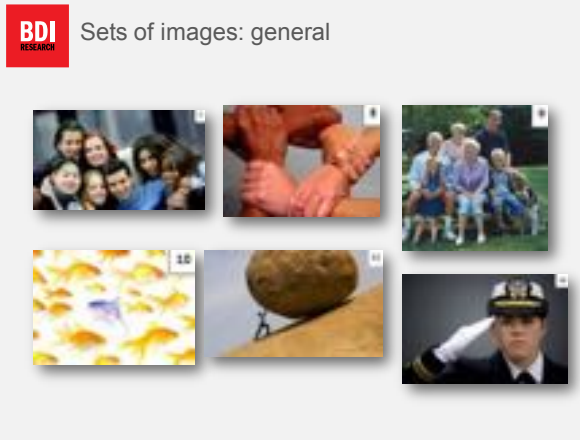


Figure 51 General set of images: animals

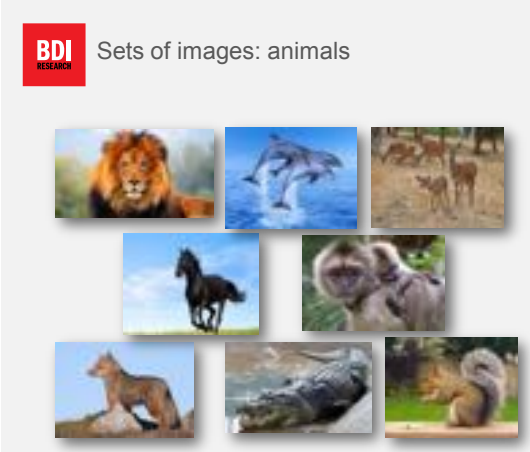
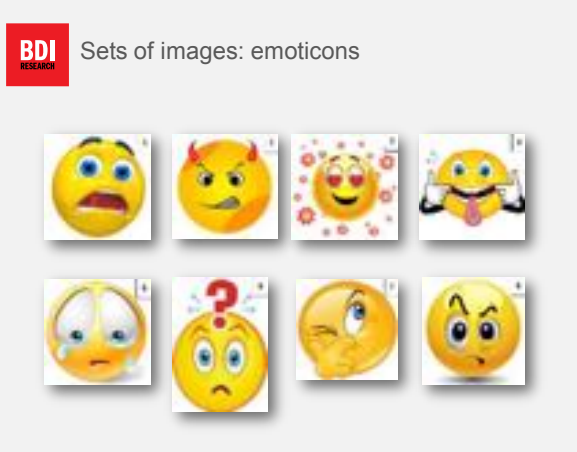


Figure 52 General set of images: Emoticons



Annex 8 Focus group parents and children distribution

Table 42 outlines the distribution of children according to target and gender. In all countries but France and Germany, 4 female and 4 male participants participated in the focus groups with children. In France and Germany, the focus group with children comprised 5 female and 3 male, and 3 female and 5 male participants, respectively.

Table 42 Distribution of children according to target and gender

Country	Experienced networkers	Risky explorers	Intensive gamers	Total
Spain	1 female 2 male	1 female 1 male	2 female 1 male	4 female 4 male
Italy	2 female	2 male	2 female 2 male	4 female 4 male
France	2 female 1 male	2 male	3 female	5 female 3 male
Poland	1 female 1 male	2 female 1 male	1 female 2 male	4 female 4 male
The Netherlands	2 female 1 male	2 male	2 female 1 male	4 female 4 male
Germany	3 female	3 male	2 male	3 female 5 male
UK	1 female 1 male	1 female 2 male	2 female 1 male	4 female 4 male
Sweden	2 female	3 male	2 female 1 male	4 female 4 male

In the focus groups with parents, a less homogeneous distribution of gender of participants occurred. In Spain, the Netherlands and the UK, 4 female and 4 male parents participated per focus group. In France, Poland, Germany and Sweden, 5 female and 3 male parents participated per focus group. In Italy, 3 female and 5 male parents participated. The table below gives an outline of the distribution of parents according to child's target and parent's gender.

Table 43 Distribution of parents according to (child's) target and (parent's) gender

Country	Experienced networkers	Risky explorers	Intensive gamers	Total
Spain	3 female	2 male	1 female 2 male	4 female 4 male
Italy	2 female	2 male	1 female 3 male	3 female 5 male
France	3 male	2 female	3 female	5 female 3 male
Poland	2 female	2 female 1 male	1 female 2 male	5 female 3 male
The Netherlands	2 female 1 male	2 male	2 female 1 male	4 female 4 male
Germany	2 female 1 male	2 female 1 male	1 female 1 male	5 female 3 male
UK	2 male	3 female	1 female 2 male	4 female 4 male
Sweden	1 female 1 male	2 female 1 male	2 female 1 male	5 female 3 male

Annex 9 Parents' survey questionnaire

Introduction

This survey is about your attitudes and experiences as a parent/guardian to a variety of issues related to your child's/children's internet use and to online games (including mobile and tablet applications). The survey will take approximately 20 minutes to complete.

Before you start the questionnaire we would like to verify that you can see the images that we will show you.
What can you see in the following image?

An animal	1
A flower	2
An ice cream	3
I cannot see the image	4

Screener

S1. **How old are you? __ years old**[127] IF NOT BETWEEN 25-65, CLOSE. CHECK QUOTAS

S2. **Are you…** CHECK QUOTAS

Male	1.
Female	2.

S3. **How many children aged 6 to 14 years old live in your household under your responsibility/care?**[128]

___ number → IF NONE, CLOSE

Now we are going to ask you several questions regarding THE CHILD BETWEEN 6 AND 14 WHOSE BIRTHDAY IS COMING UP NEXT

S4. **Are you her/his?**

Parent/step-parent	1. IF 1, GO TO S6
Guardian	2. IF 2, GO TO S5
None of above	3. IF 3, CLOSE

[127] Based on Q0 from Flash EB No 248 – Safe internet for children

[128] D40b from Eurobarometer 2005

S5. If you are the child's guardian, are you her/his?

Sibling	1.
Grandparent	2.
Other relative	3.
Other	4. IF 4, CLOSE

S6. As far as you know, does your child use the internet?[129]

Yes	1.
No	0. → IF 0 CLOSE

Child identification, internet access, devices and usage

Q1. Among your children aged between 6 and 14 years, is the child whose birthday is coming up next a boy or a girl?

Boy	1.
Girl	2.

Q2. How old is this child?[130]

_ years old.

Now we are going to ask you several questions regarding THE CHILD BETWEEN 6 AND 14 WHOSE BIRTHDAY IS COMING UP NEXT

Q3. As far as you are aware, where does your child access the internet?... [131] **By 'the internet' we mean going online on any device** [Several answers possible]

a. Living room (or other public room) at home	1.
b. Own room (or other private room) at home	2.
c. At school	3.
d. In an internet café	4.
e. At friends' homes	5.
f. At relatives' homes	6.
g. In a library/other public place	7.
h. Somewhere else [Please specify]	8.
i. [DK/NA]	9.

Q4. As far as you know, does your child use the following devices to connect to the internet...

Yes	1.
No	0.
[DK/NA]	9.

a. Computer (desktop/laptop)	1.
b. Mobile phone/smartphone	2.
c. Tablet	3.
d. Games console	4.
e. TV	5.
f. Other	6.

[129] S5 from Flash EB No 248 – Safe internet for children

[130] Based on Q2 from Flash EB No 248 – Safe internet for children

[131] Based on Q5a from Flash EB No 248 – Safe internet for children

Q5. Does your child possess the following devices for her/his exclusive personal use?

Yes	1.
No	0.

a.	Computer (desktop/laptop)	1.
b.	Mobile phone/smartphone	2. → IF Q5.b=1 GO TO Q6
c.	Tablet	3.
d.	Games console	4.
e.	TV	5.

Q6. Does your child's mobile phone/smartphone have internet connection (3G, 4G)?

Yes	1.
No	0.

Q7. How long do you estimate your child spends using the internet at home ON A NORMAL SCHOOL DAY?

More than 5 hours	6.
Between 3 and 5 hours	5.
Between 2 and 3 hours	4.
Between 1 and 2 hours	3.
Between half an hour and 1 hour	2.
Less than half an hour	1.

Q8. How long do you estimate your child spends using the internet at home ON A NORMAL NON-SCHOOL DAY?

More than 5 hours	6.
Between 3 and 5 hours	5.
Between 2 and 3 hours	4.
Between 1 and 2 hours	3.
Between half an hour and 1 hour	2.
Less than half an hour	1.

Q9. How often does your child perform the following internet activities? [These will appear in random order]

Every day or almost every day	5.
At least once a week (but not every day)	4.
At least once a month (but not every week)	3.
Less than once a month	2.
Never	1.
[DK/NA]	9.

a. Use the internet for school work
b. Watch video clips (e.g. on YouTube)
c. Download music or films
d. Read/watch news online
e. Visit a social networking profile
f. Visit a chat room
g. Use instant messaging
h. Play games with other people online
i. Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft…)
j. Use a webcam
k. Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)

l. Put (or post) a message on a website
m. Write a blog or online diary
n. Participate in a site concerned with good causes (e.g. campaigns, charity)
o. Use a file sharing site
p. Download games
q. Play online games alone

Parent's perception of their child's digital skills

Q10. Please indicate how accurate the following statements are when thinking about how your child uses the internet.[132] Please remember that these questions are related to THE CHILD BETWEEN 6 AND 14 WHOSE BIRTHDAY IS COMING UP NEXT [These will appear in the questionnaire without the headings and random order]

Very true of my child	5.
Mostly true of my child	4.
Neither true nor untrue of my child	3.
Not very true of my child	2.
Not at all true of my child	1.
I do not understand what you mean by this	9.
I do not know this about my child	99.

Operational

a. My child knows how to open downloaded files
b. My child knows how to download/save a photo she/he found online
c. My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)
d. My child knows how to open a new tab in a browser
e. My child knows how to adjust privacy settings

Information/browsing

f. My child finds it easy to decide what the best keywords are to use for online searches
g. My child finds it easy to find a website he/she visited before
h. My child enjoys looking for information online
i. Sometimes my child ends up on websites without knowing how he/she got there
j. My child finds it easy to verify information he/she found online

Social

k. My child knows which information he/she should and shouldn't share online
l. My child knows when he/she should and shouldn't share information online
m. My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is online
n. My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)
o. My child knows how to remove friends from his/her contact lists

Creative

p. My child knows how to create something new from existing online images, music or video

[132] Measuring digital skills. From digital skills to tangible outcomes, Project report (2014)

q. My child knows how to make basic changes to the content that others have produced
r. My child knows how to design a website
s. My child knows which different types of licences apply to online content
t. My child would feel confident putting online video content he/she has created

Mobile

u. My child knows how to install apps on a mobile device
v. My child knows how to keep track of the costs of mobile app use
w. My child knows how to make an in-app purchase
x. My child knows my password enabling him/her to make an in-app purchase

Active mediation of internet use

Q11. When your child uses the internet, do you...[133] [These will appear in random order]

Always	5.
Very often	4.
Sometimes	3.
Rarely	2.
Never	1.

a. Talk to your child about what he/she does on the internet?
b. Encourage your child to explore and learn things on the internet?
c. Sit with your child while he/she uses the internet?
d. Stay nearby when your child uses the internet?
e. Do shared activities together with your child on the internet?

Q12. Has your child ever... [randomise] ...[134] [These will appear in random order]

Yes	1.
No	0.

a. Initiated a discussion with you about what she/she does on the internet?
b. Told you about things she/he finds disturbing on the internet?
c. Asked for your advice on how she/he should act online?
d. Asked for products and/or services that she/he has seen advertisements for online?
e. Ask for your help concerning a situation on the internet that she/he cannot handle?
f. Used the internet?

Restrictive mediation

Q13. For each of these actions, please indicate if you CURRENTLY let your child perform them whenever she/he wants, or let her/him perform them but only with your permission or supervision, or you never let her/him perform them...[135] [These will appear in random order]

Can do this anytime	3.
Can only do this with my permission or supervision	2.

[133] EU Kids online

Based on EU Kids online

[135] EU Kids online

Can never do this	1.
Don't know	9.

a. Use the internet for school work
b. Watch video clips (e.g. on YouTube)
c. Download music or films
d. Read/watch news online
e. Visit a social networking profile
f. Visit a chat room
g. Use instant messaging
h. Play games with other people online
i. Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft…)
j. Use a webcam
k. Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)
l. Put (or post) a message on a website
m. Write a blog or online diary
n. Participate a in a site concerned with good causes (e.g. campaigns, charity)
o. Use a file sharing site
p. Download games
q. Play online games alone

Active mediation of internet safety

Q14. How often do you do any of these things with your child? [136] [These will appear in random order]

Always	5.
Very often	4.
Sometimes	3.
Rarely	2.
Never	1.

a. Help him/her when something is difficult to do or to find on the internet
b. Suggest ways to use the internet safely
c. Explain why some websites are appropriate or inappropriate
d. Help him/her when something has bothered him/her on the internet
e. Talk to him/her about what to do if something on the internet bothered him/her
f. Explain that online games may contain hidden advertising aimed at making children want to have new products
g. Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game
h. Talk to him/her about the commercial activities they are exposed to online

Parental technical mediation

Q15. Do you (or your partner/other carer) make use of any of the following…?[137] [These will appear in random order]

Yes	1.
No	0.

[136] EU Kids online

[137] EU Kids online

DK/NA 9.

a. Parental controls or other means of blocking or filtering some types of website
b. Parental controls or other means of keeping track of the websites or apps your child visits
c. Rules about how long or when your child is allowed to go online
d. A service or contract that limits the time your child spends on the internet
e. Software to prevent spam or junk mail/viruses
f. Parental controls that filter the apps your child can download
g. Parental controls that alert you when your child wants to buy content (in-app purchase)
h. Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)
i. Ad blocking software

Parental monitoring

Q16. When your child uses the internet, how often do you (or your partner/other carer) check the following things afterwards? [138] [These will appear in random order]

Always	5.
Very often	4.
Sometimes	3.
Rarely	2.
Never	1.

a. Which websites he/she visited
b. Which friends or contacts he/she adds to his/her social networking profile/instant messaging service
c. The messages in his/her email or instant messaging account
d. His/her profile on a social networking or online community
e. The apps he/she downloaded
f. The in-app purchases he/she made

Risks

Please remember that these questions refer to THE CHILD BETWEEN 6 AND 14 WHOSE BIRTHDAY IS COMING UP NEXT

Q17. For each of the following possible online risks, please assess how harmful they could be to your child on a scale from 1 to 7, in which 1 stands for 'Not harmful at all' and 7 for 'Very harmful' [These will appear in random order]

Very harmful	7.
	6.
	5.
	4.
	3.
	2.
Not harmful at all	1.
[DK/NA]	9.

[138] EU Kids online

a. To see images on the internet that contain explicit violence against others
b. Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)
c. To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)
d. Spending too much money on online games or in-app purchases
e. Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)
f. Being exposed to hidden advertisements on online platforms, such as branded games or product placement
g. That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct marketing or targeted online advertising)
h. Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol
i. Being exposed to advertisements of unhealthy food
j. Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data

Q18. For each of the following situations, please indicate how likely it is that these will happen to your child on a scale from 1 to 7, in which 1 stands for 'Not likely at all' and 7 for 'Very likely'? [Perceived vulnerability]
[These will appear in random order]

Very likely	7.
	6.
	5.
	4.
	3.
	2.
Not likely at all	1.
[DK/NA]	9.

a. To see images on the internet that contain explicit violence against others
b. Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)
c. To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)
d. Spending too much money on online games or in-app purchases
e. Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)
f. Being exposed to hidden advertisements on online platforms, such as branded games or product placement
g. That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct marketing or targeted online advertising)
h. Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol
i. Being exposed to advertisements of unhealthy food
j. Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data

Q19. For the following situations, please indicate, as far as you are aware, whether or not your child has encountered them in the PAST YEAR…[139] [These will appear in random order]

Yes	1.
No	0.
[DK/NA]	9.

a. To see images on the internet that contain explicit violence against others
b. Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)
c. To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)
d. Spending too much money on online games or in-app purchases
e. Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)
f. Being exposed to hidden advertisements on online platforms, such as branded games or product placement
g. That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct marketing or targeted online advertising)
h. Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol
i. Being exposed to advertisements of unhealthy food
j. Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data

Q20. As far as you are aware, in the past year, have any of the following situations, if any, happened to your child while playing an online game? [140] [These will appear in random order]

Yes	1.
No	0.
[DK/NA]	9.

a. The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases
b. The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases
c. The game allowed your kid to play with other players (check with Q9h)

Protective measures

Q21. To which extent do you think the following would contribute to a safer and more effective use of the internet for your child?[141] **By 'the internet' we mean going online on any device** [These will appear in random order]

Would contribute a lot	4.
Would contribute somewhat	3.

[139] EU Kids online

[140] EU Kids online

[141] Q14 from Flash EB No 248 – Safe internet for children

Would not contribute much	2.
Would not contribute at all	1.
[DK/NA]	9.

a. More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online
b. More/better information and advice for parents on the commercial activities children/adolescents are exposed to online
c. Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adolescents are exposed to online
d. Improved availability/performance of parental control software
e. Stricter regulation for businesses that produce online content and services
f. More awareness-raising campaigns on online risks
g. Contact points such as helplines where parents and children can receive individual advice about how to stay safe online
h. More/better information on consumer rights and the risks of internet cost-traps

Q22. Have you used any of the following protective measures related to advertising in online games for children? [These will appear in random order]

Yes	1.
No	0.

a. Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising
b. Contextual information (labels) displayed permanently on the screen
c. Parent's pre-approval before playing.
d. School education for children in recognising advertising
e. Age verification systems
f. Surveillance and monitoring of hidden advertisements by **government** of online games to ensure that they do not follow unfair practice
g. Surveillance and monitoring of hidden advertisements by **companies** of online games to ensure that they do not follow unfair practice

Q23. In general, how effective do you think the following protective measures related to advertising in online games for children are?

Very effective	7.
	6.
	5.
	4.
	3.
	2.
Not effective	1.
[DK/NA]	9.

a. Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising
b. Contextual information (labels) displayed permanently on the screen
c. Parent's pre-approval before playing
d. School education for children in recognising advertising
e. Age verification systems
f. Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unfair practice

g. Surveillance and monitoring of advertisement by companies of online games to ensure that they do not follow unfair practice

Q24. Have you used any of the following protective measures related to in-app purchases for children's applications? [These will appear in random order]

Yes	1.
No	0.

a. Parental pre-approval of purchases
b. Cooling-off period for children before making a purchase
c. School education in using online apps
d. Clear indication that in-app purchases are required to fully exploit the application/game
e. Age verification systems
f. In-app purchase password as default option on the mobile

Q25. In general, how effective do you think the following protective measures related to in-app purchases for children's applications are?

Very effective	7.
	6.
	5.
	4.
	3.
	2.
Not effective	1.
[DK/NA]	9.

a. Parental pre-approval of purchases
b. Cooling-off period for children before making a purchase
c. School education in using online apps
d. Clear indication that in-app purchases are required to fully exploit the application/game
e. Age verification systems
f. In-app purchase password as default option on the mobile

Q26. Do you find protecting your child from online threats is…

Very easy	7.
	6.
	5.
	4.
	3.
	2.
Very difficult	1.
[DK/NA]	9.

Q27. How much control do you believe you have over protecting your child from online threats?

Complete control	7.
	6.
	5.
	4.
	3.
	2.
No control	1.

[DK/NA] 9.

Q28. Do you find protecting your child from online marketing is…

Very easy 7.
6.
5.
4.
3.
2.
Very difficult 1.
[DK/NA] 9.

Q29. How much control do you believe you have over protecting your child from online marketing?

Complete control 7.
6.
5.
4.
3.
2.
No control 1.
[DK/NA] 9.

Q30. Do you find that protecting your child from online marketing of alcohol is…

Very easy 7.
6.
5.
4.
3.
2.
Very difficult 1.
[DK/NA] 9.

Q31. How much control do you believe you have over protecting your child from online marketing of alcohol?

Complete control 7.
6.
5.
4.
3.
2.
No control 1.
[DK/NA] 9.

Q32. Please indicate to what extent to you agree or disagree with the following statements

Strongly agree 7.
6.
5.
4.
3.
2.

Strongly disagree	1.
[DK/NA]	9.

a. It is mostly up to me as a parent/guardian that my children are safe from online marketing
b. It is mostly up to government regulators to ensure that my children are safe from online marketing
c. It is mostly up to the online industries to ensure that my children are safe from online marketing

Parents' digital skills

Q33. Please indicate how accurate the following statements are when thinking about how YOU use the internet. Please tick one option per row[142] [These will appear in the questionnaire without the headings and random order]

Very true of me	5.
Mostly true of me	4.
Neither true nor untrue of me	3.
Not very true of me	2.
Not at all true of me	1.
I do not understand what you mean by this	9.

Operational

a. I know how to open downloaded files
b. I know how to download/save a photo I found online
c. I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)
d. I know how to open a new tab in my browser
e. I know how to adjust privacy settings

Information/navigation

a. I find it easy to decide what the best keywords are to use for online searches
b. I find it easy to find a website I visited before
c. I enjoy looking for information online
d. Sometimes I end up on websites without knowing how I got there
e. I find it easy to verify information I found online

Social

a. I know which information I should and shouldn't share online
b. I know when I should and shouldn't share information online
c. I am careful to make my comments and behaviours appropriate to the situation I find myself in online
d. I know how to change who I share content with (e.g. friends, friends of friends or public)
e. I know how to remove friends from my contact lists

Creative

a. I know how to create something new from existing online images, music or video
b. I know how to make basic changes to the content that others have produced
c. I know how to design a website
d. I know which different types of licences apply to online content
e. I would feel confident putting video content I have created online

[142] Measuring digital skills. From digital skills to tangible outcomes, Project report (2014)

Mobile

a. I know how to install apps on a mobile device
b. I know how to keep track of the costs of mobile app use
c. I know how to make an in-app purchase
d. I use the internet

Socio-demographic information

Q34. How old were you when you finished full-time education? Please write the age when education was terminated[143]

__ years old

Q35. What is the highest level of schooling you completed? [Standard Classification of Education (ISCED; UNESCO, 2006)]

a. Primary school, Middle school
b. O level, GCSE grade A–C or equivalent
c. GCE A/AS Level
d. NVQ
e. HND, Higher Education Diploma
f. Bachelor's Degree
g. Master's Degree, Post-Graduate Degree
h. Doctorate (PhD)

Q36. Besides you, is there anyone else in the household who regularly helps you take care of your children?

a. Yes, my partner
b. Yes, my parents or other family members
c. Yes, a nanny/carer
d. No, I take care of the children on my own

Q37. What is the highest level of schooling completed of the person who regularly helps you take care of your children? [Standard Classification of Education (ISCED; UNESCO, 2006)]

a. Primary school, Middle school
b. O level, GCSE grade A–C or equivalent
c. GCE A/AS Level
d. NVQ
e. HND, Higher Education Diploma
f. Bachelor's Degree
g. Master's Degree, Post-Graduate Degree
h. Doctorate (PhD)

Q38. Which of the following occupational categories currently apply to you?

a. Self-employed → Go to Q39
b. Employee → Go to Q39
c. Unemployed → Go to Q40
d. Looking after the house and/or the family → Go to Q40
e. Retired → Go to Q40
f. Other → Go to Q39

Q39. What is your current occupation?[144] **[To be adapted]**

[143] D3 from Flash EB No 248 – Safe internet for children

[144] Q12 from Flash EB No 248 – Safe internet for children

a. Farmer, forester, fisherman
b. Owner of a shop, craftsperson
c. Professional (lawyer, medical doctor, accountant, architect…)
d. Manager of a company
e. General management, director or top management
f. Middle management
g. Civil servant
h. Office clerk
i. Other employee (salesperson, nurse, etc...)
j. Specialised manual worker
k. Supervisor/foreman (team manager, etc…)
l. Manual worker
m. Unspecialised manual worker
n. Other

Q40. Think of this ladder as representing where people stand in your country. At the top of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the bottom are the people who are the worst off – who have the least money, the least education, and the least respected jobs or no job.
The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom. If you consider your current situation and compare it with all other people in your country, where would you place yourself on this ladder?[145]

Q41. Could you tell me how many people (of all ages) live in your household, yourself included?
___ number

Q42. How many are under 6 years old?
___ number

Q43. How many aged 6 to 14 years old? (check with S3)
___ number

Q44. How many are aged 15 to 18?
___ number

Q45. How many are aged above 19, yourself included?
___ number

Finally, we would like to show you two images from two different applications.

Q46. To what extent do you agree or disagree that the purpose of the following application is…

Strongly agree	7.
	6.
	5.
	4.
	3.
	2.
Strongly disagree	1.

[145] Adler, N.E. and Stewart, J. (2007) *The MacArthur scale of subjective social status*. Available at www.macses.ucsf.edu/research/psychosocial/subjective.php, retrieved 4/15/2012.

[DK/NA] 9.

a. Educational/training
b. Entertainment
c. Advertising/selling

Q47. To what extent do you agree or disagree that the purpose of the following application is…

Strongly agree 7.
6.
5.
4.
3.
2.
Strongly disagree 1.
[DK/NA] 9.

a. Educational/training
b. Entertainment
c. Advertising/selling


Full
50
Invite

Annex 10 Parents' survey target, sampling and wieighting

The demographic groups are organised by the cross-referenced quotas of gender and age group as follows:

- Women aged between 25 and 34 years old,
- Women aged between 35 and 49 years old,
- Women aged between 50 and 64 years old,
- Men aged between 25 and 34 years old,
- Men aged between 35 and 49 years old,
- Men aged between 50 and 64 years old.

Level of education:

- Low education (ISCED 0-4)
- High education (ISCED 5-8)

Table 44 shows the target population by country and **Table 45** shows the sample by country and age group.

