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# Young Children (0-8) and Digital Technology

## A qualitative study across Europe

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Abstract

This report presents the results of a qualitative study made over seventeen countries exploring how children between zero and eight engage with digital technologies, how far parents mediate this engagement and their awareness on the risks-opportunities balance. It concludes on recommendations to parents, schools, industries and policymakers.

Title Young children (0-8) and digital technology, a qualitative study across Europe

How digital technology is used by young children today?

- Today, young children between 0 and 8 acquire their digital skills mainly in the home context.
- Young children learn quickly by observing and mirroring the behaviour of the adults and older children close to them-parents and older siblings - following a trial and error strategy not exempt of risks.
- Yet young children lack of agency and of clear representation of the tools they use daily such as the Internet, Wi-Fi or social networks.
- Young children diversify their digital skills and are more aware of risks if their school integrates digital technology meaningfully and develop digital literacy.
- Parents tend to support more their children's digital learning opportunities if schools integrate digital technology in their homework requests and tend to have more positive views upon technologies.

# Young Children (0-8) and Digital Technology

A qualitative study across Europe

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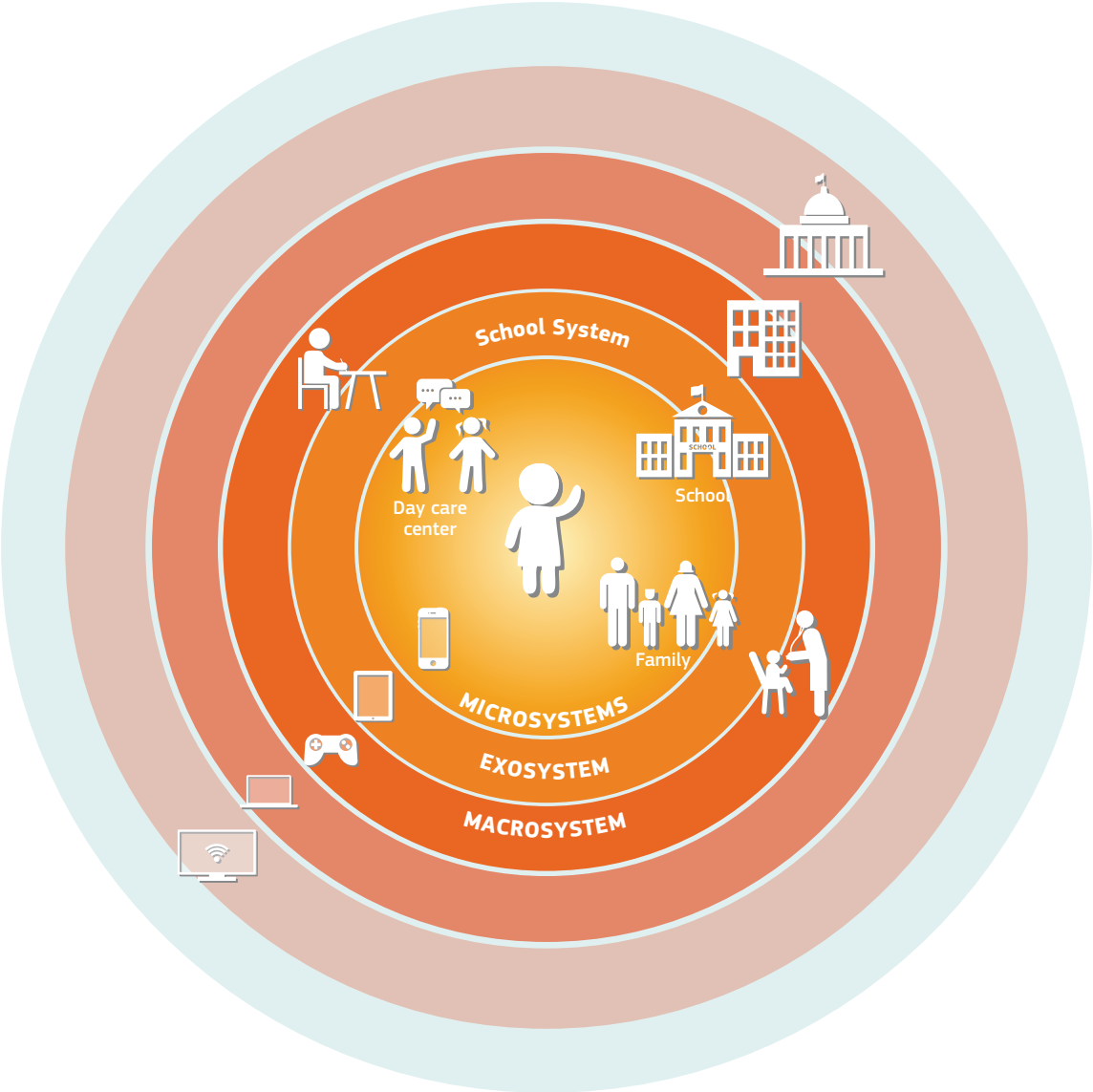
School System
Day care center
School
Family
MICROSYSTEMS
EXOSYSTEM
MACROSYSTEM

# Foreword

This report is the result of an intense and constructive collaboration between more than 60 European researchers from 31 research centres and universities selected for their expertise and excellence in this field of research.

The collaboration started early June 2014 when a JRC experts' workshop brought together top-rank researchers with the task of diagnosing issues, identifying research questions and formulating some ideas to define the framework and methodology of a pilot research. Nine universities then joined with the JRC to design and implement a pilot study as the first phase of this qualitative exploratory study on 'Young children (0-8) and digital technology' based on family interviews. Two other study phases - the enlargement study, extending the sample across Europe, and the advanced study - followed in 2015-2016 and 2016-2017. The project benefited from the cooperation and support of 31 universities and research centres in 21 countries in total.

The partnership, led by the JRC, designed the study, its protocol of observation and protocol of analysis collegially. Results were assessed and analysed by the participants via numerous virtual meetings and six face-to-face project meetings. A cross-national analysis for the first results based on the pilot study implemented in 2014 was published in January 2015 along with seven national reports (Chaudron, et al., 2015) in 'Young children (0-8) and digital technology: a qualitative exploratory study across seven countries' (*http://publications.jrc.ec.europa.eu/repository/handle/JRC93239*).

The present document reports on the core findings that emerged from the cross-national analysis of the three phases of the project: the pilot study (2014); the enlargement study (2015-2016); and the advanced study (2016-2017). These results are drawn from a large data set built from interviews with 234 family interviews in 21 countries, reported nationally by each national research team for each phase of the research. The authors aimed to report the 'least common denominator' of the entire sample while taking into account the very diverse cultural and familial backgrounds. Readers interested in enriching and deepening their understanding of this analysis are warmly invited to read the national country reports carried out within the study that are all referenced in the dedicated section at the end of this report.

Parts of the study's results presented in this report have been previously presented and discussed in peer-reviewed publications. They are all fruit of the collaboration between their authors in the framework of this study, based on its (partial) dataset. We invite the reader to consult the following articles for deeper analysis: *How parents of young children manage digital devices at home: the role of income, education and parental style* (Livingstone, Mascheroni, Dreier, Chaudron, & Lagae, 2015); *Rules of engagement: family rules on young children's access to and use of technologies* (Chaudron, et al., 2018); *Learning versus play or learning through play? How parents' imaginaries, discourses and practices around ICTs shape children's (digital) literacy practices* (Mascheroni, Livingstone, Dreier, & Chaudron, 2016); *The role of parents in the engagement of young children with digital technologies: Exploring tensions between rights of access and protection, from 'Gatekeepers' to 'Scaffolders'*. (Dias, et al., 2016); *Family dynamics in digital homes: The role played by parental mediation in young children's digital practices around 14 European countries* (Brito, Francisco, Dias, & Chaudron, 2017).

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In particular, we thank the parents and children involved in this research for their enthusiastic cooperation. Without their support and trust, such a study would have never taken place.

We express our warm thanks to the EU Kids Online Network, especially its former coordinator, Sonia Livingstone. Her support was the corner stone in setting up this research. We are equally grateful to the Digital Literacy and Multimodal Practices of Young Children Network (DigiLitEY) coordinated by Jackie Marsh and supported by the European Cooperation in Science and Technology (COST) action. This connection gave us opportunities to scale up the research, to communicate its results through dedicated events across Europe and to be part of EU High Level Group on Literacy Group.

The Insafe Network, coordinated by Hans Martens at European Schoolnet and co-funded by the European Commission, should also be thanked for its support and connections with key events such as the Safer Internet Forum and Safer Internet Day.

Special thanks go to Manuela Martra of the Directorate-General for Communications Networks, Content and Technology for her guidance, advice and support since the genesis of this work.

Last but not least, sincere thanks to the following: our colleagues Francesca Varano, Marta Rossi and Annalisa Rossi, for their efficiency in dealing with workshop arrangements; Lorena Fochi, who gave advice on procurement and administrative matters; Natalia Serra, for her legal support for the formal establishment of the research partnership; Margaret Dolley, Massimiliano Gusmini, Colin Parnell, Tracy and Dave Durrant for their edition work and the JRC Visitor Centre colleagues for embracing our research during important public events, such as the Researchers' Night and the JRC Open day, when the results of our research were presented to citizens and the general public.

# Executive summary

## Policy context

There have been noticeable increases in the Internet participation rate of children in all EU countries. The usage patterns of tweens (9-12 year olds) now resemble those of teenagers 3 to 4 years ago, and younger school-aged children's usage is increasing to the equivalent of tweens' previous use. Very young children (0-8) are showing particularly increased patterns of Internet use. Pre-schoolers are going online too, and most children under the age of 2 in developed countries have an online presence (or digital footprint) through their parents.

If the digital engagement of teenagers in Europe is well known today thanks to numerous studies and research networks - and EU Kids Online ([1]), in particular - there is a lack of knowledge about the status and development of young children's digital skills (under age 9). In this context, young children's lack of agency and technical, critical and social skills may pose increasing challenges to them growing happily and responsibly within the digital world.

Research to support education strategies is key to mitigate risks and enhance learning opportunities. On the other hand, indicators such as the Digital Economy and Society Index (DESI) (European Commission, 2017) that illustrates the diversity of contexts and disparities in which European children are growing up ask for research that can gather data in different European contexts.

To address these societal needs, the JRC developed a qualitative research project across Europe, 'Young children (0-8) and digital technology', which looked closely at the digital engagement of young children under the age of 8 in 21 countries in Europe ([2]).

## The Study

The present report builds on data from the research project 'Young children (0-8) and digital technology', co-funded and coordinated by the Joint Research Centre of the European Commission and supported by 31 universities or research centres and more than 60 researchers across Europe and beyond. It includes findings from 234 family interviews in 21 countries ([2]). In this work, researchers take a closer look at the role(s) played by digital technologies in families with young children. They focus on the following research questions.

They focus on the following research questions in a first round of interviews of 234 families with children aged 0-8 made between autumn 2014 and spring 2017, in the pilot and enlargement phases of the study (see Figure2).

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([1]) EU Kids Online is an international research network which currently encompasses 33 European countries. It aims to coordinate and stimulate investigation into the way children use new media. After three phases of work, funded by the European Commission's Better Internet for Kids (originally, Safer Internet)|http://www.lse.ac.uk/media@lse/research/EUKidsOnline/Home.aspx

([2]) Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, Germany, Italy, Latvia, Lithuania, Malta, the Netherlands, Norway, Portugal, Romania, Russia, Slovenia, Spain, Switzerland and the United Kingdom.

- **How do children under the age of 8 engage with digital technologies?**
- **How do the different family members perceive them?**
- **How do parents manage their younger children's use of technologies?**
- **What role do they play?**
- **What are the associated risks and opportunities?**

A second round of interviews (advanced phase of the study) allowed to get back in 56 families of the interviewed families, in 10 of the 21 countries ([2]), a year after the first interviews, and focused on the following research questions.

- **How did the engagement of children under the age of 8 with online technologies evolve over the course of a year?**
- **How did the perceptions of the online technologies by the different family members evolve over the course of a year?**
- **How did parents' mediation of young children's use of online technologies evolve over the course of a year?**
- **Has the role that the online technologies play in the children's and parents' lives changed over a year?**

This section contains the key findings of the data analysis regarding young children's usage of digital technologies, their perceptions and the digital skills they may acquire in the home context. It provides insights about the perceptions and attitudes of their parents regarding digital technologies and their use by young children. It underlines the potential benefits, challenges and consequences associated with their (online) interactions with digital technologies. It contrasts the findings within homes with other factors that may influence children's usage, perceptions and skills outside the household context.

Finally, it concludes by looking at the desire expressed by the majority of interviewed parents to be guided in managing their children's engagement with digital technologies and to be enlightened about the positive and educational uses of digital technologies..

## Findings

The main finding emerging from this research is that children's digital skills seem to be developed from a very young age mostly in the home context by observing and mirroring parents and older siblings' digital behaviour. They follow their interests and needs using a trial-error path, not exempt from risks.

Parents attempt to balance and safeguard their children's digital engagement with more or less success. Parental strategies of mediation - open, permissive, supportive, and restrictive or of

'laissez-faire' - rely on numerous interlinked factors like parents' skills, knowledge, attitudes and perceptions towards digital technologies. Personal experiences and socio-economic background also influence parental approaches.

The following correlations have been found and confirm previous research. Favourable opinions about the pedagogical potential of digital media are mostly found among parents with more digital skills and confidence, most of medium and high socioeconomic status. Parents that take the position of not encouraging the pedagogical use of digital tools, nor the articulation with school (although some of them recognize their importance for accessing information) are mostly less confident in the use of technology, more worried about possible consequence of mis- and overuse and tend to be from a lower socioeconomic status.

Contextual factors such as levels of penetration and acceptance of the technology in society and the level of integration of meaningful digital activities at school matter too. The analysis of the collected data seems to confirm that children enlarge and diversify their digital activities and skills if stimulated by the school. In addition, parents tend to perceive digital technology more positively, to support their children's engagement with digital technology more actively and to invest more time and resources, if specific digital tasks are requested by the school. However, parents who are already knowledgeable, skilled and confident with the technology more easily embrace this role.

The playground is therefore very uneven between families, within and between countries regarding children's digital skills, including commonly known practices to safeguard children's privacy, personal data and exposure to the possible perils of the online world. The same is to be said for providing children with digital learning and creative opportunities. Most parents ask for guidelines and help to support the healthy development of their children's digital daily life. They also increasingly expect school to provide children with the digital skills needed in the future.

On the other hand, data analysis suggest that early years of childhood are key in developing children's digital competences and agency, and in building healthy and balanced attitudes towards the digital realm. Digital education and development of digital literacy should start at an early age, when children start to use digital technology in their daily life. Therefore, better focus on early childhood education and care (ECEC), and raising awareness about supportive practices among parents and immediate family and carers would help to increase the digital literacy level for all children, and guarantee a more even start for children in the quest for digital competence for their future.

The key findings of the study are structured and detailed as follows.

## Young children's use of digital technology

- **Young children generally have a varied and balanced life** integrating sports, outdoor play and creative activities in which digital activities play only one part. Nonetheless, they are daily consumers of audiovisual media services (AVMS) products, (smart) TV, video on demand (VOD) and games, through smartphones, tablets, video-game consoles, laptop and more rarely PC's. Most popular are small screens (although smart TV is striking back) that allow mobility and have 24/7 availability, ownership and autonomy of choice and use.
- **Children have their first contact with digital technologies and screens at a very early age** (below 2), usually through their parents' devices, which are not tailored for them in the first place.
- **Young children learn very quickly how to interact with digital devices by observing the behaviour of adults and older** children. Even if they have not yet mastered reading and writing, they develop their own strategies: auto-completion, vocal recognition, image recognition. By doing so, most of the time, individually and in autonomy, they follow a trial and error learning path not exempt from risks, but they also develop skills and are often more knowledgeable than their parents realise. In fact, it seems that the more they use digital technology, the more they learn to use it; however they enlarge their capacities and the spectrum of their skills when they benefit directly from tutorials of knowledgeable grown-ups (young family members, parents, care-takers, teachers...).
- **For young children, digital technology is useful for four main purposes**: (1) leisure & entertainment; (2) information and learning; (3) creation and (4) communication.

  **(1) Leisure and entertainment**: Following children's account Digital technology is mainly videos and games (YouTube and Google Play). Digital activities constitute for them the easiest anti-boredom solution.

  **(2) Information and learning**: Children also use search engines to get information or to gain knowledge. Not only for school purposes but also to feed their interests, their imagination and creativity although this use is more frequently encouraged by parents if explicitly requested by schools as homework. In addition, opportunities for learning that digital technology can offer to children are more concrete to parents in this case.

  **(3) Creation**: Some children are digital creators. All of them share an interest in this form of expression and they benefitted, at least initially, from the tutorial and engagement of digitally knowledgeable grown-ups.

  **(4) Communication**: A minority of interviewed children, around age 6, are already social networkers. The majority of them are invited by their parents to join the communication schemes of the family and generally are integrated in a family account, under the supervision of the parents. However, other young children adopt social networks to answer to peer pressure (as mainly reported by the Bulgarian part of the study) or to share a common inter-

est with online groups. Some parents mediate and accompany their children in this use but others are not much aware of the pitfalls and leave their children freely exploring the tools.

- **Across Europe, young children learn to interact with digital technology** and build their digital skills and competences mainly in the home context, influenced by:

  **(1) the type of digital devices and content they have access to**;

  **(2) their own interests and needs**; and

  **(3) the level and typology of support and engagement they can benefit from their parents**.

  **Parents' choices regarding their mediation approaches and strategies** - more open and permissive, more restrictive and controlling; more supportive and demanding or not - depend on their own perceptions, views and attitudes towards digital technology. Those depend on their knowledge and experiences and on the level of penetration and acceptance of digital technology within the society in which they live, and of the social norms of the social groups they belong to. The more positive their perception, the more inclined parents are to actively support children's digital activities. The conditions that foster the development of digital competences in young children can therefore vary greatly from one family to another, and from one child to another, and so can the type and level of digital competences they develop.

- **However, in general young children are little aware of the risks associated with the use of digital technology**. They lack agency and clear representation of the tools they use daily such as the Internet, Wi-Fi or social networks.

- **Young children diversify their digital skills and are more aware of risks if their school integrates digital technology** meaningfully, so that they develop digital literacy.

### Parents' perceptions and mediation strategies

- **Parents in return develop their own mediation strategies that range from protection by limiting access to digital technology to warm support and co-usage**. Most parents put in place protective strategies that limit and control digital access in one way or another (strongly or loosely). The least knowledgeable parents, often of modest socioeconomic status, tend to restrict the access to digital technology more strongly. Digitally knowledgeable parents, mostly from medium or higher socioeconomic status, or parents who see the harmonious integration of digital technology as a learning tool within the classroom - as witnessed in the many northern European countries of the study and Malta more recently- tend to support actively and co-use digital technology with their children, guiding them more efficiently. A minority of parents chose a ´laissez-faire' approach. A majority of those are single mothers who suffer a lack of time and/or of knowledge and confidence while taking advantage of the 'SOS' and 'Babysitter' roles that digital technology can offer to retrieve time for work, or household tasks or themselves.

- **Parental mediation strategies are mainly motivated by *fears*** of possible negative effects on eyesight, concentration, cognitive capacities, social behaviour etc., fears that children reflect in their own accounts. However, parents' fears match only partially the ***risks*** (exposure to inappropriate content (violence, sex, drugs, hate-speech, anorexia…), commercial requests, sharing of private and/or inappropriate content, difficulties to acquire auto-regulation, etc.). Parents of the second wave of interviews only mentioned bullying and cyber-bullying while reporting on their experience with children aged 7-9.
- **Most parents see the digital evolution as inevitable, useful but challenging** and they ask for guidance, even if for the time being, parents see few risks and post-pone the risks mediation to the teenage years, when actually the study saw children exposed to non-appropriate content, sharing content and sometimes personal data even via social networks.
- **Parents are challenged by the technology itself**, finding it very helpful, as a convenient babysitter for example, but also hard to manage at the same time. In addition, parents are continuously challenged by their children, whose usage and strategies evolve quickly. Parents claim tools and guidance for developing their own active mediation strategies and their own knowledge. Active mediation needs to happen before the age of 9-10 as the second round of interviews of this study shows that from 8-9 already parents' influence tends to shrink at the expense of friends' influence.
- **Parents tend to support their children's digital learning opportunities more if schools integrate digital technology in their homework requests** and tend to have more positive views upon technologies. The majority also believe that digital technologies are indispensable for the education of their children and therefore expect the school to play a key role in the digital enculturation of the new generations.