Table 44 Target population by country (25-64 years old)

Country	Total	Sample
Germany (DE)	38,628,851	800
Spain (ES)	20,366,814	800
France (FR)	28,505,152	800
Italy (IT)	20,798,528	800
Netherlands (NL)	7,956,475	800
Poland (PL)	14,500,080	800
Sweden (SE)	4,866,051	800
United Kingdom (UK)	31,234,316	800
TOTAL	166,856,267	6.400

Source: Eurostat, Population 2011

Table 45 Target sample by country and age group

Country	25-34	35-49	50-64	Total
Germany (DE)	193	380	227	800
Spain (ES)	282	370	148	800
France (FR)	208	352	240	800
Italy (IT)	233	391	176	800
Netherlands (NL)	200	304	296	800
Poland (PL)	310	340	150	800
Sweden (SE)	187	330	283	800
United Kingdom (UK)	208	346	246	800
TOTAL	1.821	2.813	1.766	6.400

Source: Eurostat, Population 2011

The following table displays the sample by country and gender

Table 46 Target sample by country and gender group

Country	Male	Female	Total
Germany (DE)	399	401	800
Spain (ES)	395	405	800
France (FR)	385	415	800
Italy (IT)	395	405	800
Netherlands (NL)	400	400	800
Poland (PL)	387	413	800
Sweden (SE)	394	406	800
United Kingdom (UK)	396	404	800
TOTAL	3.144	3.256	6.400

Source: Eurostat, Population 2011

Having defined the sample characteristics the final sample is displayed in Table 47. The sample has two essential characteristics. Firstly, a comparable sample was selected for each country. This provides an equal level of reliability of the results obtained in each of the countries. Secondly, as Eurostat does not provide information about distributions on parents of children between 6-14 years of age and it is reasonable to assume that they are concentrated in those between 35 and 49. Hence we did not opt for a representative sample distribution, but instead agreed with the EC to establish a minimum target for the age groups 25-34 and 50-64 years of age (minimum 15%).

Similar criteria were used for education quotas, given the lack of data on this segment in Eurostat and the difficulties related to finding this target. We therefore grouped the sample according to medium and high education[146] and allowed a minimum deviation of 10% per group in each country. It was not possible to identify enough number of parents having children aged between 4 and 14 years old, who are Internet users with the low educational level.

Table 47 Final sample by country and demographics

Country	Male		Female		25-34 years old		35-49 years old		50-64 years old		Low education		High education	
Germany	50%	399	50%	400	15%	120	67%	535	18%	145	66%	529	34%	271
Spain	49%	395	51%	405	15%	120	70%	560	15%	120	57%	456	43%	344
France	48%	385	52%	415	16%	130	69%	548	15%	122	54%	435	46%	365
Italy	49%	395	51%	405	15%	120	70%	560	15%	120	71%	568	29%	232
Netherlands	50%	400	50%	400	15%	120	68%	545	17%	135	56%	444	44%	356
Poland	48%	387	52%	413	16%	131	69%	549	15%	120	64%	508	36%	292
Sweden	49%	394	51%	406	17%	132	68%	547	15%	121	55%	440	45%	360
United Kingdom	50%	396	50%	404	20%	160	60%	482	20%	158	56%	449	44%	351

[146] Standard Classification of Education (ISCED; UNESCO, 2006).

The following table shows the study sampling errors (overall and by quotas). They are calculated for a probability no greater than 95.5%, and for the least desired context, i.e. a maximum indeterminate probability (p = q = 50%) for the reference population.

Table 48 Sampling errors by country

Country	Sampling errors
Germany (DE)	+ 3.54%
Spain (ES)	+ 3.54%
France (FR)	+ 3.54%
Italy (IT)	+3.54%
Hungary (HU)	+ 3.54%
Poland (PL)	+ 3.54%
Sweden (SE)	+ 3.54%
United Kingdom (UK)	+ 3.54%
TOTAL	+ 1.25%

These sampling errors determine the statistical reliability of the sample. The overall error margin, therefore, is +1.25%, with a country specific error margin of +3.53%. These errors are in line with the statistical criteria that validate the sample design and, given that the sample is representative and reliable, it is possible to extrapolate the study results to the target population group in the selected countries.

Table 49 Sampling errors age

Country	25-34	35-49	50-64
Germany (DE)	± 7.20%	± 5.13%	± 6.64%
Spain (ES)	± 5.96%	± 5.20%	± 8.21%
France (FR)	± 6.94%	± 5.33%	± 6.45%
Italy (IT)	± 6.55%	± 5.06%	± 7.54%
Netherlands (NL)	± 7.11%	± 5.74%	±5.81%
Poland (PL)	± 5.68%	± 5.42%	± 8.16%
Sweden (SE)	± 7.32%	± 5.51%	± 5.94%
United Kingdom (UK)	± 6.93%	± 5.38%	± 6.38%
TOTAL	± 2.35%	± 1.86%	± 2.43%

Table 50 Sampling errors gender

Country	Male	Female
Germany (DE)	±5.01%	± 4.99%
Spain (ES)	± 5.03%	± 4.97%
France (FR)	± 5.10%	± 4.91%
Italy (IT)	± 5.03%	± 4.97%
Netherlands (NL)	± 5.00%	± 5.00%
Poland (PL)	± 5.08%	± 4.92%
Sweden (SE)	± 5.04%	± 4.96%

United Kingdom (UK)	± 5.07%	± 4.93%
TOTAL	± 1.79%	± 1.75%

Lastly, as each country's total population is different, but is sampled in equal measure, weighting is applied to ensure a representative sample for interpretation of the overall data, i.e. for all the selected countries. The following table displays the weighting to be applied by country.

Table 51 Weighting factors by country

Country	Weights
Germany (DE)	1.85
Spain (ES)	0.98
France (FR)	1.37
Italy (IT)	0.98
Netherlands (NL)	0.38
Poland (PL)	0.70
Sweden (SE)	0.23
United Kingdom (UK)	1.50

Annex 11 Parents' survey fieldwork process

The following table shows the data collection schedule for the different countries.

Table 52 Data collection

Country	Sample	Launch date	Completion
Germany (DE)	800	2.3.15	18.3.15
Spain (ES)	800	3.3.15	19.3.15
France (FR)	800	2.3.15	24.3.15
Italy (IT)	800	3.3.15	18.3.15
Netherlands (NL)	800	2.3.15	24.3.15
Poland (PL)	800	2.3.15	24.3.15
Sweden (SE)	800	2.3.15	22.3.15
United Kingdom (UK)	800	26.2.15	18.3.15
TOTAL	6400	2.3.15	24.3.15

Table 53 summarises the interview distribution by overall data and country within the fieldwork process:

- 8500 of 19796 received responses were deleted, mainly because they did not fall into the required quotas (5420) or they have been rejected by target (2130) or they have been rejected by quality control (950). The criteria for rejecting a response were incompleteness, duration and/or poor consistency of responses.
- To achieve 6400 responses, it was necessary to send 77381 invitations to the panel, from which, 19796 responses were received.
- In the majority of countries, the panel had information on parent status and young children only the Dutch panel did not have this information. For this reason we have differences between the Netherlands and the other countries in number of invitations, rejected, etc.
  - It explains also why we have needed additional time to achieve the number of interviews required.
  - Not all panels with information had the same type of information about the age of the children. On account of this there are differences between panels in terms of invitations, screen out or timeout.

Table 53 Indicators of the fieldwork process

Country	Invitations	Non responses	Reponses	Screenout	Out of quota	Time out	Rejected	Sample
Germany	9696	7757	1939	486	171	381	101	800
Spain	3318	1577	1741	192	385	221	143	800
France	2656	846	1810	434	90	339	147	800
Italy	3502	1583	1919	371	188	479	81	800
Netherlands	28073	22776	5297	2422	226	1705	144	800
Poland	7489	5803	1686	177	325	268	116	800
Sweden	19026	15944	3082	897	270	996	119	800
United Kingdom	6610	4288	2322	441	475	507	99	800
TOTAL	77381	57585	19796	5420	2130	4896	950	6400

Annex 12 In-depth analysis of games results

Table 54 Data collection App Store and Google

		App Store						Google Play Apps					
nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Geometry Dash	Stickman Soccer 2014	Fish Out Of Water!	Angry Birds Epic	Clash of Clans	Candy Crush	Minecraft	The Sims™ 3	Don't Tap The White Tile	Angry Cats	Hay Day	Castle Clash
1	Embeded ad*	0	1	1	1	0	0	0	1	0	1	0	0
2	Contextual ad	0	0	0	0	0	0	0	0	1	0	0	0
3	Picture of the product	99	1	1	1	99	99	99	0	99	1	99	99
4	Logo or product symbol	99	1	1	1	99	99	99	1	99	1	99	99
5	Link for product information	99	0	1	1	99	99	99	1	99	1	99	99
6	Sponsorship	99	0	0	0	99	99	99	0	99	0	99	99
7	Pre-game ad	99	1	0	1	99	99	99	0	99	0	99	99
8	Inter-game ad	99	0	1	0	99	99	99	1	99	1	99	99
9	Post-game ad	99	0	0	0	99	99	99	0	99	0	99	99
10	Product placement	99	1	0	0	99	99	99	1	99	0	99	99
11	Advergame	99	0	0	0	99	99	99	0	99	0	99	99
12	Genres	Casual	Sport	Casual	Casual	Simulation	Puzzle	Simulation	Simulation	Casual	Casual	Simulation	Simulation
13	Purchase available/required for moving to a higher level in the game	0	1	1	1	1	1	0	1	1	0	1	1
14	Inducements to extend game play	1	0	1	1	1	1	0	0	1	0	1	1
15	Game personalization options	1	1	0	0	0	1	0	1	0	0	1	0
16	Activities that contribute to learning and provide educational value to users	0	0	0	0	1	0	0	0	0	0	0	0
17	Activities that motivate users to learn and read more about the brand or its products/services	0	0	0	0	0	0	0	0	0	0	0	0
18	Activities that help users pit their knowledge, skill, beauty, or any other type of competition against others.	0	0	0	0	0	0	0	1	0	0	0	0

		App Store						Google Play Apps					
nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Geometry Dash	Stickman Soccer 2014	Fish Out Of Water!	Angry Birds Epic	Clash of Clans	Candy Crush	Minecraft	The Sims™ 3	Don't Tap The White Tile	Angry Cats	Hay Day	Castle Clash
19	Activities in which winner(s) are or will be clearly announced	0	1	1	1	1	1	0	0	0	0	0	0
20	Activities in which scoring more points, being faster, gaining more buddies, having more contributions is important to users	1	1	1	1	1	1	0	0	1	1	1	1
21	Activities which encourage users to test their skills	1	1	1	1	1	1	1	1	0	1	1	1
22	Activities that attempt to elicit imagery and creativity from users	0	0	0	0	0	0	1	1	0	0	1	1
23	Activities that offer a sense of escape or adventure	0	0	0	0	1	0	1	1	0	0	0	1
24	Activities that provide an opportunity to users to experience an imagery life.	0	0	0	0	0	0	1	1	0	0	0	1
25	Activities that contain beauty, objects, or goals to be dreamed of or fantasized about.	0	0	0	0	1	0	1	1	0	0	0	0
26	Activities that require users' full concentration and engrossing in order to enjoy.	1	1	1	1	1	1	1	0	0	0	1	1
27	Activities that have the highest control in users' hands and leader direct guidance or rules to follow.	0	0	0	0	1	0	1	1	0	0	1	1

		App Store						Google Play Apps					
nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Geometry Dash	Stickman Soccer 2014	Fish Out Of Water!	Angry Birds Epic	Clash of Clans	Candy Crush	Minecraft	The Sims™ 3	Don't Tap The White Tile	Angry Cats	Hay Day	Castle Clash
28	Activities that involve the formation of interest-groups or community with a specific group name	0	0	0	0	0	0	1	0	0	0	0	0
29	Paid downloads	1	1	0	0	0	0	1	1	0	0	0	0
30	In-app advertising	0	1	1	1	0	0	0	1	1	1	0	0
31	In-app purchases (games, digital content)	0	1	1	1	1	1	0	1	1	0	1	1
32	Freemium (free-to-premium)	0	0	0	0	0	0	0	0	0	0	0	0
33	Promotion of non-digital goods	0	1	0	0	0	0	0	1	0	0	0	0
34	Resale of data collected via app use	0	0	0	0	0	0	0	0	0	0	0	0
35	Youtube	0	0	0	0	1	0	0	0	0	0	0	0
36	Facebook	1	1	1	1	1	1	0	0	1	0	1	0
37	Twitter	1	1	1	0	1	0	0	0	1	0	0	0
38	Others**	0	0	0	0	0	0	0	0	0	0	0	0
39	Register or create an account	1	0	0	0	1	0	0	0	1	0	0	1
40	Member sign-in	1	0	0	0	1	0	0	0	1	0	0	1
41	Messages passed on via social networks	0	0	1	1	1	1	0	0	1	0	1	0
42	Sending an e-mail greeting to a friend	0	0	0	0	0	0	0	0	1	0	0	0
43	Inviting a friend to play or join the Web site	0	0	0	0	0	0	0	0	1	0	0	0
44	For repeat visits	0	0	1	1	1	0	0	0	0	0	0	0
45	For prolonged visits	0	0	1	0	1	1	0	0	0	0	0	0
46	For buying virtual goods	0	1	1	1	1	1	0	0	0	1	0	0
47	For buying goods	0	0	0	0	0	0	0	0	0	0	0	0
48	Present only before game loads	99	0	0	0	99	99	99	0	99	99	99	99
49	Present only while game is loading	99	0	0	0	99	99	99	0	99	99	99	99

		App Store						Google Play Apps					
nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Geometry Dash	Stickman Soccer 2014	Fish Out Of Water!	Angry Birds Epic	Clash of Clans	Candy Crush	Minecraft	The Sims™ 3	Don't Tap The White Tile	Angry Cats	Hay Day	Castle Clash
50	Present only after game loads	99	0	0	0	99	99	99	0	99	99	99	99
51	Present before and after loading	99	0	0	0	99	99	99	0	99	99	99	99
52	Present during loading (during playing game)	99	0	0	0	99	99	99	0	99	99	99	99
53	Present before, during and after loading	99	0	0	0	99	99	99	0	99	99	99	99
54	One-sentence ad break	99	0	0	0	99	99	99	0	99	99	99	99
55	Multiple-sentence ad break	99	0	0	0	99	99	99	0	99	99	99	99
56	Icon	99	0	0	0	99	99	99	0	99	99	99	99
57	Combination	99	1	1	0	99	99	99	0	99	99	99	99
58	Presence of an introductory explanation about the ad break itself	99	0	0	0	99	99	99	0	99	99	99	99
59	Presence of advertising literacy components	99	0	0	0	99	99	99	0	99	99	99	99
60	Privacy policy	0	1	1	1	1	1	1	1	1	0	1	1
61	Terms of usage	0	1	1	1	1	1	1	1	0	0	0	0
62	Age limit suggested	1	1	1	1	1	1	0	1	1	1	1	1
63	Age limit enforced (must enter birthdate)	0	0	0	0	0	0	0	0	0	0	0	0
64	Parental permission required statement	0	0	0	0	0	0	0	0	0	0	0	0
65	Parental section	0	0	0	0	0	0	0	0	0	0	0	0
66	Parental warning	0	0	0	0	0	0	0	0	0	0	0	0
67	Content rating	4+	4+	4+	4+	9+	4+	Low**	Low **	Low **	Low **	Medium**	Medium**
68	Labelling schemes	0	0	0	0	0	0	0	0	0	0	0	0
69	Forms	1	0	0	0	0	0	0	0	0	0	0	1
70	Email	1	0	1	1	1	1	0	1	1	0	1	0
71	Report a problem	1	0	1	0	0	1	1	1	1	1	1	1
72	Phone	0	0	1	0	0	0	0	0	0	0	1	0

Source: Authors elaboration

*IF Indicator 1=0 GO TO Indicator 12 and SKIP from indicator 48 to 59

** Low Maturity: Applications in this category may include instances of mild cartoon or fantasy violence or other potentially offensive content. Applications may collect user location data for the purpose of providing location specific information or otherwise improving the user experience, but should not share the data with other users. Applications may include some social features but should not focus on allowing users to find and communicate with each other.
Medium Maturity: Applications in this category may include sexual references; intense fantasy or realistic violence; profanity or crude humor; references to drug, alcohol and tobacco use; social features and simulated gambling. Applications may collect user location data for the purpose of sharing or publishing with the user's consent (see Control what types of apps can be downloaded https://support.google.com/googleplay/answer/1075738?hl=en)

Table 55 Data collection Facebook

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Farm Heroes Saga	Pet Rescue Saga	Bubble Witch 2 Saga	DoubleDown Casino - Free Slots	FarmVille 2	Slotomania Slot Machines
1	Embeded ad*	0	0	0	0	1	0
2	Contextual ad	1	1	1	1	1	1
3	Picture of the product	99	99	99	99	1	99
4	Logo or product symbol	99	99	99	99	1	99
5	Link for product information	99	99	99	99	1	99
6	Sponsorship	99	99	99	99	0	99
7	Pre-game ad	99	99	99	99	0	99
8	Inter-game ad	99	99	99	99	0	99
9	Post-game ad	99	99	99	99	0	99
10	Product placement	99	99	99	99	1	99
11	Advergame	99	99	99	99	0	99
12	Genres	Casual	Casual	Casual	Casino	Simulation	Casino
13	Purchase available/required for moving to a higher level in the game	1	1	1	1	1	1
14	Inducements to extend game play	1	1	1	1	1	1
15	Game personalization options	1	1	1	1	1	1
16	Activities that contribute to learning and provide educational value to users	0	0	0	0	0	0
17	Activities that motivate users to learn and read more about the brand or its products/services	0	0	0	0	0	0
18	Activities that help users pit their knowledge, skill, beauty, or any other type of competition against others.	0	0	0	0	0	0
19	Activities in which winner(s) are or will be clearly announced	1	1	1	1	1	1
20	Activities in which scoring more points, being faster, gaining more buddies, having more contributions is important to users	1	1	1	1	1	1
21	Activities which encourage users to test their skills	1	1	1	1	1	1
22	Activities that attempt to elicit imagery and creativity from users	0	0	0	0	0	0
23	Activities that offer a sense of escape or adventure	0	0	0	0	1	0
24	Activities that provide an opportunity to users to experience an imagery life.	0	0	0	0	0	0
25	Activities that contain beauty, objects, or goals to be dreamed of or fantasized about.	0	0	0	0	1	0
26	Activities that require users' full concentration and engrossing in order to enjoy.	1	1	1	1	1	1

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Farm Heroes Saga	Pet Rescue Saga	Bubble Witch 2 Saga	DoubleDown Casino - Free Slots	FarmVille 2	Slotomania Slot Machines
27	Activities that have the highest control in users' hands and leader direct guidance or rules to follow.	0	0	0	0	1	0
28	Activities that involve the formation of interest-groups or community with a specific group name	0	0	0	0	0	0
29	Paid downloads	0	0	0	0	0	0
30	In-app advertising	0	0	0	0	1	0
31	In-app purchases (games, digital content)	1	1	1	1	1	1
32	Freemium (free-to-premium)	0	0	0	0	0	0
33	Promotion of non-digital goods	0	0	0	0	1	0
34	Resale of data collected via app use	0	0	0	0	0	0
35	Youtube	1	1	1	0	0	0
36	Facebook	1	1	1	1	1	1
37	Twitter	1	1	1	0	1	0
38	Others**	Instagram	Instagram	Instagram	0	0	0
39	Register or create an account	0	0	0	0	0	0
40	Member sign-in	0	0	0	0	0	0
41	Messages passed on via social networks	1	1	1	0	1	1
42	Sending an e-mail greeting to a friend	1	1	1	1	1	1
43	Inviting a friend to play or join the Web site	1	1	1	1	1	1
44	For repeat visits	1	1	1	1	1	1
45	For prolonged visits	1	1	1	1	1	1
46	For buying virtual goods	1	1	1	1	1	1
47	For buying goods	0	0	0	0	0	0
48	Present only before game loads	99	99	99	99	0	99
49	Present only while game is loading	99	99	99	99	0	99
50	Present only after game loads	99	99	99	99	0	99
51	Present before and after loading	99	99	99	99	0	99
52	Present during loading (during playing game)	99	99	99	99	1	99
53	Present before, during and after loading	99	99	99	99	0	99
54	One-sentence ad break	99	99	99	99	0	99
55	Multiple-sentence ad break	99	99	99	99	0	99
56	Icon	99	99	99	99	0	99
57	Combination	99	99	99	99	0	99
58	Presence of an introductory explanation about the ad break itself	99	99	99	99	0	99
59	Presence of advertising literacy components	99	99	99	99	0	99
60	Privacy policy	1	1	1	1	1	1
61	Terms of usage	1	1	1	1	1	1
62	Age limit suggested	1	1	1	1	1	1

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Farm Heroes Saga	Pet Rescue Saga	Bubble Witch 2 Saga	DoubleDown Casino - Free Slots	FarmVille 2	Slotomania Slot Machines
63	Age limit enforced (must enter birthdate)	1	1	1	1	1	1
64	Parental permission required statement	0	0	0	1	0	1
65	Parental section	0	0	0	0	0	0
66	Parental warning	0	0	0	0	0	0
67	Content rating	0	0	0	0	0	0
68	Labelling schemes	0	0	0	0	0	0
69	Forms	0	0	0	1	0	1
70	Email	1	1	1	1	1	0
71	Report a problem	1	1	1	1	1	1
72	Phone	0	0	0	0	0	0

Source: Authors elaboration

*IF Indicator 1=0 GO TO Indicator 12 and SKIP from indicator 48 to 59

Table 56 Data collection Advergames

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Coke Recycling	Happy Meal	Crunch	Doritos	Trust Danone	Club Kelloggs	Fast or Fail
1	Embeded ad*	1	1	1	1	1	1	1
2	Contextual ad	0	1	1	1	0	0	0
3	Picture of the product	1	1	1	1	0	1	1
4	Logo or product symbol	1	1	1	1	1	1	1
5	Link for product information	0	1	1	1	1	0	1
6	Sponsorship	0	0	0	0	0	0	0
7	Pre-game ad	0	1	0	0	0	0	0
8	Inter-game ad	0	0	0	0	0	0	0
9	Post-game ad	0	0	0	0	0	0	0
10	Product placement	1	0	1	0	1	1	1
11	Advergame	1	0	0	1	1	1	1
12	Genres	Casual	Casual	Casual	Casual	Simulation	Casual	Casual
13	Purchase available/required for moving to a higher level in the game	0	0	0	0	0	0	0
14	Inducements to extend game play	1	0	1	1	0	1	1
15	Game personalization options	0	0	0	0	1	0	0
16	Activities that contribute to learning and provide educational value to users	1	0	0	0	1	0	0
17	Activities that motivate users to learn and read more about the brand or its products/services	1	0	0	0	1	0	0
18	Activities that help users pit their knowledge, skill, beauty, or any other type of competition against others.	0	0	0	0	0	0	0
19	Activities in which winner(s) are or will be clearly announced	0	0	0	0	0	0	0
20	Activities in which scoring more points, being faster, gaining more buddies, having more contributions is important to users	0	1	1	1	0	1	1
21	Activities which encourage users to test of their skills	1	1	1	1	1	1	1
22	Activities that attempt to elicit imagery and creativity from users	0	0	0	0	0	0	0
23	Activities that offer a sense of escape or adventure	0	0	0	0	0	0	0
24	Activities that provide an opportunity to users to experience an imagery life.	0	0	0	0	0	0	0
25	Activities that contain beauty, objects, or goals to be dreamed of or fantasized about.	0	0	0	0	0	0	0
26	Activities that require users' full concentration and engrossing in order to enjoy.	1	0	0	0	0	1	1

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Coke Recycling	Happy Meal	Crunch	Doritos	Trust Danone	Club Kelloggs	Fast or Fail
27	Activities that have the highest control in users' hands and leader direct guidance or rules to follow.	1	0	0	0	0	1	0
28	Activities that involve the formation of interest-groups or community with a specific group name	0	0	0	0	0	0	0
29	Paid downloads	0	0	0	0	0	0	0
30	In-app advertising	0	0	0	0	0	0	0
31	In-app purchases (games, digital content)	0	0	0	0	0	0	0
32	Freemium (free-to-premium)	0	0	0	0	0	0	0
33	Promotion of non-digital goods	1	1	1	1	1	1	1
34	Resale of data collected via app use	0	0	0	0	0	0	0
35	Youtube	0	0	0	0	0	0	0
36	Facebook	0	0	0	1	1	0	1
37	Twitter	0	0	0	0	1	0	1
38	Others**	0	0	0	Android Iphone	Google+	0	0
39	Register or create an account	0	0	0	0	1	1	1
40	Member sign-in	0	0	1	0	1	1	1
41	Messages passed on via social networks	0	0	0	1	0	0	1
42	Sending an e-mail greeting to a friend	0	0	1	0	0	0	0
43	Inviting a friend to play or join the Web site	0	0	1	0	1	0	0
44	For repeat visits	0	0	0	1	0	0	0
45	For prolonged visits	1	0	1	0	0	0	0
46	For buying virtual goods	0	0	0	0	0	0	0
47	For buying goods	0	0	0	1	0	0	1
48	Present only before game loads	0	1	0	0	0	0	0
49	Present only while game is loading	0	0	0	0	0	0	0
50	Present only after game loads	0	0	0	0	0	0	0
51	Present before and after loading	0	0	0	0	0	0	0
52	Present during loading (during playing game)	0	0	0	0	0	0	0
53	Present before, during and after loading	0	0	1	1	0	1	1
54	One-sentence ad break	0	0	0	0	0	0	0
55	Multiple-sentence ad break	0	0	0	0	0	0	0
56	Icon	0	0	0	0	0	0	0
57	Combination	0	0	0	0	0	0	0
58	Presence of an introductory explanation about the ad break itself	0	0	0	0	0	0	0
59	Presence of advertising literacy components	0	0	0	0	0	0	0
60	Privacy policy	1	1	1	1	1	1	0
61	Terms of usage	0	1	1	1	1	1	0
62	Age limit suggested	0	1	0	0	1	0	0

nº	Indicator - Code YES=1/NO=0 / Not applicable (N.A)=99	Coke Recycling	Happy Meal	Crunch	Doritos	Trust Danone	Club Kelloggs	Fast or Fail
63	Age limit enforced (must enter birthdate)	0	0	0	0	0	0	0
64	Parental permission required statement	0	1	0	0	0	0	0
65	Parental section	0	1	0	0	0	0	0
66	Parental warning	0	0	0	0	0	0	0
67	Content rating	0	0	0	0	0	0	0
68	Labelling schemes	0	0	0	0	0	0	0
69	Forms	0	0	1	1	0	1	0
70	Email	0	1	1	1	1	1	0
71	Report a problem	0	0	0	1	0	0	0
72	Phone	0	1	1	1	0	1	0

Source: Authors elaboration

*IF Indicator 1=0 GO TO Indicator 12 and SKIP from indicator 48 to 59

Annex 13 Parents' survey descriptive statistics whole weighted sample

Socio-demographic information

Table 57 Respondents' Gender (%)

Male	Female
49%	51%

Source: S2 (n=6400)

Table 58 Respondents' Age (%)

25-34	35-49	50-64
16%	67%	17%

Source: AGE (n=6400)

Table 59 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
2%	12%	19%	28%	11%	14%	12%	2%

Source: Q35 (n=6400)

Table 60 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
82%	5%	0%	13%

Source: Q36 (n=6400)

Table 61 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
5%	15%	18%	25%	12%	13%	10%	2%

Source: Q37

Table 62 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
10%	68%	6%	12%	1%	2%

Source: Q38 (n=6400)

Table 63 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
1%	4%	8%	12%	19%	20%	18%	12%	5%	2%

Source: Q40 (n=6400)

Table 64 Number of children aged 6-14 (%)

One child	Two children	Three or more children
67%	29%	4%

Source: S3 (n=6400)

Table 65 Respondents' role (%)

Parent/step-parent	Guardian	None of above
94%	6%	0%

Source: S4 (n=6400)

Table 66 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
10%	23%	67%	0%

Source: S5

Table 67 Children's gender (%)

Male	Female
54%	46%

Source: Q1 (n=6400)

Table 68 Children's age (%)

6	7	8	9	10	11	12	13	14
8%	8%	9%	9%	11%	11%	13%	15%	16%

Source: Q2 (n=6400)

Children's Internet access, devices and usage

Table 69 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	20%	80%
Own room (or other private room) at home	42%	58%
At school	51%	49%
In an internet café	98%	2%
At friends' homes	72%	28%
At relatives' homes	75%	25%
In a library/other public place	90%	10%
Somewhere else	95%	5%

Source: Q3 (n=6400)

Table 70 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	9%	91%	0%
Mobile phone/smartphone	34%	65%	1%
Tablet	31%	68%	1%
Games console	61%	37%	2%
TV	76%	22%	2%
Other	82%	3%	14%

Source: Q4 (n=6400)

Table 71 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	55%	45%
Mobile phone/smartphone	39%	61%
Tablet	51%	49%
Games console	50%	50%
TV	69%	31%

Source: Q5 (n=6400)

Table 72 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	17%	83%

Source: Q5 (n=3811)

Table 73 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	13%	26%	29%	18%	11%	4%
On a normal non school day	7%	15%	23%	23%	20%	12%

Source: Q7, Q8 (n=6400)

Table 74 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	11%	9%	14%	37%	27%	2%
Watch video clips (e.g. on YouTube)	5%	6%	12%	36%	39%	2%
Download music or films	44%	13%	14%	17%	6%	5%
Read/watch news online	39%	13%	13%	18%	11%	6%
Visit a social networking profile	42%	6%	7%	16%	27%	3%
Visit a chat room	62%	5%	6%	10%	8%	9%
Use instant messaging	39%	5%	6%	15%	29%	5%
Play games with other people online	36%	8%	10%	23%	19%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraftâ€¦)	43%	7%	9%	19%	13%	8%
Use a webcam	60%	10%	9%	11%	5%	5%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	50%	9%	11%	17%	8%	5%
Put (or post) a message on a website	56%	8%	9%	13%	7%	8%
Write a blog or online diary	76%	4%	5%	5%	2%	7%
Participate in a site concerned with good causes (e.g. campaigns, charity)	73%	6%	5%	4%	2%	10%
Use a file sharing site	68%	7%	6%	7%	3%	10%

Download games	34%	19%	21%	15%	4%	6%
Play online games alone	19%	8%	15%	31%	21%	5%

Source: Q9 (n=6400)

Parents' digital skills

Table 75 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	1%	2%	7%	15%	74%	0%
I know how to download/save a photo I found online	2%	3%	9%	16%	70%	0%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	3%	5%	11%	18%	63%	1%
I know how to open a new tab in my browser	1%	2%	7%	14%	75%	0%
I know how to adjust privacy settings	2%	4%	10%	22%	62%	1%
I find it easy to decide what the best keywords are to use for online searches	1%	3%	9%	23%	63%	1%
I find it easy to find a website I visited before	1%	2%	8%	20%	68%	0%
I enjoy looking for information online	1%	2%	9%	21%	67%	0%
Sometimes I end up on websites without knowing how I got there	23%	23%	22%	15%	17%	1%
I find it easy to verify information I found online	1%	4%	15%	35%	44%	1%
I know which information I should and shouldn't share online	1%	2%	9%	26%	61%	1%
I know when I should and shouldn't share information online	1%	2%	9%	26%	60%	1%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	1%	2%	9%	25%	62%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	2%	3%	11%	25%	58%	1%
I know how to remove friends from my contact lists	1%	3%	9%	20%	66%	1%
I know how to create something new from existing online images, music or video	6%	10%	20%	23%	40%	1%
I know how to make basic changes to the content that others have produced	8%	12%	21%	23%	34%	2%
I know how to design a website	24%	19%	19%	17%	21%	1%
I know which different types of licences apply to online content	12%	14%	24%	25%	23%	2%
I would feel confident putting video content I have created online	15%	14%	22%	22%	25%	1%
I know how to install apps on a mobile device	4%	5%	10%	21%	58%	1%
I know how to keep track of the costs of mobile app use	5%	5%	14%	25%	50%	1%
I know how to make an in-app purchase	4%	5%	11%	23%	56%	1%

Source: Q31 (n=6400)

Parents' perception of children's digital skills

Table 76 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	14%	8%	12%	34%	29%	1%	3%
My child knows how to download/save a photo she/he found online	17%	9%	12%	29%	30%	1%	3%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	23%	12%	12%	22%	24%	1%	6%
My child knows how to open a new tab in a browser	7%	4%	7%	31%	48%	1%	2%
My child knows how to adjust privacy settings	33%	14%	14%	16%	15%	1%	7%
My child finds it easy to decide what the best keywords are to use for online searches	13%	10%	18%	33%	22%	1%	4%
My child finds it easy to find a website he/she visited before	6%	6%	11%	38%	37%	0%	2%
My child enjoys looking for information online	8%	8%	17%	35%	29%	0%	2%
Sometimes my child ends up on websites without knowing how he/she got there	23%	23%	24%	18%	7%	1%	5%
My child finds it easy to verify information he/she found online	14%	13%	26%	29%	14%	1%	4%
My child knows which information he/she should and shouldn't share online	12%	9%	16%	34%	25%	1%	3%
My child knows when he/she should and shouldn't share information online	12%	9%	16%	35%	25%	1%	3%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	11%	8%	18%	34%	24%	1%	4%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	18%	10%	17%	29%	21%	1%	5%
My child knows how to remove friends from his/her contact lists	17%	8%	11%	27%	31%	1%	4%
My child knows how to create something new from existing online images, music or video	21%	13%	18%	23%	17%	1%	6%
My child knows how to make basic changes to the content that others have produced	25%	15%	18%	20%	11%	2%	9%
My child knows how to design a website	46%	17%	12%	10%	6%	1%	7%
My child knows which different types of licences apply to online content	40%	16%	15%	13%	6%	2%	7%
My child would feel confident putting online video content he/she has created	30%	15%	18%	20%	10%	1%	6%
My child knows how to install apps on a mobile device	13%	7%	9%	30%	38%	1%	2%
My child knows how to keep track of the costs of mobile app use	27%	13%	16%	22%	17%	1%	4%
My child knows how to make an in-app purchase	26%	12%	14%	24%	18%	1%	4%
My child knows my password enabling him/her to make an in-app purchase	61%	11%	8%	9%	8%	1%	3%

Source: Q10 (n=6400

Mediation of use and safety: active and restrictive

Table 77 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	3%	26%	45%	25%
Encourage your child to explore and learn things on the internet?	3%	12%	40%	31%	13%
Sit with your child while he/she uses the internet?	3%	15%	41%	30%	11%
Stay nearby when your child uses the internet?	2%	9%	27%	37%	25%
Do shared activities together with your child on the internet?	3%	12%	42%	33%	10%

Source: Q11 (n=6400)

Table 78 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	18%	82%
Told you about things she/he finds disturbing on the internet?	44%	56%
Asked for your advice on how she/he should act online?	39%	61%
Asked for products and/or services that she/he has seen advertisements for online?	33%	67%
Ask for your help concerning a situation on the internet that she/he cannot handle?	31%	69%

Source: Q12 (n=6400)

Table 79 Parents' restrictives practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	5%	28%	65%	1%
Watch video clips (e.g. on YouTube)	4%	40%	55%	1%
Download music or films	36%	40%	22%	2%
Read/watch news online	14%	33%	51%	2%
Visit a social networking profile	32%	28%	37%	2%
Visit a chat room	52%	26%	16%	6%
Use instant messaging	30%	27%	39%	4%
Play games with other people online	26%	38%	34%	3%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraftâ€¦)	32%	31%	30%	7%
Use a webcam	48%	33%	16%	3%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	40%	35%	22%	3%
Put (or post) a message on a website	39%	32%	26%	4%
Write a blog or online diary	50%	25%	17%	8%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	38%	33%	19%	9%
Use a file sharing site	49%	32%	13%	6%
Download games	21%	54%	22%	2%
Play online games alone	13%	40%	45%	2%

Source: Q13 (n=6400)

Table 80 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	2%	4%	27%	33%	33%
Suggest ways to use the internet safely	4%	7%	27%	34%	28%
Explain why some websites are appropriate or inappropriate	3%	6%	27%	32%	32%
Help him/her when something has bothered him/her on the internet	7%	10%	25%	24%	35%
Talk to him/her about what to do if something on the internet bothered him/her	5%	8%	27%	27%	32%
Explain that online games may contain hidden advertising aimed at making children want to have new products	7%	10%	28%	31%	24%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	5%	6%	26%	34%	29%
Talk to him/her about the commercial activities they are exposed to online	7%	10%	31%	31%	20%

Source: Q14 (n=6400)

Table 81 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	40%	57%	3%
Parental controls or other means of keeping track of the websites or apps your child visits	45%	52%	3%
Rules about how long or when your child is allowed to go online	22%	76%	2%
A service or contract that limits the time your child spends on the internet	71%	27%	2%
Software to prevent spam or junk mail/viruses	22%	75%	3%
Parental controls that filter the apps your child can download	54%	42%	3%

Parental controls that alert you when your child wants to buy content (in-app purchase)	57%	39%	3%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	69%	26%	4%
Ad blocking software	53%	43%	4%

Source: Q15 (n=6400)

Table 82 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	13%	13%	28%	25%	21%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	25%	12%	23%	21%	19%
The messages in his/her email or instant messaging account	29%	14%	21%	18%	17%
His/her profile on a social networking or online community	29%	11%	21%	20%	19%
The apps he/she downloaded	16%	11%	26%	24%	24%
The in-app purchases he/she made	28%	9%	15%	18%	31%

Source: Q16 (n=6400)

Severity of risk and vulnerability

Table 83 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	1%	2%	8%	12%	20%	53%	2%
Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)	3%	4%	7%	19%	23%	21%	21%	3%
To be treated in a hurtful or nasty way on the internet by another child or teenager	1%	1%	3%	8%	12%	20%	52%	3%
Spending too much money on online games or in-app purchases	3%	2%	4%	11%	14%	20%	42%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	3%	3%	5%	12%	18%	22%	34%	3%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	3%	4%	7%	17%	22%	21%	25%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	2%	2%	3%	11%	15%	21%	44%	3%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	3%	3%	5%	12%	15%	20%	39%	2%
Being exposed to advertisements of unhealthy food	4%	4%	7%	17%	21%	21%	24%	2%

Source: Q17 (n=6400)

Table 84 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	9%	8%	9%	17%	19%	16%	18%	3%
Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)	8%	7%	8%	16%	21%	18%	17%	4%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	12%	10%	10%	19%	17%	14%	15%	4%

Spending too much money on online games or in-app purchases	27%	14%	9%	13%	12%	11%	11%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	15%	10%	10%	16%	17%	15%	16%	3%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	9%	7%	10%	17%	20%	18%	16%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	12%	9%	10%	17%	17%	15%	16%	4%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	10%	9%	11%	18%	18%	16%	15%	3%
Being exposed to advertisements of unhealthy food	9%	7%	10%	19%	19%	18%	16%	3%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	13%	11%	11%	17%	16%	13%	14%	4%

Source: Q18 (n=6400)

Problematic practices online

Table 85 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	58%	28%	14%
Being exposed to personalised/targeted advertisements (e.g. in social media, google searches etc.)	42%	43%	15%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	76%	15%	9%
Spending too much money on online games or in-app purchases	86%	9%	5%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	51%	40%	9%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	43%	43%	13%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	70%	13%	16%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	60%	25%	15%
Being exposed to advertisements of unhealthy food	46%	39%	15%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	80%	8%	12%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	55%	35%	10%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	54%	37%	8%

Source: Q19, Q20 (n=6400)

Table 86 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	2%	8%	37%	48%	5%
More/better information and advice for parents on the commercial activities	3%	12%	42%	37%	5%

children/adolescents are exposed to online					
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children	5%	19%	41%	27%	7%
Improved availability/performance of parental control software	3%	12%	39%	40%	6%
Stricter regulation for businesses that produce online content and services	3%	10%	32%	49%	5%
More awareness-raising campaigns on online risks	3%	12%	40%	40%	5%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	6%	20%	41%	27%	7%
More/better information on consumer rights and the risks of internet cost-traps	3%	13%	41%	36%	6%

Source: Q21 (n=6400)

Table 87 Protective measure usage games (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	55%	45%
Contextual information (labels) displayed permanently on the screen	71%	29%
Parent's pre-approval before playing.	45%	55%
School education for children in recognising advertising	61%	39%
Age verification systems	51%	49%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	71%	29%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	70%	30%

Source: Q22 (n=6400)

Table 88 Protective measure effectiveness games (%)

	Not efective 1	2	3	4	5	6	Very effective 7	DK /D A
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	6%	5%	9%	18%	20%	19%	15%	7%
Contextual information (labels) displayed permanently on the screen	7%	7%	10%	19%	20%	15%	12%	10 %
Parent's pre-approval before playing	4%	3%	5%	13%	18%	21%	31%	6%
School education for children in recognising advertising	3%	3%	5%	14%	21%	24%	24%	6%
Age verification systems	8%	6%	7%	15%	18%	18%	21%	6%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	7%	5%	8%	17%	19%	18%	18%	9%

Source: Q23 (n=6400)

Table 89 In-app purchases: use of protective measures (%)

	No	Yes
Parental pre-approval of purchases	38%	62%
Cooling-off period for children before making a purchase	59%	41%
School education in using online apps	64%	36%
Clear indication that in-app purchases are required to fully exploit the application/game	55%	45%
Age verification systems	55%	45%
In-app purchase password as default option on the mobile	44%	56%

Source: Q24 (n=6400)

Table 90 In-app purchases: perceived effectiveness of protective measures (%)

	Not efective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	2%	4%	10%	15%	23%	40%	5%
Cooling-off period for children before making a purchase	5%	4%	6%	16%	20%	20%	20%	8%
School education in using online apps	3%	3%	5%	15%	22%	22%	23%	7%
Clear indication that in-app purchases are required to fully exploit the application/game	3%	3%	5%	15%	23%	23%	23%	6%
Age verification systems	7%	5%	7%	14%	19%	20%	22%	6%
In-app purchase password as default option on the mobile	3%	2%	3%	11%	17%	23%	34%	6%

Source: Q25 (n=6400)

Self-efficacy

Table 91 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	12%	14%	20%	23%	18%	8%	4%	1%
Online marketing	18%	16%	19%	20%	15%	7%	4%	1%
Online marketing of alcohol	10%	10%	16%	20%	18%	12%	10%	4%

Source: Q26, Q28, Q30 (n=6400)

Table 92 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	1%	4%	11%	22%	30%	22%	8%	1%
Protecting your child from online marketing	7%	11%	16%	23%	22%	13%	6%	2%
Protecting your child from online marketing of alcohol	6%	8%	13%	21%	20%	16%	13%	3%

Source: Q27, Q29, Q31 (n=6400)

Table 93 Perceived responsability (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	2%	1%	3%	9%	16%	23%	43%	2%
It is mostly up to government regulators to ensure that my children are safe from online marketing	6%	5%	7%	17%	21%	20%	22%	3%
It is mostly up to the online industries to ensure that my children are safe from online marketing	6%	5%	8%	17%	20%	19%	22%	3%

Source: Q32 (n=6400)

Parents' recognition of digital content

Figure 53 Advergame example

Table 94 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	12%	8%	10%	17%	20%	16%	13%	4%
Entertainment	7%	5%	8%	18%	24%	19%	14%	4%
Advertising/selling	5%	3%	4%	11%	17%	22%	35%	4%

Source: Q46 (n=6400)

Figure 54 Advertisement example

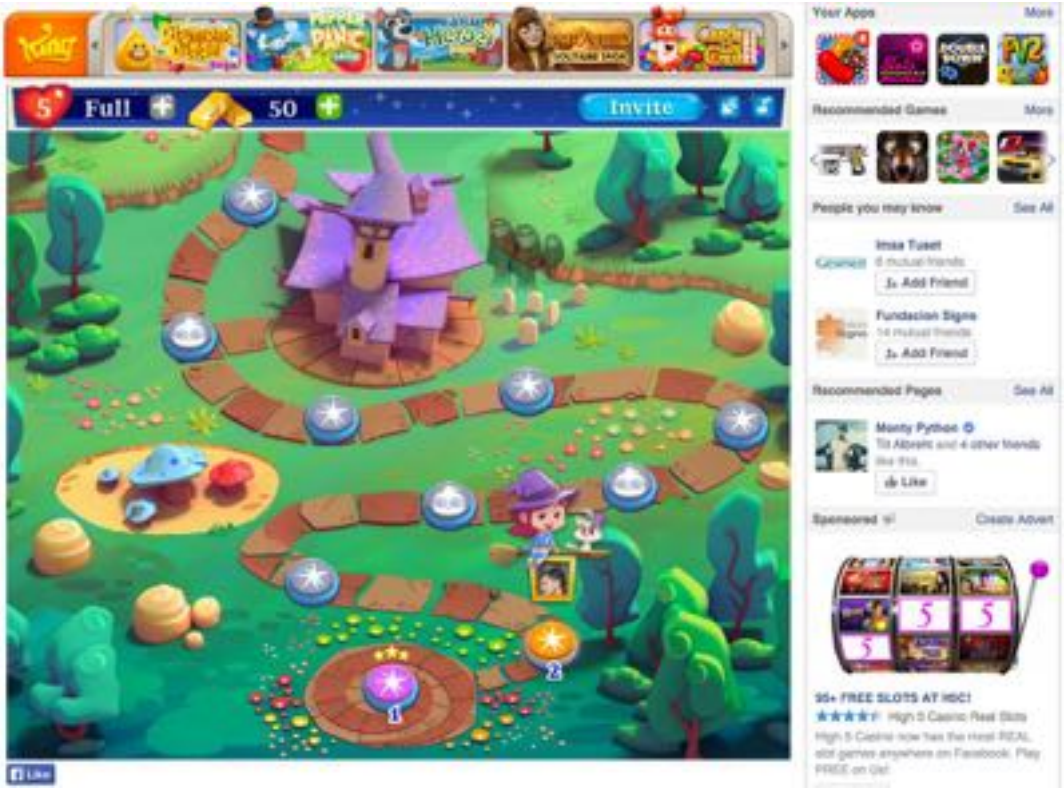


Table 95 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	23%	13%	11%	16%	13%	8%	5%	10%
Entertainment	2%	2%	3%	12%	17%	24%	30%	9%
Advertising/selling	7%	7%	9%	18%	18%	16%	16%	10%

Source: Q46 (n=6400)

Annex 14 Parents' survey descriptive statistics by country

United Kingdom

Socio-demographic information

Table 96 Respondents' Gender (%)

Male	Female
50%	50%

Source: S2 (n=800)

Table 97 Respondents' Age (%)

25-34	35-49	50-64
20%	60%	20%

Source: S1 (n=800)

Table 98 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
1%	24%	17%	14%	11%	22%	10%	2%

Source: Q35 (n=800)

Table 99 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
81%	6%	1%	12%

Source: Q36 (n=800)

Table 100 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
3%	28%	17%	12%	11%	18%	9%	2%

Source: Q37

Table 101 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
7%	69%	3%	18%	1%	2%

Source: Q38 (n=800)

Table 102 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
2%	7%	10%	9%	8%	11%	15%	24%	13%	2%

Source: Q40 (n=800)

Table 103 Number of children aged 6-14 (%)

One child	Two children	Three or more children
63%	33%	4%

Source: S3 (n=800)

Table 104 Respondents' role (%)

Parent/step-parent	Guardian	None of above
98%	2%	0%

Source: S4 (n=800)

Table 105 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
23%	38%	38%	0%

Source: S5

Table 106 Children's gender (%)

Male	Female
52%	48%

Source: Q1 (n=800)

Table 107 Children's age (%)

6	7	8	9	10	11	12	13	14
7%	9%	11%	9%	11%	13%	12%	15%	13%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 108 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	12%	88%
Own room (or other private room) at home	42%	58%
At school	25%	75%
In an internet café	98%	2%
At friends' homes	71%	29%
At relatives' homes	72%	28%
In a library/other public place	90%	10%
Somewhere else	98%	2%

Source: Q3 (n=800)

Table 109 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	9%	91%	0%
Mobile phone/smartphone	41%	58%	1%
Tablet	19%	80%	1%
Games console	51%	48%	2%
TV	76%	22%	2%
Other	80%	4%	15%

Source: Q4 (n=800)

Table 110 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	54%	46%
Mobile phone/smartphone	44%	56%
Tablet	33%	67%
Games console	44%	56%
TV	60%	41%

Source: Q5 (n=800)

Table 111 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	13%	87%

Source: Q6 (n=447)

Table 112 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	12%	21%	32%	22%	11%	3%
On a normal non school day	6%	12%	22%	25%	22%	14%

Source: Q7, Q8 (n=800)

Table 113 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	5%	5%	15%	47%	26%	2%
Watch video clips (e.g. on YouTube)	4%	4%	11%	37%	43%	1%
Download music or films	42%	13%	19%	16%	6%	5%
Read/watch news online	52%	14%	10%	12%	6%	7%
Visit a social networking profile	49%	4%	6%	14%	24%	4%
Visit a chat room	72%	4%	4%	8%	4%	9%
Use instant messaging	44%	4%	6%	17%	25%	4%
Play games with other people online	37%	8%	9%	21%	22%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	34%	8%	12%	24%	18%	5%
Use a webcam	63%	9%	7%	10%	5%	5%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	51%	9%	9%	18%	9%	5%
Put (or post) a message on a website	54%	10%	7%	14%	9%	6%
Write a blog or online diary	78%	4%	4%	5%	3%	6%
Participate in a site concerned with good causes (e.g. campaigns, charity)	71%	8%	5%	4%	2%	11%
Use a file sharing site	72%	5%	4%	5%	3%	11%
Download games	24%	22%	26%	18%	6%	4%
Play online games alone	22%	7%	14%	29%	26%	3%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 114 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	1%	2%	7%	14%	76%	0%
I know how to download/save a photo I found online	2%	3%	8%	16%	71%	0%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	4%	5%	9%	17%	65%	1%
I know how to open a new tab in my browser	1%	2%	6%	12%	80%	0%
I know how to adjust privacy settings	2%	3%	10%	21%	64%	1%
I find it easy to decide what the best keywords are to use for online searches	1%	3%	8%	22%	67%	1%
I find it easy to find a website I visited before	1%	2%	6%	18%	74%	0%
I enjoy looking for information online	1%	2%	8%	21%	68%	0%
Sometimes I end up on websites without knowing how I got there	26%	26%	20%	13%	16%	0%
I find it easy to verify information I found online	1%	5%	17%	32%	45%	0%
I know which information I should and shouldn't share online	1%	2%	6%	21%	69%	0%
I know when I should and shouldn't share information online	1%	2%	7%	23%	67%	0%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	1%	1%	8%	22%	68%	0%
I know how to change who I share content with (e.g. friends, friends of friends or public)	2%	3%	9%	22%	64%	1%
I know how to remove friends from my contact lists	1%	3%	7%	20%	68%	1%
I know how to create something new from existing online images, music or video	8%	13%	16%	22%	41%	1%
I know how to make basic changes to the content that others have produced	7%	12%	18%	22%	40%	1%
I know how to design a website	34%	21%	14%	13%	18%	1%
I know which different types of licences apply to online content	18%	18%	20%	22%	21%	2%
I would feel confident putting video content I have created online	15%	14%	17%	23%	30%	1%
I know how to install apps on a mobile device	4%	5%	7%	20%	64%	0%
I know how to keep track of the costs of mobile app use	4%	5%	11%	23%	58%	1%
I know how to make an in-app purchase	4%	5%	10%	20%	61%	0%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 115 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	13%	10%	11%	32%	30%	1%	4%
My child knows how to download/save a photo she/he found online	15%	8%	10%	29%	33%	1%	4%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	18%	11%	12%	24%	27%	1%	6%
My child knows how to open a new tab in a browser	4%	3%	6%	29%	56%	0%	2%
My child knows how to adjust privacy settings	30%	14%	14%	17%	15%	1%	9%
My child finds it easy to decide what the best keywords are to use for online searches	10%	8%	17%	36%	25%	0%	4%
My child finds it easy to find a website he/she visited before	3%	4%	6%	40%	45%	1%	2%
My child enjoys looking for information online	3%	4%	13%	41%	38%	0%	2%
Sometimes my child ends up on websites without knowing how he/she got there	22%	26%	25%	15%	6%	1%	5%
My child finds it easy to verify information he/she found online	9%	11%	25%	34%	16%	2%	4%
My child knows which information he/she should and shouldn't share online	5%	6%	12%	37%	37%	1%	3%
My child knows when he/she should and shouldn't share information online	5%	5%	10%	40%	37%	1%	3%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	6%	4%	16%	40%	29%	0%	4%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	12%	7%	16%	31%	28%	1%	5%
My child knows how to remove friends from his/her contact lists	13%	6%	13%	25%	37%	0%	5%
My child knows how to create something new from existing online images, music or video	18%	11%	17%	26%	21%	1%	7%
My child knows how to make basic changes to the content that others have produced	19%	14%	19%	24%	14%	2%	9%
My child knows how to design a website	40%	17%	14%	11%	7%	1%	10%
My child knows which different types of licences apply to online content	40%	15%	14%	12%	6%	3%	11%
My child would feel confident putting online video content he/she has created	26%	13%	17%	26%	13%	1%	5%
My child knows how to install apps on a mobile device	9%	5%	7%	31%	47%	1%	2%
My child knows how to keep track of the costs of mobile app use	24%	12%	16%	25%	19%	1%	4%
My child knows how to make an in-app purchase	17%	10%	13%	30%	27%	1%	4%
My child knows my password enabling him/her to make an in-app purchase	55%	12%	6%	10%	12%	1%	4%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 116 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	4%	25%	41%	29%
Encourage your child to explore and learn things on the internet?	1%	5%	36%	39%	19%
Sit with your child while he/she uses the internet?	4%	16%	43%	27%	11%
Stay nearby when your child uses the internet?	3%	11%	27%	34%	25%
Do shared activities together with your child on the internet?	4%	15%	42%	30%	10%