## Children's use and preferences among digital devices

- **TV is still at the centre of children favourite mediated activities and the most common screen present in all interviewed families**. Even though TV seemed to lose some media preference in the last years compare to mobile devices, especially tablets, Smart TVs gain favour again thanks to a more interactive, diversified and personalised offer.
- **Tablet is the most popular device among young children** for watching online-videos and gaming mainly but also drawing, listing music, searching for information. The size of its screen, its portability and its ease of use thanks to the touchscreen technology are the main assets of this device for child use. It is increasingly adopted across countries as shared 'family' devices , sometimes as the individual property of the child.
- **Smartphones can be considered as the universal device** thanks to their relatively cheap cost compare to other category of digital devices and their large versatility of use.

Parents generally regards it their private property, usually available for children to use in certain circumstances sometime turning it as 'SOS' device helping to manage difficult parenting situations.

- **Game consoles, laptops and computers might also be present in the household**. Their use is more limited and is regulated with parental permission, especially when used for gaming activities.
- **Laptops and PC's are most commonly considered the property of the parents** - often linked with professional activities - and difficult to operate by children. They are rarely used by young children unless PC or laptop provides the only digital technology accessible in the household. Older children of our sample use them more often together with their parents as support for their homework, especially if requested by the school.
- **It is important to note that the function, the possible activities offered by the device, seem more important than the device itself**, even though children express naturally their preference for portable and touch screen device when they can access one.
- **Sharing devices that are not configured for young children use in the first place increases risks** of problematic experiences with pop ups and in-app purchases by children.

## The importance of schools, among other influential factors

Schools, as observed in our sample in the Nordic countries and Malta ([3]) more recently, can have a major influence over the acquisition of digital competences - including creativity -, when integrating digital technology as active learning tools. **Developing digital literacy at school from an early age (kindergarten) would also help to raise awareness on safety issues and measures and to build critical thinking and resilience in the digital context**. Finally, meaningful integration of digital technology in didactics would influence parents' positive perceptions of digital technology as a learning tool and increase parents' support in the acquisition of digital skills useful for the digital future. In the last couple of years, some parents have intensified their expectations regarding the role that technology might play at school. Indeed, increasingly **parents believe that mastering digital technologies and developing digital skills are indispensable for the education of their children. They expect the school to play a key role in the digital enculturation of the new generations**.

([3]) 'One Tablet per Child' initiative. Following a positive pilot project for using mobile technology in primary schools, the Maltese Ministry of Education and Employment provided, in December 2016, every child in Year 4 (i.e. nine years old) with a tablet intended to help improve reading, writing, numeracy and digital literacy skills. (http://www.digital.edu.mt/ and https://ec.europa.eu/education/compendium/one-tablet-child_en)

## RECOMMENDATIONS TO POLICY-MAKERS

### Digital literacy

The results of the study show that schools can play a major influence in the acquisition of digital competences including creativity when integrating digital technology as active learning tools. It would help also in raising awareness, building critical thinking and resilience, and finally influencing parents' positive perceptions to build their own positive and supportive mediation strategies:

- **Building and enhancing children's digital and media literacy** as early as possible is an increasingly urgent task of schools and teachers.
- **Developing a digital literacy curriculum and digital didactics from an early age** (kindergarten) at European level is key at multiple levels: to develop digital literacy and a harmonised digital culture; to avoid increasing digital gaps; to enhance digital creativity; to build critical thinking and resilience.
- **Further research targeting early childhood** and taking into account different cognitive stages of children (0-3; 4-5, 6-8) is also needed in order to develop digital learning objectives in line with children stage of cognitive development.
- **Developing a digital literacy** curriculum and digital didactics for teachers initial and Life-Long-Learning at European level training is essential to support children in the acquisition of the 21st Century digital competences.
- **Building a framework for digital competences for children** such as a DigComp (Vuorikari, Punie, Carretero, & Van den Brande, 2016) for children would be an essential and pragmatic tool of reference across Europe.
- **There is a need for new tales that will help children to understand the digital worlds,** its components, its interactions, its dangers, as children show difficulties to conceptualise the digital world and its abstract reality.
- **Supportive actions towards digital literacy and digital inclusion from other institutions** trusted by parents and teachers such as libraries and museums are also essential to build an inclusive and harmonious digital citizenship culture.

### Digital culture

The results of the study show that parents are challenged by technology and the fast evolution of their children's digital engagement; parents need tools and guidance for developing active mediation strategies; parents with more knowledge and greater digital competences view digital technology more positively and seem to mediate their children's engagement with more ease; parents' influence over their children tends to shrink already from the age of 8-9 when there is a shift towards friends' influence.

- **Developing practical materials for parents to support their mediation strategies** from when their children are very young (kindergarten) is key to guide them in building digital mediation strategies to increase the benefit of digital activities while mitigating their potential harm.
- **Services and information campaigns informing parents and professionals** on the children's use of technologies, the importance of digital literacy should be created. They should instruct them on approaches and strategies to increase the benefit of digital activities while mitigating their potential harm.
- **Professional figures should be among the targeted groups of services and campaigns** as parents consider them as experts (paediatricians, psychologists, nurses, caregivers, teachers...) and usually they seek for help and support towards them.
- **Services and information campaigns should pay particular attention to vulnerable families**, i.e. with less availability of time and/ or resources, particularly single parent families of lower social-economic status as our study shows that they lack both time and competences and sometimes resources for the digital mediation of their children.
- **Support to parents and professionals would further help to develop a harmonised digital culture at European level**; to reduce digital gaps; to enhance digital creativity; to raise awareness and to build critical thinking and resilience.
- **Further research with specific research questions and adapted methodology** as our study calls in documenting a proportion close to 1 out of 10 children showing signs of overuse, all boys in our sample.

## RECOMMENDATION TO INDUSTRIES

The results of the study show gaps in supply of suitable and service solutions tailored for children.

- **The built-in design of devices should empower and protect children** by embedding effective digital literacy and safety mechanisms 'by design' into devices and software, especially social media. For example, tools that enhance parental mediation instead of purely restrictive parental control tools; improving the user-friendliness of content labelling mechanisms and reporting tools; offering easily accessible and child-friendly information about online risks and safety on the services they offer to children and their parents.
- **The industry should also support initiatives aimed at promoting digital literacy.** Parents also need easy mediation tools, inspiring educational programmes and quality content in national languages to support their mediation of digital technologies.

In addition, the study shows that parents need guidelines more than ever as they face an unprecedented level of diversified media, including social networks.

- **Promoting systematic use of a clear and unified age rating system for any digital content** across platforms, including social ones, would improve signposting and would support parents in their choice of appropriate content for children.

## RECOMMENDATION TO PARENTS AND CARERS

The results of the study show that numerous parents feel powerless, lacking information, skills and/or time to help their children in the digital world.

- **Parents should be proactive and continuously improve their knowledge and skills** regarding the devices, apps and websites their children are using/visiting. We invite them to consult other parents, teachers and other relevant experts to help them in this task. Popular online platforms are also increasingly providing materials to help mediating children's online experiences, also available in numerous languages.

Moreover, the study shows that children are still not or little informed about digital safety measures, and most parents believe it is too soon to approach these issues with them, also because parents are not fully aware of their children's online activities and of the risks they are exposed to.

- **We invite parents to participate and accompany their children in their digital activities,** to listen to their interests and needs and positively (still critically) discuss them together. This would contribute to the development of children's skills and give parents clearer comprehension of their children's digital activities.

As children grow, they become more curious and eager to experiment and explore.

- **Parents should be aware of the role model they play** when they themselves use digital technology as young children learn to use technology copying adults' behaviours. For the same reason, when parents chose rules as mediation strategies, instead of they should consider family rules that apply to every family member. Children are also inclined to respect more rules that they negotiate and that parents themselves follow.

- **Parents should to take special care to support the early digital and media literacy of their children,** focusing on critical thinking, creative activities and responsible online behaviour.

Finally, our study indicates that among parents, mothers and fathers mediate children's digital technology use differently. Fathers active contribution to the development of children's digital skills is essential as they often appear more confident in dealing with digital technology than mothers do.

- **We invite parents to take the habit of talking with their children about their online life in the same way as they would discuss school life.** This habit will ease the immediate mediation of children's digital activities and will put the basis of communication for a future one for which trustful relationship on the subject is key.

**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

# Introduction

# Introduction

## 1. Study and research questions

It only takes witnessing a few interactions within modern western families to realise how much the experience of childhood has changed. Different winds are blowing, but certainly the use of digital technologies is one of the most important and its impact on childhood, education, learning and safety has been questionable in recent years.

Until 2014 very little was known about the substantial increase in usage of internet and digital technologies by very young children in Europe. Research focusing on the benefits and challenges associated with children's use of the internet mainly targeted those aged 9-16 years old.

The EU Kids Online Searchable European Evidence Database, a database gathering more than 1 500 studies of European research on children and young people's online activities, risks and safety, showed in 2014 that only a small percentage of them focus on children under the age of 9 (Figure 1).

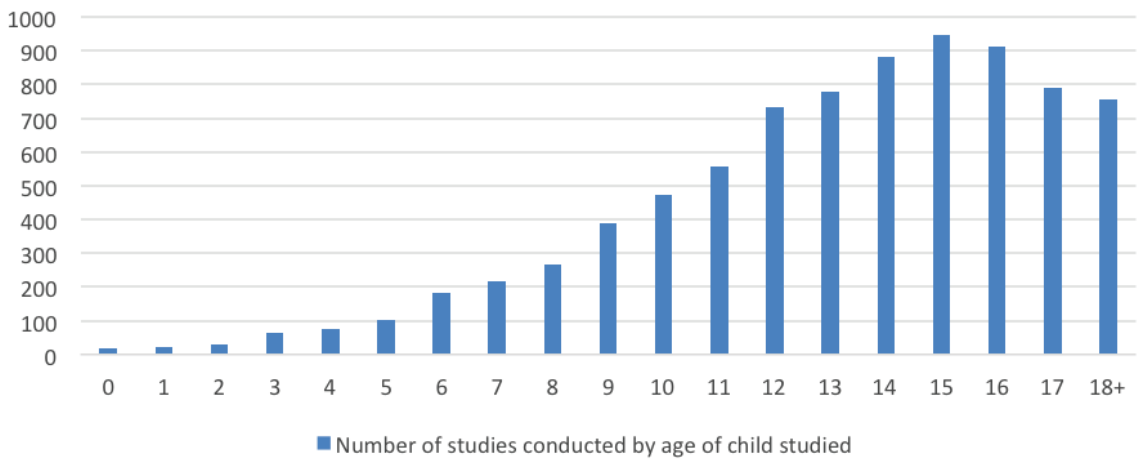
Moreover, most of those studies are quantitative rather than qualitative and focus more on the risks associated with the use of the fixed internet (few take into account mobile devices) and little on profit and opportunities for children. In addition, as Ólafsson, Livingstone and Haddon (Ólafsson, Livingstone, & Haddon, 2013) pointed out in their review of the European evidence database on children's use of online technologies in Europe, little attention is paid to the role of parenting (Dias, et al., 2016) in the use of new technologies by children. Finally, those studies are rarely cross-national.

EU Kids Online's recent review of the available literature on children aged between 0 and 8 and their use of new technologies produced some tentative findings

**FIGURE 1**

**Number of studies conducted by age of child studied**

Source: EU Kids Online's searchable European Evidence Database (www.eukidsonline.net)



- Children engage in diverse activities online using a range of internet-connected devices.
- Online activities can stimulate imagination, creativity and play.
- Up to a certain point, these help with learning, reading and navigating information.
- Many children use devices/contents not designed for their age group.
- Children's digital footprints often begin at birth, with unknown consequences.
- Younger children are more often upset about or vulnerable to risks of harm online.
- Children can be very trusting, for example if invited to meet someone after playing a game.

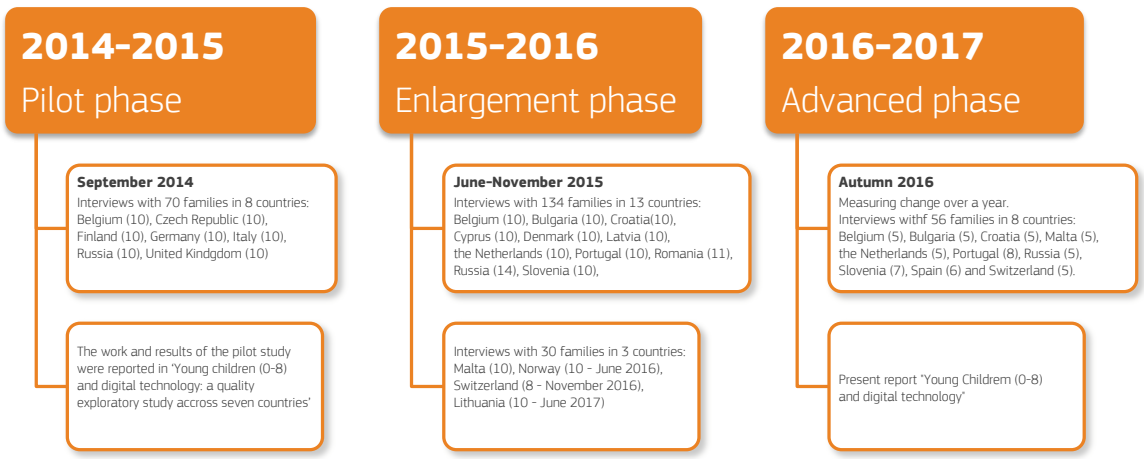
Yet many questions remained unanswered about the physical, mental, emotional and social consequences (opportunities or risks) of internet/digital engagement for young children and their families.

The present report builds on data from the research project 'Young children (0-8) and digital technology', funded and coordinated by the Joint Research Centre of the European Commission. They focus on the following research questions in a first round of interviews of 234 families with children aged 0-8 made between autumn 2014 and spring 2017, in the pilot and enlargement phases of the study (Figure 2).

- How do children under the age of 8 engage with digital technologies?
- How do the different family members perceive them?

**FIGURE 2**

**Young children (0-8) and digital technology - phases of the study**
Source: European Commission



- How do parents manage their younger children's use of technologies? What role do they play?

A second round of interviews (advanced phase of the study) allowed to get back in 56 families of the interviewed families, in 10 of the 21 countries (Belgium, Bulgaria, Croatia, Malta, the Netherlands, Portugal, Russia, Slovenia, Spain, Switzerland), a year after the first interviews, and focused on the following research questions.

- How did the engagement of children under the age of 8 with online technologies evolve over the course of a year?
- How did the perceptions of the online technologies by the different family members evolve over the course of a year?
- How did parents' mediation of young children's use of online technologies evolve over the course of a year?
- Has the role that the online technologies play in the children's and parents' lives changed over a year?

This document presents the key findings of the analysis regarding young children's usage of digital technologies, their perceptions and the digital skills they may acquire in the home context. It provides insights about the perceptions and attitudes of their parents regarding digital technologies and their use by young children. It underlines the potential benefits, challenges and consequences associated with their (online) interactions with digital technologies. It contrasts the findings within homes with other factors that may influence children's usage, perceptions and skills outside the household context. It finally concludes on the need expressed by the majority of interviewed parents to be guided in managing children's engagement with digital technologies and to be enlightened about the positive and educational use of digital technologies.

## 2. Methodology

Given the scarcity of research on young children's media use and the challenge of involving young children in research, the study took a qualitative approach following other researchers who opted for this method in an attempt to understand better young children's digital media practicesInvalid source specified. Invalid source specified.. Such qualitative research methods are used for exploration of less well investigated areas, leading to the generation of new hypotheses and deep insights about the subjects.

Looking in depth at a limited number of cases allowed as many aspects of the use of technologies by children as possible to be captured, leaving the door open to any element. In particular, it looked at young children's (online) technological engagement as well as the potential benefits and risks associated with their (online) interactions with digital technologies. It included findings from 234 family interviews in 21 countries conducted between September 2014 and March 2017 in three distinct phases over 3 years: a pilot study, an enlargement study and an advanced study measuring change over 1 year.

**The pilot study** tested the methodology while gathering qualitative data. Seventy families were simultaneously interviewed in seven countries (Belgium, Czech Republic, Finland, Germany, Italy, Russia, United Kingdom), i.e. 10 per country, between September and October 2014 by researchers from selected universities. The work and results of this pilot study were reported in January 2015 in Young children (0-8) and digital technology: a qualitative exploratory study across seven countries. (Chaudron, et al., 2015).

**The enlargement to 21 countries**. Research carried out in 2015 aimed to fine-tune the methodology and to enlarge the sample at European level. Partners in the pilot study supported by new partners ready to implement the research in their respective country worked together on the improvement of the protocol of observation and on the predefined analytic framework. As a results, between June and November 2015, 126 families were simultaneously interviewed in 12 countries - 10 families each in Belgium, Bulgaria, Croatia, Cyprus, Denmark, Latvia, the Netherlands, Portugal and Slovenia, 11 families in both Romania and Spain, and 14 in Russia. The Belgian and Russian teams participated in both the pilot study in 2014 and in its enlargement in 2015, extending their national sample to include some children aged 8 or under the age of 6. By June 2016 data from interviews with 10 families in Malta and 10 in Norway enriched the data set and a data set from interviews from 10 families in Lithuania and eight families in Switzerland closed the research phase in June 2017. The total data set collected from the end of 2015 to early 2017 thus comprised interviews with 234 families.

**Measuring change over a year, the advanced study**. A new protocol for observation based on the same principles and methodology as the first study but focusing on measuring change over time in use, perceptions and attitudes of young children towards digital technologies in the home context was defined in autumn 2016 and research teams from 10 countries (Belgium, Bulgaria, Croatia, Malta, the Netherlands, Portugal, Russia, Slovenia, Spain and Switzerland) returned after a year to talk to 56 families that had previously been interviewed in enlargement phase of the study (5 interviews for most of these countries but 6 for Spain, 7 for Slovenia and 8 for Portugal). As for the previous phase, each team issued a national report based on their analysis of the data by July 2017. The present report summarises at the cross-national level the analysis of the results reported by the partners in the pilot, enlargement and advanced phases of the study (Figure 4).

### The sample

The core of the sample comprises families with children under 8 with at least one parent and at least one child of age 6-7 who used digital technologies regularly and who had younger siblings. The sample in each country also counted at least one only-child family, one single-parent family and one family with siblings older than 7. The goal was to get a diverse mix within the sample in each country, in terms of children's ages and gender, family composition and income. Contact with the families was made through schools, social services or snowball sampling ([4]).

([4]) Snowball sampling may be defined as a technique for gathering research subjects through the identification of an initial subject who is used to provide the names of other actors.

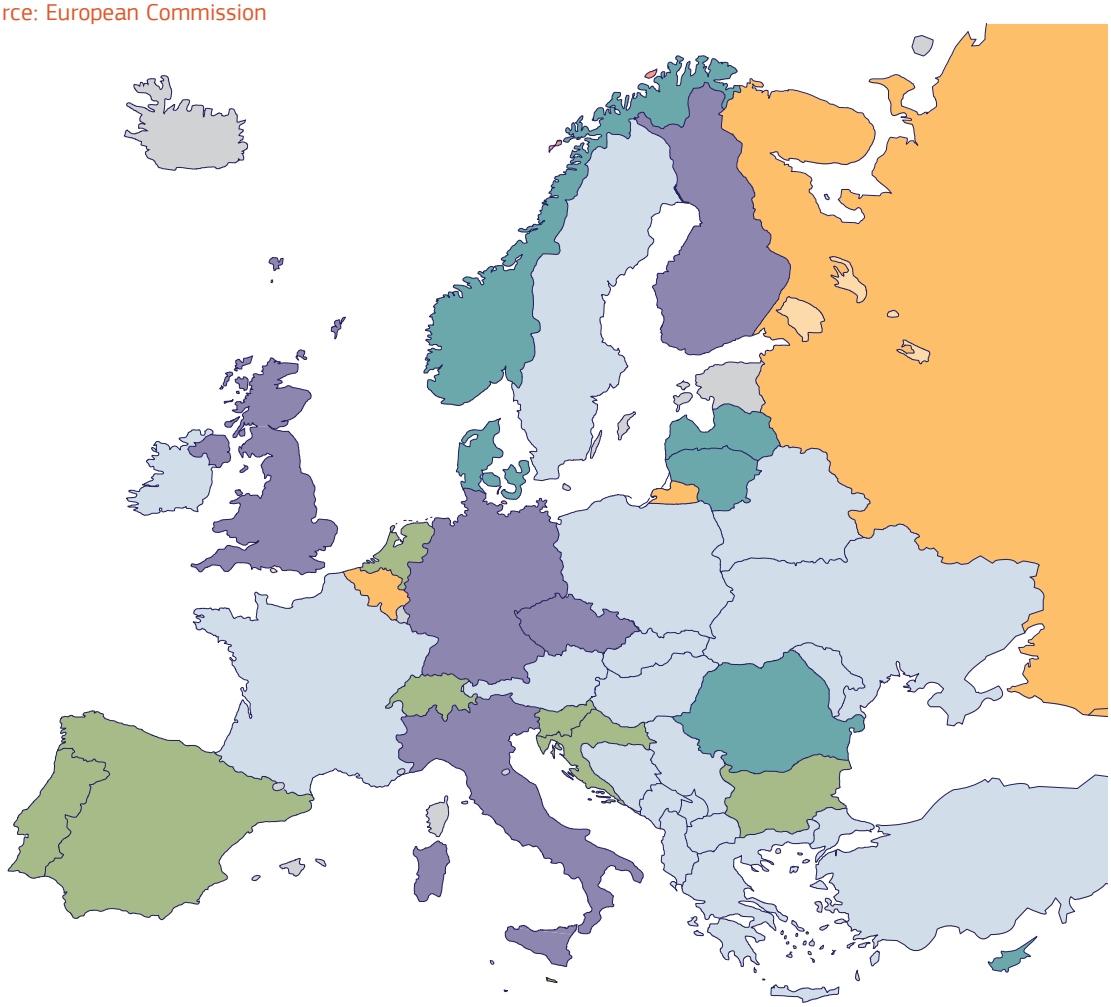
The sample in the Netherlands was assembled and selected thanks to a short survey.

The data set comes from semi-conducted interviews and observations in 10 families respectively in Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Finland, Germany, Italy, Latvia, Lithuania, Malta, the Netherlands, Norway, Portugal, Slovenia, and United Kingdom, eight families in Switzerland, 11 families in each of Romania and Spain, 20 families in Belgium and 24 in Russia, amounting to 234 families across 21 countries in total. It resulted in a total sample of 400 parents and 198 children from the target group aged 6-7 (102 boys, 96 girls), 21 interviewed children under the age of 6 (10 boys, 11 girls) and 25 interviewed children aged 8 (17 boys, 8 girls).

**FIGURE 3**

**Participating countries in the 'Young children (0-8) and Digital technology' research between 2014 and 2017**

Source: European Commission



The entire sample counted 244 interviewed children (n = 244). Further context was provided by indirectly or directly observing in the interviewed families 129 children outside the target group aged 8 or under and 89 aged 9 to 20 (Figure 4). A full description of the sample is given in Annex 4.

An attempt has been made to include in the sample families with diverse socioeconomic backgrounds: high (31 %), medium (32 %), low (26 %) and unknown (1 %). The sample is diverse in other aspects too: low, medium, high digital users, family constellations (the number of siblings, younger and older siblings, single mothers, etc.), the education of the parents and the sex of the child.

**All interviews** were conducted in the home of the participants, with the exception of a few interviews that were conducted, at the request of the families, in community service facilities or other public spaces.

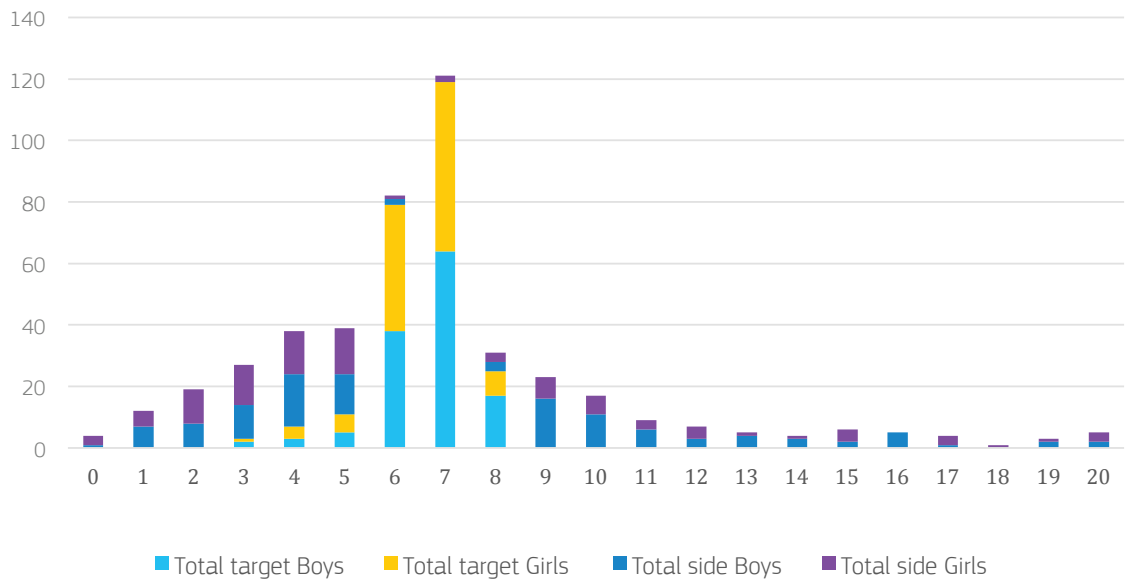
All interviews followed an observation protocol where each research team had some freedom to make adaptations according to specific interview contexts and needs (e.g. country, culture, family context), given the exploratory nature of the study. After a short and interactive family introduction in which the entire family participated, parents and children were taken care of separately by one of the researchers.

The parents had a short semi-conducted interview, while innovative and age-appropriate interview tools such as card games and toys were used to grasp the children's point of view, and this

**FIGURE 4**

**Sample composition following age of the interviewed child (target child) or present during the interview (side child) in the agregated sample of pilot and enlargement phase.**

Source: European Commission



was completed by ethnographic observations (Irwin & Johnson, 2005). Researchers and family members came together in a moment dedicated to final reflections.

An entire session lasted between 1½ and 2½ hours.

Each interview was (partially) transcribed verbatim and analysed according to a hybrid approach based on thematic analysis (Braun & Clarke, 2006) supported by theoretical sampling and coding techniques from grounded theory (Strauss & Corbin, 1990; Strauss & Corbin, 1998). Thematic analysis can usefully summarise key features of a large body of data, condensing extensive data sets to their essence. Similarities and differences across the data set can be highlighted, which might be of use for cross-cultural comparison.

Although the analysis was conducted separately in each country, the coding of data was based on a protocol of analysis jointly constructed by the consortium partners. Moreover, participating researchers from various countries compared and discussed the coding and results in both face-to-face and computer-mediated meetings.

More concretely, each national report that served as a basis for this cross-national analysis provides a 'Family portraits gallery' section presenting the interviewed families at national level within anonymised short narratives. Those narratives give a flavour of the diversity of family circumstances involved and help to ground the findings. The referenced list of the national reports is reported at the end of this report.

All results provided in this report have been set against the individual findings in each of the countries.

**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

Chapter 1

# Trends of young children's digital engagement across Europe

Chapter 1

# Trends of young children's digital engagement across Europe

This section presents the findings of the study under four sub-sections in which we articulate the common findings of this study across Europe around its main research questions, looking at the commonalities at cross-national level.

**1. How do children under the age of 8 engage with new (online) technologies?**

This research question allows its findings to be presented under three different points.

The first describes the technological landscape available in the home context for young children, the technologies, and devices that young children access and use, their preferences.

The second describes the digital activities of young children that can be summarised in four words: entertainment, learning, communication and creation.

Answering the 'what, how, when, how often, with whom' is key to understanding young children's engagement with digital technologies.

The third point a close look at the digital skills developed by young children.

**2. How are new online technologies (digital technology) perceived by the different family members?**

This section first describes the perceptions of the children regarding digital technologies and its positive and negative sides. It then presents the parents' perceptions and views.

**3. How do parents manage their young children's use of (online) technologies?**

This section develops our findings in terms of parental mediation, style and elements of influence. It concludes with parents and children's needs for better digital technology mediation.

**4. Other factors that impact young children's digital technology use and mediation**

Although the data set is based on interviews and observations of families in the home context, the participants interviewed revealed or underlined the importance of factors other than parental mediation in the access to and use of digital technology by young children: the enlarged family context, the school context or even climatic conditions may play a part in some instances.

Note : to illustrate our findings in this chapter, we used principally quotes extracts from interviews of the second phase of the study made in Belgium, Bulgaria, Croatia, Cyprus, Denmark, Latvia, Lithuania, Malta, the Netherlands, Portugal, Romania, Russia, Slovenia, Spain, and Switzerland although the analysis has been made over the entire sample, considering also the data collected in the pilot phase. A report dedicated to the pilot phase has been published in 2015 (Chaudron, et al., 2015).

*Answering the 'what, how, when, how often, with whom' is key to understand young children's engagement with digital technologies*

## 1.1 How do children under the age of 8 engage with new (online) technologies?

The first element to consider in response to this question is the young children's access to digital devices in the home context. Interviewed children all across the sample live in digitally rich homes as a norm. Socioeconomic status, the economic power of the family and the level of instruction of the parents seem to have little impact on the number of digital devices that young children can access and use, although their quality may vary.

The perception, views and usage of the parents seem to matter more for the parenting mediation style and the type and quality of the devices owned by the household (see Sections 1.3.2 and 1.3.3). The lifestyle of the majority of the interviewed children consists of a variety of different activities and the use of digital technology accounts for only a small part.

### 1.1.1 What devices do young children access and use?

#### TV, Tablets, Smartphones, Console games, PC and Laptops

The interviewed children use a variety of digital technologies. At 6 years old the majority have experience of using different devices - smartphones, tablets, laptops, etc. Children's first choice is smartphones and tablets, because of their multi-functionality and portability. Devices with a touchscreen are enjoyed the most by children. The directness of touch navigation and the use of apps seem to complement their playfulness and limited literacy skills at that age.

Although completely or nearly absent from children's narratives, TV is still at the centre of their favourite mediated activities. The most common screen present in all interviewed families is the TV, which is becoming increasingly digital and interactive in areas that benefit from an extended broadband network such as, in our sample, in Denmark, Finland, Latvia, the Netherlands, Norway and Switzerland (Lobe, Livingstone, Ólafsson, & Vodeb, 2011).

Nevertheless, the most popular device among children, the tablet, is becoming more popular than TV for watching online videos or TV programmes on demand, especially in the north European part of our sample. This phenomenon has already been reported by an Ofcom report in 2015 for the UK (Ofcom, 2015). But tablets are also good for gaming, drawing, listening to music and searching for information. Tablets are increasingly adopted across countries as 'family' devices (a device shared among family members) or sometimes as the individual property of the child to avoid conflict; in the Nordic countries of our sample, in particular, having as many tablets as family members is not rare. Most of the interviewed children that have access to a tablet use it regularly if not on a daily basis. Three reasons can be offered to account for the widespread adoption of the tablet as a preferred device for children and families, as mentioned in our preliminary results (Chaudron, et al., 2015).

The size of its screen, which is larger than a smartphone, its portability and its ease of use thanks to the touchscreen technology are the main assets of this device for child use.

*There are not so many buttons on the tablet [compare to laptop], so it's easier (Norwegian boy, 7).*

*I like the smartphone, it is full of games, but iPad I like because it is big and I can play games with cats and horses. The Internet is boring, I cannot find anything there (Latvian girl, 8).*

#### Game consoles, laptops and computers

May also be present in the household. Their use is more limited and is regulated with parental permission, especially when used for gaming activities. Laptops and PCs are most commonly considered the property of the parents, often linked with professional activities as well perceived by this boy in Malta.

*The laptop is 'adultish', and mummy and daddy use it for work (Maltese boy, 6).*

They are difficult for children to operate. Young children rarely use them unless a PC or laptop provides the only digital technology accessible in the household.

Even though children express naturally their preference for portable and touchscreen device when they can access one, it is important to note that the functions that the device offers seem more important than the device

itself. For example, a child might prefer their dad's new smartphone to their own 'old' tablet because the phone has the new game that the child enjoys.

*The functions that the device offers seem more important than the device itself*

Young children are very aware of the different possibilities offered by different devices and different contexts. Children from divorced families in our sample are very well aware of the possibilities of their two homes and consequently develop two different kinds of behaviour and experiences depending on the context.

### 1.1.2 What are young children's digital activities?

#### Recreation, Information & Learning, Creation and Communication

Our study identified four main categories of digital activities in which young children are engaged. Children use digital technology to relax and to entertain themselves, to get information and learn, to create and sustain their creativity and to communicate, mainly with their family.

#### Recreation – Relaxing and entertainment time – Video and games

Children under 8 use digital technologies mainly in their leisure time, for relaxing and entertainment. In this category, their most common activity is watching (online) videos or (on-demand) TV programmes. For them it doesn't matter if the films are presented via TV, tablet or computer screen, YouTube or DVD, although some interviewed children already know that having their device connected to Wi-Fi will considerably enlarge their video library.

What is still more interesting is the fact that TV programmes as well as videos on YouTube are sometimes perceived as having endless continuity. After every episode the next one gets automatically suggested, providing excitement about what will come next (National Swiss Report, p. 42). Parental mediation is often challenged by this perception of endless continuity and remains essential to help children to forge their auto-regulation habits.

The other common digital activity among young children is video gaming. Again, children prefer games that are fun and entertaining. The kind of devices and the type of access children have to video games paired with their parents' mediation are key to understanding the habits and culture children can develop around video gaming.

Based on our study, we can differentiate at least three types of access of video gaming among young children: (1) occasional access, mostly initiated by the parent themselves on their own device when they need their children to be involved in a calm and safe activity either at home (i.e. while cooking dinner themselves) or outside the household (i.e. when waiting or at stressful times while traveling or before a medical visit); (2) usual access, embedded in the weekly routine of the child, (before or after school or during the weekends and facilitated especially if the child owns a gaming device); and (3) family-time access, where video gaming is embedded in the family culture as a family activity either with siblings only or with their parents too. This typology of access, the kind of device and the respective parental mediation style shape different experiences of video gaming.

*Their most common activity is watching (online) videos or (on-demand) TV programmes*

These three types of access to video games are not mutually exclusive and can actually be complementary to one another, the most common being occasional and usual access.

It seems that most very young children have their first contact with games occasionally through their parents' smartphones or tablets in situations where parents use the natural attraction of children for those activities in time and places where they need their children to be calm and safely occupied. This 'SOS' function of the device, as described in section 3 of this chapter, is maintained as long as

the child does not own its own device. Video games can enter the routine of a child at pre-school age. Parental mediation in this case spans from active to passive mediation, providing a different context to the gaming experience.

Few parents, especially fathers who are gamers themselves, consider video games, and those played on games consoles in particular, as quality family time. This positive and active parental mediation has been reported notably in the northern countries of our sample (Demark, Finland, the Netherlands, Norway). In this context, young children learn with their parent to handle the technology itself, but also the video gaming experience, including how to manage their emotions and when to stop the activity.

Experience defined by occasional access only provides occasional gamers compare to daily or usual gamers. Most the time in those instances, children use their parent's devices with remote supervision. We note that the technology is not tailored to children use and can potentially be riskier (accessing inappropriate content, commercial risks).

After usually an initial involvement of the parents, usual gamers use digital devices to game autonomously and individually and this activity is embedded in their everyday life. Parents claim to monitor their digital activities from the distance.

Nonetheless, keeping an eye on the children's activity becomes more and more challenging given the portability of some devices and the smaller screen.

The routine factor also is important. The risks here are linked to loneliness, and trial and error learning patterns.

Some interviewers noted that when children have access to a mobile device and an internet connection, searching, downloading and erasing apps on the device can become an activity in itself.

Interviewers also remarked that very little mention has been made of radio, CD players and MP3 and MP4. Music is part of young children's life but they find their own music via internet-based platforms such as YouTube or even Spotify, if either their parents or older siblings have established a free account. Children report ease in finding the music they like and can search for it on video platforms such as YouTube. Firstly, the autocomplete feature for text helps them to write what they are looking for in the search engine. Secondly, the images displayed as vignettes of the videos help them to select the musical video they look for and finally the autosuggestion for the next video helps them to find the next one, although it does not help them to stop this activity.

Finally, we noted that this activity was very gender based, with girls in particular liking to practice their dancing skills with the music of their favourite band.

### Information & learning – Google and YouTube

Some interviewed children link the use of digital technologies to education purposes. Children attending primary school can sometimes use the internet and digital technologies for learning and studying, particularly for searching for information for their homework. This usage increases if supported or requested by the school itself. Both children and parents across countries - except Denmark, Finland, the Netherlands, Norway, Switzerland and the United Kingdom, as well as Belgium - often say that the quality of educational applications and games is quite poor or missing in their national language.

It is also important to note that very few children mentioned learning apps spontaneously (whose declared aims are to foster reading/writing/numeracy/logical activities, etc.) but some reported the use of them on request either because their parents chose such apps for them or because they used them at school.

On this point, we note that the majority of the Swiss children in the sample cited the use of an online book quiz named *Antolin*, which is commonly used in Swiss German-speaking primary schools. Interestingly, it is also the sub-sample in which listening to and reading digital books was mentioned the most by children and parents among digital activities whereas it was nearly absent in the digital landscape of the rest or the sample.

Finally, we note in our study that under this category of so-called 'serious' or educational games, children show enthusiasm for games with a competitive edge, like 'just-for-fun' games.

The exception to this rule occurs in games that require a high level of creativity from the child, such as Minecraft, the video-game most cited in our sample.

### Creation - Drawings, pictures, videos and games objects

Some interviewed children create digital content, mainly drawings and paintings, pictures and videos and objects created in the virtual world.

Many of those children use, especially on their parents' suggestion, apps for drawings and painting and learn how to save creations of which they are proud. It is interesting to note that this activity seems more popular among children aged between 4 and 5 than between 6 and 7 years old. Some children in the latter age group reported that they used to draw and paint with the tablet but not anymore.

Comparing this information with their parents' interview revealed, for example, that the child no longer uses a certain device where those drawings apps were first installed by the parent. They now use a new device where the drawing app is absent. They did not ask for it but forgot about it and moved on to use other activities and apps. It seems that other digital activities - like taking pictures or videos - drive the interests of children more than drawing and painting at a certain age.

Some children know how to take pictures or videos with the devices they own or have access to and like to do this. Few of them can edit them and the ones who can have benefited from an active tutorial from an older siblings or adults to acquire this competence. In most cases, those recordings have no other purpose than preserving the memory of (funny) moments of their life.

Some children are creators of virtual objects within video games, mainly driven by the features of the game itself. Those objects range from the creation of simple avatars that will impersonate the child as a player during the game, to entire and elaborate virtual entities such as houses or villages or any possible constructions that the game allow them to create. Here again, one game stands out among the others for its ease of use and flexibility: Minecraft creator.

### Communication -Integrating family or community life and sharing interests and emotions

Some children use digital technology as a communication tool and it often actually enters into the communication schemes of the family. Typically, children that have some family members abroad know face-to-face remote communication tools such as Skype or FaceTime, and a few of them are able to use these autonomously.

*Children, mirroring the behaviour of others, learn following a trial - and - error path*

Children that already own smartphones may use instant chat apps such as WhatsApp with their parents and close family. They like this tool very much as they can exchange text enabled by effective vocal recognition, voice messages, emojis, pictures and videos. Others may use their parents' Facebook account for the same purpose and it becomes a sort of family account, under close mediation by the parents in most cases.

For most of these children, sending these recordings has no other purpose than sharing some moments of their lives that they consider important with their families and friends, feeling close to each other and building relations.

However, in a minority of cases, picture messages are intended to address a wider audience than the family circle, as pointed out by the Romanian partners in this project. Two situations stood out:

(1) sending photos to a community of interest (e.g. sport or hobby) to get information or informed evaluation; and

(2) sending out photos to the world without a precise purpose or target.

In the first case, the parent has an important role, be it while creating and distributing the content, or through a more general, but ongoing, active mediation, through which the child is given an explanation of what can be made public and how.

The second situation is when the child takes the initiative and, through mimetic behaviour, posts uncritically on the parent's social network account various pictures he/she has taken (including selfies). Interestingly, in some cases, the parent considers it as digital competence.