Source: Q11 (n=800)

Table 117 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	21%	79%
Told you about things she/he finds disturbing on the internet?	59%	41%
Asked for your advice on how she/he should act online?	50%	50%
Asked for products and/or services that she/he has seen advertisements for online?	33%	68%
Ask for your help concerning a situation on the internet that she/he cannot handle?	61%	39%

Source: Q12 (n=800)

Table 118 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	3%	28%	69%	1%
Watch video clips (e.g. on YouTube)	4%	35%	60%	1%
Download music or films	27%	47%	24%	2%
Read/watch news online	17%	31%	50%	3%
Visit a social networking profile	42%	21%	35%	2%
Visit a chat room	59%	23%	14%	4%
Use instant messaging	34%	26%	38%	3%
Play games with other people online	23%	38%	37%	2%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	21%	30%	47%	3%
Use a webcam	49%	30%	18%	3%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	41%	31%	26%	2%
Put (or post) a message on a website	38%	29%	30%	3%
Write a blog or online diary	51%	22%	18%	9%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	33%	37%	20%	10%
Use a file sharing site	56%	24%	13%	8%
Download games	12%	59%	28%	1%
Play online games alone	15%	36%	48%	1%

Source: Q13 (n=800)

Table 119 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	2%	6%	27%	34%	32%
Suggest ways to use the internet safely	3%	7%	27%	33%	31%
Explain why some websites are appropriate or inappropriate	4%	9%	26%	29%	33%
Help him/her when something has bothered him/her on the internet	11%	16%	25%	19%	30%
Talk to him/her about what to do if something on the internet bothered him/her	7%	13%	27%	23%	30%
Explain that online games may contain hidden advertising aimed at making children want to have new products	8%	10%	32%	27%	22%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	4%	6%	28%	31%	32%
Talk to him/her about the commercial activities they are exposed to online	9%	14%	34%	25%	19%

Source: Q14 (n=800)

Table 120 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	26%	73 %	1%
Parental controls or other means of keeping track of the websites or apps your child visits	36%	62 %	2%
Rules about how long or when your child is allowed to go online	20%	79 %	1%
A service or contract that limits the time your child spends on the internet	71%	27 %	2%
Software to prevent spam or junk mail/viruses	19%	79 %	2%
Parental controls that filter the apps your child can download	43%	54 %	3%
Parental controls that alert you when your child wants to buy content (in-app purchase)	48%	49 %	3%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	66%	28 %	6%
Ad blocking software	44%	52 %	4%

Source: Q15 (n=800)

Table 121 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	10%	13%	28%	26%	22%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	26%	13%	22%	21%	20%
The messages in his/her email or instant messaging account	27%	13%	22%	18%	20%
His/her profile on a social networking or online community	32%	9%	21%	19%	20%
The apps he/she downloaded	14%	10%	26%	23%	27%
The in-app purchases he/she made	22%	10%	19%	21%	29%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 122 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	1%	2%	6%	10%	19%	58%	3%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	3%	4%	8%	20%	26%	19%	19%	2%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	1%	2%	7%	12%	20%	55%	3%
Spending too much money on online games or in-app purchases	3%	2%	4%	14%	19%	23%	31%	4%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	2%	3%	5%	15%	23%	24%	25%	3%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	3%	4%	8%	19%	27%	19%	17%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	1%	1%	2%	12%	18%	24%	40%	2%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	3%	2%	6%	13%	18%	23%	34%	2%
Being exposed to advertisements of unhealthy food	4%	5%	7%	20%	24%	21%	18%	2%

Source: Q17 (n=800)

Table 123 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	13%	10%	10%	17%	19%	15%	13%	4%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	10%	7%	12%	18%	21%	19%	11%	3%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	13%	11%	11%	21%	17%	12%	10%	4%
Spending too much money on online games or in-app purchases	28%	15%	10%	14%	12%	11%	7%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	12%	9%	11%	19%	19%	14%	13%	3%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	9%	6%	12%	21%	20%	17%	12%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	14%	8%	12%	20%	18%	13%	11%	4%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	12%	10%	13%	23%	18%	14%	8%	4%
Being exposed to advertisements of unhealthy food	8%	7%	12%	22%	21%	16%	12%	3%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	15%	14%	13%	19%	14%	12%	9%	4%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 124 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	70%	20%	10%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	50%	37%	13%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	77%	17%	7%
Spending too much money on online games or in-app purchases	82%	13%	5%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	49%	42%	9%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	48%	39%	13%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	74%	13%	14%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	66%	21%	14%
Being exposed to advertisements of unhealthy food	48%	40%	12%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	82%	7%	11%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	56%	35%	9%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	48%	45%	7%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 125 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	2%	7%	43%	45%	3%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	2%	12%	44%	39%	3%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	5%	19%	44%	28%	5%
Improved availability/performance of parental control software	3%	10%	42%	42%	3%
Stricter regulation for businesses that produce online content and services	2%	8%	37%	50%	3%
More awareness-raising campaigns on online risks	2%	12%	45%	37%	3%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	3%	18%	44%	31%	3%
More/better information on consumer rights and the risks of internet cost-traps	4%	14%	43%	35%	4%

Source: Q21 (n=800)

Table 126 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	61%	40%
Contextual information (labels) displayed permanently on the screen	73%	27%
Parent's pre-approval before playing.	41%	59%
School education for children in recognising advertising	57%	43%
Age verification systems	41%	59%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	76%	24%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	76%	24%

Source: Q22 (n=800)

Table 127 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	6%	5%	9%	18%	20%	19%	15%	7%
Contextual information (labels) displayed permanently on the screen	7%	7%	10%	19%	20%	15%	12%	10%
Parent's pre-approval before playing	4%	3%	5%	13%	18%	21%	31%	6%
School education for children in recognising advertising	3%	3%	5%	14%	21%	24%	24%	6%
Age verification systems	8%	6%	7%	15%	18%	18%	21%	6%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unfair practice	7%	5%	8%	17%	19%	18%	18%	9%

Source: Q23 (n=800)

Table 128 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	40%	60%
Cooling-off period for children before making a purchase	70%	31%
School education in using online apps	61%	39%
Clear indication that in-app purchases are required to fully exploit the application/game	62%	38%
Age verification systems	52%	48%
In-app purchase password as default option on the mobile	50%	51%

Source: Q24 (n=800)

Table 129 Protective measure effectiveness in-app (%)

	Not efective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	3%	3%	12%	16%	24%	34%	6%
Cooling-off period for children before making a purchase	5%	5%	8%	18%	19%	20%	17%	9%
School education in using online apps	3%	4%	5%	18%	22%	23%	17%	8%
Clear indication that in-app purchases are required to fully exploit the application/game	4%	5%	5%	18%	24%	22%	15%	7%
Age verification systems	6%	6%	10%	14%	20%	19%	18%	6%
In-app purchase password as default option on the mobile	4%	3%	5%	13%	20%	22%	26%	8%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 130 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	7%	9%	18%	23%	23%	12%	7%	1%
Online marketing	15%	17%	18%	20%	17%	8%	5%	1%
Online marketing of alcohol	5%	6%	14%	20%	21%	15%	15%	6%

Source: Q26, Q28, Q30 (n=800)

Table 131 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	1%	5%	12%	22%	33%	18 %	8%	1%
Protecting your child from online marketing	9%	14%	17%	23%	21%	11 %	5%	1%
Protecting your child from online marketing of alcohol	5%	7%	14%	20%	22%	15 %	12%	5%

Source: Q27, Q29, Q31 (n=800)

Table 132 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/D A
It is mostly up to me as a parent/guardian that my children are safe from online marketing	2%	1%	2%	9%	19%	26%	38%	2%
It is mostly up to government regulators to ensure that my children are safe from online marketing	7%	5%	8%	20%	23%	22%	14%	2%
It is mostly up to the online industries to ensure that my children are safe from online marketing	7%	7%	10%	17%	23%	20%	14%	2%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 55 Advergame example

Table 133 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	6%	5%	9%	19%	25%	22%	12%	2%
Entertainment	5%	7%	11%	22%	28%	18%	10%	2%
Advertising/selling	4%	3%	5%	12%	18%	24%	32%	2%

Source: Q46 (n=800)

Figure 56 Advertisement example

Table 134 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	15%	19%	15%	23%	12%	7%	7%	3%
Entertainment	3%	4%	5%	17%	18%	26%	26%	3%
Advertising/selling	4%	9%	13%	25%	17%	14%	14%	4%

Source: Q47 (n=800)

Spain
Socio-demographic information

Table 135 Respondents' Gender (%)

Male	Female
49%	51%

Source: S2 (n=800)

Table 136 Respondents' Age (%)

25-34	35-49	50-64
15%	70%	15%

Source: S1 (n=800)

Table 137 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
2%	9%	22%	24%	16%	19%	5%	3%

Source: Q35 (n=800)

Table 138 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
88%	4%	%	7%

Source: Q36 (n=800)

Table 139 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
7%	15%	19%	21%	15%	17%	4%	1%

Source: Q37

Table 140 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
13%	61%	16%	8%	1%	1%

Source: Q38 (n=800)

Table 141 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
1%	3%	10%	16%	23%	24%	15%	5%	1%	1%

Source: Q40 (n=800)

Table 142 Number of children aged 6-14 (%)

One child	Two children	Three or more children
70%	26%	3%

Source: S3 (n=800)

Table 143 Respondents' role (%)

Parent/step-parent	Guardian	None of above
98%	2%	0%

Source: S4 (n=800)

Table 144 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
38%	31%	31%	0%

Source: S5

Table 145 Children's gender (%)

Male	Female
55%	45%

Source: Q1 (n=800)

Table 146 Children's age (%)

6	7	8	9	10	11	12	13	14
7%	9%	11%	11%	12%	10%	11%	13%	15%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 147 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	12%	88%
Own room (or other private room) at home	57%	43%
At school	55%	45%
In an internet café	97%	3%
At friends' homes	73%	27%
At relatives' homes	71%	29%
In a library/other public place	80%	20%
Somewhere else	95%	5%

Source: Q3 (n=800)

Table 148 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	8%	92%	0%
Mobile phone/smartphone	36%	63%	1%
Tablet	29%	70%	1%
Games console	58%	40%	2%
TV	75%	23%	2%
Other	82%	4%	14%

Source: Q4 (n=800)

Table 149 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	57%	43%
Mobile phone/smartphone	50%	50%
Tablet	48%	52%
Games console	47%	53%
TV	77%	24%

Source: Q5 (n=800)

Table 150 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	11%	89%

Source: Q6 (n=399)

Table 151 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	12%	27%	28%	14%	14%	5%
On a normal non school day	5%	15%	25%	28%	18%	10%

Source: Q7, Q8 (n=800)

Table 152 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	3%	8%	10%	38%	41%	1%
Watch video clips (e.g. on YouTube)	5%	7%	11%	44%	32%	2%
Download music or films	42%	12%	16%	21%	4%	4%
Read/watch news online	43%	13%	14%	17%	7%	6%
Visit a social networking profile	42%	6%	7%	19%	24%	2%
Visit a chat room	55%	7%	7%	14%	11%	6%
Use instant messaging	31%	4%	6%	17%	40%	2%
Play games with other people online	39%	9%	10%	26%	13%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	42%	9%	12%	22%	9%	6%
Use a webcam	57%	11%	11%	12%	5%	4%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	49%	10%	13%	17%	8%	4%
Put (or post) a message on a website	59%	9%	11%	9%	4%	8%
Write a blog or online diary	74%	6%	5%	6%	2%	6%
Participate in a site concerned with good causes (e.g. campaigns, charity)	72%	8%	6%	5%	2%	8%
Use a file sharing site	68%	8%	7%	7%	2%	9%
Download games	34%	18%	22%	17%	3%	6%
Play online games alone	27%	8%	15%	32%	14%	5%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 153 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	0%	2%	8%	20%	69%	0%
I know how to download/save a photo I found online	0%	3%	11%	20%	67%	0%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	1%	6%	12%	21%	59%	0%
I know how to open a new tab in my browser	0%	3%	8%	17%	72%	0%
I know how to adjust privacy settings	2%	4%	10%	25%	60%	0%
I find it easy to decide what the best keywords are to use for online searches	0%	2%	11%	25%	62%	0%
I find it easy to find a website I visited before	0%	2%	9%	25%	64%	0%
I enjoy looking for information online	0%	2%	9%	22%	67%	0%
Sometimes I end up on websites without knowing how I got there	12%	16%	25%	24%	22%	0%
I find it easy to verify information I found online	1%	4%	18%	38%	40%	0%
I know which information I should and shouldn't share online	0%	3%	11%	29%	57%	0%
I know when I should and shouldn't share information online	0%	2%	11%	30%	56%	0%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	0%	3%	10%	30%	57%	0%
I know how to change who I share content with (e.g. friends, friends of friends or public)	1%	2%	12%	31%	53%	0%
I know how to remove friends from my contact lists	0%	2%	11%	23%	64%	0%
I know how to create something new from existing online images, music or video	6%	9%	23%	24%	37%	1%
I know how to make basic changes to the content that others have produced	8%	12%	24%	25%	30%	1%
I know how to design a website	25%	17%	23%	17%	18%	0%
I know which different types of licences apply to online content	10%	15%	29%	26%	19%	1%
I would feel confident putting video content I have created online	11%	15%	29%	27%	18%	1%
I know how to install apps on a mobile device	1%	5%	11%	27%	56%	0%
I know how to keep track of the costs of mobile app use	7%	8%	21%	29%	33%	2%
I know how to make an in-app purchase	3%	4%	15%	30%	49%	0%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 154 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	14%	9%	13%	38%	24%	0%	2%
My child knows how to download/save a photo she/he found online	16%	10%	13%	32%	28%	1%	1%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	24%	11%	13%	24%	24%	1%	3%
My child knows how to open a new tab in a browser	6%	5%	7%	34%	46%	1%	1%
My child knows how to adjust privacy settings	38%	11%	15%	16%	14%	2%	6%
My child finds it easy to decide what the best keywords are to use for online searches	14%	10%	20%	32%	22%	1%	3%
My child finds it easy to find a website he/she visited before	7%	8%	12%	39%	33%	0%	1%
My child enjoys looking for information online	8%	9%	19%	36%	28%	1%	1%
Sometimes my child ends up on websites without knowing how he/she got there	20%	21%	25%	23%	9%	1%	2%
My child finds it easy to verify information he/she found online	15%	15%	26%	27%	13%	2%	2%
My child knows which information he/she should and shouldn't share online	10%	11%	16%	37%	24%	1%	1%
My child knows when he/she should and shouldn't share information online	10%	10%	17%	37%	25%	1%	1%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	9%	11%	17%	35%	26%	1%	3%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	13%	9%	20%	33%	23%	1%	2%
My child knows how to remove friends from his/her contact lists	13%	8%	13%	31%	31%	1%	2%
My child knows how to create something new from existing online images, music or video	20%	14%	22%	26%	13%	1%	5%
My child knows how to make basic changes to the content that others have produced	28%	15%	19%	23%	8%	1%	6%
My child knows how to design a website	57%	14%	12%	8%	4%	1%	3%
My child knows which different types of licences apply to online content	48%	15%	15%	12%	5%	2%	4%
My child would feel confident putting online video content he/she has created	34%	15%	22%	18%	6%	1%	4%
My child knows how to install apps on a mobile device	13%	7%	13%	31%	34%	1%	1%
My child knows how to keep track of the costs of mobile app use	37%	13%	18%	15%	9%	3%	4%
My child knows how to make an in-app purchase	35%	14%	15%	23%	9%	1%	3%
My child knows my password enabling him/her to make an in-app purchase	68%	8%	9%	8%	4%	1%	2%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 155 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	2%	18%	46%	34%
Encourage your child to explore and learn things on the internet?	2%	9%	35%	38%	17%
Sit with your child while he/she uses the internet?	1%	6%	35%	41%	17%
Stay nearby when your child uses the internet?	0%	3%	21%	41%	36%
Do shared activities together with your child on the internet?	1%	5%	30%	49%	15%

Source: Q11 (n=800)

Table 156 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	8%	92%
Told you about things she/he finds disturbing on the internet?	32%	68%
Asked for your advice on how she/he should act online?	30%	70%
Asked for products and/or services that she/he has seen advertisements for online?	31%	69%
Ask for your help concerning a situation on the internet that she/he cannot handle?	20%	80%

Source: Q12 (n=800)

Table 157 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	3%	33%	64%	0%
Watch video clips (e.g. on YouTube)	4%	53%	43%	0%
Download music or films	33%	46%	19%	1%
Read/watch news online	17%	40%	42%	1%
Visit a social networking profile	29%	40%	29%	1%
Visit a chat room	46%	36%	16%	2%
Use instant messaging	20%	35%	44%	1%
Play games with other people online	27%	46%	26%	2%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	29%	42%	23%	5%
Use a webcam	47%	41%	10%	2%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	38%	45%	16%	1%
Put (or post) a message on a website	42%	36%	20%	3%
Write a blog or online diary	51%	31%	14%	4%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	36%	43%	15%	5%
Use a file sharing site	49%	37%	11%	4%
Download games	34%	47%	18%	2%
Play online games alone	16%	47%	35%	1%

Source: Q13 (n=800)

Table 158 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	1%	3%	16%	35%	46%
Suggest ways to use the internet safely	2%	4%	17%	38%	39%
Explain why some websites are appropriate or inappropriate	2%	5%	18%	32%	43%
Help him/her when something has bothered him/her on the internet	5%	8%	16%	29%	44%
Talk to him/her about what to do if something on the internet bothered him/her	4%	4%	18%	32%	43%
Explain that online games may contain hidden advertising aimed at making children want to have new products	4%	7%	19%	36%	34%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	5%	5%	17%	35%	39%
Talk to him/her about the commercial activities they are exposed to online	5%	7%	22%	34%	33%

Source: Q14 (n=800)

Table 159 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	40%	58%	2%
Parental controls or other means of keeping track of the websites or apps your child visits	47%	51%	3%
Rules about how long or when your child is allowed to go online	17%	81%	2%
A service or contract that limits the time your child spends on the internet	77%	21%	2%
Software to prevent spam or junk mail/viruses	21%	77%	3%
Parental controls that filter the apps your child can download	50%	47%	3%
Parental controls that alert you when your child wants to buy content (in-app purchase)	56%	41%	3%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	68%	29%	3%
Ad blocking software	51%	45%	3%

Source: Q15 (n=800)

Table 160 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	8%	9%	23%	31%	29%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	17%	9%	20%	27%	27%
The messages in his/her email or instant messaging account	20%	12%	21%	24%	24%
His/her profile on a social networking or online community	21%	9%	19%	27%	25%
The apps he/she downloaded	9%	7%	25%	28%	30%
The in-app purchases he/she made	21%	5%	13%	22%	39%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 161 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	1%	1%	7%	13%	19%	57%	1%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	2%	3%	5%	16%	25%	24%	25%	1%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	1%	2%	6%	13%	17%	59%	2%
Spending too much money on online games or in-app purchases	1%	1%	3%	9%	11%	18%	57%	1%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	1%	1%	2%	8%	16%	25%	46%	1%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	1%	2%	3%	14%	24%	24%	31%	1%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	1%	1%	2%	7%	15%	22%	51%	2%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	1%	1%	3%	9%	14%	21%	51%	1%
Being exposed to advertisements of unhealthy food	2%	2%	5%	13%	24%	25%	29%	1%

Source: Q17 (n=800)

Table 162 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	9%	8%	10%	15%	22%	16%	18%	1%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	8%	8%	8%	18%	23%	16%	17%	2%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	13%	14%	10%	19%	17%	13%	13%	2%
Spending too much money on online games or in-app purchases	30%	14%	9%	11%	14%	10%	11%	1%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	19%	11%	9%	15%	18%	14%	13%	1%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	11%	9%	10%	17%	23%	14%	15%	2%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	16%	12%	9%	15%	18%	17%	13%	1%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	11%	10%	11%	16%	20%	16%	14%	2%
Being exposed to advertisements of unhealthy food	9%	7%	10%	18%	21%	19%	14%	1%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	15%	12%	10%	17%	18%	13%	13%	1%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 163 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	60%	29%	12%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	48%	42%	10%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	83%	10%	7%
Spending too much money on online games or in-app purchases	90%	7%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	59%	34%	7%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	48%	42%	10%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	74%	14%	12%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	64%	24%	12%
Being exposed to advertisements of unhealthy food	48%	41%	11%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	80%	11%	9%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	53%	40%	7%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	42%	50%	8%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 164 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	1%	8%	36%	53%	2%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	2%	8%	43%	45%	2%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	3%	17%	46%	32%	3%
Improved availability/performance of parental control software	2%	13%	43%	40%	3%
Stricter regulation for businesses that produce online content and services	3%	10%	35%	50%	2%
More awareness-raising campaigns on online risks	3%	10%	40%	46%	2%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	3%	18%	43%	34%	2%
More/better information on consumer rights and the risks of internet cost-traps	2%	10%	41%	45%	2%

Source: Q21 (n=800)

Table 165 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	46%	54%
Contextual information (labels) displayed permanently on the screen	63%	37%
Parent's pre-approval before playing.	43%	57%
School education for children in recognising advertising	45%	56%
Age verification systems	45%	56%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	65%	35%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	65%	35%

Source: Q22 (n=800)

Table 166 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	4%	3%	5%	16%	21%	25%	23%	3%
Contextual information (labels) displayed permanently on the screen	4%	3%	7%	17%	24%	21%	20%	5%
Parent's pre-approval before playing	3%	2%	3%	12%	18%	23%	37%	3%
School education for children in recognising advertising	2%	1%	2%	11%	19%	26%	38%	2%
Age verification systems	7%	4%	6%	13%	17%	20%	31%	3%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	5%	3%	4%	17%	20%	19%	29%	4%

Source: Q23 (n=800)

Table 167 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	40%	61%
Cooling-off period for children before making a purchase	49%	51%
School education in using online apps	47%	54%
Clear indication that in-app purchases are required to fully exploit the application/game	52%	48%
Age verification systems	48%	52%
In-app purchase password as default option on the mobile	43%	57%

Source: Q24 (n=800)

Table 168 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	1%	2%	8%	16%	25%	45%	2%
Cooling-off period for children before making a purchase	3%	3%	4%	14%	23%	25%	25%	4%
School education in using online apps	1%	1%	3%	10%	21%	26%	36%	2%
Clear indication that in-app purchases are required to fully exploit the application/game	2%	2%	3%	12%	23%	27%	28%	4%
Age verification systems	5%	4%	5%	12%	17%	23%	30%	3%
In-app purchase password as default option on the mobile	2%	1%	2%	10%	15%	27%	40%	3%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 169 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	11%	14%	20%	25%	21%	6%	4%	0%
Online marketing	15%	15%	22%	22%	17%	5%	4%	1%
Online marketing of alcohol	7%	9%	21%	22%	24%	10%	7%	1%

Source: Q26, Q28, Q30 (n=800)

Table 170 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	0%	3%	11%	21%	34%	23%	8%	1%
Protecting your child from online marketing	3%	9%	16%	25%	28%	13%	5%	1%
Protecting your child from online marketing of alcohol	3%	6%	13%	26%	24%	18%	9%	1%

Source: Q27, Q29, Q31 (n=800)

Table 171 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	1%	0%	2%	10%	15%	26%	46%	1%
It is mostly up to government regulators to ensure that my children are safe from online marketing	1%	2%	3%	13%	24%	27%	29%	1%
It is mostly up to the online industries to ensure that my children are safe from online marketing	2%	3%	4%	15%	25%	25%	26%	1%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 57 Advergame example

Table 172 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	7%	4%	8%	15%	22%	24%	18%	3%
Entertainment	4%	3%	6%	15%	26%	25%	19%	2%
Advertising/selling	4%	1%	4%	12%	22%	24%	31%	3%

Source: Q46 (n=800)