Another usage of social networks by children is linked to the importance of being part of a peer group and of using its communication tools. This phenomenon was reported particularly by the researchers in Bulgaria,

who observed that six out of the 10 interviewed children aged 6-7 had a Facebook profile that in most but not all cases the parents themselves had created. The parents explained that the majority of the schoolmates of their children (first grade of primary school) had a personal Facebook account. They felt a social pressure to do the same as they feared that their children would feel isolated without an account of their own. Other early social network adopters could be observed in countries such as the Netherlands, where a 6-year-old girl had her own social network account mainly for gaming purposes.

Others reported that they had access to Facebook indirectly via the mobile devices of friends while playing outside the house, the parents being unaware of the fact.

### 1.1.3 What digital skills do young children develop?

**Digital competences that serve their needs for fun, entertainment, curiosity, creativity and social life.**

Most of the interviewed children's digital skills are gained in the home context unless the school provides active digital literacy classes.

*Our 3-year-old son just started using the smartphone. We do not know how he learned. Some games he just learned how to play by himself interacting with the smartphone. - Latvian mother, 31.*

Children are often described as having learnt how to use digital media 'on their own'. Actually, this process includes close observations of use and interaction with digital devices by parents, older siblings, cousins or peers. Most of the interviewed children benefited from initial operational indications offered by their parents or older siblings, and then the children, mirroring the behaviour of others, learn following a trial-and-error path. Nonetheless, children are prompted to ask for help from adults or siblings when needed.

*Most of the interviewed children's digital skills are gained in the home context*

*She calls out to me … and it often happens that I do not have the time so she is trying [for a long time] until she manages by herself (Slovenian mother, 40).*

Even though the searching skills of the children are quite limited, due to limited reading and writing skills, researchers observed that some children succeed in finding games, videos or websites based on image recognition, usually with the help of the autocomplete feature of some search engines and platforms and /or search engines powered by vocal recognition.

*When I want to watch a video on YouTube I need help from my mom, or sometimes I type something small and then it is there already and I click on it (Belgian girl, 5).*

However, this trial-and-error process is not without risks of encountering commercial or inappropriate content.

Their knowledge of the concept of 'the internet' is mainly focused on whether or not they have access to Wi-Fi and therefore whether they can use apps or watch videos they like. As such, the internet is a non-concrete concept for the children in the study. They do 'surf the net' to look up information about their likes or interests, but these practices are most of the time parent or sibling mediated as they involve writing and reading, sometimes in a foreign language (English). Children at this age take the digital world for granted. The internet is not 'out there', it is just there.

*The internet means that you can go somewhere (Danish boy, 7).*

They know that the games they like to play, music they like to listen to or films they like to watch are 'there' and they know what they need to do in order to reach them (turn on their device, click on the proper icon). Most children in the sample can distinguish between the online content and the content stored on the device. The main difference between the two, in their opinion, is that to reach the former, you need a Wi-Fi signal, while the latter is always available. Very young children are not necessarily capable of making this distinction and therefore are not aware that the information comes from internet sites and not from the device itself. This point is important to underline as therefore young children have little (or possibly no) awareness of the possibilities and pitfalls of using an internet-connected device.

Most of the interviewed children have good mastery of the digital devices

they use, but are not proficient users, and can be described as independent users in a limited range of skills.

Moreover, researchers observed that children are not necessarily capable of 'exporting' this know-how from one device to another. For example, if a child knows how to access his or her favourite games or video on a specific device he/she is used to, the child does not necessarily know how to access the same content on another device. Even among the very active users, the range of skills varies considerably.

*What remains constant, however, is the fact that the more children use digital technologies, the better their skills are*

Those that are allowed to do so can easily download a game or an application to a smartphone or a tablet, without the help of an adult. The large majority of children were aware of Play Store (for Android) and App Store (for iOS). The ones who play games prefer touchscreens to a computer mouse, and if they have the choice for the same game will prefer the tablet to the smartphone for its larger screen.

Rare are the children in our sample that show more sophisticated digital literacy skills. Those advanced users are digital creators (pictures and video editing, drawings, videos, etc.).

Researchers observed that those children invest time in digital creation for two main factors. The first is the interest of some children in this form of expression. The second is the active mediation from well-informed grown-ups. In most cases, those children benefited from learning opportunities when a parent, a sibling or another family member took the time to share with them an interest in or mediated through digital technologies.

Not surprisingly, children's skills vary greatly. What remains constant, however, is the fact that the more children use digital technologies, the better their skills are. In other words, children performed best with the digital technologies they consume on a regular basis, such as watching the same sort of videos or playing their favourite game. In contrast, children are not good at online activities they seldom perform and, consequently, turn to their parents or older siblings for help.

Researchers came across rare exceptions like a Belgian boy aged 8 who taught himself how to solve certain errors by reading 'help pop-ups'. This makes him one of the most skilled children interviewed, yet he is also the one most exposed to violent and sexual content, as also noticed during the interview but he also is the one who show signs of resilience in the strategies he chose to handle those situations. Noticeably he is among the oldest and has already gained autonomy thanks to his reading and writing skills. This corroborates the concept of 'ladder of digital opportunities' developed on the basis of the results of the EuKids Online project according to which the more children do online, the more skills they have or the more skills and/or self-confidence children have, the greater the range of online activities they undertake, and the more they climb the 'ladder of digital opportunities' (Livingstone & Helsper, 2007).

An important point is still to be underlined. Some children show the capacity to auto-regulate their use of digital technologies, but most of them expressed the will to use them more if allowed to.

A few children present signs of overuse of digital activities, mainly linked to video gaming and only boys in our sample. One toddler, a 3-year-old Maltese boy, was reported to suffer from some difficulties in oral communication while being ahead in learning the alphabet, numbers and shapes.

*Their digital activities nourish their traditional offline play and are often embedded in it*

This was due, according to his parents and his speech therapist, to extensive watching of TV and YouTube videos, which were used as a 'babysitter'. Even now that he is 4 years old and is taken care of by specialists, digital devices are hidden from him, as he tends to become overexcited about them. Parents of a single boy aged 4 in Lithuania reported a similar story.

Parents 'used to give [him] the cell phone to play, but the boy got angry,

irritated, became hysterical and got tired very quickly, so they stopped giving him the phone. Besides, when he was given the phone, when he came back after kindergarten each day he kept asking his parents When will you give it to me? When?' (Lithuanian national report, p.25).

The parents installed strict rules for the use of the tablet and the smartphone when they discovered that their son could find and access video on YouTube by himself.

To conclude this section, based on our data set we can say that in most cases, children use digital technology individually and autonomously. They learn digital competences mainly in the home context, mirroring the behaviour of the grown-ups.

Their individual interests, often clearly differentiated between genders, drive their choice of a particular video or game but also the kind of digital competences they develop. Their digital activities nourish their traditional offline play and are often embedded in it.

This continuity and cross-pollination between digital activities and traditional play can explain the fact that, despite their individual use of digital technologies, the narratives about their use usually include family members or friends.

Finally, children might know how to use technology but lack more a precise representation of the digital world they are interacting with, with the consequence that they have little understanding of what the pitfalls might be and few safeguards against them.

## 1.2 How are new online technologies (digital technology) perceived by the different family members?

### 1.2.1 How young children (0-8) perceive Digital Technology?

**A space of freedom-attractive, positive, fun, entertaining, social**

Young children do not think about digital media. Digital media are just there as a natural part of their life. Digital technologies are integrated in the everyday life of almost all interviewed families although with variable intensity and possibility of access.

Children have a clear sense of ownership and of the possibility of access to the various digital devices present in the household and clear ideas about the devices they prefer or dislike and the reasons why. Their preferences and rankings are based on particular criteria such as the degree to which they can access and use a device with relative autonomy or the type and number of applications a device contains. For instance, in the following dialogue, a Spanish boy aged 7 distinguishes between mobile phones 'without' or 'with' games and gives a priority to the activity he likes (i.e. being able to play the games he likes), rather than to (the uses or the possession of) the device itself.

*Boy: A smartphone!*

*Researcher: How would you classify it [you like it a lot, you like it, you don't like it]?*

*Boy: If it hasn't any games, then here [I do not like it], but if it has games, then here [I love it].*

*Boy: Wow! Wow! I really love this one a lot! … a tablet!*

*Researcher: Do you have a tablet?*

*Boy: Yes, it is charging in the office.*

*Researcher: What do you prefer, a tablet or a smartphone? [he uses his finger to point out to the tablet]. And why do you prefer the tablet?*

*Boy: Because probably it has plenty of games, much more games than in a smartphone … I have lots of games. (Spanish boy, 7).*

Regarding tablet devices, researchers have noticed that children with access to educational tablets nevertheless preferred 'standard' ones, mainly because of their access to the internet that enlarges the palette of their possible use.

Ruling passions shape children's options, engagements and uses of technology. Contrary to the widespread view according to which children are passive consumers of technology, our results show that their passions (e.g. dancing, cooking, model car racing) determine what children choose to do with the devices. Children actively use technology to cultivate their interests.

Children seem to see digital technologies and the digital world as linked to the 'grown-up's world'. They see their use as an opportunity to grow, to experience freedom of choice and action, to act like the 'grown-ups'. Children also interpret devices in relation to their age and perception of the 'maturity' of the device.

Interestingly, many children were not able to identify the children-designed computer among pictures that were shown to them. When the interviewer explained to them what it was, children aged 6 did not like it, referring to it as a technology for very little children. Here, an extract of interview of two sisters aged 6 and 9 from Belgium.

*Girl (6): Is this a normal computer or a computer for kids?*

*Researcher: That is a computer for kids.*

*Girl (6): Then I don't like it!*

*Girl (9): That is something for babies! (Belgian sisters, 6 and 9)*

Researchers collecting the Spanish data have come across similar spontaneous comments where children defined particular devices as something childish and others as being for grown-ups.

Here, the reaction of a boy aged 7, in front of a card displaying a sort of LeapPad (i.e. a computer-tablet designed for toddlers):

*This is something ridiculous, for you, for everybody but me (Spanish Boy, 7).*

Another boy aged 7, in front of a card showing a tablet for children, argues more explicitly the following:

*I don't like this one [a tablet for children]. I like these other ones [points at two cards, one with an iPad and the other one with a car] because it's for grown-ups. The iPad can be for youngsters, the car is for older people. I love it a lot! (Spanish boy, 7).*

Due to the popularity of the tablet, thanks to its feature usability and portability, the children's computer has lost importance.

*Digital media are just there as a natural part of their life*

Moreover, observations and interviews challenge the common perception that use of digital technologies can lead to social isolation. Children actually feel social links based on specific use of digital technologies as they also establish associations between particular devices and family members such as siblings, parents or the extended family. For instance, playing with a video game console is an activity that boys, all across the sample, to some extent associated with the father, their brothers, uncles or cousins.

*Sometimes my brother and I sit with each of our own iPad and play Minecraft together (Danish boy, 5).*

Despite their evident enthusiasm, and sometimes their emotional attachment, children perceive digital technologies as toys or activities among others that they use seamlessly with traditional toys. In general, they do not see them as indispensable or list them at the very top of their favourite games or free-time activities.

For example, in the Latvian sample, when children were asked what they like to do most, in general the interviewed children said that they liked to play board games and to draw. Playing with pets occupied the second place and the usage of laptops came only third. The next digital device was only in ninth place (CD player). The smartphone, video game console, tablet and digital TV held respectively the 11th, 13th, 15th and 17th rank. (National Latvian Report, p.29)

Children in divorced families are very illustrative in this respect. They may have only limited access to tablets, for instance, if these are only found in the homes of one of their parents.

The limited access does not seem to be a concern for the children; this is just a condition that they accept. As such, one can conclude that digital, mobile media are not (yet) personal tools for the children (even though some of them have a great desire to own their own tablet or smartphone). They use them, whenever they can and are allowed to, but when they cannot use them they use other toys and tools just as much.

*Due to the popularity of the tablet, thanks to its feature usability and portability, the children's computer has lost importance*

*At my mother's I play with the iPad and at father's I watch YouTube videos on the computer (Danish boy, 6).*

Nevertheless, children consider digital activities as easy, straightforward anti-boredom solutions. Parents take advantage of this facility when needed, especially via smartphones that to some extent are considered as the 'SOS device', used to keep the child busy when they are waiting for something outside the house or there is something unpleasant to get through.

## Children's use of digital devices often depends on the availability of alternatives

*They can play games on our smartphone while we try to comb their washed hair, as it is usually a bit painful and they can better deal with it with the game in their hand (Slovenian mother, 35).*

*Using devices as babysitters is inevitable. Kudos to any mother that manages without TV or smartphone. This is the only way in which I can steal some time - to prepare dinner, to do the washing (Bulgarian mother, 41).*

Children's use of digital devices often depends on the availability of alternatives. For example, several children indicated that they preferred regular play rather than using new technologies such as tablets, but would use those new technologies when their preferred options for spending time were unavailable. Whether or not those preferred options are available can depend on a number of circumstances, a prominent one being the weather conditions or the absence of a partner to play together with in offline, traditional play.

Summarising the positive aspects of technologies, children have complex views on digital technologies and devices. They have their own criteria for preference and choice of devices. Those are based on elements such as the resources that devices contain, the access they have, their leisure preferences or interests and the social links they would like to invest in.

The nuances in their discourses challenge the socially extended discourse that children are 'absorbed' or 'alienated' by technology devices. On the contrary, children have clear ideas regarding for what purposes they want the devices and which devices can help them develop their personal interests; alone and with others (parents, siblings, other family members, peers), nourishing also in this case social relations.

### Children's perception of risks, mirroring their parents' concerns

Children usually talk about technology in a positive way, focusing their talk about technology on what they can do or like to do with the devices.

This is a salient difference from their parents' discourse above, where risks emerged spontaneously in nearly all the conversations (although the type of risks and the intensity with which they talk about them are different).

Children talk about the risks only when explicitly asked and they mainly reproduce adults' verbalisations on risks.

Children seem to internalise adults' discourse and the views on risks and dangers that they have heard from their parents or other adults.

*A tablet should not be used much, because otherwise it damages the eye (Latvian girl, 6).*

*[Our] parents limit the time spent on computer, because it is harmful for our eyes. All of us [parents and 3 children] have eyeglasses, except (…) the cat and the hamster (Lithuanian boy, 7).*

## Children usually talk about technology in a positive way

Children across the sample at first often mentioned the risk of damaging their eyesight because of watching screens too much. Interestingly, one 6-year-old girl mentioned this argument in her interview but looked at it critically, when she remarked that her parents should have major eye problems as they had been looking at computer screens all day at work for years.

Another risk commonly cited by children is that of encountering 'silly', violent or scary content while watching TV or video on demand or video gaming. Some children reported that they came across violent and scary content when watching TV or game content with their parents or siblings but also alone.

*The devices connect to the internet and they might open things that we don't want to see (Cypriot boy, 8).*

Some children repeat their parents' discourses in stating that violent and scary content is not good for children as it can cause nightmares. One 6-year-old Croatian boy reported proudly:

*I watched 'Transformers' and I didn't have nightmares (Croatian boy, 6).*

Children label as 'silly' and 'crazy' two different categories of content. On one hand, they found 'silly' and 'crazy' the very popular videos that their older teenage siblings love to watch, following their favourite YouTube stars. Children feel they are not for them and sometimes judge harshly the silliness of their content. On the other hand, few children classified videos with sexual content under the same label when they expressed some concerns or reported about less pleasant online experiences. When they were asked what they do when they see nudity, those children answered that they just close the screen.

A third kind of risk mentioned by children is the behavioural consequences of the overuse of digital technologies, because it can make you act 'goofy' or become addicted.

*Too much TV and computer can make you crazy (Croatian boy, 6).*

*If you play all day, at night instead of hearing dreams you will hear your brain making sounds (Cypriot boy, 7).*

Others state the following:

*I don't want to be a technology addict (Spanish girl, 7).*

*I do not want a tablet… there are too many stimuli (Belgian girl, 7).*

Those last two quotes in particular, given the 'grown-up' vocabulary chosen by the children, show the replication by the children of the verbalisation of the adults of their own fears or direct observations. Yet some children recognise some of the effects that digital technologies, in particular games, can have on them, such as difficulties in managing frustrations. Here an extract of the interview of a German boy aged 4.

*Boy: I can't play anymore, because I threw the remote control up against the ceiling.*

*Interviewer: You threw the remote control up to the ceiling? Why?*

*Boy: Because it got out of my hand.*

*Interviewer: It got out of your hand? And now you are not allowed to play computer games anymore?*

*Boy: With the TV.*

*Interviewer: But are you still allowed to watch TV?*

*Boy: Yes, watching TV is still allowed.*

Another 7-year-old Portuguese girl shared with the interviewers a direct and disturbing experience.

*Interviewer: Have you ever seen something online that was scary or that you didn't like?*

*Boy: Yes. A boy and a girl and another boy doing something crazy. I saw it at school and I hated it. (German boy, 4)*

Some children report being worried about the integrity of the device itself, again reflecting the worries of their parents over expensive devices, and who often put into place rules for ensuring the integrity of the device itself in primis.

*Girl: I can play sometimes [with dad's [i-]Phone], but usually I cannot.*

*Interviewer: Why not?*

*Girl: Because once I was playing with and I let it fall. I was very little… So, I didn't know it was made of glass (Belgian girl, 6)*

Yet some children recognise some of the effects that digital technologies, in particular games, can have on them

The commercial aspects of digital devices are recognised and disliked by some children, or on the contrary are purposefully sought after by others. While consuming content, children encounter advertisements. Some children think these advertisements are annoying and a waste of time that they skip whenever possible.

*[When there is advert in the video,], then I look for another thing to do. Most of the time, I walk to the kitchen, count to 10 and walk back to see if it is ready yet (Belgian boy, 8).*

In some cases reported by the Bulgarian and Romanian parts of the study, exposure of children to advertising seem to have reached a new form

where some children look purposefully for the adverts. With their parents' approval or even with their help, when the child does not read/write, some children search intently for promotional videos for various products (e.g. Kinder Surprise), sometimes related to their hobby (Lego) but sometimes just randomly.

Although they know that it is advertising, they enjoy it and even react to it in the expected direction. Parents report that children are heavily influenced by all kinds of advertising and that they feel under enormous pressure to provide the advertised product. Some parents, repeatedly and intensively exposed to advertising along with their children, tend to consider the acquisition of those products as 'normal'.

*Girl: I usually watch for what's new at Kinder. At the toy babies videos.*

*Researcher: Let me see, where are you looking for them?*

*Girl: On YouTube. I type Kinder here and it gives me.*

*Researcher: OK… I see. And after you see these videos you start pestering mom to buy you Kinder eggs?*

*Girl: (laughing). No, usually, when we go shopping it's only normal (emphasises) to buy me a Kinder egg (the parents laugh themselves). (Romanian girl, 6).*

Moreover, children watch official demo videos for the games they want to download and install on their mobile devices. Created partially for marketing purposes (to make as many users as possible download them) and partially for information/education (as they also show how you are supposed to play them), these videos are, surprisingly, used by children in of the same sort of way that they indulge in window-shopping. Thus, with no intention of downloading new apps, sometimes children 'navigate', from link to link inside the magazine play/app store, stopping from time to time to admire a product, via its promotional video, and then going on to another.

Possible breaches of privacy were mentioned only four times during interviews, by two parents, a father in the Netherland and a mother in Portugal, and by two older siblings, an 11-year-old boy in Cyprus and a 10-year-old girl in Norway.

*People can spy on you when you are online (Cypriot boy, 11).*

The Norwegian girl expressed her concerns about breaches of privacy very concretely as reported by her mother, showing her understanding of her right to consent to share an image of herself online.

*Mum, you didn't ask me about this, and you don't have permission. You cannot post these photos here (Facebook). (Norwegian girl, 10).*

Some young children witness the overuse or unregulated use of technology by their parents or close adults. Although children are not always aware of their own risks in using digital technologies, they do understand what excessive use is and even recognise it with their parents.

*My mom can even don't notice how much time has passed, as she spends lots of time online (Russian boy, 7).*

Several children state that their parents check their (own) smartphone all the time'. Children perceive it as annoying because it results in a lack of attention for them. Sometimes they mimic their parent's behaviour.

In a striking way, none of the children referred to cyberbullying stories, even children that already have their social network at the age of 6-7 and use it with peers as reported by the Bulgarian and Dutch researchers.