Figure 58 Advertisement example

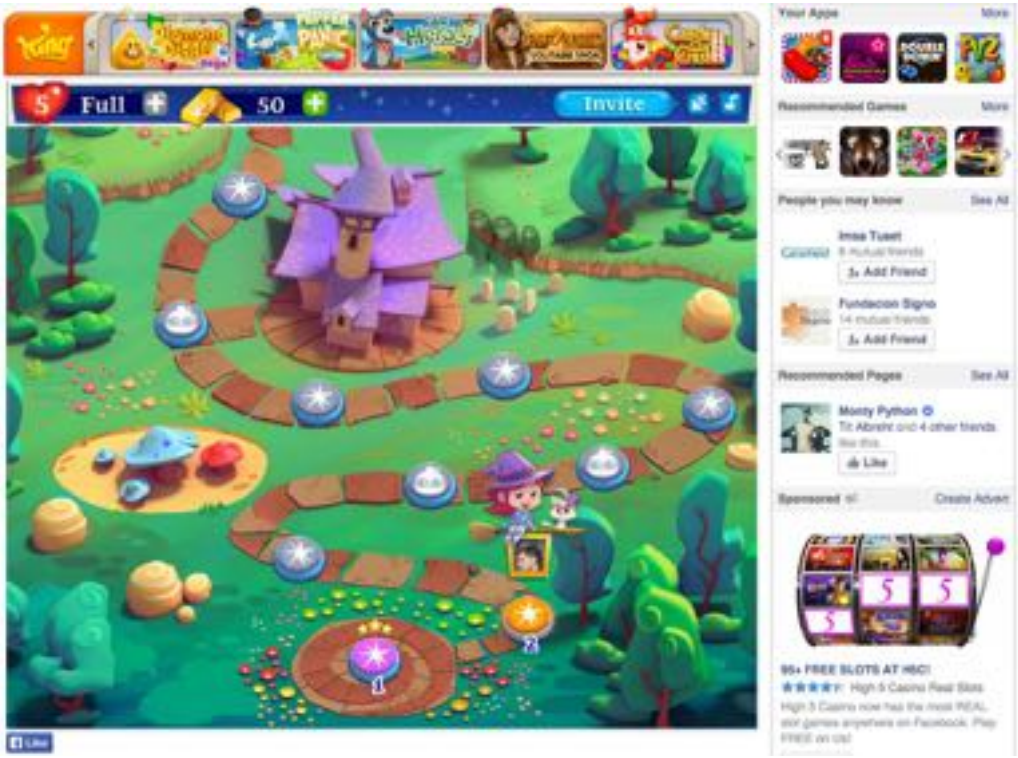


Table 173 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	10%	10%	10%	23%	21%	15%	10%	1%
Entertainment	1%	1%	2%	14%	20%	29%	31%	0%
Advertising/selling	6%	5%	8%	22%	23%	19%	15%	2%

Source: Q47 (n=800)

France
Socio-demographic information

Table 174 Respondents' Gender (%)

Male	Female
48%	52%

Source: S2 (n=800)

Table 175 Respondents' Age (%)

25-34	35-49	50-64
16%	69%	15%

Source: S1 (n=800)

Table 176 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
1%	1%	5%	47%	22%	10%	10%	3%

Source: Q35 (n=800)

Table 177 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
80%	4%	0%	16%

Source: Q36 (n=800)

Table 178 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
1%	2%	10%	41%	25%	11%	8%	4%

Source: Q37

Table 179 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
5%	76%	6%	10%	1%	2%

Source: Q38 (n=800)

Table 180 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
2%	4%	7%	13%	22%	22%	16%	9%	3%	3%

Source: Q40 (n=800)

Table 181 Number of children aged 6-14 (%)

One child	Two children	Three or more children
64%	31%	5%

Source: S3 (n=800)

Table 182 Respondents' role (%)

Parent/step-parent	Guardian	None of above
87%	13%	0%

Source: S4 (n=800)

Table 183 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
5%	7%	88%	0%

Source: S5

Table 184 Children's gender (%)

Male	Female
55%	45%

Source: Q1 (n=800)

Table 185 Children's age (%)

6	7	8	9	10	11	12	13	14
8%	6%	8%	8%	10%	12%	15%	13%	20%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 186 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	17%	83%
Own room (or other private room) at home	48%	52%
At school	66%	34%
In an internet café	99%	1%
At friends' homes	84%	16%
At relatives' homes	82%	18%
In a library/other public place	93%	7%
Somewhere else	97%	3%

Source: Q3 (n=800)

Table 187 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	6%	94%	0%
Mobile phone/smartphone	50%	50%	1%
Tablet	41%	59%	1%
Games console	58%	40%	2%
TV	75%	23%	2%
Other	84%	3%	13%

Source: Q4 (n=800)

Table 188 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	58%	42%
Mobile phone/smartphone	50%	50%
Tablet	58%	42%
Games console	41%	59%
TV	72%	28%

Source: Q5 (n=800)

Table 189 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	28%	72%

Source: Q6 (n=399)

Table 190 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	18%	26%	27%	12%	8%	8%
On a normal non school day	10%	18%	25%	21%	15%	12%

Source: Q7, Q8 (n=800)

Table 191 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	17%	16%	18%	32%	16%	1%
Watch video clips (e.g. on YouTube)	6%	9%	16%	39%	30%	1%
Download music or films	50%	13%	14%	15%	5%	3%
Read/watch news online	34%	13%	18%	22%	11%	3%
Visit a social networking profile	44%	7%	9%	16%	22%	3%
Visit a chat room	66%	6%	7%	9%	6%	8%
Use instant messaging	44%	6%	9%	17%	21%	4%
Play games with other people online	38%	7%	11%	23%	18%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	46%	8%	11%	18%	10%	8%
Use a webcam	59%	11%	10%	12%	5%	4%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	51%	8%	12%	16%	8%	4%
Put (or post) a message on a website	54%	8%	10%	13%	9%	6%
Write a blog or online diary	75%	4%	6%	5%	2%	8%
Participate in a site concerned with good causes (e.g. campaigns, charity)	80%	4%	4%	3%	2%	7%
Use a file sharing site	73%	4%	6%	5%	2%	9%
Download games	45%	17%	18%	10%	4%	7%
Play online games alone	22%	9%	16%	31%	16%	5%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 192 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	2%	4%	10%	19%	65%	0%
I know how to download/save a photo I found online	3%	4%	14%	19%	60%	0%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	5%	6%	17%	19%	53%	0%
I know how to open a new tab in my browser	2%	3%	11%	18%	66%	0%
I know how to adjust privacy settings	3%	5%	13%	24%	55%	1%
I find it easy to decide what the best keywords are to use for online searches	2%	3%	12%	26%	57%	0%
I find it easy to find a website I visited before	2%	3%	11%	23%	61%	0%
I enjoy looking for information online	2%	3%	14%	27%	54%	0%
Sometimes I end up on websites without knowing how I got there	19%	21%	25%	16%	18%	1%
I find it easy to verify information I found online	2%	4%	18%	34%	41%	1%
I know which information I should and shouldn't share online	3%	3%	13%	29%	52%	0%
I know when I should and shouldn't share information online	2%	3%	15%	29%	51%	1%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	2%	4%	13%	28%	53%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	3%	4%	14%	30%	49%	0%
I know how to remove friends from my contact lists	3%	4%	13%	23%	57%	1%
I know how to create something new from existing online images, music or video	7%	10%	21%	26%	37%	1%
I know how to make basic changes to the content that others have produced	8%	12%	21%	25%	34%	1%
I know how to design a website	21%	20%	22%	17%	20%	1%
I know which different types of licences apply to online content	14%	14%	28%	22%	21%	1%
I would feel confident putting video content I have created online	14%	12%	20%	24%	30%	1%
I know how to install apps on a mobile device	8%	7%	15%	25%	44%	0%
I know how to keep track of the costs of mobile app use	8%	6%	16%	28%	41%	1%
I know how to make an in-app purchase	6%	6%	14%	25%	48%	0%

Source: Q33 (n=800

Parents' perception of children's digital skills (10)

Table 193 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	15%	8%	11%	33%	28%	1%	4%
My child knows how to download/save a photo she/he found online	19%	8%	13%	31%	24%	1%	4%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	26%	12%	14%	20%	19%	2%	7%
My child knows how to open a new tab in a browser	6%	5%	9%	35%	41%	1%	3%
My child knows how to adjust privacy settings	36%	13%	14%	14%	13%	2%	8%
My child finds it easy to decide what the best keywords are to use for online searches	13%	9%	22%	32%	19%	1%	5%
My child finds it easy to find a website he/she visited before	7%	6%	14%	39%	31%	1%	3%
My child enjoys looking for information online	11%	10%	22%	34%	20%	1%	3%
Sometimes my child ends up on websites without knowing how he/she got there	28%	19%	23%	16%	6%	1%	7%
My child finds it easy to verify information he/she found online	17%	12%	26%	25%	15%	1%	5%
My child knows which information he/she should and shouldn't share online	13%	10%	17%	34%	21%	1%	4%
My child knows when he/she should and shouldn't share information online	14%	9%	19%	34%	20%	1%	4%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	14%	8%	19%	33%	21%	1%	5%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	19%	9%	20%	29%	19%	1%	4%
My child knows how to remove friends from his/her contact lists	18%	8%	13%	30%	25%	1%	5%
My child knows how to create something new from existing online images, music or video	22%	12%	21%	22%	16%	1%	6%
My child knows how to make basic changes to the content that others have produced	23%	16%	19%	20%	12%	2%	8%
My child knows how to design a website	46%	15%	12%	12%	6%	2%	7%
My child knows which different types of licences apply to online content	42%	15%	16%	11%	5%	2%	9%
My child would feel confident putting online video content he/she has created	30%	16%	15%	20%	12%	1%	5%
My child knows how to install apps on a mobile device	18%	8%	12%	32%	26%	1%	4%
My child knows how to keep track of the costs of mobile app use	29%	15%	17%	20%	12%	2%	6%
My child knows how to make an in-app purchase	32%	12%	16%	20%	12%	1%	7%
My child knows my password enabling him/her to make an in-app purchase	55%	11%	9%	11%	7%	2%	6%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 194 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	4%	27%	45%	23%
Encourage your child to explore and learn things on the internet?	4%	15%	42%	29%	11%
Sit with your child while he/she uses the internet?	5%	17%	41%	25%	12%
Stay nearby when your child uses the internet?	5%	16%	34%	30%	16%
Do shared activities together with your child on the internet?	3%	14%	43%	31%	9%

Source: Q11 (n=800)

Table 195 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	13%	88%
Told you about things she/he finds disturbing on the internet?	45%	56%
Asked for your advice on how she/he should act online?	43%	58%
Asked for products and/or services that she/he has seen advertisements for online?	40%	60%
Ask for your help concerning a situation on the internet that she/he cannot handle?	28%	72%

Source: Q12 (n=800)

Table 196 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	13%	33%	54%	1%
Watch video clips (e.g. on YouTube)	6%	40%	53%	2%
Download music or films	43%	32%	23%	3%
Read/watch news online	20%	34%	44%	2%
Visit a social networking profile	43%	23%	33%	1%
Visit a chat room	60%	21%	15%	4%
Use instant messaging	39%	25%	34%	2%
Play games with other people online	36%	31%	30%	3%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	42%	26%	27%	5%
Use a webcam	51%	28%	19%	2%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	44%	29%	25%	2%
Put (or post) a message on a website	43%	26%	28%	3%
Write a blog or online diary	66%	17%	12%	5%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	67%	18%	9%	6%
Use a file sharing site	61%	22%	12%	5%
Download games	29%	47%	21%	2%
Play online games alone	16%	39%	43%	2%

Source: Q13 (n=800)

Table 197 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	3%	3%	33%	33%	28%
Suggest ways to use the internet safely	7%	7%	32%	33%	22%
Explain why some websites are appropriate or inappropriate	5%	6%	30%	33%	26%
Help him/her when something has bothered him/her on the internet	13%	12%	30%	24%	22%
Talk to him/her about what to do if something on the internet bothered him/her	9%	9%	31%	29%	23%
Explain that online games may contain hidden advertising aimed at making children want to have new products	10%	9%	30%	32%	20%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	7%	6%	29%	34%	23%
Talk to him/her about the commercial activities they are exposed to online	10%	8%	33%	31%	18%

Source: Q14 (n=800)

Table 198 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	40%	58%	3%
Parental controls or other means of keeping track of the websites or apps your child visits	41%	56%	3%
Rules about how long or when your child is allowed to go online	34%	64%	2%
A service or contract that limits the time your child spends on the internet	70%	28%	2%
Software to prevent spam or junk mail/viruses	39%	58%	3%
Parental controls that filter the apps your child can download	55%	41%	4%
Parental controls that alert you when your child wants to buy content (in-app purchase)	63%	32%	5%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	73%	23%	4%
Ad blocking software	50%	46%	4%

Source: Q15 (n=800)

Table 199 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	15%	10%	29%	26%	20%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	27%	10%	23%	23%	19%
The messages in his/her email or instant messaging account	30%	8%	25%	21%	16%
His/her profile on a social networking or online community	30%	9%	22%	21%	19%
The apps he/she downloaded	19%	11%	25%	24%	22%
The in-app purchases he/she made	35%	7%	13%	16%	29%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 200 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	0%	1%	7%	12%	26%	49%	3%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	2%	3%	5%	17%	24%	25%	20%	4%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	0%	2%	7%	14%	24%	48%	3%
Spending too much money on online games or in-app purchases	3%	2%	2%	9%	17%	23%	42%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	3%	1%	3%	11%	20%	25%	34%	4%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	2%	2%	4%	15%	21%	27%	27%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	2%	1%	2%	11%	15%	23%	43%	3%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	1%	1%	3%	12%	18%	25%	37%	3%
Being exposed to advertisements of unhealthy food	2%	2%	4%	16%	22%	24%	26%	3%

Source: Q17 (n=800)

Table 201 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	7%	6%	8%	17%	21%	20%	19%	4%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	7%	6%	5%	17%	23%	21%	17%	4%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	12%	10%	9%	17%	18%	15%	16%	5%
Spending too much money on online games or in-app purchases	25%	12%	7%	14%	15%	12%	12%	4%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	17%	11%	7%	15%	18%	14%	14%	4%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	8%	7%	7%	17%	21%	19%	16%	5%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	10%	8%	8%	18%	18%	18%	16%	5%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	10%	7%	8%	20%	19%	18%	14%	4%
Being exposed to advertisements of unhealthy food	8%	7%	9%	19%	20%	18%	14%	5%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	13%	10%	7%	17%	18%	17%	14%	5%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 202 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	58%	31%	11%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	45%	43%	12%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	78%	13%	9%
Spending too much money on online games or in-app purchases	86%	8%	5%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	60%	33%	7%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	52%	35%	13%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	74%	13%	13%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	70%	18%	12%
Being exposed to advertisements of unhealthy food	62%	25%	14%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	80%	10%	10%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	59%	32%	9%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	68%	26%	6%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 203 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	5%	12%	39%	34%	10%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	5%	15%	46%	25%	10%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	8%	21%	41%	20%	11%
Improved availability/performance of parental control software	6%	14%	40%	31%	10%
Stricter regulation for businesses that produce online content and services	5%	12%	36%	38%	10%
More awareness-raising campaigns on online risks	5%	15%	41%	30%	9%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	9%	26%	36%	18%	11%
More/better information on consumer rights and the risks of internet cost-traps	5%	16%	43%	26%	9%

Source: Q21 (n=800)

Table 204 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	51%	49%
Contextual information (labels) displayed permanently on the screen	69%	31%
Parent's pre-approval before playing.	47%	53%
School education for children in recognising advertising	62%	38%
Age verification systems	52%	49%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	64%	36%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	64%	36%

Source: Q22 (n=800)

Table 205 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	7%	3%	7%	17%	23%	21%	12%	9%
Contextual information (labels) displayed permanently on the screen	8%	4%	9%	19%	23%	18%	9%	11 %
Parent's pre-approval before playing	5%	2%	5%	14%	21%	20%	25%	8%
School education for children in recognising advertising	4%	2%	5%	18%	25%	23%	16%	8%
Age verification systems	11%	6%	6%	15%	21%	18%	14%	9%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	6%	4%	7%	19%	24%	19%	12%	10 %

Source: Q23 (n=800)

Table 206 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	47%	53%
Cooling-off period for children before making a purchase	59%	41%
School education in using online apps	67%	34%
Clear indication that in-app purchases are required to fully exploit the application/game	60%	40%
Age verification systems	58%	43%
In-app purchase password as default option on the mobile	47%	53%

Source: Q24 (n=800)

Table 207 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	3%	2%	3%	12%	18%	25%	29%	8%
Cooling-off period for children before making a purchase	8%	4%	5%	18%	22%	21%	13%	10 %
School education in using online apps	5%	4%	4%	17%	24%	22%	16%	9%
Clear indication that in-app purchases are required to fully exploit the application/game	4%	3%	4%	16%	28%	21%	16%	9%
Age verification systems	10%	5%	7%	15%	21%	19%	15%	9%
In-app purchase password as default option on the mobile	3%	2%	3%	11%	20%	23%	30%	8%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 208 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	12%	11%	21%	25%	18%	7%	4%	3%
Online marketing	19%	17%	17%	22%	13%	6%	4%	2%
Online marketing of alcohol	10%	10%	19%	22%	18%	10%	7%	5%

Source: Q26, Q28, Q30 (n=800)

Table 209 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	2%	3%	10%	25%	31%	19%	8%	2%
Protecting your child from online marketing	7%	9%	18%	27%	20%	10%	6%	3%
Protecting your child from online marketing of alcohol	6%	9%	16%	24%	19%	13%	9%	5%

Source: Q27, Q29, Q31 (n=800)

Table 210 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/D A
It is mostly up to me as a parent/guardian that my children are safe from online marketing	1%	1%	1%	9%	17%	19%	51%	2%
It is mostly up to government regulators to ensure that my children are safe from online marketing	1%	1%	2%	10%	20%	24%	38%	3%
It is mostly up to the online industries to ensure that my children are safe from online marketing	1%	2%	2%	13%	20%	21%	38%	3%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 59 Advergame example

Table 211 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	9%	5%	8%	18%	22%	19%	12%	8%
Entertainment	5%	4%	8%	19%	24%	21%	14%	7%
Advertising/selling	5%	2%	3%	15%	21%	22%	26%	7%

Source: Q46 (n=800)

Figure 60 Advertisement example

Table 212 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	12%	8%	9%	21%	19%	14%	7%	11%
Entertainment	2%	1%	3%	12%	19%	25%	31%	8%
Advertising/selling	7%	4%	8%	18%	23%	17%	12%	11%

Source: Q47 (n=800)

Italy
Socio-demographic information

Table 213 Respondents' Gender (%)

Male	Female
49%	51%

Source: S2 (n=800)

Table 214 Respondents' Age (%)

25-34	35-49	50-64
15%	70%	15%

Source: S1 (n=800)

Table 215 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
3%	14%	37%	16%	3%	8%	17%	1%

Source: Q35 (n=800)

Table 216 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
86%	7%	0%	6%

Source: Q36 (n=800)

Table 217 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
2%	18%	35%	14%	4%	9%	16%	2%

Source: Q37

Table 218 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
18%	53%	10%	15%	1%	2%

Source: Q38 (n=800)

Table 219 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
3%	4%	8%	13%	23%	26%	15%	6%	2%	2%

Source: Q40 (n=800)

Table 220 Number of children aged 6-14 (%)

One child	Two children	Three or more children
70%	26%	3%

Source: S3 (n=800)

Table 221 Respondents' role (%)

Parent/step-parent	Guardian	None of above
99%	1%	0%

Source: S4 (n=800)

Table 222 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
43%	0%	57%	0%

Source: S5

Table 223 Children's gender (%)

Male	Female
57%	43%

Source: Q1 (n=800)

Table 224 Children's age (%)

6	7	8	9	10	11	12	13	14
8%	7%	10%	8%	11%	9%	15%	17%	13%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 225 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	23%	77%
Own room (or other private room) at home	45%	55%
At school	71%	29%
In an internet café	98%	2%
At friends' homes	79%	22%
At relatives' homes	83%	17%
In a library/other public place	92%	9%
Somewhere else	95%	5%

Source: Q3 (n=800)

Table 226 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	12%	88%	0%
Mobile phone/smartphone	29%	70%	1%
Tablet	34%	65%	1%
Games console	59%	39%	3%
TV	78%	21%	1%
Other	85%	3%	12%

Source: Q4 (n=800)

Table 227 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	58%	42%
Mobile phone/smartphone	37%	63%
Tablet	56%	44%
Games console	41%	59%
TV	68%	32%

Source: Q5 (n=800)

Table 228 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	10%	90%

Source: Q6 (n=503)

Table 229 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	14%	31%	24%	14%	12%	6%
On a normal non school day	11%	21%	25%	18%	16%	9%

Source: Q7, Q8 (n=800)

Table 230 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	12%	8%	13%	38%	28%	1%
Watch video clips (e.g. on YouTube)	7%	7%	12%	35%	37%	2%
Download music or films	42%	13%	14%	21%	8%	3%
Read/watch news online	38%	13%	13%	19%	13%	3%
Visit a social networking profile	41%	5%	6%	16%	32%	1%
Visit a chat room	66%	5%	5%	10%	9%	4%
Use instant messaging	34%	4%	5%	15%	41%	2%
Play games with other people online	37%	6%	10%	23%	21%	2%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	56%	5%	7%	16%	9%	7%
Use a webcam	66%	9%	6%	12%	4%	4%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	48%	8%	9%	19%	14%	2%
Put (or post) a message on a website	57%	7%	8%	14%	9%	5%
Write a blog or online diary	74%	4%	6%	8%	4%	6%
Participate in a site concerned with good causes (e.g. campaigns, charity)	69%	6%	6%	6%	4%	9%
Use a file sharing site	63%	6%	8%	9%	7%	7%
Download games	34%	16%	22%	16%	7%	4%
Play online games alone	20%	7%	15%	30%	25%	3%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 231 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	0%	2%	7%	17%	73%	1%
I know how to download/save a photo I found online	1%	2%	9%	17%	70%	1%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	2%	4%	12%	20%	62%	1%
I know how to open a new tab in my browser	1%	2%	8%	17%	71%	0%
I know how to adjust privacy settings	2%	4%	10%	24%	60%	1%
I find it easy to decide what the best keywords are to use for online searches	1%	2%	10%	24%	63%	1%
I find it easy to find a website I visited before	1%	2%	9%	21%	68%	0%
I enjoy looking for information online	1%	2%	11%	24%	63%	0%
Sometimes I end up on websites without knowing how I got there	20%	18%	23%	19%	19%	1%
I find it easy to verify information I found online	1%	3%	17%	35%	43%	0%
I know which information I should and shouldn't share online	0%	2%	11%	29%	58%	0%
I know when I should and shouldn't share information online	1%	2%	9%	29%	58%	0%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	0%	2%	9%	28%	60%	0%
I know how to change who I share content with (e.g. friends, friends of friends or public)	1%	2%	14%	28%	55%	1%
I know how to remove friends from my contact lists	1%	2%	10%	21%	66%	0%
I know how to create something new from existing online images, music or video	3%	6%	18%	25%	48%	0%
I know how to make basic changes to the content that others have produced	5%	10%	24%	23%	37%	1%
I know how to design a website	20%	17%	21%	20%	21%	1%
I know which different types of licences apply to online content	8%	11%	25%	30%	26%	1%
I would feel confident putting video content I have created online	13%	14%	28%	22%	23%	1%
I know how to install apps on a mobile device	4%	4%	15%	22%	55%	1%
I know how to keep track of the costs of mobile app use	4%	5%	16%	28%	47%	1%
I know how to make an in-app purchase	3%	3%	12%	24%	57%	1%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 232 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	13%	7%	14%	37%	27%	1%	1%
My child knows how to download/save a photo she/he found online	16%	8%	13%	33%	28%	0%	1%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	26%	14%	15%	21%	18%	0%	5%
My child knows how to open a new tab in a browser	8%	6%	9%	32%	43%	0%	3%
My child knows how to adjust privacy settings	40%	16%	14%	13%	11%	0%	5%
My child finds it easy to decide what the best keywords are to use for online searches	11%	9%	19%	35%	24%	0%	2%
My child finds it easy to find a website he/she visited before	8%	8%	17%	38%	27%	0%	2%
My child enjoys looking for information online	8%	8%	20%	36%	25%	1%	1%
Sometimes my child ends up on websites without knowing how he/she got there	27%	21%	20%	21%	9%	1%	2%
My child finds it easy to verify information he/she found online	16%	14%	29%	26%	11%	1%	3%
My child knows which information he/she should and shouldn't share online	10%	10%	21%	32%	25%	1%	2%
My child knows when he/she should and shouldn't share information online	11%	10%	18%	33%	26%	2%	2%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	12%	9%	20%	31%	25%	1%	3%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	26%	12%	18%	23%	16%	1%	3%
My child knows how to remove friends from his/her contact lists	22%	7%	11%	27%	30%	1%	3%
My child knows how to create something new from existing online images, music or video	22%	10%	17%	27%	20%	1%	4%
My child knows how to make basic changes to the content that others have produced	26%	14%	20%	21%	12%	2%	5%
My child knows how to design a website	55%	17%	10%	8%	5%	1%	4%
My child knows which different types of licences apply to online content	43%	15%	18%	13%	6%	1%	4%
My child would feel confident putting online video content he/she has created	27%	14%	24%	21%	8%	1%	5%
My child knows how to install apps on a mobile device	14%	5%	11%	31%	37%	0%	2%
My child knows how to keep track of the costs of mobile app use	29%	15%	19%	22%	13%	1%	3%
My child knows how to make an in-app purchase	29%	13%	18%	21%	14%	1%	4%
My child knows my password enabling him/her to make an in-app purchase	64%	12%	9%	8%	5%	1%	2%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 233 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	0%	2%	16%	45%	37%
Encourage your child to explore and learn things on the internet?	4%	15%	39%	27%	15%
Sit with your child while he/she uses the internet?	1%	8%	32%	39%	20%
Stay nearby when your child uses the internet?	1%	4%	15%	38%	42%
Do shared activities together with your child on the internet?	2%	6%	33%	40%	20%

Source: Q11 (n=800)

Table 234 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	14%	86%
Told you about things she/he finds disturbing on the internet?	43%	57%
Asked for your advice on how she/he should act online?	31%	69%
Asked for products and/or services that she/he has seen advertisements for online?	40%	60%
Ask for your help concerning a situation on the internet that she/he cannot handle?	22%	78%

Source: Q12 (n=800)

Table 235 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	5%	35%	59%	1%
Watch video clips (e.g. on YouTube)	5%	48%	46%	1%
Download music or films	34%	44%	20%	2%
Read/watch news online	12%	44%	42%	2%
Visit a social networking profile	30%	35%	34%	2%
Visit a chat room	62%	26%	10%	3%
Use instant messaging	27%	28%	44%	1%
Play games with other people online	31%	39%	28%	2%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	47%	27%	19%	7%
Use a webcam	55%	35%	9%	2%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	38%	39%	22%	1%
Put (or post) a message on a website	41%	37%	20%	3%
Write a blog or online diary	54%	27%	14%	5%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	39%	36%	18%	7%
Use a file sharing site	47%	36%	14%	3%
Download games	22%	53%	24%	1%
Play online games alone	14%	41%	44%	2%

Source: Q13 (n=800)

Table 236 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	0%	2%	18%	36%	44%
Suggest ways to use the internet safely	0%	3%	16%	36%	45%
Explain why some websites are appropriate or inappropriate	1%	4%	16%	32%	46%
Help him/her when something has bothered him/her on the internet	4%	6%	18%	28%	44%
Talk to him/her about what to do if something on the internet bothered him/her	3%	6%	20%	29%	42%
Explain that online games may contain hidden advertising aimed at making children want to have new products	4%	7%	25%	32%	33%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	3%	5%	20%	34%	39%
Talk to him/her about the commercial activities they are exposed to online	6%	10%	23%	33%	28%

Source: Q14 (n=800)

Table 237 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	31%	66%	4%
Parental controls or other means of keeping track of the websites or apps your child visits	37%	60%	3%
Rules about how long or when your child is allowed to go online	22%	76%	2%
A service or contract that limits the time your child spends on the internet	71%	25%	4%
Software to prevent spam or junk mail/viruses	24%	73%	3%
Parental controls that filter the apps your child can download	52%	44%	4%
Parental controls that alert you when your child wants to buy content (in-app purchase)	57%	39%	4%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	62%	34%	4%
Ad blocking software	55%	40%	5%

Source: Q15 (n=800)

Table 238 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	8%	8%	18%	30%	36%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	16%	8%	15%	26%	34%
The messages in his/her email or instant messaging account	18%	8%	17%	25%	31%
His/her profile on a social networking or online community	20%	6%	16%	24%	34%
The apps he/she downloaded	9%	9%	18%	29%	36%
The in-app purchases he/she made	22%	6%	10%	18%	44%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 239 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	1%	1%	5%	10%	16%	65%	1%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	2%	2%	6%	14%	22%	23%	29%	1%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	2%	3%	7%	15%	18%	55%	1%
Spending too much money on online games or in-app purchases	1%	1%	3%	8%	11%	19%	54%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	1%	1%	2%	8%	17%	20%	49%	2%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	2%	2%	3%	11%	21%	21%	39%	2%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	1%	2%	2%	8%	13%	18%	56%	2%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	1%	2%	3%	7%	12%	19%	56%	2%
Being exposed to advertisements of unhealthy food	2%	3%	3%	12%	19%	21%	40%	1%

Source: Q17 (n=800)

Table 240 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	10%	7%	7%	13%	19%	17%	26%	2%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	8%	7%	7%	12%	20%	21%	25%	1%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	14%	10%	9%	15%	19%	15%	18%	2%
Spending too much money on online games or in-app purchases	31%	11%	7%	12%	10%	13%	16%	1%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	17%	8%	8%	12%	18%	16%	19%	2%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	11%	8%	7%	12%	21%	18%	21%	2%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	17%	7%	9%	12%	15%	16%	23%	2%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	12%	8%	9%	13%	19%	17%	21%	2%
Being exposed to advertisements of unhealthy food	8%	7%	7%	14%	18%	21%	22%	2%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	16%	9%	10%	13%	15%	16%	19%	2%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 241 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	62%	29%	9%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	42%	47%	11%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	81%	12%	7%
Spending too much money on online games or in-app purchases	90%	7%	4%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	57%	35%	8%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	47%	42%	11%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	75%	13%	13%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	66%	24%	10%
Being exposed to advertisements of unhealthy food	49%	39%	12%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	83%	7%	10%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	50%	43%	7%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	68%	28%	4%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 242 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	2%	7%	36%	53%	3%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	2%	9%	45%	42%	2%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	4%	18%	41%	32%	4%
Improved availability/performance of parental control software	1%	8%	40%	48%	3%
Stricter regulation for businesses that produce online content and services	2%	8%	30%	58%	2%
More awareness-raising campaigns on online risks	2%	10%	37%	49%	2%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	4%	21%	42%	29%	4%
More/better information on consumer rights and the risks of internet cost-traps	3%	11%	42%	43%	3%

Source: Q21 (n=800)

Table 243 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	41%	59%
Contextual information (labels) displayed permanently on the screen	60%	41%
Parent's pre-approval before playing.	39%	61%
School education for children in recognising advertising	54%	46%
Age verification systems	48%	52%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	64%	36%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	63%	37%

Source: Q22 (n=800)

Table 244 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	4%	4%	7%	13%	22%	22%	25%	3%
Contextual information (labels) displayed permanently on the screen	5%	3%	7%	17%	21%	22%	21%	4%
Parent's pre-approval before playing	3%	2%	3%	10%	14%	22%	43%	3%
School education for children in recognising advertising	2%	2%	3%	11%	15%	28%	37%	3%
Age verification systems	7%	4%	5%	12%	18%	19%	32%	3%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	5%	4%	5%	16%	18%	22%	28%	4%

Source: Q23 (n=800)

Table 245 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	28%	73%
Cooling-off period for children before making a purchase	39%	61%
School education in using online apps	60%	40%
Clear indication that in-app purchases are required to fully exploit the application/game	46%	54%
Age verification systems	46%	54%
In-app purchase password as default option on the mobile	30%	70%

Source: Q24 (n=800)

Table 246 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	1%	3%	5%	12%	21%	53%	2%
Cooling-off period for children before making a purchase	4%	3%	7%	13%	20%	23%	27%	4%
School education in using online apps	3%	2%	4%	12%	18%	26%	32%	3%
Clear indication that in-app purchases are required to fully exploit the application/game	2%	1%	5%	12%	22%	26%	29%	4%
Age verification systems	5%	3%	6%	11%	18%	22%	32%	3%
In-app purchase password as default option on the mobile	2%	1%	2%	8%	14%	23%	47%	3%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 247 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	13%	17%	19%	22%	18%	7%	4%	1%
Online marketing	16%	17%	18%	20%	16%	9%	4%	1%
Online marketing of alcohol	10%	10%	12%	21%	20%	14%	10%	2%

Source: Q26, Q28, Q30 (n=800)

Table 248 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	0%	1%	5%	18%	32%	32%	11%	1%
Protecting your child from online marketing	4%	7%	14%	25%	25%	17%	8%	1%
Protecting your child from online marketing of alcohol	4%	5%	9%	18%	24%	23%	16%	2%

Source: Q27, Q29, Q31 (n=800)

Table 249 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	2%	1%	2%	4%	13%	20%	57%	2%
It is mostly up to government regulators to ensure that my children are safe from online marketing	2%	2%	4%	9%	21%	26%	34%	2%
It is mostly up to the online industries to ensure that my children are safe from online marketing	2%	3%	5%	10%	20%	23%	34%	3%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 61 Advergame example

Table 250 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	10%	5%	8%	14%	19%	20%	22%	3%
Entertainment	8%	4%	7%	16%	25%	20%	16%	3%
Advertising/selling	5%	3%	4%	8%	18%	24%	35%	3%

Source: Q46 (n=800)

Figure 62 Advertisement example

Table 251 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	29%	15%	16%	13%	13%	7%	6%	3%
Entertainment	2%	1%	2%	5%	10%	29%	49%	2%
Advertising/selling	12%	8%	12%	17%	17%	17%	16%	3%

Source: Q47 (n=800)

Netherlands
Socio-demographic information

Table 252 Respondents' Gender (%)

Male	Female
50%	50%

Source: S2 (n=800)

Table 253 Respondents' Age (%)

25-34	35-49	50-64
15%	68%	17%

Source: S1 (n=800)

Table 254 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
0%	6%	16%	33%	12%	24%	8%	0%

Source: Q35 (n=800)

Table 255 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
84%	4%	0%	12%

Source: Q36 (n=800)

Table 256 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
2%	8%	15%	26%	14%	25%	9%	1%

Source: Q37

Table 257 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
9%	66%	6%	16%	0%	3%

Source: Q38 (n=800)

Table 258 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
1%	3%	5%	8%	14%	21%	31%	15%	3%	1%

Source: Q40 (n=800)

Table 259 Number of children aged 6-14 (%)

One child	Two children	Three or more children
58%	37%	4%

Source: S3 (n=800)

Table 260 Respondents' role (%)

Parent/step-parent	Guardian	None of above
98%	2%	0%

Source: S4 (n=800)

Table 261 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
13%	25%	63%	0%

Source: S5

Table 262 Children's gender (%)

Male	Female
54%	46%

Source: Q1 (n=800)

Table 263 Children's age (%)

6	7	8	9	10	11	12	13	14
9%	10%	9%	9%	9%	9%	14%	16%	16%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 264 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	13%	87%
Own room (or other private room) at home	51%	49%
At school	45%	55%
In an internet café	99%	1%
At friends' homes	71%	30%
At relatives' homes	71%	29%
In a library/other public place	93%	7%
Somewhere else	96%	4%

Source: Q3 (n=800)

Table 265 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	11%	89%	0%
Mobile phone/smartphone	35%	64%	0%
Tablet	26%	74%	0%
Games console	65%	34%	1%
TV	78%	21%	1%
Other	84%	2%	14%

Source: Q4 (n=800)

Table 266 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	59%	41%
Mobile phone/smartphone	41%	59%
Tablet	52%	48%
Games console	61%	40%
TV	73%	27%

Source: Q5 (n=800)

Table 267 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	23%	76%

Source: Q5 (n=471)

Table 268 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	13%	26%	32%	18%	9%	2%
On a normal non school day	7%	16%	25%	22%	20%	11%

Source: Q7, Q8 (n=800)

Table 269 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	13%	10%	11%	30%	32%	4%
Watch video clips (e.g. on YouTube)	5%	5%	11%	36%	39%	4%
Download music or films	52%	9%	12%	15%	7%	5%
Read/watch news online	50%	13%	10%	12%	8%	7%
Visit a social networking profile	42%	7%	7%	16%	22%	6%
Visit a chat room	70%	4%	5%	7%	6%	8%
Use instant messaging	51%	4%	5%	10%	21%	8%
Play games with other people online	38%	7%	8%	22%	19%	6%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	46%	6%	7%	19%	16%	7%
Use a webcam	69%	8%	7%	7%	4%	6%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	54%	7%	9%	15%	10%	6%
Put (or post) a message on a website	59%	8%	8%	10%	5%	9%
Write a blog or online diary	81%	3%	5%	3%	2%	7%
Participate in a site concerned with good causes (e.g. campaigns, charity)	79%	6%	4%	2%	2%	9%
Use a file sharing site	70%	5%	5%	8%	3%	9%
Download games	33%	18%	21%	19%	4%	6%
Play online games alone	17%	9%	14%	33%	22%	6%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 270 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	1%	3%	10%	20%	67%	1%
I know how to download/save a photo I found online	2%	4%	10%	19%	66%	1%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	3%	7%	13%	20%	56%	1%
I know how to open a new tab in my browser	1%	4%	9%	17%	69%	1%
I know how to adjust privacy settings	2%	6%	11%	26%	54%	1%
I find it easy to decide what the best keywords are to use for online searches	2%	4%	10%	27%	57%	1%
I find it easy to find a website I visited before	2%	3%	10%	25%	61%	1%
I enjoy looking for information online	1%	4%	10%	22%	63%	1%
Sometimes I end up on websites without knowing how I got there	19%	32%	24%	13%	12%	1%
I find it easy to verify information I found online	1%	4%	16%	36%	41%	1%
I know which information I should and shouldn't share online	1%	5%	12%	29%	53%	1%
I know when I should and shouldn't share information online	1%	5%	12%	27%	53%	1%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	1%	4%	12%	27%	56%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	2%	4%	13%	26%	54%	2%
I know how to remove friends from my contact lists	2%	4%	10%	23%	60%	1%
I know how to create something new from existing online images, music or video	7%	14%	23%	22%	33%	2%
I know how to make basic changes to the content that others have produced	7%	15%	21%	23%	31%	2%
I know how to design a website	30%	23%	17%	13%	15%	1%
I know which different types of licences apply to online content	13%	19%	25%	22%	19%	2%
I would feel confident putting video content I have created online	22%	19%	23%	18%	16%	2%
I know how to install apps on a mobile device	5%	7%	10%	23%	55%	1%
I know how to keep track of the costs of mobile app use	6%	6%	13%	26%	48%	2%
I know how to make an in-app purchase	4%	8%	12%	24%	51%	1%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 271 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	13%	8%	11%	36%	29%	0%	3%
My child knows how to download/save a photo she/he found online	17%	10%	10%	31%	31%	0%	2%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	22%	14%	12%	22%	24%	1%	6%
My child knows how to open a new tab in a browser	8%	5%	7%	33%	43%	1%	3%
My child knows how to adjust privacy settings	29%	16%	14%	16%	17%	1%	7%
My child finds it easy to decide what the best keywords are to use for online searches	14%	14%	17%	32%	19%	1%	4%
My child finds it easy to find a website he/she visited before	6%	7%	11%	41%	33%	1%	2%
My child enjoys looking for information online	10%	10%	17%	37%	24%	0%	2%
Sometimes my child ends up on websites without knowing how he/she got there	17%	28%	28%	15%	6%	0%	5%
My child finds it easy to verify information he/she found online	12%	15%	25%	30%	13%	1%	4%
My child knows which information he/she should and shouldn't share online	17%	12%	21%	29%	17%	1%	4%
My child knows when he/she should and shouldn't share information online	18%	12%	18%	31%	16%	1%	4%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	13%	12%	20%	34%	16%	1%	4%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	21%	15%	15%	26%	17%	1%	4%
My child knows how to remove friends from his/her contact lists	19%	13%	9%	27%	28%	1%	4%
My child knows how to create something new from existing online images, music or video	23%	19%	15%	20%	15%	1%	7%
My child knows how to make basic changes to the content that others have produced	24%	19%	16%	19%	12%	1%	9%
My child knows how to design a website	50%	21%	11%	8%	4%	1%	6%
My child knows which different types of licences apply to online content	43%	21%	13%	9%	4%	2%	8%
My child would feel confident putting online video content he/she has created	32%	21%	17%	18%	5%	1%	7%
My child knows how to install apps on a mobile device	14%	7%	8%	31%	37%	1%	2%
My child knows how to keep track of the costs of mobile app use	27%	15%	13%	20%	20%	2%	4%
My child knows how to make an in-app purchase	29%	15%	14%	22%	17%	1%	3%
My child knows my password enabling him/her to make an in-app purchase	60%	13%	7%	8%	9%	1%	2%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 272 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	6%	40%	40%	13%
Encourage your child to explore and learn things on the internet?	8%	20%	48%	19%	5%
Sit with your child while he/she uses the internet?	5%	18%	49%	22%	6%
Stay nearby when your child uses the internet?	4%	12%	34%	32%	18%
Do shared activities together with your child on the internet?	4%	16%	59%	18%	3%

Source: Q11 (n=800)

Table 273 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	45%	55%
Told you about things she/he finds disturbing on the internet?	44%	56%
Asked for your advice on how she/he should act online?	39%	61%
Asked for products and/or services that she/he has seen advertisements for online?	33%	67%
Ask for your help concerning a situation on the internet that she/he cannot handle?	31%	69%

Source: Q12 (n=800)

Table 274 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	4%	20%	74%	2%
Watch video clips (e.g. on YouTube)	4%	33%	61%	2%
Download music or films	36%	36%	25%	3%
Read/watch news online	12%	25%	60%	4%
Visit a social networking profile	26%	29%	43%	2%
Visit a chat room	56%	28%	12%	4%
Use instant messaging	38%	22%	32%	8%
Play games with other people online	24%	37%	35%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	30%	30%	34%	6%
Use a webcam	54%	33%	10%	3%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	38%	34%	25%	3%
Put (or post) a message on a website	36%	36%	25%	4%
Write a blog or online diary	45%	29%	18%	9%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	34%	34%	22%	10%
Use a file sharing site	41%	36%	15%	7%
Download games	13%	56%	28%	2%
Play online games alone	9%	36%	53%	2%

Source: Q13 (n=800)

Table 275 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	3%	7%	37%	31%	23%
Suggest ways to use the internet safely	6%	10%	38%	29%	17%
Explain why some websites are appropriate or inappropriate	5%	8%	39%	29%	19%
Help him/her when something has bothered him/her on the internet	6%	11%	38%	21%	24%
Talk to him/her about what to do if something on the internet bothered him/her	7%	11%	38%	22%	23%
Explain that online games may contain hidden advertising aimed at making children want to have new products	9%	13%	37%	27%	15%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	9%	11%	36%	29%	15%
Talk to him/her about the commercial activities they are exposed to online	9%	13%	41%	26%	11%

Source: Q14 (n=800)

Table 276 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	46%	51%	3%
Parental controls or other means of keeping track of the websites or apps your child visits	50%	47%	3%
Rules about how long or when your child is allowed to go online	21%	77%	2%
A service or contract that limits the time your child spends on the internet	70%	27%	3%
Software to prevent spam or junk mail/viruses	16%	81%	3%
Parental controls that filter the apps your child can download	61%	35%	4%
Parental controls that alert you when your child wants to buy content (in-app purchase)	57%	40%	3%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	71%	23%	6%
Ad blocking software	63%	31%	6%

Source: Q15 (n=800)

Table 277 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	17%	16%	38%	20%	9%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	31%	12%	30%	16%	11%
The messages in his/her email or instant messaging account	34%	13%	28%	15%	10%
His/her profile on a social networking or online community	32%	10%	31%	16%	11%
The apps he/she downloaded	21%	13%	32%	22%	13%
The in-app purchases he/she made	35%	12%	21%	16%	17%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 278 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	2%	5%	14%	19%	24%	30%	5%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	2%	4%	12%	23%	25%	16%	11%	6%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	3%	4%	10%	14%	23%	40%	6%
Spending too much money on online games or in-app purchases	4%	3%	6%	12%	16%	22%	29%	8%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	3%	4%	7%	16%	20%	23%	20%	7%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	3%	5%	10%	20%	23%	19%	13%	7%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	1%	3%	6%	14%	18%	22%	29%	6%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	4%	4%	8%	16%	20%	21%	22%	5%
Being exposed to advertisements of unhealthy food	3%	4%	9%	21%	23%	19%	15%	6%

Source: Q17 (n=800)

Table 279 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	6%	6%	11%	20%	21%	18%	12%	5%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	7%	8%	9%	21%	21%	18%	11%	6%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	9%	9%	13%	20%	16%	13%	15%	6%
Spending too much money on online games or in-app purchases	25%	14%	8%	15%	12%	12%	9%	5%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	13%	10%	10%	18%	17%	15%	12%	5%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	7%	8%	12%	18%	21%	16%	12%	6%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	8%	9%	11%	21%	18%	15%	13%	7%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	8%	8%	13%	23%	18%	15%	11%	5%
Being exposed to advertisements of unhealthy food	7%	7%	10%	21%	21%	17%	12%	5%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	10%	13%	14%	18%	16%	11%	13%	7%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 280 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	47%	36%	17%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	39%	45%	17%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	74%	16%	10%
Spending too much money on online games or in-app purchases	85%	10%	6%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	49%	41%	10%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	40%	48%	13%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	68%	16%	16%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	52%	31%	18%
Being exposed to advertisements of unhealthy food	39%	44%	17%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	80%	8%	12%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	57%	33%	10%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	52%	37%	11%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 281 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	2%	9%	37%	45%	7%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	3%	14%	45%	31%	8%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	6%	26%	41%	18%	9%
Improved availability/performance of parental control software	3%	16%	39%	31%	10%
Stricter regulation for businesses that produce online content and services	2%	12%	31%	47%	8%
More awareness-raising campaigns on online risks	3%	14%	43%	32%	9%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	4%	23%	42%	21%	10%
More/better information on consumer rights and the risks of internet cost-traps	2%	18%	43%	28%	9%

Source: Q21 (n=800)

Table 282 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	61%	39%
Contextual information (labels) displayed permanently on the screen	79%	21%
Parent's pre-approval before playing.	46%	54%
School education for children in recognising advertising	69%	31%
Age verification systems	61%	39%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	70%	30%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	71%	29%

Source: Q22 (n=800)

Table 283 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	6%	6%	10%	18%	20%	20%	14%	7%
Contextual information (labels) displayed permanently on the screen	6%	8%	12%	20%	21%	13%	9%	11%
Parent's pre-approval before playing	2%	3%	6%	15%	19%	21%	27%	7%
School education for children in recognising advertising	1%	2%	6%	13%	24%	26%	22%	7%
Age verification systems	7%	5%	8%	17%	19%	21%	16%	7%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	3%	4%	7%	16%	21%	23%	18%	8%

Source: Q23 (n=800)

Table 284 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	38%	62%
Cooling-off period for children before making a purchase	65%	35%
School education in using online apps	73%	28%
Clear indication that in-app purchases are required to fully exploit the application/game	61%	39%
Age verification systems	64%	36%
In-app purchase password as default option on the mobile	48%	52%

Source: Q24 (n=800)

Table 285 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	1%	4%	11%	15%	27%	35%	5%
Cooling-off period for children before making a purchase	5%	4%	8%	18%	19%	22%	16%	8%
School education in using online apps	2%	2%	6%	15%	23%	25%	21%	8%
Clear indication that in-app purchases are required to fully exploit the application/game	2%	1%	4%	15%	25%	25%	21%	7%
Age verification systems	5%	5%	9%	15%	23%	21%	16%	7%
In-app purchase password as default option on the mobile	2%	2%	6%	11%	18%	25%	29%	8%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 286 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	3%	9%	20%	25%	24%	13%	4%	3%
Online marketing	5%	10%	18%	23%	23%	12%	5%	3%
Online marketing of alcohol	4%	6%	13%	22%	21%	15%	12%	7%

Source: Q26, Q28, Q30 (n=800)

Table 287 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	1%	6%	14%	24%	30%	18%	6%	3%
Protecting your child from online marketing	5%	8%	17%	23%	25%	12%	6%	4%
Protecting your child from online marketing of alcohol	4%	8%	11%	24%	19%	17%	12%	5%

Source: Q27, Q29, Q31 (n=800)

Table 288 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	2%	2%	3%	12%	18%	27%	35%	3%
It is mostly up to government regulators to ensure that my children are safe from online marketing	5%	6%	9%	22%	25%	19%	11%	3%
It is mostly up to the online industries to ensure that my children are safe from online marketing	5%	8%	11%	22%	22%	15%	14%	4%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 63 Advergame example

Table 289 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	14%	10%	13%	17%	21%	11%	6%	8%
Entertainment	4%	3%	7%	19%	28%	22%	12%	7%
Advertising/selling	4%	3%	4%	11%	18%	25%	30%	6%

Source: Q46 (n=800)

Figure 64 Advertisement example

Table 290 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	27%	17%	12%	16%	12%	7%	3%	7%
Entertainment	2%	1%	2%	8%	17%	30%	35%	5%
Advertising/selling	7%	10%	9%	17%	21%	18%	14%	6%

Source: Q47 (n=800)

Germany
Socio-demographic information

Table 291 Respondents' Gender (%)

Male	Female
50%	50%

Source: S2 (n=800)

Table 292 Respondents' Age (%)

25-34	35-49	50-64
15%	67%	18%

Source: S1 (n=800)

Table 293 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
5%	15%	15%	32%	7%	9%	15%	4%

Source: Q35 (n=800)

Table 294 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
79%	3%	0%	18%

Source: Q36 (n=800)

Table 295 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
10%	19%	11%	34%	7%	7%	10%	2%

Source: Q37

Table 296 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
9%	74%	3%	10%	2%	3%

Source: Q38 (n=800)

Table 297 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
1%	3%	5%	10%	20%	20%	23%	14%	4%	1%

Source: Q40 (n=800)

Table 298 Number of children aged 6-14 (%)

One child	Two children	Three or more children
69%	27%	4%

Source: S3 (n=800)

Table 299 Respondents' role (%)

Parent/step-parent	Guardian	None of above
89%	11%	0%

Source: S4 (n=800)

Table 300 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
11%	24%	65%	0%

Source: S5

Table 301 Children's gender (%)

Male	Female
51%	49%

Source: Q1 (n=800)

Table 302 Children's age (%)

7%	6%	7%	10%	10%	11%	13%	18%	18%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 303 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	18%	82%
Own room (or other private room) at home	44%	57%
At school	52%	48%
In an internet café	97%	3%
At friends' homes	61%	39%
At relatives' homes	77%	23%
In a library/other public place	90%	10%
Somewhere else	95%	5%

Source: Q3 (n=800)

Table 304 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	8%	92%	0%
Mobile phone/smartphone	33%	67%	1%
Tablet	46%	54%	0%
Games console	67%	31%	2%
TV	81%	19%	1%
Other	86%	3%	10%

Source: Q4 (n=800)

Table 305 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	55%	45%
Mobile phone/smartphone	33%	67%
Tablet	69%	31%
Games console	50%	50%
TV	63%	37%

Source: Q5 (n=800)