*From the children's points of view, technology is a reality full of authentic choices; it is a space where they can do things that attract them*

Interestingly for the cross-national analysis, even when prompted, the interviewed children in Denmark were not aware of the possibilities and pitfalls of the internet. It is also the country where parents and children show the most common digital activities for entertainment of the entire family. It seems that children feel confident in the digital world and parents have not yet passed on to them their concerns. Parents, aware of the digital risks, explicitly stated that they postpone the discussion about online risks and behaviour to an older age, when the children will be of an age to understand it.

On the other end of the spectrum, interviewed Norwegian children were the one showing the more pragmatic knowledge regarding digital technologies risks, mentioning the possibility of encountering inappropriate content, technical threats (virus) or commercial pressure, or of deleting or sharing (sensitive and personal) information unintentionally. Nonetheless, risks linked with physical or cognitive integrity were not reported either by interviewed children in the Norwegian part of the sample.

To sum up, in comparison to the parents' discourses on technologies where the awareness of risks and opportunities are explicit and central (see below), children's ways of talking about technology seem not to be structured in these terms. However, from the children's points of view, technology is a reality full of authentic choices; it is a space where they can do things that attract them. Obviously, the view of technology as an opportunity for growth or as a space where some dangers exist requires more perspective, knowledge and a complex interpretation of it.

## 1.2.2 How do parents of young children perceive digital technology?

### An inevitable, practical tool that can turn out into a Pandora box

Across the different countries represented by our sample, there is wide agreement between parents that perceive both positive and negative aspects of digital technologies. The main difference among parents is their general attitudes towards technology: some parents positioned themselves as supporters of technology whereas others displayed a moderate or resistant positioning towards it. Interestingly, regardless of the position they take, most parents agreed on the fact that it is impossible (and inadvisable) to avoid the use of technology in the life of their children, both at school and at home.

*The notion that technology is the future and is unavoidable for the children, dominates parents' viewpoints*

Karen Ferneding (Ferneding, 2004) refers to this idea as the 'discourse of inevitability'; the notion that technology is the future and is unavoidable for the children, dominates parents' viewpoints.

*I think it's important that [my son, boy aged 6] has a fluent relationship with technology. Technology is part of our lives today. I don't think you can avoid technology. I don't think it's a good idea to prevent children from using technologies (Belgian mother, 41).*

An exception to the ambivalent attitude towards ICTs is represented across the sample by families in which parents are highly digitally skilled given that they work in the IT sector. Here digital media are part of the family 'habitus' and perceived as *a standard activity (short pause). Like reading a book or playing a board game. as this Czech father explains.*

The same 'habitus' can be found in higher income, higher educated families, where the strong diffusion of digital devices (as evident in the parents' own uses) in and of itself presents digital media use to the children as a taken-for-granted social norm of today's society.

*People say technologies are evil. But a bicycle, a car or eating fatty food are also evil. If you do everything in moderation, nothing is evil (Lithuanian father, 38).*

The use of digital technology by young children in every (or nearly every) aspect of life can also be considered as a social norm in northern countries. Some parents from northern countries even state that children's use of digital media is part of a natural phenomenon. They tend to consider the positive sides of the digital technologies and to see few negative ones, forming an optimistic image overall.

*We are really relaxed and look upon the children' use of media as a natural thing (Danish mother, 31).*

For themselves, parents generally see digital technologies as positive tools from which they benefit in numerous ways both professionally and privately in term of communication, information and leisure. The fact that parents invest a lot in digital technologies even in families with limited resources bears out this point.

For their children, these parents feel that digital media is a useful addition

to their lives.

However, they may still not have clear views on the scope of digital technologies, especially as an educational tool. Indeed, our study shows little evidence of positive parental guidance over specific programs, apps, online sites and experiences although it reports widespread use of tablets and smartphones for games, video watching and social communication, to some extent. The large majority of parents see the necessity for their children to learn how to use technologies from childhood, and to embrace the technologies of their time.

*That is just 2015. (…) We are about to go only digital. (…) It should not be an issue. (…) It should not be a problem that children are on them [digital media]. They should be able to do their own thing (Dutch mother, 28).*

*At the end of the day, what is literacy today? Is it defined by signing one's name or being able to obtain information from available media? (Croatian father, 37).*

Paradoxically, as we will see in the next section, parents tend to limit the access to and use of digital technologies despite the positive and supportive views they may have on early childhood digital literacy. Their limiting strategies are motivated by their fears about possible (future) negative effects and the values they attach to offline activities.

*That is just 2015. (…) We are about to go only digital. (…) It should not be an issue. (…) It should not be a problem that children are on them [digital media]. They should be able to do their own thing (Dutch mother, 28).*

*Technology is positive, as long as it is controlled (Maltese father, 44).*

Parents' fears are firstly considering the possible impacts on the physical and cognitive health of their children. The more commonly reported effects are possible damage to eyesight, headaches, the lack of physical exercise and of good sleep, social isolation and their negative psychosocial or cognitive consequences.

*They stare at it, become addicted, they spoil their eyesight, that makes no sense (Croatian mother, 36).*

*My father created this 10-minute rule of playing with the tablet PC to allow my eyes to rest (Lithuanian boy, 8).*

*You can get hypnotised as soon as you see moving images (Dutch mother, 37).*

Parents' fears are firstly considering the possible impacts on the physical and cognitive health of their children

Parents are also worried about the consequences on the emotional state of their children. Violent or inappropriate content are thought to be the source of nightmares, and/or the integration of violence in their traditional play. They are also concerned about the effect of video gaming or overuse on the children's behaviour: frustration, absorption, addiction and social isolation.

*Digital media makes people stupid and lazy and also anti-social (Belgian mother of two girls, 5 and 7).*

*It's about what they miss out on, eh. At the moment you are doing that [sitting in front of a screen] you can't do anything. You can't get bored, you can't play, you miss out on social contacts. Those are things you can't do 'alone alone' (Belgian mother, 37).*

Often, parents see digital technologies as entering into competition with off-screen activities that they consider healthier or stealing away time from family moments. Some parents tend to take their own childhood experiences with TV and computers as a model of mediation. They also have the tendency to idealise their own active and outdoor childhood.

*Kids don't play like we used to play… On the street… They're not able to make friends because they are constantly looking at their smartphones and tablets. I don't think they are enjoying their childhood to the fullest (Portuguese mother, 28).*

In general, parents seem less concerned regarding current dangers that may stem from inappropriate content as they felt that their children were too young and not sufficiently skilled to access inappropriate content online. However, in a few cases, it was clear that children had occasionally accessed undesirable material.

*These devices connect to the internet and they might open things that we don't want to see (Cypriot boy, 8).*

*My daughter entered a site with sexual content which was something I really didn't like (Cypriot father, 41).*

A few parents recognised nonetheless that they were only one click away based on their own experience.

*The mobile phone can be unsafe because you can press something by accident, that you shouldn't have, and then there are problems (Croatian mother, 36).*

*My daughter entered a site with sexual content which was something I really didn't like (Cyprian father, 41).*

A few parents recognised nonetheless that they were only one click away based on their own experience.

*The mobile phone can be unsafe because you can press something by accident, that you shouldn't have, and then there are problems (Croatian mother, 36).*

Also, researcher investigating in Swiss families reported the following about a 7 years old boy.

*Since they only use free streaming portals to watch movies, with a lot of pop up ads, the boy happens to see porn landing pages. He doesn't like it and doesn't wanna look at it, and parents try to prevent him from seeing it until they got the movie running, but it still happens eventually.*

The majority of parents did not appear to be concerned about contact with strangers and conduct issues.

They are aware of dangers such as contact with strangers, cyberbullying and paedophilia, but they believe these are concerns for the future, as they feel their children are not exposed to them at such an early age. In addition, few parents reported commercial risks or concerns about privacy risks or concerns.

*[When] I cook something (…) I put it there [FaceBook]. When I took Radu (…)the first day at the chess club, I put that on FaceBook. But never since then, I did post a thing (Romanian mother, 39).*

Regarding opportunities that digital technologies can offer, with the exception of parents that are highly digitally skilled given their work or own interests, they believe in the educational potential but do not have clear views on how to support the digital learning of their children.

Nonetheless, a recurrent use of digital technologies that parents see as positive across the sample is the use of mobile devices as a 'nanny' when they need to get some time for themselves, or an 'SOS' when they need the child to behave calmly, especially in situations outside the house.

*The majority of parents did not appear to be concerned about contact with strangers and conduct issues*

To sum up, parents have various ideas about the benefits and dangers of digital technologies.

The benefits appear in general to be poorly understood, while concerns are pushing parents to limit the time in which their children use digital technology, allied to their perception of children being insufficiently skilled to access inappropriate content.

Some parents find it difficult to manage the pervasive aspect of the digital technologies in the various spheres of their life and most parents express a need for information on how to balance young children's usage.

## 1.3 How do parents manage their young children's use of (online) technologies?

### 1.3.1 Parental mediation

The diverse practices through which parents try to manage and regulate their children's experiences with the technologies has been referred to in the literature as 'Parental mediation' (Clark, 2011).

Initially, parental mediation theory was applied to television and early studies suggested that there were three main types of parental mediation: restrictive mediation, instructive mediation and co-viewing (Nathanson, 1999; Warren, 2003).

Restrictive mediation refers to practices, which include restricting the amount of time children can view television, or only allowing specific time, and programmes to be watched. Instructive mediation includes discussion about the content of programmes, which might be negative or positive in

nature. Co-viewing consists of shared viewing, which might be undertaken for a variety of purposes, including having fun.

In a study of parental mediation of pre-schoolers' use of television Warren found that most co-viewing was coincidental, and both restrictive and instructive mediation were more commonly found, with the greatest use being made of restrictive practices (Warren, 2003). Now, researchers, professionals and policy-makers are asking whether similar strategies can be adapted to the internet and digital technologies, or whether new strategies are needed (Livingstone & Helsper, 2008; Clark, 2013). Compared with television, online and digital devices may be harder for parents to manage, for several reasons. First, they are more technologically complex and require a minimum of knowledge and practices. Second, the innovation circle is getting shorter and shorter, pushing parents to update and adapt their habits.

Parents are themselves less familiar with some digital devices or services; they may feel overwhelmed by the skills and attitudes of their children. Third, as digital devices become ever more personalised and portable, traditional strategies of co-use or supervision become less available or effective (Haddon & Vincent, 2014; Mascheroni & Ólafsson, 2014).Whilst some studies have found similar patterns in relation to parental mediation of other technologies, such as videogames (Nikken & Jansz, 2006) there is evidence that a wider range of strategies are employed in relation to parental mediation of the internet and digital technologies.

## 1.3.2 Parental mediation strategies

In relation to the online lives of preteens, teenagers and young people, needed (Livingstone & Helsper, 2008) identified four factors that characterised parental styles of mediation of the internet labelled as (1) active co-use, (2) restrictions of time and content, (3) technical restrictions, and (4) monitoring.

Building on those categories, researchers of our study found five strategies of mediation based on the analysis of the data-set generated by interviews of 234 families of children aged 0-8 in 21 countries in Europe. Four of them match Livingstone and Helsper's findings for children aged between 9 (Livingstone & Helsper, 2008) and 16 and Nikken and Jansz for children aged between 2 and 12 (Nikken & Jansz, 2014). They are: (1) co-use (using digital technologies together); (2) active mediation (e.g. helping children to understand what to do when confronted with an issue, being it technical or of content); (3) restrictive mediation (general restrictions, such as time, and content limitations, such as banning certain sites or apps) but also technical restrictions (use of firewall or passwords) and (4) monitoring (parents supervise children's internet use when nearby or after use). A fifth strategy has been highlighted by this study: (5) active distraction (parents' proposition for alternative attractive off-line activities).

In the following paragraphs, we will review those categories against the findings of this study, from what appeared the most used by parents to the least. Therefore, we first address restrictive mediation and supervision strategies, then co-use and active mediation, finally monitoring and technical restriction. We conclude this point on the additional strategy that was highlighted in this analysis compared to previous ones: active distraction.

Restrictive mediation and supervision appear preferred mediation strategies of parents for young children. Parents may set-up rules, explicitly or implicitly, to manage the access of their young children to digital technologies in four different domains: timing (e.g. no video games on weekday or mornings); the combination of content and timing (e.g. no energising media activities before bedtime); the acquisition and use of specific content (e.g. not being allowed to download apps); location or context (e.g. no media during play dates); and control (e.g. having to ask permission to use a device).

The most common strategies across the sample are rules regulating time and context of use of digital technology. Time rules are often grounded in the daily rhythm of family life, such as the most common ones, not being allowed to play with digital devices until homework is done, before bedtime, or during school days. Weekends see usually looser rules and children benefit from a rather larger freedom on those days to explore the digital world.

Parents who create rules according to their values on this respect also recognise different social contexts. For example, some parents choose to ban digital technology from play

dates with other children as they favour non-digital and outdoor play for those social times. Others allow digital screen activities to their children, mainly video watching and gaming, during waiting times outside of the household, while e.g. traveling or waiting for a medical appointment. Some parents also choose this strategy to have their children 'behaving' while waiting at the restaurant. Others, a minority, in the same context, choose to ban screens from the table even outside the house in order teach their children the social norms of being in society.

Often during family moments, the use of digital devices is prohibited. Dinnertime in particular is an important moment for the parents, and children are not then allowed to use any devices at that time. However, sometimes the parents do not follow their own rules by using devices themselves during these moments, most often their smartphone. This causes tensions between some parents that do not like it when his or her partner uses their phone during dinner. When children observe this behaviour with their parents they are more inclined to follow the rules and habits more loosely.

Dinnertime rules are not the only ones not to be strictly followed; actually, rules often seem useful to enact exceptions. It may happen that parents will reinforce the rules or ignore them according to what suits them best on the spot, creating confusion and frustration among family members and children especially. Written rules and rules negotiated within the family members seem to hold better and reach the scope of pacifier. As found by Nikken & Jansz in 2014 (Nikken & Jansz, 2014), some level of supervision and monitoring was also observed in the study.

Most parents claim to 'keep an eye' on their children during their technology use and/or to take sporadic 'tours' through children's personal devices, monitoring the apps installed, and occasionally asking children to delete what they find inappropriate, mostly violent games.

*Although most parents believe in dialogue, they have not covered most risks and dangers with their children yet, referring to it as too early*

Some mothers also state they pay attention to sounds, thus monitoring games and videos remotely as reported here by a Latvian mother.

*Interviewer: Do you look after your daughter when she's watching TV?*

*Mother: I always listen and see what she's watching, and if I don't like something, I turn it off.*

*Interviewer: And how about using the computer?*

*Mother: It is the same, I can see what she is doing more or less by passing by. It's not like she can do whatever she wants (Latvian mother, 39).*

**Active mediation** was observed less frequently. Although most parents believe in dialogue, they have not covered most risks and dangers with their children yet, referring to it as too early.

They also trust that children will tell them about problems that may occur, yet some children described problematic episodes - contact with violent, scary or sexual content - that they have not discussed with their parents. Instead, instructive mediation with younger children is often limited to teaching children how to overcome difficulties and how to navigate content and activities, thus acting as 'gatekeepers' not only for provision but also for skill development. The mediation is more frequent when children begin to use the devices. After a while, children are trusted to be left alone to explore the device.

*We started watching YouTube (...). There are a lot of nonstop videos (...). Most of the times we decide between 10 and 15 minutes is enough. I was at her [daughter aged 3] side all the time at the beginning. I admit that this changed recently. I am not longer at her side all the time when she watches but still keep track on my watch (German mother, 32).*

Other parents like this Maltese mother recognise that children still need help to choose the content suitable for them and invest time in this support.

*These digital devices have both positive and negative aspects. I help the children to choose what is good for them (Maltese mother, 38).*

Parents that are gamers themselves or that take an interest in digital technologies as a creation or communica-

tion tool are more likely to use active mediation.

**Monitoring and technical restrictions** are the least common of all the strategies. Parents who chose to use passwords, filter, firewall and/or monitoring software are usually digitally knowledgeable and skilled parents (fathers in large majority) that see technical restrictions as an efficient way to safeguard their children's use of digital technology, either to prevent or to overcome an issue (typically prevention of access to inappropriate content and of overuse). Passwords are the most used technical restrictions but also the easiest to be overcome by young children even without parents knowing, as many family interviews showed. Most parents are not yet familiar with more elaborate technical safety guidance.

*I have been a bit unconcerned about [safety issues], but I think maybe it's time to put the filters on, isn't it? I don't know what it's called ... to stop, not to see certain things. I don't know how this works but I know it exists (Portuguese mother, 38).*

Moreover, as underlined in the previous paragraph, most parents also believe in dialogue to monitor their use as they trust their children to tell them any problems that may occur while using digital technology. Therefore, they do not see the need of applying technical means for restrictions or monitoring. Furthermore, a minority of parents express concerns about very close monitoring being problematic, as it might be a violation of the children's privacy and have a negative impact in the parent-child relationship, particularly on trust.

This study has enabled researchers to highlight a fifth strategy that parents use to manage the digital engagement of their young children: active distraction. This strategy sees parents proposing to their children attractive off-line activities as an alternative to digital activities, such as outdoor play or family play. This could be seen as being part of the restriction strategies, where parents instead of setting rules to limit time of use of digital technology that children more or less respect, adopt a positive strategy of limiting digital technology time by proposing alternative activities that seem more attractive to the children: outdoor play, family play, family outing. Children will be more inclined to accept those alternative activities if they socially involve other children or other family members.

Researchers report the following about a single child and single parent Swiss family of a 7 years old boy:

*The mother initiates all outdoor activities together, if it's up to him, he wants to play computer games. [In the card game facilitating the interview, the boy] put the activity Playing outside between I like ok and I don't like (Swiss National Report).*

Or this Bulgarian family, also single-child and single-parent:

*[The mother] underlined that she worries most about [her daughter aged 8] excessive use of digital devices. She therefore tries to keep her busy and interested in a range of offline hobbies (Bulgarian National Report).*

Also, this young boy from Romania has a very clear understanding of his mother' strategy.

*We try more original entertainment activities! Like cycling, swinging in a swing, playing with broken tools (Romanian boy, 6).*

Sometimes, the parent themselves 'fill-in' the children's after-school time with sports and club activities so leave little space for digital technology activities such as in this Russian family where researcher notes that 'Hard schedule replaces rules of Internet usage'.

Confronting the needs of play and socialisation of young children to pre-teens and teenagers may account for the presence of this strategy. Children up to 8 years old are easily ready to embrace enthusiastically new activities that an adult may propose to them especially if they involve other children, family members, pets, sports and fun. Pre-teens and teenagers rely less on parents to choose their activities and they are less easily convinced to change their choice or timetable. Furthermore, young children might bond with their peers around digital technology but rarely use digital technology as way to communicate remotely with them, while teenagers may benefit from 24/7 connection with their friends thanks to instant messaging apps on their smartphone.

### 1.3.3 Parenting Styles

How parents manage digital media depends on more general norms and practices of parenting.

One of the prevalent models for parental style nowadays is the matrix proposed by Valcke et al. (2010), which relates parental mediation of

digital technologies to the overall parenting styles, based on Baumrind and others' work (e.g. Baumrind, 1991). This model was used as theoretical grounding of the coding protocol of this study.

The authors defined two axes of parental mediation regarding internet use (extended here to digital technology use) at home-parental control and parental warmth-leading to a matrix of four mediation styles (Figure 5).

1. **Authoritative**: parents set clear rules and explain them, in order to foster responsible behaviour and self-regulation; the most common rule is setting a specific amount of time for using digital media; but they may also consider content and context.
2. **Authoritarian**: parents set rules without explanations and expect obedience, they are not open to dialogue and impose their own perceptions and views towards digital media;
3. **Permissive**: parents do not set explicit limits but monitor occasionally and negotiate with the children, rarely guiding or teaching, but rather reacting to solicitations from the children;
4. **Laissez-faire**: parents do not control or engage with their children's digital practices, they do not interfere at all.

Referring to Baumrind's (1991) analysis of parenting styles, Valcke et al. (2010) show that **authoritative** parents tend to combine mediation strategies - including active mediation, social restrictions and technical restrictions - all more frequently than other parents. This is also the case in our study where this model of parenting has been the most frequently identified in the sample.