Table 306 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	13%	87%

Source: Q5 (n=536)

Table 307 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	16%	30%	31%	15%	6%	2%
On a normal non school day	9%	19%	27%	23%	17%	6%

Source: Q7, Q8 (n=800)

Table 308 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	9%	10%	20%	42%	17%	3%
Watch video clips (e.g. on YouTube)	6%	9%	12%	39%	34%	1%
Download music or films	50%	14%	13%	13%	4%	6%
Read/watch news online	30%	14%	14%	22%	15%	5%
Visit a social networking profile	42%	6%	8%	16%	26%	3%
Visit a chat room	58%	7%	7%	12%	9%	7%
Use instant messaging	42%	6%	6%	15%	23%	8%
Play games with other people online	39%	9%	9%	23%	14%	5%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	47%	8%	9%	18%	11%	8%
Use a webcam	68%	8%	8%	8%	3%	5%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	53%	10%	12%	15%	6%	5%
Put (or post) a message on a website	58%	8%	10%	12%	5%	7%
Write a blog or online diary	75%	5%	5%	6%	2%	7%
Participate in a site concerned with good causes (e.g. campaigns, charity)	77%	4%	5%	4%	1%	9%
Use a file sharing site	70%	6%	5%	7%	2%	10%
Download games	35%	23%	22%	12%	3%	6%
Play online games alone	18%	9%	19%	31%	17%	5%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 309 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	2%	3%	6%	13%	76%	1%
I know how to download/save a photo I found online	2%	3%	7%	15%	72%	0%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	3%	5%	9%	16%	67%	0%
I know how to open a new tab in my browser	2%	3%	7%	13%	74%	1%
I know how to adjust privacy settings	3%	5%	10%	20%	62%	1%
I find it easy to decide what the best keywords are to use for online searches	2%	3%	9%	19%	66%	1%
I find it easy to find a website I visited before	1%	3%	8%	20%	67%	0%
I enjoy looking for information online	1%	2%	8%	18%	71%	1%
Sometimes I end up on websites without knowing how I got there	27%	25%	20%	13%	15%	1%
I find it easy to verify information I found online	1%	4%	14%	36%	45%	1%
I know which information I should and shouldn't share online	1%	3%	10%	27%	58%	1%
I know when I should and shouldn't share information online	2%	3%	10%	28%	57%	1%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	1%	3%	9%	25%	61%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	2%	4%	12%	24%	57%	1%
I know how to remove friends from my contact lists	2%	4%	9%	20%	65%	1%
I know how to create something new from existing online images, music or video	8%	12%	20%	22%	37%	2%
I know how to make basic changes to the content that others have produced	8%	11%	19%	26%	35%	2%
I know how to design a website	15%	17%	18%	21%	28%	1%
I know which different types of licences apply to online content	9%	12%	19%	32%	26%	2%
I would feel confident putting video content I have created online	9%	8%	14%	28%	40%	1%
I know how to install apps on a mobile device	5%	5%	10%	17%	62%	1%
I know how to keep track of the costs of mobile app use	4%	4%	12%	22%	58%	1%
I know how to make an in-app purchase	6%	6%	10%	19%	58%	1%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 310 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	14%	6%	9%	36%	33%	0%	2%
My child knows how to download/save a photo she/he found online	17%	8%	12%	30%	30%	1%	3%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	24%	12%	11%	26%	23%	1%	4%
My child knows how to open a new tab in a browser	9%	5%	8%	31%	44%	1%	3%
My child knows how to adjust privacy settings	28%	12%	16%	21%	16%	1%	6%
My child finds it easy to decide what the best keywords are to use for online searches	11%	9%	17%	38%	22%	1%	2%
My child finds it easy to find a website he/she visited before	8%	5%	10%	37%	37%	0%	2%
My child enjoys looking for information online	8%	8%	16%	36%	31%	0%	1%
Sometimes my child ends up on websites without knowing how he/she got there	27%	27%	21%	16%	6%	1%	4%
My child finds it easy to verify information he/she found online	13%	13%	24%	33%	14%	1%	3%
My child knows which information he/she should and shouldn't share online	14%	11%	18%	34%	19%	1%	3%
My child knows when he/she should and shouldn't share information online	15%	11%	17%	34%	21%	1%	3%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	13%	8%	20%	33%	24%	0%	3%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	17%	8%	17%	32%	23%	1%	3%
My child knows how to remove friends from his/her contact lists	16%	7%	11%	29%	33%	0%	3%
My child knows how to create something new from existing online images, music or video	25%	13%	21%	21%	12%	1%	6%
My child knows how to make basic changes to the content that others have produced	25%	15%	19%	23%	11%	2%	7%
My child knows how to design a website	45%	19%	15%	11%	5%	1%	4%
My child knows which different types of licences apply to online content	37%	17%	17%	16%	8%	2%	4%
My child would feel confident putting online video content he/she has created	33%	12%	14%	22%	13%	0%	5%
My child knows how to install apps on a mobile device	15%	6%	8%	29%	40%	1%	2%
My child knows how to keep track of the costs of mobile app use	19%	9%	13%	30%	25%	0%	3%
My child knows how to make an in-app purchase	24%	10%	13%	27%	21%	2%	3%
My child knows my password enabling him/her to make an in-app purchase	63%	7%	10%	9%	9%	1%	2%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 311 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	1%	3%	24%	50%	22%
Encourage your child to explore and learn things on the internet?	3%	12%	42%	32%	11%
Sit with your child while he/she uses the internet?	5%	18%	39%	29%	10%
Stay nearby when your child uses the internet?	3%	14%	24%	38%	21%
Do shared activities together with your child on the internet?	2%	11%	46%	34%	8%

Source: Q11 (n=800)

Table 312 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	14%	86%
Told you about things she/he finds disturbing on the internet?	37%	63%
Asked for your advice on how she/he should act online?	23%	77%
Asked for products and/or services that she/he has seen advertisements for online?	28%	72%
Ask for your help concerning a situation on the internet that she/he cannot handle?	27%	73%

Source: Q12 (n=800)

Table 313 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	3%	26%	69%	2%
Watch video clips (e.g. on YouTube)	5%	38%	57%	1%
Download music or films	42%	39%	17%	1%
Read/watch news online	10%	31%	58%	1%
Visit a social networking profile	32%	27%	39%	2%
Visit a chat room	45%	30%	21%	3%
Use instant messaging	32%	26%	37%	5%
Play games with other people online	24%	38%	35%	3%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	31%	34%	29%	6%
Use a webcam	52%	31%	14%	3%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	39%	37%	22%	2%
Put (or post) a message on a website	37%	32%	28%	4%
Write a blog or online diary	44%	28%	20%	8%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	34%	36%	22%	9%
Use a file sharing site	40%	35%	18%	7%
Download games	21%	56%	22%	1%
Play online games alone	11%	41%	46%	1%

Source: Q13 (n=800)

Table 314 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	2%	4%	31%	34%	29%
Suggest ways to use the internet safely	4%	6%	32%	36%	21%
Explain why some websites are appropriate or inappropriate	2%	7%	30%	37%	25%
Help him/her when something has bothered him/her on the internet	4%	9%	29%	26%	33%
Talk to him/her about what to do if something on the internet bothered him/her	4%	7%	31%	29%	29%
Explain that online games may contain hidden advertising aimed at making children want to have new products	6%	10%	30%	32%	23%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	5%	5%	29%	35%	25%
Talk to him/her about the commercial activities they are exposed to online	6%	7%	34%	36%	17%

Source: Q14 (n=800)

Table 315 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	39%	57%	4%
Parental controls or other means of keeping track of the websites or apps your child visits	52%	44%	5%
Rules about how long or when your child is allowed to go online	18%	81%	2%
A service or contract that limits the time your child spends on the internet	71%	26%	3%
Software to prevent spam or junk mail/viruses	17%	80%	3%
Parental controls that filter the apps your child can download	54%	41%	5%
Parental controls that alert you when your child wants to buy content (in-app purchase)	61%	34%	5%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	69%	26%	6%
Ad blocking software	50%	47%	3%

Source: Q15 (n=800)

Table 316 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	19%	13%	31%	21%	17%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	30%	15%	26%	16%	14%
The messages in his/her email or instant messaging account	41%	16%	20%	12%	11%
His/her profile on a social networking or online community	37%	13%	22%	16%	13%
The apps he/she downloaded	23%	11%	27%	19%	20%
The in-app purchases he/she made	31%	9%	17%	16%	28%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 317 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	3%	3%	5%	11%	15%	19%	42%	3%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	4%	5%	9%	23%	20%	19%	16%	4%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	3%	3%	6%	12%	14%	20%	39%	4%
Spending too much money on online games or in-app purchases	10%	7%	7%	12%	14%	16%	31%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	8%	5%	7%	14%	15%	19%	30%	4%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	6%	6%	9%	20%	19%	18%	19%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	3%	3%	7%	15%	17%	21%	30%	4%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	7%	7%	8%	17%	14%	19%	26%	4%
Being exposed to advertisements of unhealthy food	8%	8%	11%	20%	17%	17%	17%	3%

Source: Q17 (n=800)

Table 318 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	11%	8%	12%	20%	18%	14%	13%	5%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	9%	7%	10%	16%	20%	18%	16%	4%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	11%	12%	13%	21%	15%	13%	10%	5%
Spending too much money on online games or in-app purchases	23%	14%	14%	15%	12%	11%	9%	4%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	13%	11%	12%	18%	15%	15%	12%	4%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	10%	8%	11%	18%	17%	19%	14%	4%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	10%	7%	13%	20%	18%	16%	12%	5%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	11%	11%	12%	18%	17%	15%	11%	5%
Being exposed to advertisements of unhealthy food	10%	8%	13%	19%	18%	16%	12%	4%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	11%	8%	13%	21%	18%	12%	12%	5%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 319 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	72%	16%	13%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	48%	40%	12%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	80%	12%	9%
Spending too much money on online games or in-app purchases	84%	10%	6%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	54%	38%	8%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	44%	45%	11%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	67%	14%	19%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	61%	24%	15%
Being exposed to advertisements of unhealthy food	49%	37%	14%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	78%	7%	15%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	67%	24%	10%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	57%	36%	7%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 320 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	3%	9%	37%	45%	6%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	5%	15%	41%	33%	7%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	5%	17%	41%	29%	8%
Improved availability/performance of parental control software	4%	12%	35%	42%	7%
Stricter regulation for businesses that produce online content and services	5%	10%	33%	46%	6%
More awareness-raising campaigns on online risks	4%	14%	38%	39%	6%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	9%	21%	37%	25%	8%
More/better information on consumer rights and the risks of internet cost-traps	5%	15%	40%	35%	6%

Source: Q21 (n=800)

Table 321 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	56%	44%
Contextual information (labels) displayed permanently on the screen	77%	23%
Parent's pre-approval before playing.	41%	60%
School education for children in recognising advertising	69%	31%
Age verification systems	53%	47%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	76%	24%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	76%	24%

Source: Q22 (n=800)

Table 322 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	6%	6%	9%	18%	19%	20%	15%	7%
Contextual information (labels) displayed permanently on the screen	8%	6%	12%	19%	23%	13%	9%	10%
Parent's pre-approval before playing	4%	4%	5%	11%	16%	19%	35%	5%
School education for children in recognising advertising	3%	4%	8%	16%	22%	20%	20%	8%
Age verification systems	6%	5%	8%	13%	17%	21%	24%	6%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	6%	6%	9%	18%	20%	15%	17%	9%

Source: Q23 (n=800)

Table 323 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	36%	64%
Cooling-off period for children before making a purchase	72%	28%
School education in using online apps	73%	27%
Clear indication that in-app purchases are required to fully exploit the application/game	55%	45%
Age verification systems	59%	41%
In-app purchase password as default option on the mobile	49%	52%

Source: Q24 (n=800)

Table 324 Protective measure effectiveness in-app (%)

	Not efective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	2%	2%	4%	11%	13%	21%	43%	5%
Cooling-off period for children before making a purchase	3%	2%	6%	14%	18%	20%	28%	9%
School education in using online apps	3%	3%	5%	18%	26%	18%	21%	8%
Clear indication that in-app purchases are required to fully exploit the application/game	3%	2%	5%	14%	21%	21%	27%	6%
Age verification systems	5%	6%	7%	15%	17%	18%	27%	6%
In-app purchase password as default option on the mobile	2%	2%	4%	12%	15%	22%	37%	6%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 325 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	11%	19%	22%	24%	13%	8%	3%	1%
Online marketing	17%	18%	20%	20%	14%	7%	3%	2%
Online marketing of alcohol	10%	11%	14%	20%	18%	13%	11%	4%

Source: Q26, Q28, Q30 (n=800)

Table 326 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	2%	7%	13%	28%	28%	17%	6%	1%
Protecting your child from online marketing	7%	13%	17%	26%	20%	10%	5%	3%
Protecting your child from online marketing of alcohol	7%	8%	13%	21%	20%	15%	12%	4%

Source: Q27, Q29, Q31 (n=800)

Table 327 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	2%	1%	4%	11%	18%	24%	40%	3%
It is mostly up to government regulators to ensure that my children are safe from online marketing	7%	8%	11%	21%	21%	16%	13%	4%
It is mostly up to the online industries to ensure that my children are safe from online marketing	8%	6%	8%	19%	18%	19%	18%	4%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 65 Advergame example

Table 328 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	18%	13%	11%	20%	16%	12%	6%	5%
Entertainment	6%	4%	7%	18%	25%	21%	15%	4%
Advertising/selling	2%	1%	3%	11%	14%	24%	41%	4%

Source: Q46 (n=800)

Figure 66 Advertisement example

Table 329 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	21%	17%	14%	18%	15%	8%	4%	4%
Entertainment	1%	1%	3%	11%	14%	30%	37%	3%
Advertising/selling	9%	10%	12%	21%	16%	15%	13%	5%

Source: Q47 (n=800)

Poland
Socio-demographic information

Table 330 Respondents' Gender (%)

Male	Female
48%	52%

Source: S2 (n=800)

Table 331 Respondents' Age (%)

25-34	35-49	50-64
16%	69%	15%

Source: S1 (n=800)

Table 332 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
1%	2%	30%	31%	5%	7%	23%	2%

Source: Q35 (n=800)

Table 333 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
82%	8%	0%	10%

Source: Q36 (n=800)

Table 334 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
3%	3%	31%	26%	8%	8%	21%	1%

Source: Q37

Table 335 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
9%	69%	5%	12%	4%	1%

Source: Q38 (n=800)

Table 336 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
2%	4%	12%	18%	22%	19%	14%	5%	1%	1%

Source: Q40 (n=800)

Table 337 Number of children aged 6-14 (%)

One child	Two children	Three or more children
74%	23%	2%

Source: S3 (n=800)

Table 338 Respondents' role (%)

Parent/step-parent	Guardian	None of above
95%	5%	0%

Source: S4 (n=800)

Table 339 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
0%	68%	32%	0%

Source: S5

Table 340 Children's gender (%)

Male	Female
54%	46%

Source: Q1 (n=800)

Table 341 Children's age (%)

6	7	8	9	10	11	12	13	14
10%	8%	9%	9%	12%	9%	13%	13%	16%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 342 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	45%	56%
Own room (or other private room) at home	42%	58%
At school	25%	75%
In an internet café	51%	49%
At friends' homes	98%	2%
At relatives' homes	80%	20%
In a library/other public place	76%	24%
Somewhere else	93%	7%

Source: Q3 (n=800)

Table 343 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	3%	97%	0%
Mobile phone/smartphone	29%	70%	1%
Tablet	34%	64%	2%
Games console	67%	29%	5%
TV	71%	26%	3%
Other	77%	2%	21%

Source: Q4 (n=800)

Table 344 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	48%	53%
Mobile phone/smartphone	30%	70%
Tablet	50%	50%
Games console	67%	33%
TV	72%	28%

Source: Q5 (n=800)

Table 345 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	32%	68%

Source: Q5 (n=562)

Table 346 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	5%	23%	33%	25%	10%	4%
On a normal non school day	2%	10%	19%	28%	27%	14%

Source: Q7, Q8 (n=800)

Table 347 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	6%	7%	13%	34%	39%	3%
Watch video clips (e.g. on YouTube)	33%	18%	17%	20%	6%	6%
Download music or films	24%	13%	13%	23%	22%	5%
Read/watch news online	29%	6%	7%	17%	39%	3%
Visit a social networking profile	54%	6%	6%	8%	5%	22%
Visit a chat room	33%	8%	9%	19%	23%	8%
Use instant messaging	25%	8%	11%	26%	24%	7%
Play games with other people online	41%	7%	8%	18%	12%	14%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	47%	12%	9%	15%	9%	8%
Use a webcam	47%	13%	12%	16%	4%	7%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	46%	11%	11%	15%	6%	10%
Put (or post) a message on a website	74%	4%	5%	5%	3%	11%
Write a blog or online diary	62%	7%	7%	4%	3%	18%
Participate in a site concerned with good causes (e.g. campaigns, charity)	44%	17%	11%	11%	4%	13%
Use a file sharing site	28%	22%	20%	17%	4%	10%
Download games	8%	7%	15%	36%	30%	6%
Play online games alone	33%	18%	17%	20%	6%	6%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 348 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	1%	3%	8%	14%	73%	1%
I know how to download/save a photo I found online	1%	3%	8%	17%	70%	1%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	1%	5%	11%	19%	63%	1%
I know how to open a new tab in my browser	1%	3%	6%	13%	77%	1%
I know how to adjust privacy settings	1%	4%	9%	18%	67%	1%
I find it easy to decide what the best keywords are to use for online searches	1%	3%	8%	21%	66%	1%
I find it easy to find a website I visited before	1%	3%	7%	19%	69%	1%
I enjoy looking for information online	1%	3%	8%	19%	69%	1%
Sometimes I end up on websites without knowing how I got there	20%	21%	21%	18%	19%	1%
I find it easy to verify information I found online	1%	3%	11%	33%	52%	1%
I know which information I should and shouldn't share online	1%	2%	9%	22%	65%	1%
I know when I should and shouldn't share information online	1%	2%	10%	22%	63%	1%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	1%	3%	10%	23%	62%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	2%	5%	11%	22%	60%	1%
I know how to remove friends from my contact lists	1%	4%	8%	19%	67%	1%
I know how to create something new from existing online images, music or video	5%	8%	21%	24%	40%	1%
I know how to make basic changes to the content that others have produced	9%	12%	22%	24%	31%	2%
I know how to design a website	17%	19%	23%	19%	22%	1%
I know which different types of licences apply to online content	8%	12%	22%	29%	29%	1%
I would feel confident putting video content I have created online	16%	16%	28%	21%	18%	2%
I know how to install apps on a mobile device	5%	7%	13%	24%	51%	1%
I know how to keep track of the costs of mobile app use	6%	8%	13%	25%	48%	1%
I know how to make an in-app purchase	4%	5%	10%	26%	55%	1%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 349 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	11%	9%	11%	34%	33%	1%	2%
My child knows how to download/save a photo she/he found online	12%	11%	11%	28%	35%	1%	3%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	16%	11%	10%	26%	32%	1%	5%
My child knows how to open a new tab in a browser	4%	3%	5%	28%	57%	1%	2%
My child knows how to adjust privacy settings	21%	17%	14%	19%	22%	1%	6%
My child finds it easy to decide what the best keywords are to use for online searches	8%	10%	14%	37%	28%	1%	2%
My child finds it easy to find a website he/she visited before	4%	6%	9%	37%	42%	1%	2%
My child enjoys looking for information online	6%	9%	13%	36%	33%	1%	1%
Sometimes my child ends up on websites without knowing how he/she got there	16%	24%	23%	21%	8%	1%	7%
My child finds it easy to verify information he/she found online	8%	11%	22%	33%	20%	1%	4%
My child knows which information he/she should and shouldn't share online	10%	9%	11%	33%	33%	1%	3%
My child knows when he/she should and shouldn't share information online	10%	9%	12%	33%	33%	1%	3%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	11%	12%	14%	35%	24%	2%	4%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	16%	14%	14%	28%	22%	1%	5%
My child knows how to remove friends from his/her contact lists	15%	12%	9%	26%	34%	1%	3%
My child knows how to create something new from existing online images, music or video	16%	16%	14%	25%	22%	1%	7%
My child knows how to make basic changes to the content that others have produced	21%	19%	18%	19%	13%	2%	9%
My child knows how to design a website	37%	22%	14%	11%	9%	1%	7%
My child knows which different types of licences apply to online content	31%	20%	15%	16%	10%	1%	7%
My child would feel confident putting online video content he/she has created	25%	23%	19%	14%	9%	2%	8%
My child knows how to install apps on a mobile device	14%	10%	11%	31%	31%	1%	3%
My child knows how to keep track of the costs of mobile app use	23%	17%	14%	24%	15%	1%	6%
My child knows how to make an in-app purchase	20%	18%	13%	26%	19%	1%	4%
My child knows my password enabling him/her to make an in-app purchase	52%	17%	9%	10%	8%	1%	4%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 350 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	0%	2%	23%	50%	25%
Encourage your child to explore and learn things on the internet?	2%	10%	33%	40%	16%
Sit with your child while he/she uses the internet?	1%	13%	39%	39%	9%
Stay nearby when your child uses the internet?	1%	8%	25%	45%	21%
Do shared activities together with your child on the internet?	1%	11%	39%	41%	8%

Source: Q11 (n=800)

Table 351 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	10%	90%
Told you about things she/he finds disturbing on the internet?	42%	58%
Asked for your advice on how she/he should act online?	29%	71%
Asked for products and/or services that she/he has seen advertisements for online?	26%	74%
Ask for your help concerning a situation on the internet that she/he cannot handle?	14%	86%

Source: Q12 (n=800)

Table 352 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	4%	30%	64%	2%
Watch video clips (e.g. on YouTube)	5%	48%	45%	2%
Download music or films	31%	45%	20%	4%
Read/watch news online	11%	38%	49%	2%
Visit a social networking profile	22%	32%	44%	3%
Visit a chat room	46%	21%	13%	21%
Use instant messaging	23%	37%	33%	7%
Play games with other people online	21%	43%	31%	4%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft)	35%	33%	20%	13%
Use a webcam	33%	39%	22%	6%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	39%	41%	15%	5%
Put (or post) a message on a website	38%	37%	20%	5%
Write a blog or online diary	45%	26%	16%	12%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	31%	37%	19%	13%
Use a file sharing site	29%	53%	13%	6%
Download games	20%	61%	16%	3%
Play online games alone	6%	48%	44%	3%

Source: Q13 (n=800)

Table 353 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	2%	3%	18%	40%	38%
Suggest ways to use the internet safely	2%	4%	19%	42%	33%
Explain why some websites are appropriate or inappropriate	2%	4%	18%	37%	39%
Help him/her when something has bothered him/her on the internet	2%	5%	16%	32%	45%
Talk to him/her about what to do if something on the internet bothered him/her	2%	4%	19%	34%	41%
Explain that online games may contain hidden advertising aimed at making children want to have new products	5%	7%	21%	41%	26%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	3%	4%	19%	42%	31%
Talk to him/her about the commercial activities they are exposed to online	5%	8%	26%	40%	21%

Source: Q14 (n=800)

Table 354 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	37%	61%	3%
Parental controls or other means of keeping track of the websites or apps your child visits	36%	61%	3%
Rules about how long or when your child is allowed to go online	15%	83%	2%
A service or contract that limits the time your child spends on the internet	47%	51%	3%
Software to prevent spam or junk mail/viruses	14%	83%	3%
Parental controls that filter the apps your child can download	46%	51%	4%
Parental controls that alert you when your child wants to buy content (in-app purchase)	46%	49%	5%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	58%	37%	5%
Ad blocking software	45%	51%	5%

Source: Q15 (n=800)

Table 355 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	6%	12%	25%	35%	23%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	20%	13%	22%	26%	19%
The messages in his/her email or instant messaging account	22%	16%	21%	23%	18%
His/her profile on a social networking or online community	20%	11%	20%	29%	20%
The apps he/she downloaded	9%	10%	24%	32%	25%
The in-app purchases he/she made	21%	8%	14%	22%	35%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 356 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	2%	1%	3%	6%	8%	15%	64%	2%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	3%	2%	5%	14%	20%	23%	31%	3%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	2%	1%	2%	7%	9%	18%	58%	3%
Spending too much money on online games or in-app purchases	3%	1%	5%	11%	11%	16%	52%	2%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	3%	2%	4%	11%	15%	21%	43%	2%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	2%	2%	6%	14%	19%	22%	33%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	2%	2%	3%	8%	11%	18%	54%	3%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	3%	2%	3%	10%	12%	20%	48%	2%
Being exposed to advertisements of unhealthy food	3%	3%	5%	14%	16%	21%	34%	3%

Source: Q17 (n=800)

Table 357 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	8%	6%	7%	14%	15%	18%	28%	4%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	8%	5%	6%	14%	19%	20%	24%	5%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	10%	6%	8%	13%	16%	16%	27%	5%
Spending too much money on online games or in-app purchases	19%	12%	9%	12%	12%	13%	20%	4%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	10%	7%	9%	14%	16%	18%	23%	5%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	8%	6%	9%	15%	19%	18%	21%	4%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	9%	6%	9%	13%	16%	17%	26%	5%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	8%	6%	9%	15%	16%	18%	24%	4%
Being exposed to advertisements of unhealthy food	7%	4%	7%	18%	18%	19%	22%	5%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	10%	7%	8%	13%	17%	16%	25%	5%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 358 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	47%	35%	18%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	31%	48%	22%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	61%	23%	16%
Spending too much money on online games or in-app purchases	79%	13%	9%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	42%	45%	13%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	38%	46%	17%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	62%	14%	25%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	45%	36%	20%
Being exposed to advertisements of unhealthy food	36%	45%	19%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	70%	11%	19%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	45%	41%	14%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	49%	39%	12%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 359 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	3%	7%	33%	51%	6%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	3%	12%	39%	39%	6%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	5%	19%	38%	32%	7%
Improved availability/performance of parental control software	4%	10%	37%	42%	7%
Stricter regulation for businesses that produce online content and services	3%	11%	31%	49%	7%
More awareness-raising campaigns on online risks	3%	10%	35%	47%	5%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	6%	18%	40%	29%	8%
More/better information on consumer rights and the risks of internet cost-traps	3%	11%	38%	41%	6%