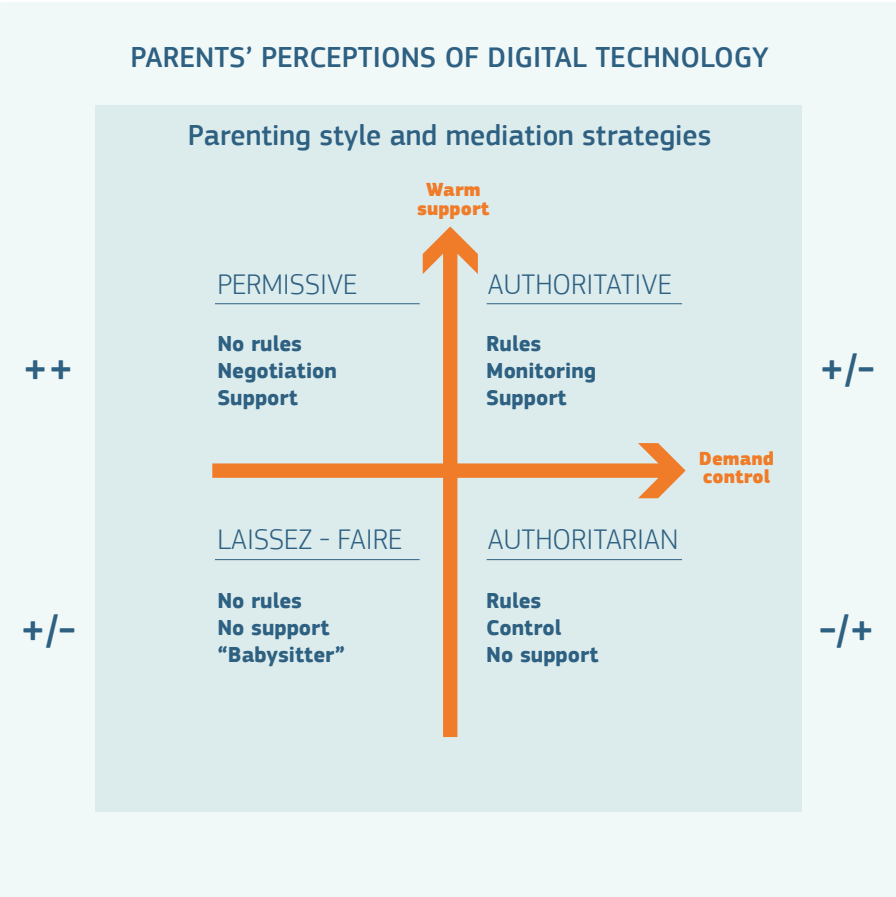
Families who adopted authoritative mediation style are concerned about controlling the apps installed by children, time of use and monitoring the visualized contents. However, the rules regarding time limits vary: there are parents who limit their children's use of digital devices on weekdays, in the morning or before bedtime, with a time limit, which ranges from 15, 20, 30 minutes to one or two hours a day, though during the weekend they allow more hours spent on these devices. Parent's perceptions about technologies explain this range of limits: the better the perceptions, more time children can use technologies.

Most parents realize that some online content may not be appropriate for children, so they monitor content on TV and on mobile devices. If children are watching inappropriate programs on TV, parents ask them to change and see something (preferably) educational. The same happens for apps: if parents find their content to be inappropriate (usually violent), they uninstall them from the devices.

**FIGURE 5**

**Parenting style and mediation strategies in relation to the parents' perceptions of digital technology, based on Valcke et al. (2010).**

Source: European Commission



It was curious to note that some authoritative parents report themselves to use technologies intensively, being incoherent with the style of parental mediation they hold. Others use technology intensively outside home and control their use when they are with the family, so they can be consistent with their children's rules.

These authoritative parents have both positive and negative perceptions of technologies. Although they consider them relevant for their children's development, useful for school activities and stimulating critical thinking, they also have the opinion that it is important to encourage other kind of activities, especially the outdoors, such as being in contact with nature (i.e., going to the forest or to the beach).

Along with the authoritative style, but less represented, is the **permissive style**. This style is influenced by parents' positive perceptions about the use of technology by their children. Parents are active users and they consider that their children do not make excessive use of technology. Children can use the devices whenever they like, although several parents worry how much time they spend on the devices or if they access content that is not suitable for their age. Parents of a family from the Netherlands described their mediation choice as '***freedom within boundaries***'.

The less frequent parental style was the **laissez-faire**. The majority of the families that are driven by this parental style are of a low economic status or have little availability for caring children but intense use of technologies.

Parents are not concerned about the use of devices by their children and do not supervise it as in this Portuguese family for which researchers noted the following,

*When questioned about the kind of games her son likes, the mother appeared not to be aware of the activities he performs with the mobile devices.*

or this note about a Swiss family,

*The mother is pretty informed about possible health issues linked to heavy media use (...) and the lack of long term studies about consequences of digital media use for cognitive functioning. Nevertheless, she takes into account that her son spends the majority of free time with digital media to give herself the freedom to advance her career, which she sees as an investment in her family's future.*

Children use them whenever they want, until the battery literally runs out. Parents are unaware of the potential of these technologies and possible risks as well as the activities that children perform on the devices and they tend to use tablets as effective 'babysitters' that keep the children entertained while the parents are busy with house chores or work more than other parents. In fact, we recognise here that those families lack most of

**FIGURE 6**

**The relations between parenting style and mediation strategies as categorised by Valcke et al. (2010) and parents' availability of time and knowledge as resources.**

Source: European Commission

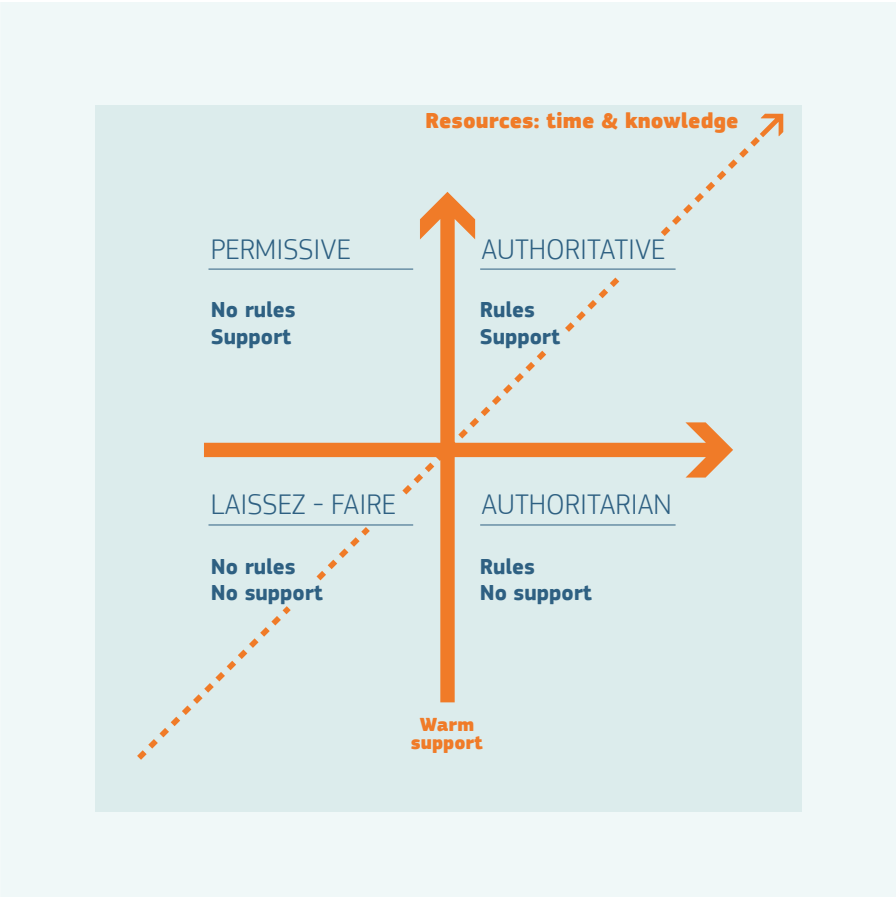
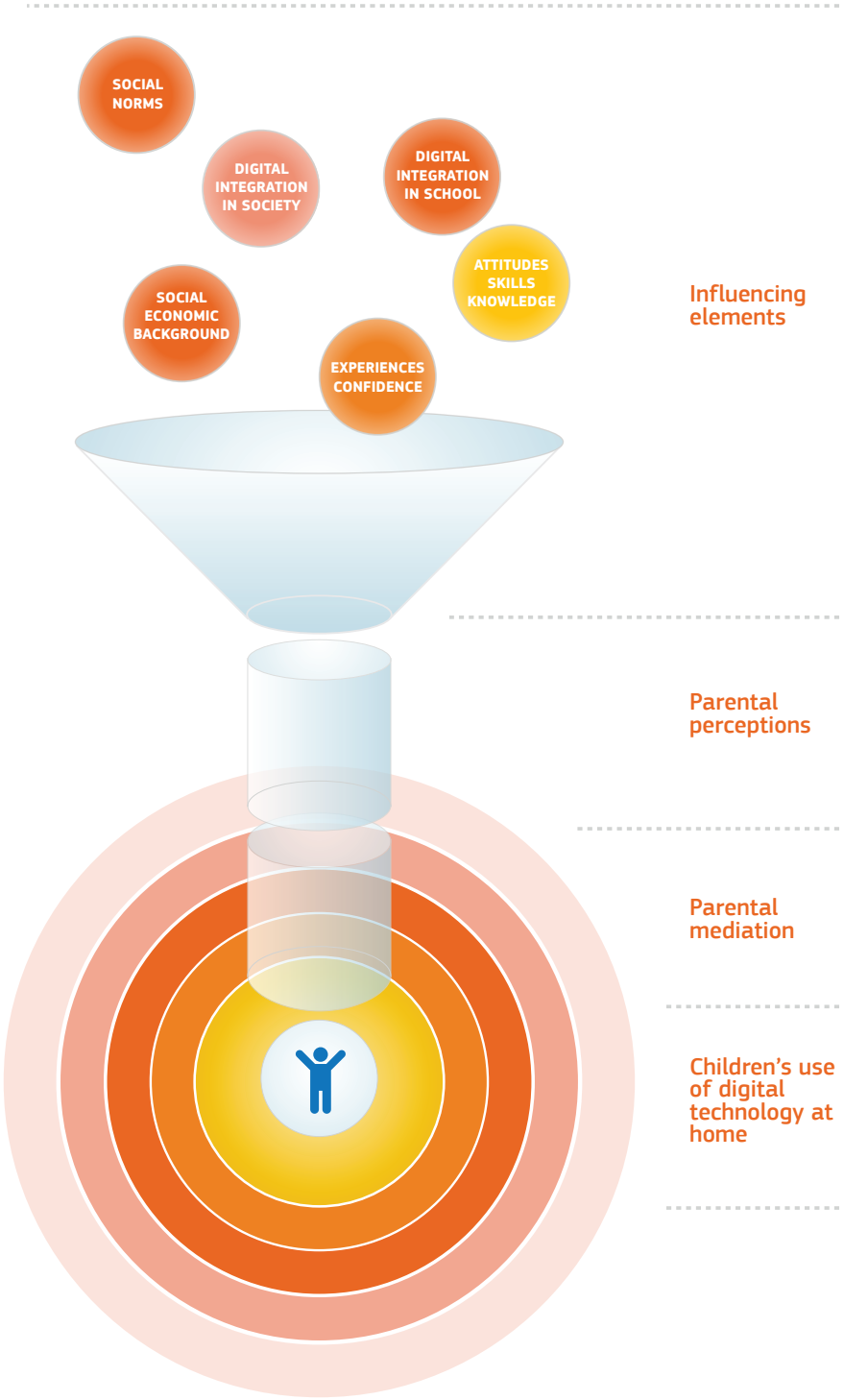


**FIGURE 7**

**Influencing elements of parental perceptions towards digital technology, key to parental mediation strategies and therefore to children's use of digital technology in the home context.**

Source: European Commission




resources, both time and knowledge, to effectvely made informed parental choices ..... showing other mediation styles. We therefore integrate an axe 'time & knowledge' in the model (Figure 6) showing that beyond perception towards digital technology, resources are key elements influencing parental mediation styles.....

**The authoritarian** style was the least present. Although practiced in more countries than the laissez-faire style, its frequency was low in most of them. Nevertheless, it was the most identified in Croatia, Slovenia and Switzerland. These parents enforce rules such as time of use or restricted apps, restricting behaviour that they consider inappropriate, without negotiating them with their children. Rules are non-negotiable.

*'I think when it comes to digital media, my rules count and I don't have to ask her (the child) about it.' - Swiss mother*

Some parents are keen to accompany their children when they use the internet fearing that they have access to inappropriate content, directing them to other activities that do not involve electronics, such as going outdoors, be it playing in a garden or doing sports.

Confronting families' characteristics with their respective parental mediation style shows that parents' educational background matters. Less educated parents tend to provide less warm support to use digital technology while also exerting less control. Our study tends to corroborate also the results of Nikken and Schols (2015) showing how lower-educated parents, who are less skilled at using digital media, engage in less active mediation of their children's internet

use, set inconsistent rules to regulate use, and more often use technical restrictions.

This analysis based on parenting style theory shows that parental mediation and the balance between mediation strategies is different from one family to another and depends on numerous factors (Figure 7) beside the general parenting style.

First, among those factors are parents' own knowledge of, and confidence with, technology itself, as already identified in previous studies (Clark, 2011).

Second, parenting styles, perceptions, imaginaries (expectations or worries) and discourses are also at the basis of the strategies by which parents' guide their children's interaction with tablets, smartphones and apps, and in so doing support or hinder their learning. Our research corroborates in this point other studies on early childhood education (Marsh et al., 2015; Plowman et al., 2008; 2010).

This study tends also to show, in agreement with (Livingstone et al., 2015; Mascheroni, Livingstone, Dreier, & Chaudron, 2016, p. 263) recently, how these expectations, worries and practices vary according to parents' education, socioeconomic background, and parenting culture.

Finally, the international sample of the study allowed cross-national analysis, which suggests the importance of social and cultural norms of the society the parents live in as a factor of influence of parental mediation. What is desirable may vary from a country to another, from social group to another. Evidence from the US shows also that socioeconomic status is associated with different understandings of 'good parenting' and children's education, including 'good digital parenting'.

The findings regarding the profile of Authoritative families in our study as described above confirm the US findings regarding upper- and middle-class parents who favour an «ethic of expressive empowerment» (Clark, 2013) or «concerted cultivation» (Pugh, 2009; see also Nelson, 2010) aimed at raising self-confident children capable of self-control and self-expression.

By contrast, Authoritarian families are close to less advantaged US families who associate good parenting with an «ethic of respectful connectedness» (Clark 2013), expecting their children to be caring and respectful of parental authority (Nelson, 2010).

We see therefore that socioeconomic differences affect both parental mediation and parental styles in related ways. For instance, Nelson (2010) shows that upper- and middle-class parents favour what she calls 'technologies of connection' (such as the mobile phone) that allow for both warm support and control at a distance; by contrast, they disapprove of 'constraining technologies' such as parental controls and filters.

Less socially advantaged parents, who tend to be less confident of managing online risks, try to minimise them through restrictions or direct control (Hollingworth et al., 2011; Paus-Hasebrink et al., 2013).

### 1.3.4 Parents between 'Gatekeepers' and 'Scaffolders' roles

The choice for digital mediation strategies are the results of the ponderation this broad range of influences (experiences, knowledge, skills and attitudes, perceptions, background, parenting style and social norms). Based on the literature, we propose a continuum going from 'gatekeepers' to 'scaffolders' to understand parental mediation in relation to children's use of digital technology.

Parents acting as 'Gatekeepers' act in fact as guardians of a digital walled garden that they build for their children. Gatekeepers emphasise restrictive mediation and truly act as a gateway to the technology. Therefore, typically, they preferably choose strategies of restrictions (rules regarding time, content, context) and are inclined to monitor closely their children's use of digital technologies. They may also use technical restrictions such as passwords, filters or monitoring software. As a result, the emphasis is on protection and provision but with the result to provide fewer learning opportunities within the digital world.

On the other side of the spectrum, rather than restricting digital technology use, parents have been observed to adopt a range of explicit and implicit, verbal, physical and emotional supporting strategies to guide young children's interactions with tablets and apps, as also reported by (Petkovski, 2014; Plowman et al., 2008). The strategies through which parents participate and guide children's successful

achievement of skills are referred to as scaffolding practices (Wood, Bruner, & Ross, 1976), enacted in the context of the parent-child interaction (Vygotsky, 1978).

Scaffolding refers here to a transactional process where parents discover the optimal level at which to instruct the child, intervening in such a way that the child can succeed at the task but also gradually learns the skills to complete the task independently (Conner & Cross, 2003). Typically, scaffolders facilitate a broad range of parental mediation strategies, with an emphasis however on a more supportive and instructive position. It involves trying to enact both protection and freedom of access and action in a more negotiated manner.

As Green pointed out already in 1988, in so doing, parents foster children's learning in three main areas, as it has been anticipated: operational skills, cultural understanding and critical skills (Green, 1988).

Parents will adopt a position closer to one role or the other, following all influencing factors as described above but also depending on the circumstances, on the age of the child, its gender, or the its position in the family. For example, parents tend to be 'restrictive mediators' or 'gatekeepers' when their children are younger or if they themselves are less educated or with less digital knowledge and confidence. The reverse is true for parents who are 'active mediators' or 'scaffolders'. Scaffolders are usually parents that are digitally knowledgeable and/or of medium-upper socio economic status. In terms of gender, girls tend to be monitored and restricted more than boys.

**Parental mediation strategies may also vary in time and following the circumstances and may actually be different in the same household**.

Indeed, fathers and mothers in a family do not always share the same perception, attitudes and mediation regarding digital technologies, depending on their respective usage and experience. Mothers tend to be more restrictive in general and controlling content while fathers can be more flexible and less strict. Fathers in our sample show a preference to use laptops and to keep their smartphone private.

The ones that are gamers tend to share the game activity with their children, especially boys. The ones that have an interest in the technology itself tend to use technological solutions (filters, passwords, etc.). Mothers in our sample show a preference to use smartphones that they are inclined to share with their children.

They also use communication tools such as instant messages, video calls or social networks. Mothers tend to believe more in mediating children's use of digital technologies through dialogue. A large age-gap between parents may also sometimes account for noticeable differences between parents in knowledge and skills and therefore between their perceptions and attitudes and in the end between their mediation choice and style. However, parents create rules, often unilaterally, to overcome or prevent an issue and dialogue is often absent.

**Whatever their positions, parenting style, strategies or roles, parents feel in control of their children's use of technology and therefore do see minor risks**.

*I have no fears about the technology as I supervise my children well. - Maltese mother, 40.*

Our analysis suggests that children from families with an open approach and communication towards digital media were more aware of the risks associated with using these technologies, but in the majority of families, the parents do not bring up these risks.

They feel that their children do not have enough skills and knowledge to put themselves in dangerous situations. In general, they deliberately choose to postpone safety mediation until their children are teenagers, when they suppose social network communication will start. Nonetheless, the large majority of the interviewed parents asked for tricks and tips, guidelines to better accompany their children in using digital technologies for the best of their interests.

*I think when it comes to digital media, my rules count and I don't have to ask her [the child] about it. - Swiss mother, 44.*

At the question,

*Do you have any tips about technologies that you would like to suggest to other parents?*

a dad replied:

*I guess everybody is looking for that answer. - Portuguese father, 43.*

## 1.4 Other factors that impact on young children's digital technology use and mediation

Even though the research project focuses on the use of digital technologies in the home context, it provides the researchers with data concerning other factors that show important influences on how young children use digital technologies.

**Older siblings, cousins and young relatives** can have an important impact on the mediation of digital technologies for children. They are generally up to date with the technology and can easily provide help or demonstrations. Other family members or familiars could be also influential.

*I [Norwegian boy, 7] make new users for the different games for [sister, aged 4] so she can start from the beginning. Then she can learn it as well, and she won't ruin it for me. - Norwegian boy, 7.*

*She [Romanian girl, 7] she received her first tablet from a neighbour; it had a cracked screen; it was functional for a few months, and then broke completely. - Romanian mother, 43.*

*We do not possess a tablet, [her daughter, aged 6] got familiar with it and used it with one of her friends. - Slovenian mother, 36.*

**Grandparents**, for instance, who may have more time and financial resources, can have an important role. They may show patience and be ready to seize any learning opportunities for the sake of their grandchildren.