Source: Q21 (n=800)

Table 360 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	51%	49%
Contextual information (labels) displayed permanently on the screen	58%	43%
Parent's pre-approval before playing.	48%	52%
School education for children in recognising advertising	55%	45%
Age verification systems	39%	61%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	64%	37%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	62%	38%

Source: Q22 (n=800)

Table 361 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	7%	5%	9%	21%	20%	14%	15%	8%
Contextual information (labels) displayed permanently on the screen	7%	6%	11%	21%	18%	15%	12%	10%
Parent's pre-approval before playing	6%	2%	7%	14%	17%	19%	30%	6%
School education for children in recognising advertising	5%	2%	6%	16%	22%	20%	24%	6%
Age verification systems	11%	5%	7%	16%	14%	19%	22%	6%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unf	9%	5%	10%	16%	16%	15%	18%	11%

Source: Q23 (n=800)

Table 362 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	35%	65%
Cooling-off period for children before making a purchase	42%	58%
School education in using online apps	50%	50%
Clear indication that in-app purchases are required to fully exploit the application/game	38%	62%
Age verification systems	41%	59%
In-app purchase password as default option on the mobile	41%	59%

Source: Q24 (n=800)

Table 363 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	4%	2%	5%	10%	15%	21%	39%	5%
Cooling-off period for children before making a purchase	6%	3%	6%	18%	22%	16%	22%	8%
School education in using online apps	4%	3%	7%	16%	21%	21%	22%	7%
Clear indication that in-app purchases are required to fully exploit the application/game	4%	2%	4%	15%	21%	21%	28%	6%
Age verification systems	10%	5%	6%	15%	18%	19%	21%	6%
In-app purchase password as default option on the mobile	4%	4%	4%	14%	17%	21%	30%	6%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 364 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	24%	18%	19%	19%	11%	5%	3%	1%
Online marketing	23%	17%	20%	18%	13%	6%	2%	2%
Online marketing of alcohol	15%	16%	18%	18%	15%	9%	7%	2%

Source: Q26, Q28, Q30 (n=800)

Table 365 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	2%	3%	9%	16%	28%	27%	14%	1%
Protecting your child from online marketing	4%	5%	12%	20%	26%	21%	11%	2%
Protecting your child from online marketing of alcohol	2%	6%	11%	16%	22%	18%	23%	3%

Source: Q27, Q29, Q31 (n=800)

Table 366 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	5%	2%	5%	10%	14%	21%	41%	3%
It is mostly up to government regulators to ensure that my children are safe from online marketing	10%	6%	9%	21%	19%	16%	16%	4%
It is mostly up to the online industries to ensure that my children are safe from online marketing	9%	6%	9%	20%	18%	18%	16%	4%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 67 Advergame example

Table 367 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	14%	10%	8%	14%	16%	15%	21%	4%
Entertainment	9%	7%	8%	15%	18%	17%	23%	4%
Advertising/selling	12%	6%	7%	11%	14%	15%	31%	4%

Source: Q46 (n=800)

Figure 68 Advertisement example

Table 368 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	28%	16%	12%	16%	10%	7%	7%	5%
Entertainment	4%	2%	3%	7%	12%	22%	48%	2%
Advertising/selling	14%	11%	11%	14%	14%	14%	18%	5%

Source: Q47 (n=800)

Sweden
Socio-demographic information

Table 369 Respondents' Gender (%)

Male	Female
49%	51%

Source: S2 (n=800)

Table 370 Respondents' Age (%)

25-34	35-49	50-64
17%	68%	15%

Source: S1 (n=800)

Table 371 Respondents' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
4%	17%	31%	2%	12%	21%	11%	1%

Source: Q35 (n=800)

Table 372 Support who regularly helps you take care of your children (%)

Yes, my partner	Yes, my parents or other family members	Yes, a nanny/carer	No, I take care of the children on my own
82%	3%	0%	14%

Source: Q36 (n=800)

Table 373 Supporters' education level (%)

Primary education	Lower secondary education	Upper secondary education	Post-secondary non-tertiary education	Short-cycle tertiary education	Bachelor or equivalent	Master or equivalent	Doctoral or equivalent
7%	16%	27%	2%	14%	23%	10%	2%

Source: Q37

Table 374 Respondents' occupation (%)

Self-employed	Employee	Unemployed	Housekeeper	Retired	Other
10%	72%	5%	5%	3%	6%

Source: Q38 (n=800)

Table 375 Socioeconomic position (%)

1	2	3	4	5	6	7	8	9	10
2%	3%	7%	8%	15%	22%	25%	13%	4%	1%

Source: Q40 (n=800)

Table 376 Number of children aged 6-14 (%)

One child	Two children	Three or more children
62%	33%	6%

Source: S3 (n=800)

Table 377 Respondents' role (%)

Parent/step-parent	Guardian	None of above
92%	8%	0%

Source: S4 (n=800)

Table 378 Guardians' role (%)

Sibling	Grandparent	Other relative	Other
5%	77%	19%	0%

Source: S5

Table 379 Children's gender (%)

Male	Female
56%	44%

Source: Q1 (n=800)

Table 380 Children's age (%)

6	7	8	9	10	11	12	13	14
13%	10%	10%	9%	8%	11%	13%	13%	14%

Source: Q2 (n=800)

Children's Internet access, devices and usage (3-8, i.e. questions 3 to 9)

Table 381 Internet access (%)

Place	No	Yes
Living room (or other public room) at home	20%	80%
Own room (or other private room) at home	27%	73%
At school	45%	55%
In an internet café	99%	2%
At friends' homes	55%	45%
At relatives' homes	69%	32%
In a library/other public place	90%	10%
Somewhere else	93%	8%

Source: Q3 (n=800)

Table 382 Devices (%)

Devices	No	Yes	DK/DA
Computer (desktop/laptop)	16%	83%	1%
Mobile phone/smartphone	20%	79%	1%
Tablet	21%	79%	1%
Games console	62%	35%	3%
TV	74%	23%	3%
Other	81%	3%	16%

Source: Q4 (n=800)

Table 383 Devices personal usage (%)

Devices	No	Yes
Computer (desktop/laptop)	50%	51%
Mobile phone/smartphone	28%	72%
Tablet	44%	56%
Games console	51%	49%
TV	66%	35%

Source: Q5 (n=800)

Table 384 Mobile with Internet connection (3G, 4G) personal usage (%)

Devices	No	Yes
Mobile phone/smartphone	9%	91%

Source: Q6 (n=577)

Table 385 Internet frequency of usage (%)

	Less than half an hour	Between half an hour and 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	Between 3 and 5 hours	More than 5 hours
On a normal school day	10%	19%	26%	25%	18%	3%
On a normal non school day	4%	11%	21%	20%	26%	18%

Source: Q7, Q8 (n=800)

Table 386 Internet activities (%)

	Never	Less than once a month	At least once a month (but not every week)	At least once a week (but not every day)	Every day or almost every day	DK/DA
Use the internet for school work	19%	10%	11%	30%	23%	8%
Watch video clips (e.g. on YouTube)	2%	4%	8%	27%	57%	2%
Download music or films	42%	12%	12%	18%	10%	6%
Read/watch news online	41%	14%	14%	15%	8%	9%
Visit a social networking profile	41%	5%	7%	16%	26%	5%
Visit a chat room	49%	7%	7%	12%	15%	11%
Use instant messaging	37%	4%	5%	14%	33%	7%
Play games with other people online	31%	7%	10%	22%	25%	5%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	33%	8%	11%	21%	18%	10%
Use a webcam	52%	12%	11%	13%	5%	8%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	47%	9%	10%	18%	10%	6%
Put (or post) a message on a website	53%	9%	8%	14%	7%	11%
Write a blog or online diary	75%	5%	6%	5%	1%	9%
Participate in a site concerned with good causes (e.g. campaigns, charity)	71%	7%	4%	2%	1%	14%
Use a file sharing site	74%	5%	4%	3%	2%	12%
Download games	36%	18%	21%	14%	3%	9%
Play online games alone	23%	8%	16%	28%	18%	9%

Source: Q9 (n=800)

Parents' digital skills (31)

Table 387 Parents' digital skills (%)

	Not at all true of me	Not very true of me	Neither true nor untrue of me	Mostly true of me	Very true of me	I do not understand what you mean by this
I know how to open downloaded files	2%	3%	6%	10%	78%	1%
I know how to download/save a photo I found online	2%	4%	8%	11%	75%	1%
I know how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	4%	5%	12%	12%	67%	1%
I know how to open a new tab in my browser	1%	3%	6%	8%	82%	1%
I know how to adjust privacy settings	2%	4%	11%	20%	63%	1%
I find it easy to decide what the best keywords are to use for online searches	2%	5%	10%	23%	59%	2%
I find it easy to find a website I visited before	1%	3%	7%	16%	72%	1%
I enjoy looking for information online	1%	3%	7%	16%	72%	1%
Sometimes I end up on websites without knowing how I got there	34%	27%	19%	10%	10%	1%
I find it easy to verify information I found online	1%	4%	17%	36%	40%	2%
I know which information I should and shouldn't share online	1%	2%	8%	22%	66%	2%
I know when I should and shouldn't share information online	2%	1%	7%	23%	66%	2%
I am careful to make my comments and behaviours appropriate to the situation I find myself in online	2%	3%	7%	19%	69%	1%
I know how to change who I share content with (e.g. friends, friends of friends or public)	3%	3%	10%	21%	61%	1%
I know how to remove friends from my contact lists	2%	3%	8%	15%	71%	1%
I know how to create something new from existing online images, music or video	8%	11%	21%	18%	39%	3%
I know how to make basic changes to the content that others have produced	12%	15%	21%	17%	32%	3%
I know how to design a website	26%	19%	18%	13%	22%	1%
I know which different types of licences apply to online content	14%	15%	23%	24%	21%	3%
I would feel confident putting video content I have created online	15%	16%	23%	20%	24%	2%
I know how to install apps on a mobile device	3%	4%	8%	16%	69%	1%
I know how to keep track of the costs of mobile app use	3%	4%	10%	20%	63%	1%
I know how to make an in-app purchase	5%	4%	9%	17%	64%	1%

Source: Q33 (n=800)

Parents' perception of children's digital skills (10)

Table 388 Parents' perception of children's digital skills (%)

	Not at all true of my child	Not very true of my child	Neither true nor untrue of my child	Mostly true of my child	Very true of my child	I do not understand what you mean by this	I do not know this about my child
My child knows how to open downloaded files	19%	9%	14%	25%	26%	1%	6%
My child knows how to download/save a photo she/he found online	21%	8%	11%	23%	31%	1%	7%
My child knows how to use shortcut keys (e.g. CTRL-C for copy, CTRL-S for save)	28%	12%	12%	14%	20%	1%	14%
My child knows how to open a new tab in a browser	9%	5%	8%	24%	50%	1%	3%
My child knows how to adjust privacy settings	36%	14%	14%	13%	12%	1%	11%
My child finds it easy to decide what the best keywords are to use for online searches	22%	11%	20%	24%	13%	2%	8%
My child finds it easy to find a website he/she visited before	9%	6%	10%	33%	39%	1%	3%
My child enjoys looking for information online	14%	10%	17%	29%	26%	1%	4%
Sometimes my child ends up on websites without knowing how he/she got there	22%	22%	25%	15%	5%	1%	10%
My child finds it easy to verify information he/she found online	19%	14%	26%	21%	9%	3%	8%
My child knows which information he/she should and shouldn't share online	16%	8%	17%	33%	20%	1%	5%
My child knows when he/she should and shouldn't share information online	16%	7%	17%	34%	19%	1%	6%
My child is careful to make his/her comments and behaviours appropriate to the situation he/she finds himself/herself in when he/she is on	14%	5%	18%	34%	21%	1%	7%
My child knows how to change whom he/she share content with (e.g. friends, friends of friends or public)	20%	9%	15%	26%	18%	2%	9%
My child knows how to remove friends from his/her contact lists	22%	8%	10%	24%	27%	1%	9%
My child knows how to create something new from existing online images, music or video	24%	11%	18%	21%	14%	2%	11%
My child knows how to make basic changes to the content that others have produced	30%	13%	19%	14%	7%	3%	16%
My child knows how to design a website	35%	13%	14%	13%	10%	1%	13%
My child knows which different types of licences apply to online content	37%	15%	14%	13%	6%	3%	13%
My child would feel confident putting online video content he/she has created	27%	12%	20%	18%	10%	3%	11%
My child knows how to install apps on a mobile device	9%	7%	9%	23%	50%	1%	3%
My child knows how to keep track of the costs of mobile app use	25%	12%	18%	21%	20%	1%	4%
My child knows how to make an in-app purchase	22%	10%	12%	24%	26%	1%	5%
My child knows my password enabling him/her to make an in-app purchase	64%	10%	7%	7%	9%	1%	3%

Source: Q10 (n=800)

Mediation of use and safety: active and restrictive (11-16)

Table 389 Parents' mediation practice - Push (%)

	Never	Rarely	Sometimes	Very often	Always
Talk to your child about what he/she does on the internet?	2%	5%	36%	41%	17%
Encourage your child to explore and learn things on the internet?	4%	12%	47%	27%	11%
Sit with your child while he/she uses the internet?	3%	20%	52%	20%	5%
Stay nearby when your child uses the internet?	1%	9%	35%	40%	16%
Do shared activities together with your child on the internet?	4%	22%	51%	19%	4%

Source: Q11 (n=800)

Table 390 Parents' mediation practice - Pull (%)

	No	Yes
Initiated a discussion with you about what she/she does on the internet?	24%	76%
Told you about things she/he finds disturbing on the internet?	39%	61%
Asked for your advice on how she/he should act online?	55%	46%
Asked for products and/or services that she/he has seen advertisements for online?	33%	67%
Ask for your help concerning a situation on the internet that she/he cannot handle?	43%	57%

Source: Q12 (n=800)

Table 391 Parents' restrictive practice (%)

	Can never do this	Can only do this with my permission or supervision	Can do this anytime	Don't know
Use the internet for school work	6%	21%	69%	4%
Watch video clips (e.g. on YouTube)	2%	27%	69%	2%
Download music or films	38%	30%	27%	6%
Read/watch news online	15%	22%	59%	4%
Visit a social networking profile	31%	23%	40%	7%
Visit a chat room	38%	24%	30%	8%
Use instant messaging	27%	18%	48%	7%
Play games with other people online	20%	30%	44%	6%
Spend time in a virtual world (e.g. Habbo, Club Penguin, Minecraft	22%	25%	42%	11%
Use a webcam	38%	30%	25%	7%
Put (or post) photos, videos or music online to share with others (including social networking or instant messaging)	40%	26%	29%	5%
Put (or post) a message on a website	35%	24%	34%	7%
Write a blog or online diary	44%	21%	23%	13%
Participate a in a site concerned with good causes (e.g. campaigns, charity)	31%	29%	26%	14%
Use a file sharing site	64%	16%	10%	11%
Download games	21%	54%	23%	3%
Play online games alone	15%	32%	48%	4%

Source: Q13 (n=800)

Table 392 Parents' active safety practice (%)

	Never	Rarely	Sometimes	Very often	Always
Help him/her when something is difficult to do or to find on the internet	3%	7%	40%	27%	23%
Suggest ways to use the internet safely	7%	14%	37%	25%	16%
Explain why some websites are appropriate or inappropriate	5%	9%	38%	29%	19%
Help him/her when something has bothered him/her on the internet	9%	16%	31%	13%	31%
Talk to him/her about what to do if something on the internet bothered him/her	7%	11%	37%	20%	25%
Explain that online games may contain hidden advertising aimed at making children want to have new products	10%	15%	34%	25%	17%
Explain that online games, even if downloaded without cost, may require in-app purchases in order to progress faster in the game or to access the full features of the game	6%	8%	34%	30%	21%
Talk to him/her about the commercial activities they are exposed to online	8%	18%	37%	24%	13%

Source: Q14 (n=800)

Table 393 Parents' technical control practice (%)

	No	Yes	DK/DA
Parental controls or other means of blocking or filtering some types of website	59%	37%	5%
Parental controls or other means of keeping track of the websites or apps your child visits	62%	34%	5%
Rules about how long or when your child is allowed to go online	30%	67%	3%
A service or contract that limits the time your child spends on the internet	81%	16%	3%
Software to prevent spam or junk mail/viruses	27%	69%	5%
Parental controls that filter the apps your child can download	70%	25%	5%
Parental controls that alert you when your child wants to buy content (in-app purchase)	65%	30%	5%
Software that limits the people your child can be in touch with (through voice calls and SMS/TEXT MMS)	82%	13%	5%
Ad blocking software	64%	31%	5%

Source: Q15 (n=800)

Table 394 Parents' Non-technical control practice (%)

	Never	Rarely	Sometimes	Very often	Always
Which websites he/she visited	21%	24%	35%	12%	9%
Which friends or contacts he/she adds to his/her social networking profile/instant messaging service	34%	18%	27%	13%	9%
The messages in his/her email or instant messaging account	41%	21%	22%	10%	7%
His/her profile on a social networking or online community	37%	19%	25%	12%	8%
The apps he/she downloaded	20%	17%	35%	15%	14%
The in-app purchases he/she made	32%	16%	21%	11%	20%

Source: Q16 (n=800)

Severity of risk and vulnerability (17-18)

Table 395 Parents' risk perception (%)

	Not harmful at all 1	2	3	4	5	6	Very harmful 7	DK/DA
To see images on the internet that contain explicit violence against others	1%	1%	2%	12%	17%	18%	48%	1%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	3%	7%	10%	24%	24%	16%	16%	2%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did n	1%	1%	3%	7%	11%	20%	56%	2%
Spending too much money on online games or in-app purchases	3%	2%	5%	16%	15%	20%	37%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	3%	4%	9%	16%	21%	22%	24%	2%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	3%	5%	13%	23%	24%	14%	17%	1%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use	1%	3%	4%	14%	19%	19%	38%	2%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	3%	4%	8%	15%	17%	16%	36%	2%
Being exposed to advertisements of unhealthy food	5%	6%	12%	22%	21%	18%	15%	2%

Source: Q17 (n=800)

Table 396 Parents' likelihood perception (%)

	Not likely at all 1	2	3	4	5	6	Very likely 7	DK/DA
To see images on the internet that contain explicit violence against others	9%	10%	12%	18%	19%	16%	13%	3%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	9%	8%	9%	16%	21%	15%	16%	5%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she	13%	10%	11%	22%	17%	11%	12%	4%
Spending too much money on online games or in-app purchases	34%	16%	11%	14%	10%	6%	7%	3%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	12%	11%	12%	16%	15%	15%	17%	3%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	7%	7%	11%	21%	17%	18%	17%	3%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that	12%	10%	11%	19%	16%	14%	14%	5%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	11%	11%	14%	18%	18%	12%	12%	4%
Being exposed to advertisements of unhealthy food	9%	7%	13%	21%	17%	15%	15%	4%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	15%	16%	14%	20%	13%	8%	9%	5%

Source: Q18 (n=800)

Problematic practices online (19-20)

Table 397 Problematic practice (%)

	No	Yes	DK/DA
To see images on the internet that contain explicit violence against others	48%	28%	25%
Being exposed to personalised/targeted advertisements (e.g. in social media, Google searches etc.)	40%	36%	25%
To be treated in a hurtful or nasty way on the internet by another child or teenager. (This includes being teased repeatedly in a way he/she did not like, or being deliberately excluded or left out of things)	70%	17%	13%
Spending too much money on online games or in-app purchases	86%	8%	6%
Being exposed to incentives to make in-app purchases while playing an online game (e.g. to progress faster in the game)	37%	50%	13%
Being exposed to hidden advertisements on online platforms, such as branded games or product placement	32%	46%	23%
That his/her personal data (information about his/her identity and behaviour online) are being tracked, stored and used by third parties that use it for a purpose other than that for which they were collected (e.g. for direct m	65%	13%	22%
Being exposed to advertising about unhealthy lifestyle products such as tobacco or alcohol	53%	21%	25%
Being exposed to advertisements of unhealthy food	38%	39%	24%
Digital identity theft or identity fraud in which someone wrongfully obtains and uses your child's personal data	80%	5%	15%
The game was advertised as free, but in reality it was impossible to play the game without making in-app purchases	53%	31%	16%
The game was downloaded for free, but progress in the game was very slow. In order to advance quicker, he/she had to make in-app purchases	48%	38%	14%

Source: Q19, Q20 (n=800)

Protective measures (21-23)

Table 398 Protective measures effectiveness (%)

	Would not contribute at all	Would not contribute much	Would contribute somewhat	Would contribute a lot	DK/DA
More/better teaching and guidance in schools on the commercial activities children/adolescents are exposed to online	2%	8%	33%	50%	8%
More/better information and advice for parents on the commercial activities children/adolescents are exposed to online	4%	14%	35%	39%	8%
Training sessions organised for parents by NGOs, government and local authorities on the commercial activities children/adult	6%	20%	37%	25%	12%
Improved availability/performance of parental control software	5%	16%	35%	34%	11%
Stricter regulation for businesses that produce online content and services	4%	12%	26%	50%	8%
More awareness-raising campaigns on online risks	4%	14%	39%	35%	8%
Contact points such as helplines where parents and children can receive individual advice about how to stay safe online	6%	19%	40%	24%	11%
More/better information on consumer rights and the risks of internet cost-traps	4%	17%	38%	32%	9%

Source: Q21 (n=800)

Table 399 Protective measure usage advergames (%)

	No	Yes
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	71%	29%
Contextual information (labels) displayed permanently on the screen	86%	15%
Parent's pre-approval before playing.	59%	41%
School education for children in recognising advertising	77%	23%
Age verification systems	66%	34%
Surveillance and monitoring of hidden advertisements by government of online games to ensure that they do not follow unfair practice	82%	18%
Surveillance and monitoring of hidden advertisements by companies of online games to ensure that they do not follow unfair practice	80%	20%

Source: Q22 (n=800)

Table 400 Protective measure effectiveness advergames (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Warning message (pop-up) before, during and after playing, clearly indicating that the game includes advertising	9%	10%	13%	18%	19%	12%	6%	13%
Contextual information (labels) displayed permanently on the screen	13%	14%	12%	18%	15%	7%	4%	18%
Parent's pre-approval before playing	5%	4%	8%	15%	19%	19%	19%	12%
School education for children in recognising advertising	3%	4%	7%	14%	23%	22%	17%	11%
Age verification systems	8%	8%	11%	16%	18%	17%	10%	13%
Surveillance and monitoring of advertisements by government of online games to ensure that they do not follow unfair practice	9%	9%	12%	17%	16%	13%	9%	16%

Source: Q23 (n=800)

Table 401 Protective measure usage in-app (%)

	No	Yes
Parental pre-approval of purchases	42%	58%
Cooling-off period for children before making a purchase	74%	26%
School education in using online apps	81%	19%
Clear indication that in-app purchases are required to fully exploit the application/game	67%	33%
Age verification systems	70%	30%
In-app purchase password as default option on the mobile	44%	56%

Source: Q24 (n=800)

Table 402 Protective measure effectiveness in-app (%)

	Not effective 1	2	3	4	5	6	Very effective 7	DK/ DA
Parental pre-approval of purchases	3%	2%	5%	12%	15%	21%	33%	9%
Cooling-off period for children before making a purchase	7%	6%	7%	19%	17%	16%	12%	18%
School education in using online apps	4%	4%	7%	18%	21%	19%	16%	12%
Clear indication that in-app purchases are required to fully exploit the application/game	4%	3%	7%	17%	20%	20%	17%	11%
Age verification systems	9%	7%	9%	15%	17%	17%	14%	13%
In-app purchase password as default option on the mobile	3%	2%	3%	13%	17%	21%	32%	9%

Source: Q25 (n=800)

Self-efficacy (24-30)

Table 403 Difficulties to protect your child (%)

	1 - Very difficult	2	3	4	5	6	7 - Very easy	DK/DA
Online threats	12%	17%	20%	23%	15%	8%	5%	1%
Online marketing	28%	18%	21%	16%	8%	5%	4%	1%
Online marketing of alcohol	16%	14%	19%	18%	12%	8%	9%	4%

Source: Q26, Q28, Q30 (n=800)

Table 404 Perceived control (%)

	1 - No control	2	3	4	5	6	7 - Complete control	DK/DA
Protecting your child from online threats	2%	6%	15%	26%	27%	18%	7%	1%
Protecting your child from online marketing	16%	18%	22%	20%	13%	7%	4%	1%
Protecting your child from online marketing of alcohol	14%	13%	17%	18%	15%	10%	10%	3%

Source: Q27, Q29, Q31 (n=800)

Table 405 Perceived responsibility (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
It is mostly up to me as a parent/guardian that my children are safe from online marketing	3%	2%	3%	14%	18%	25%	31%	4%
It is mostly up to government regulators to ensure that my children are safe from online marketing	10%	9%	12%	20%	18%	12%	14%	5%
It is mostly up to the online industries to ensure that my children are safe from online marketing	11%	9%	13%	21%	18%	11%	12%	5%

Source: Q32 (n=800)

Parents' recognition of digital content (43-44)

Figure 69 Advergame example

Table 406 Advergame parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	18%	12%	14%	20%	17%	9%	6%	5%
Entertainment	11%	7%	13%	20%	22%	13%	8%	5%
Advertising/selling	1%	1%	2%	8%	12%	21%	51%	4%

Source: Q46 (n=800)

Figure 70 Advertisement example

Table 407 Advertisement parents' recognition (%)

	Strongly disagree 1	2	3	4	5	6	Strongly agree 7	DK/DA
Educational/training	51%	18%	9%	8%	3%	3%	2%	5%
Entertainment	3%	3%	5%	14%	19%	24%	28%	4%
Advertising/selling	3%	5%	8%	14%	18%	16%	30%	6%

Source: Q47 (n=800)

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