*During holidays, there's also our grandparents' appetite for technology in general. 'Cause granny is a Candy Crush-addict and she's more active on Facebook than me. Once she retired, she discovered technology. And the other grandparents of ours are living in the country side and, besides the fact there's a poor reception of the Internet there, grandpa uses the Internet strictly with instructive-educational purposes, such as finding out how to plant something. - Romanian mother, 35.*

Our study made across 21 countries in Europa suggests also that **weather and climatic conditions** may have an impact on the kind of activities that children choose to spent time on or towards which parents direct their children. Under southern conditions, we saw in Cyprus digital technology based activities of young children are more common during summer and typically used when the hours of the day are too hot to allow outdoor play. Heavy rains, snow, frost and short days seems to have the same effect in northern countries like Russia and Norway. In temperate countries, parents will support outdoor play especially in spring and summer time and allow more easily digital play in days benefitting less favourable climatic conditions.

*For her [Dutch girl, 7], the tablet is a next-best option, something she uses when she cannot watch television, when friends are not available to play with or when the weather is too bad for outdoor activities. - Dutch mother, 28.*

*In [her, Russian girl, 6] case everything depends on mood. Sometimes she can play with a Smartphone for a very long time - for more than an hour, especially when the weather is bad and rainy.. - Russian mother, 40.*

Finally, yet importantly, **schools, starting with kindergarten**, have a key role to play in enhancing learning opportunities and mitigating risks. Indeed, parents sometimes feel that digital technologies can offer learning opportunities but recognise that they lack a clear vision of concrete possibilities. Parents would like to receive guidance and advice. Researchers in Slovenia and the Netherlands reported the following:

*[Mother, aged 42] believes she will get to know the internet better when she enters the school as they will use it for educational purposes. [Mother] believes internet provides a lot of positive aspects for children but it takes an educated parent and time to sit and co-use it with the child. She is sure she will practice that once the right time arrives.*

This was clearly less the case for parents in our sample who got familiar with digital technologies along with their children and the learning strategies developed in the school context. Integrating digital technologies as soon as the pre-school and elementary school stage can support the development of digital skills. This seems that school's request and example in using digital technology as learning tool can also help parents in developing their mediation strategies as well as facilitating digital learning opportunities at home.

*To a great extent the way she [Dutch girl, aged 6] uses digital media is influenced by school. For instance, she indicates herself that she enjoys using Ambrasoft, an online platform devel-*

*oped by an educational publisher that allows children to practice school assignments (e.g., arithmetic and reading) at home. [Dutch girl, aged 6] also regularly downloads apps and watches YouTube clips in which schoolwork is explained. Sometimes when a friend comes over to play they re-enact school at home and involve the tablet in their pretend play, for example by doing pretend arithmetic. (Dutch national report)*

**Schools**, as observed in the Nordic countries of our sample, **can play a major influence on the acquisition of digital competences including creativity** when integrating digital technology as active learning tools but also on raising awareness, building critical thinking and resilience, and finally influencing parents' positive perceptions of digital technology as an efficient learning tool.

In order to mitigate the risks of negative experiences with digital technologies, it is important to develop positive, safe, digital learning opportunities in various circles in which children grow, at home and outside, at school and in other occasion of education, supported by adults, schools, parents and other family members across Europe and beyond.

**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

Chapter 2

# What changes in young children's digital engagement over a year?

Chapter 2

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## 2.1 Measuring change over a year, the advanced study

To measure change in the way children engage with digital technologies and the way their parents manage it, researchers chose to visit some of the interviewed families a second time, after one year. The interviews aimed at measuring a set of variables that were already measured in the first interview in order to compare their values over time and evaluate the changes that occurred.

This kind of method belongs to the longitudinal methods in which the same variables are measured repeatedly in different periods in order to describe the changes patterns and to establish a direction for such changes (Menard, 2002).

In autumn 2016, researchers defined a new protocol for observation based on the same principles and methodology as the first one - family members' interviews and observations - focusing on the measure of change over time in young children's use of and perceptions and attitudes towards digital technologies in the home context.

As to consistency in measuring the same variables in this second visit, the core of our research questions remained the same:

1. How do children under the age of 8 engage with new (online) technologies?
2. How are new online technologies (digital technology) perceived by the different family members?
3. How do parents manage their young children's use of (online) technologies?
4. Other factors that affect young children's digital technology use and mediation.

However, five additional dimensions of observation were added, with the aim to track any possible change that could have happened over one year and affected the digital engagement of the interviewed family members.

Therefore, the protocols of interview and observation were tailored to facilitate the collection of data regarding changes in terms of:

1. availability and access to digital technology in the home context;
2. activities, interests and opportunities that children may have newly developed or on the contrary abandoned, and why;
3. digital skills that children may have recently developed or abandoned, and why;
4. parents' perceptions of digital technology that parents may see differently a year after the first interview, or may not;
5. mediation strategies that parents may have changed, adopted, dropped or adapted.

Additionally, researchers included questions to family members about the impact of their first visit.

As researchers had observed in the previous visit that their permanence in the homes was a bit long and children became tired and less collaborative towards its end, they decided to obtain some information prior to their second visit. For this, they asked parents to answer a short survey with the

aim of gathering in advance a sense of what changes occurred in this period, to direct more precisely the interviews and to shorten their visits.

A year after the first interviews, research teams from ten countries (Belgium, Bulgaria, Croatia, Malta, the Netherlands, Portugal, Russia, Slovenia, Spain and Switzerland) returned to speak to 56 of the interviewed families, coming back to the digital engagement of their children aged now 7-9 or under (5 family interviews per country but 6 in Spain and 8 in Portugal).

Once the changes were documented, researchers focused their analysis in finding the source and reasons for change.

Similar to the previous phase, each team issued a national report reporting data and their analysis by January 2018. All reports except for Malta and Slovenia included family portraits summarizing the findings by family and highlighting quotes extracted from the transcripts of the interviews. The present section summarises at cross-national level the analysis of the results reported by the partners in the advanced study compared to the pilot and enlargement phases of the study.

We present here the findings of this analysis following the research questions (see above), reformulated to underline both changes and the intimate link we found between perceptions and children's engagement and perceptions and parental mediation.

1. How did the engagement of children under the age of 8 with new (online) technologies and their perception of it change over the course of a year?
2. How did parents' perception and mediation of young children's use of (online) technologies evolve over the course of a year?
3. What changes can we see among the other factors affecting young children's digital technology use and mediation?

## 2.2 How did the engagement of children under the age of 8 with new (online) technologies evolve over the course of a year?

The changes that were found in relation to the digital engagement of the children aged 6-7 + 1 year are mainly linked to two factors. The first one is the fact that children have grown in one year and have therefore evolved to a different level. We saw at first the evolution of their interests, their needs and their preferences but also saw changes in their use, digital skills and literacy and in their perceptions of the digital world, all those more linked to their increased cognitive capacities and the affirmation of their personal tastes.

The second factor is linked to the fact that the world around those children has also changed over the course of a year: the context they evolve in at home, in the family, in the neighbourhood, at school, in after-school clubs… and so do their respective digital landscape and opportunities.

We start here by giving an account of the findings across the sample linked to the evolution of the context in which the interviewed children have grown.

*The changes that were found in relation to the digital engagement of the children aged 6-7 + 1 year are mainly linked to two factors. The first one is the fact that children have grown.*
*The second factor is that the world around those children has also changed*

### 2.2.1 Evolution of the context in which children grow

Over a year, much may have happened in the life of the interviewed families. The families themselves may have changed in their composition: separation of the parents into two different households, the arrival of a new partner in the household of a pre-

vious single parent, a new baby born (or two!)... All those changes in the composition of the family, in whatever ways they occur, change also the dynamics of the families and choices that are made for each of the children, including the way parents manage the use of digital technology within the household.

Freshly separated parents or parents busy with a baby may have less time than before; children are therefore growing more independent in all dimensions of their life, including the digital one. On the contrary the arrival of a new member in the family, a new partner of a single parent for example, or close to the family like a babysitter, may provide new opportunities to enter in contact with digital technology and offer new opportunities to learn.

Also, a change of classmates at school, a move to a new house or joining new after-school clubs and children creates new friendship that may introduce them to new ways of interacting with digital technologies. A change of daily routine may also offer more or less opportunities to interact with digital technology.

Those changes are rather unpredictable, manifold and their effect on children's digital engagement may vary very much from case to case.

However, what our analysis shows as being **more predictable, is the evolution of the digital landscape** in which young children are growing at home. All families on this point saw changes over the year. New devices entered into almost all households of the sample. The cycle of substitution of digital devices is rapid, as they break easily or become outdated. The typology of devices that were bought by the families were mostly smartphones and tablets; sometimes new laptops or personal computers entered the house while Smart TVs have largely substituted traditional TVs. Game consoles are rare, and DVD and MP3 players seem obsolete.

A general tendency across the sample is to see a **significant increase of ownership of personal devices by children under age 9**, either tablets or smartphones. This phenomenon actually seems to answer the needs both children and parents. Indeed, parents feel the need to have a tablet or smartphone of their own, that is not continuously occupied by their children and which is clean of any 'pollution' (e.g. games, adverts, children's preferences …). This interesting change has been documented for example in a Spanish family.

*A general tendency across the sample is to see a significant increase of ownership of personal devices by children under age 9, either tablets or smartphones.*

In this [Spanish] family, the new digital artefact (i.e. Ipad) has given him [the child] new and more digital responsibility, but in parallel (..) has led to mark clearer division of the ownership of certain devices; parents have intensified the usage of passwords in their own mobile phones so that children cannot use their mobile phones. (Spanish national report, p.34)

By providing children with a personal - not shared- tablet or smartphone they also ease tensions between them and the children or between siblings.

On the other hand, **children are also growing more independent in the use of digital devices** which they prefer to be of their own, portable, fast and internet connected so as to allow a greater versatility for use and availability.

The trend is also stimulated by the fact that the tablets the parents bought a few years back are getting older. Parents update their own one by getting a newer model and the children receive the old one. As noted by Belgian researchers, children can also experiment more with these hand-me-down tablets, as parents are less worried for the loss of this device.

**Peer pressure** may also stimulate ownership of digital devices by children as observed at least in families in Belgium, Bulgaria, and Portugal and in the Netherlands. As children grow older, the peer pressure to own a particular device and do certain things is becoming stronger. Parents fear that children might be isolated or excluded if they do not have the same devices or share similar activities and interests as other children.

We see here that **influences coming from outside the household and the family are growing and enlarging**. We saw in section 1.4 of the report

that schools and teachers might also influence the way children develop their digital skills and perceive the digital world depending on the way digital technologies are integrated or not, or even banned from school, in some instances. **Considering the evolution of the school's context of the interviewed children** was therefore crucial to monitor the evolution of their digital engagement. Like the home context, the school context might have changed in one year, both in terms of possible evolutions of perceptions and knowledge of its teachers and of possible evolution of its digital landscape.

**An increase in the use of digital technologies for education and school-related work at home has also been observed across the sample at various levels.** This tendency was clear and preponderant in data reported from Malta; it was less the case in Croatia, while the integration of digital technology in school work was noticeable in the rest of the sample, especially concerning the task of searching for information. The school context of both extremes, Malta and Croatia, are rather different in fact. The Maltese school system has invested massively in digital technology and digital pedagogy in the last years, while the Croatian system still remains very much traditional and off-line.

In Malta, since 2017, children have been provided with tablets in school from age eight. The use of tablets has been integrated in the curriculum. The interviewed children were using tablets at school on a daily basis. They were learning how to create digital content on their tablets; taking photos, filming, writing texts, doing simple coding etc. (…) Tablets had become an important and integral part of their daily lives, both at home and at school. (Maltese national report, p.1)

In Croatian primary schools, there are no informatics classes in lower grades. Some schools offer extracurricular classes in informatics for younger students, but this is rare. Primary schools do not encourage children to use personal digital devices in class (Croatian national report, p.4). Also, many schools are not equipped with digital devices in classrooms, and many of them do not even have a computer in each classroom that the teacher could use for giving presentations. (…) Some children have smartphones but they are not allowed to use them during classes. The main reason is that they would be distracted by these devices since they use them mostly to play games. (…) None of the children in the sample attend any of the out of school informatics programs that are available in different organizations. These classes offer introduction to programming and similar topics and are quite expensive (Croatian national report, p.18)

Considering the Dutch part of the sample, over the course of the year digital media use at schools has further transformed. Schools purchase new devices such as tablets and laptops and integrate them into the curriculum. This does not yet really seem to influence children's out-of-school use of digital media, but parents are aware of these changes. Frequently, schools arrange for meetings during which they inform parents about the changes at school and occasionally also provide advice about the way parents can manage children's digital technology use at home. Occasionally, children use digital devices for educational purposes such as making Powerpoint presentations.

In the other parts of the study, the evolution at school level was more sporadic. Some parents reported use of interactive white-boards in class, but still the computer may remain for the exclusive use of the teacher and children are not allowed to use it. (Portuguese national report, p. 47)

Others reported the use of a school blog to communicate the class progress with the parents. (Spanish national report, p.24)

Nonetheless, some teachers have started asking them to use technologies for their homework bringing an increase of parental support into its wake, as this quote for a Portuguese mother illustrates [Portuguese mother, 36].

*Her teacher sends a lot of home projects that you are supposed to do as a family. So we end up doing it together, and using digital technologies.*

### 2.2.2 Evolution of children's interests

Friends - what they do, what they think - are becoming very important to children entering in pre-teenager age and already feeling the need to develop their own interests and tastes, independently from their parents'.

Researchers have also witnessed this tendency in the digital media use of the older children of the sample, aged 8-9. Changes in the digital technology use of the targeted children are

influenced by their developing interests. Researchers observed that over a year, their interests and tastes regarding the types of games and videos that they choose have changed considerably. These interests concern listening to music, watching bloggers ([5]), having an idol (such as a pop artist or a vlogger), using social media (both for keeping in touch with friends or family still but also for reaching out to strangers) and playing games. Some also create videos that they sometimes publish and share publically online. The same typology of activity as last year but not the same content.

The children are now also discussing these matters with their friends. They spoke often about what they watched on their tablets, integrated it into their role play, and gave each other advice about the latest games or videos. Peers influence this development of new interests and activities. Children see what their peers do with digital media and desire to do the same things.

*[Portuguese boy, 9] has asked the parents for a smartphone, but they are reluctant, precisely because it is a device that fosters communication with others. They recognize that there is social pressure from peers, as several friends of [Portuguese boy, 9] already have smartphones, but they want to delay that decision as long as possible.*

*'Sometimes his friends come to their house and they use the computer together with [Bulgarian boy, 8] mostly to play games or browse through Facebook. [Bulgarian mother, 26] is not very happy with this, because she is convinced that other boys might instigate [Bulgarian boy, 8] to do something online which he would normally not do (e.g. view pornographic materials).'*

## Changes in the digital technology use of the targeted children are influenced by their developing interests

Last year, researchers observed also that young children's practices were strongly gendered: both boys and girls liked games and videos related to their favourite characters and fictional universes, with boys preferring superheroes and Lego while girls enjoyed Disney Princesses and Barbie. Besides, boys liked sports and fighting games, while girls preferred dressing princesses, taking care of pets and trying on make-up.

This year, as reported and analysed by the Slovenian and Portuguese researchers of this study, their tastes in games are more homogeneous. Both boys and girls are discovering construction and creative games and starting to explore more complex activities.

However, girls are presenting behaviours that are closer to pre-teens, enjoying watching pop music videos on YouTube and revealing a lot of interest in social media. They claim they would like to have smartphones so they could (...) talk with their friends (...) [Portuguese girl, 8], and this is less frequent amongst the boys.

In general terms, some of the girls seem to have already abandoned play with physical toys, while most of the boys still do it.

*[Portuguese girl, 8] demonstrates that she is becoming a tween, as her tastes in digital activities are not as linked to children's fictional universes as they used to be. Now she is more interested in pop music and in fictional universes directed at tweens and teens, with actors and actresses instead of cartoons. Because of this, she developed strategies for searching about her interests, even if she needs to use words in English.*

*A year ago [Dutch girl, 8] used to play with an older girl whose interests influenced her digital media use. For example, they watched movies shared by vloggers and also made movie clips themselves. Felicia did not initiate this, but participated in it. This year she does not play with that girl anymore and, consequently, she no longer uses digital media for those purposes.*

Both boys and girls know a few vloggers that they follow on YouTube.

Finally, researchers that took care of the Netherlands' part of the study reported temporary changes in children's digital media use, partly shaped by hypes and novelties. Among last year's hypes are the game Pokémon

([5]) Following the Collins dictionary, a blog is a website where someone regularly records their thoughts or experiences or talks about a subject. A vlog is a blog made of video. A vlogger is a person who regularly posts short videos to a vlog.

Go and the apps musical.ly and Momio. Among the games, just as last year, Minecraft is still very popular, now even among girls, and is thus less of a hype.

*[Dutch girl, 8], plays Minecraft again now, contrary to last year. This is influenced by one of the boys she plays with regularly, who has an interest in Minecraft. This boy has also strengthened Felicia's interest in Pokémon Go. (..) Felicia's interest in the game started at school, as her friends had installed the game. It really grew during a family visit to an Asian country where it had become all the rage.*

Finally, researchers have noticed that changes in children's practices entail changes in language use. Some new language use and expressions linked to their favourite digital activities have been documented.

An example of this is the expression of watching songs, which is an adaptation of the language to the contemporary practice of watching video clips on TV or on YouTube. The literal action of listening to a song is becoming less frequent, reserved to particular devices like the radio or the iPod. To Google a word in find information is even more frequent, even among parents.

Another interesting example is that one of the children refers to Google and YouTube as he, as this Spanish boy aged 8:

*Researcher: What do you do in YouTube? (...)*

*[Spanish boy, 8]: I look for things I don't know, because He tells me (Spanish national report, p.27)*

Spanish researchers propose in this respect the following analysis. This change of language shows a representation of the digital tool capable of search, of answering a question, interacting with the user as a person or at least an entity capable of autonomous and interactive actions.

According to (Latour, 2004) actor-network theory (also see Kullman 2015) (Kullman, 2015), Google (or any other interactive digital tool) would be an actor, as it is an element of the system that has influence on others. In the actor-network theory, this capacity of interaction is called 'agentivity'. From Latour's perspective, an online search tool has 'agentivity' within the system because it gives information. In this regard, when children use Google they are actually acting linguistically with its resources and this supports their conceptualization of Google as 'someone' with whom communication and knowledge exchange is possible. (Spanish national report, p.29).

### 2.2.3 Evolution of children's digital activities and digital skills

As the previous section already highlights, the digital activities of the interviewed children are similar compared to the ones they had the previous year (see section 1.2 and 1.3).

Children aged 7-9 continue to use the devices predominantly for entertainment (playing games, watching videos or music via Video-On-Demand platforms or social networks, listening to music), but other activities are taking more importance than before, especially online communication (WhatsApp, Viber, Skype and Messenger) with family members and, above all, friends.

Searching for information online sees the major evolution observed across the sample. All the interviewed children aged now 7-9 are being now more competent in reading and writing. Their new literacy skills have boosted their searching skills. Instead of being restricted to choose among the suggestions provided by App Store and Google Play, or YouTube, children are now able to insert keywords in order to search content on platforms such as YouTube or search engines like Google. The children are now capable of searching about their interests and curiosities. In this way, literacy skills enhance their autonomy in learning and in trouble-shooting.

Indeed, they now give children the opportunity to use apps and devices on their own without the need for their parents' help for known activities any more. Some children develop this skill and find online the answer to the issues they may encounter. Children use the trial and error method for learning and also observing how others do things. Some may ask their parents for help when, for example, they look for words in English, names of songs or artists, but as a last resort.

*[Belgian boy, 7] looks up YouTube videos about Minecraft, how he can get to the next level for example. He is self-educated when it comes to that. - Belgian mother*

*Last year, [Portuguese boy, 7] parents shared that he would get very nervous when he played, especially when he couldn't go to the next level. This situation has changed, as he found on*

*YouTube the solution to learn how to play the games and solved this problem on his own.*

*[Spanish boy, 8]: Yes, I am faster and I can access more screens.*

*Researcher: Who taught you that?*

*[Spanish boy, 8]: I learned it on my own, I have taught myself.*

Children of the targeted age are in general very much aware of the capacities of the devices they are used to interact with, especially if they own it, such as this Spanish girl aged 9 at the moment of the second interview.

*Researcher: So, to use the mobile correctly in a way that it works fine, what do you need to know?*

*Girl: For instance, don't install stuff that I won't use, as when you buy clothes that you don't wear, it's silly. Or recently I did not have space in my mobile and my mother uploaded all my mobile's photos on her laptop and this is a way to make a bit. (Spanish girl, 9)*

Literacy skills, in supporting children's independence and autonomy, help them to diversify their favourite activities and discover the potential of their devices.

The exchange below shows a change in her capacity to recognize how to improve speed on devices and how to optimize space and energy consumption as well as how to protect them with passwords. It constitutes an example of how children's accumulated experience benefits their autonomy.

Literacy skills, in supporting children's independence and autonomy, help them to diversify their favourite activities and discover the potential of their devices.

As Swiss researchers noticed, **once reading and writing on their own, children take a qualitative leap in their development and their favourite activities diversify towards individual interest** (more advanced video games, autonomous search on Kid's wiki, etc.). Their new skills give them the possibility to explore activities and devices in a new way (like producing content in word processing programs on PC/Laptop, etc.) although here, especially with laptop and desktop, the support and active mediation of parents is key. (Swiss national report, p.1).

Equally the interest and/or need of the child is key as this extract from the Croatian report illustrates.

*[A Croatian mother, aged 36] says she offered her daughter to teach her how to use Word program from Microsoft Office package, but she didn't find it interesting and didn't want to use it. (Croatian national report, p.16)*

In spite of all those cases of parental active mediation, most of the children are self-explorers and self-learners, and they are keen in using online resources for learning.

**Within the considered period, the majority of the interviewed children have noticeably improved their online skills and learned different new ones** as reported here by researchers for the Portuguese part of the sample:

*Most of the children we studied already revealed good digital skills last year: on mobile devices, they were able to unblock them easily, they went to the stores, they searched for apps related to their interests, and they distinguished paid from free apps. Some who weren't very competent in writing yet, used the microphone function to convert their voice into writing. Autonomously, they learned to use the apps they installed, mostly games. They only asked for the help of parents or older siblings when they had difficulties in overcoming a game level, or they needed a password to install an app. They were able to recognize when the memory was full, and knew how to delete apps.*

Most of the children are self-explorers and self-learners

*This year, the big difference is that they can read and write easily. This has allowed them a huge evolution in searching autonomously, as well as in following instructions of websites and apps, as long as they are in Portuguese. All the children know how to install and uninstall apps, to manage the memory of the tablets, and to identify paid and free apps. They also know how to identify advertising and how to shut down pop-ups without leaving the app they want*

*to use. They are also keen on taking photos and making videos, and some of them are more competent in editing this year. (Portuguese national report, p.53)*

Researchers analysing the Russian part of the sample noticed that all children are effective, quick and accurate in their digital skills and that 'real progress only takes place in those families where parents specially pay attention to the improvement of their child's digital literacy (e.g. in one family parents specially teach their daughter to use MS PowerPoint for making presentations)' (Russian national report, p.8), while actually supporting her doing her homework. We see here typically one example of acquisition of news knowledge and skills with aiming at sustaining school work, as presented in the point 1.1 of this section.

Noticeably, in the Croatian part of this study, researchers did not document the acquisition of many new skills although news skills in using social network (Viber) and skills linked to the gain of autonomy in using digital devices for entertainment were highlighted. Interestingly, researchers also note 'that some of those skills were gained during the time that children spend home alone, before or after school, while their parents work'.

It is also important to note that on one hand, Croatian schools do not seem to embrace the digital transformation yet by integrating digital technology in didactics at early primary level.

On the other hand, within the Croatian school system children enter in first grade of primary at age 6-7, which is one year later compared to the majority of the other European schooling systems starting 1st grade at age 5-6. This difference could affect the literacy skills, the efficiency in reading and writing of the Croatian children of our study, compared to the others that benefitted from a primary school system starting at age 5-6.

*Compared to the previous interview, when [Bulgarian boy, 8] used PC only to play games, listen to music and watch films father has downloaded, his online activities are now considerably more varied and advanced. He uses it for schoolwork, especially maths. He can produce and edit digital content, he uses search engines (mostly to look for films and music), and he has a Facebook account, where he communicates with his friends and posts pictures and videos he records. (Bulgarian national report, p.18)*

*It seems to be a tendency of children growing in age becoming less creators than they used to be*

In this short portrait of a Bulgarian boy aged 8, we see as that children acquire new set of digital skills to serve their needs for fun, entertainment, curiosity, creativity and social life but also to support their both their informal and formal learning.

All children have gained autonomy and efficiency in their use of digital technology and their search for information thanks to their improved or newly acquired literacy skills. They show capacities of seizing the opportunities offered by the technology as we can see a tendency among the interviewed children to become self-explorers, self-learners and self-trouble-shooters, with no support of their parents any more. We saw and increase of use of communication tools especially social networks and instant messaging as the 'time of friends' has come in their life.

The only dimension that has not been treated yet is the creative side of the use of digital technology. Comparing the interviews from one year to another, it seems to be a tendency of children growing in age becoming less creators than they used to be. Further research is needed to confirm this finding. Nonetheless a few hypotheses may account for this change which we link with the fact that, as we saw in chapter 1, the young digital creator shows particular interest in this kind of creation but in primis benefitted from the active mediation of (at least one) knowledgeable grown-up.

(1) Children aged 8-9 might not be as much interested in these kinds of creative activities anymore.

(2) They prefer to engage with activities they are confident with and in which they can be independent from adults' support and therefore they might not be interested in activities still requiring the support of their parents. Indeed, most creative children of this second part are either independent creators or co-creators with friends or siblings.

(3) As their daily routine changes, and school might become more demanding in terms of school work at home,

as reported by the Russian families especially, children might have less time available for interacting with digital technology and might choose rather to entertain and relax themselves in this time rather than being creative, or concentrate on their studies as this extract from the Russian part of the study tells us about a 7 years old girl.

*She [Russian girl, 7] used to be rather active and confident users, and now only upgrades her basic knowledge. If earlier the child wanted to learn some additional skills (e.g. Photoshop or editing videos), now she doesn't express this interest and is more concentrated on her studying. (Russian national report, p.8)*

Finally, several accounts across the sample reported more frequently in this round of interviews cases of children taking the 'teacher' position and showing how to perform some digital activities to others. Sometimes, children are positioned in the family context as experts, mastering particular tools, apps or programs and they are asked to explain or to teach others how to use them.

Sibling mediation - children mediating other children's digital activities - is very important and visible in almost all the families. In general, older siblings help the younger ones, but the contrary may happen too.

Reverse mediation - children mediating adults' digital activities - is more visible even in this data set compared to the previous one. Little experts sometimes help their parents or grand-parents.

Regarding grand-parents, if in the previous round of interviews, they were noticeably mentioned among the influential figures of children's digital engagement, their influential role was less reported in this data collection, due probably to the increase of autonomy and independence of the children in all activities.

*Children taking the 'teacher' position and show how to perform some digital activities to others*

## 2.2.4 Evolution of children's preferences

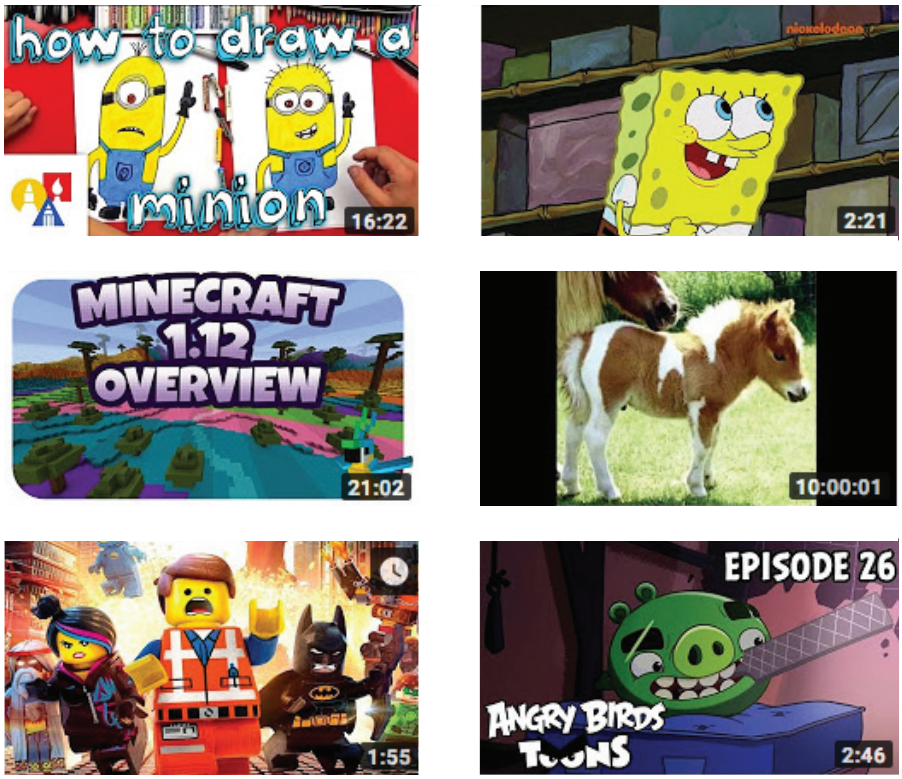
Portable devices, tablets and smartphones, are still children's preferences for the same reasons as last year: they like the size of their screen, their ease of use, their versatility and portability. Another important reason for children's attachment to smartphones and tablets is that often they are perceived as their ownership, while (Smart) TV belongs to the entire family.

TV and Smart TV especially are gaining back children's interest as reported from the Spanish part of the study for their new interactive and on-demand

**FIGURE 8**

**Illustrations of typical digital activities of children aged 6-7 and less: videos (cartoons), video games, drawings, children's driving interests such as pets.**

Source: European Commission



features and large size screen, although the novelty effect might also account for its popularity… or not.

*Time ago, the mobile phone was my favourite device because it was new. Now, I'm used to it. I am also used to the smart TV, but I'm not getting bored of it (Spanish girl, 9).*

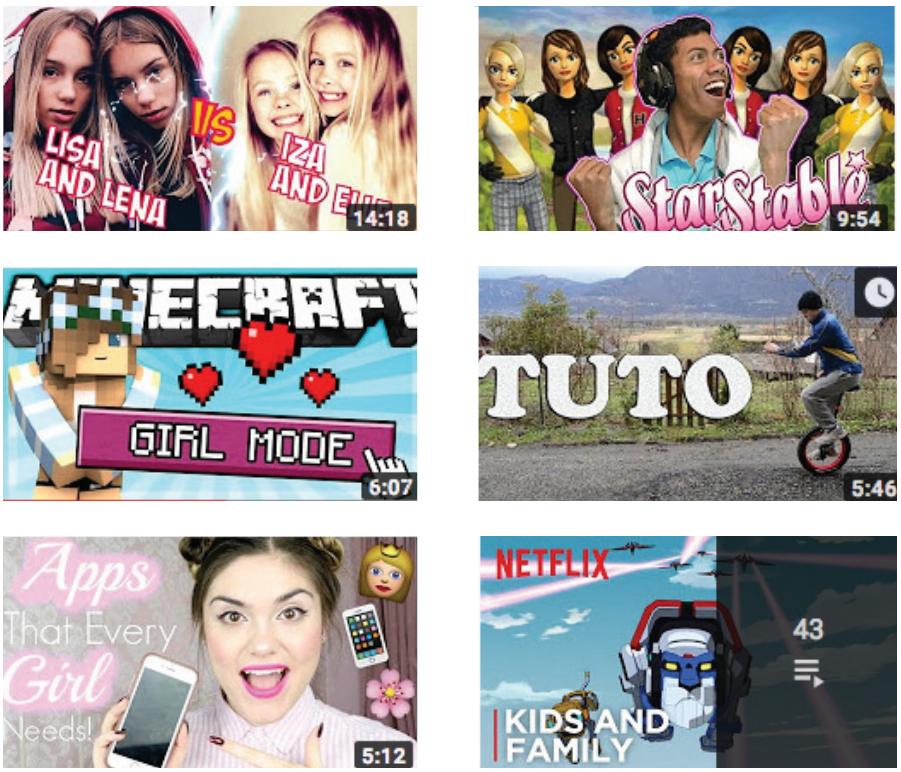
The tablet is still the favourite device for many children (especially in Belgium, Malta, Spain, Switzerland), but half of them prefer smartphones now instead (especially in Bulgaria, The Netherlands, and Russia) and the majority of the oldest children wish to gain ownership of one. Indeed, the oldest children in the sample (aged 8-9) perceive the smartphone as the grown-up's device. If they do not own a smartphone yet, they rank it high on their wish list. Most of the older children who don't have smartphones are asking their parents for one, and claim that they want to keep in touch with their friends.

**They perceive smartphone and its ownership as synonymous of independence, autonomy and freedom** while also providing the tangible sign that, by owning a 'grown-up' device, they are themselves grow-ups now.

Something that does relate positively to the perceptions of certain devices are skills. When a child is able to handle a certain device on his or her own, that device is viewed more positively.

**FIGURE 9**

**Illustrations of typical digital activities of children aged 8-9: videos (music), video games, tutorials, reviews and series.**
Source: European Commission




This is probably why PC's and laptops are next in the preference line, unlike a year ago where Game consoles were more popular.

Some children are allowed to use their parents' laptop. This new behaviour might be a result of the development of their fine motor skills and also of their reading and writing skills. This interest also depends, as we saw already, on the role played by school, which may or may not stimulate the use of digital devices for online searches or for homework. Interestingly, with the exception of the Maltese children used now to the daily usage of tablets at school, children do not perceive the tablet or the smartphone as devices they can use for schoolwork. Also, when it comes to schoolwork, the parents usually direct them to the computer. Researchers noticed also a correlation between active mediation to support school work and the interest generated by laptops and PC's. It seems that the children that are less stimulated to use digital technologies by the school and by the parents are less interested in the computer, mainly for school-related searches or work.

Game consoles seem to have lost children's interest since last year, while DVD and MP3 players seem obsolete.

On the whole sample, only a few families acquired other connected devices for their children use: a smart watch, a pair of 3D Google glasses. Over the year, the media has focused on new kinds of toys such as augmented reality toys, 3D-virtual reality glasses or internet connected toys without screen. The families who participated in this second round of fieldwork did

not seem very interested in them. The girl that used her smart watch to 'spy on' her friend in the first round of interviews stopped using it rapidly and the family that has 3D google glasses does not really use them. This round of interviews reported little presence/penetration of 3D and connected toys in family digital life.

### 2.2.5 Evolution of children's perceptions of digital technology

Although some children already understand that digital technologies are associated with certain costs, **most continue to perceive digital technologies and Internet as a free-of-charge unrestricted source of entertainment and fun**. Slowly, some children have started to discover it and recognise it also as a source of knowledge and information and acknowledge its pedagogical potential, even if the tablet is still more associated with entertainment and the laptop to learning, by both children and parents.

**Children are little aware of online risks** (explicit sexual content or contact with strangers, for instance), even those who have already had an experience of facing online risks (e.g. negative content, banners, or aggressive comments). **Most parents had not approached these issues nor digital security with them yet**.

They still believe the subject to be for a later age, which last year they defined as 'social media' age, while a significant number of the interviewed children already interact with social media.

The youngest children of the sample, mirror their parents' beliefs and fears, such as those two boys aged 7 from Croatia.

*I'm not supposed to look at it for too long because it can hurt my eyes. My grandpa says so, and he knows, he's a doctor. (Croatian boy, 7)*

*(Croatian boy, 7) knows that someone might contact him over the computer and is instructed to tell his parents about it straight away if something like that happens, but he doesn't really understand how someone could contact him because he doesn't use any communication tools on the computer (Croatian national report).*

The oldest might have their perceptions enriched by new knowledge as this report by Portuguese researchers illustrates.

*Another novelty is the mastery of passwords. All the children succeeded in explaining what passwords are, referring to them as a code [Portuguese girl, 7], that is important for security reasons, for instance, (...) if someone steals your smartphone and it has a password, the thief won't be able to find out (...) [Portuguese boy, 8], and they also identified other types of passwords. (…)*

*All the children know what Wi-Fi is, and they know that in public places like restaurants or at other people's homes, they can ask for the password. They are able to configure and connect to Wi-Fi, and they want to do it in order to watch videos on YouTube and play. (…)*

*About viruses, they have less accurate perceptions. They say it's something that stays in the technology (Portuguese boy, 9), and ruins the devices (Portuguese national report).*

**FIGURE 10**

**Illustrations of preferences of children aged 6-7 and less and of the role their families attach to digital devices.**

Source: European Commission

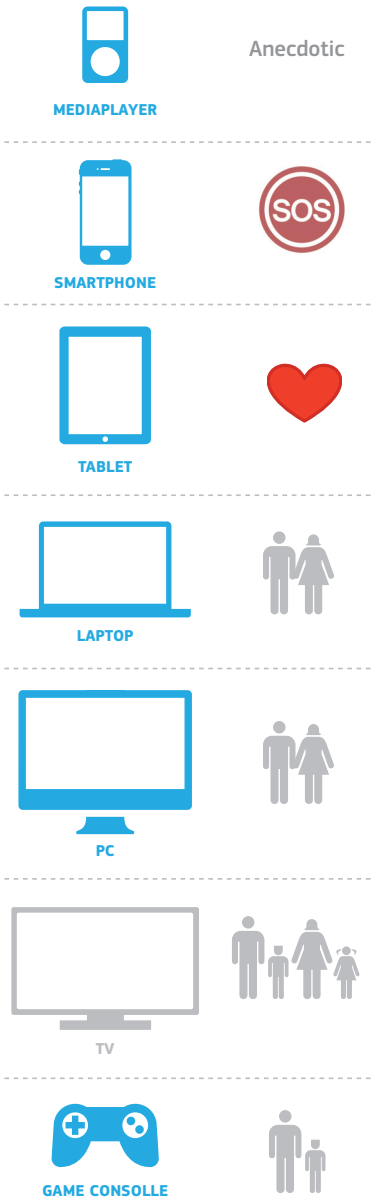
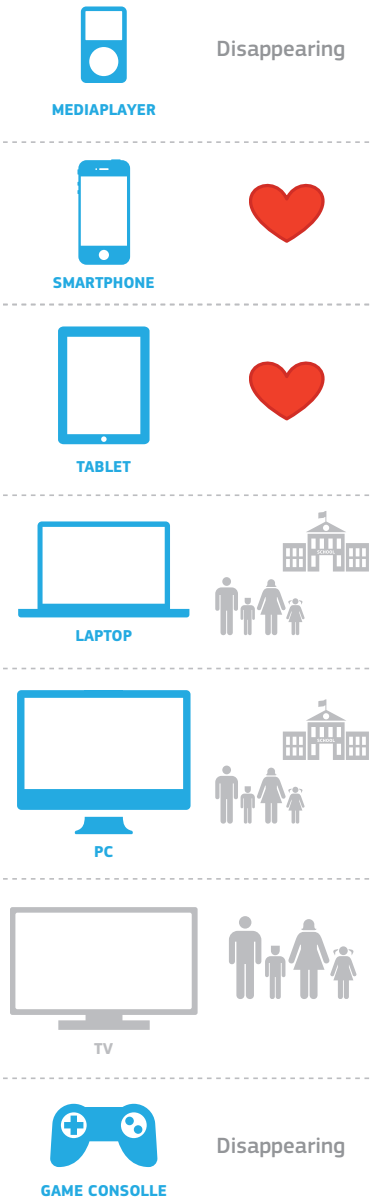


**FIGURE 11**

**Illustrations of preferences of children aged 8-9 and of the role their families attach to digital devices.**
Source: European Commission




Still, most of the interviewed children did not have a clear view of what the Internet is, nor seem to be informed about privacy and about how to protect it, although a few children show concerns when an adult takes images of them that may end up on social network. You're not going to post that on Facebook, are you? says a Portuguese girl, aged 8, about a video that her mother made of her dancing to a music video.

Nonetheless, children are very much aware of the essential role that digital technology plays nowadays in the daily life of their family as this Portuguese girl aged 8 states so well.

Mom, how did you live without mobile phones?, [Portuguese girl, 8]

## 2.3 How did parents' perception and mediation of young children's use of (online) technologies evolve over the course of a year?

### 2.3.1 Evolution of parent's perceptions

Parents acknowledge that digital technologies are important for their children, mostly because they witness the digital transformation of society and they anticipate their children's future filled with even more technologies. Parents who in the previous interview saw digital technology as inevitable, now saw it as an evidence. Similar to the year before or even more, the large majority of parents have positive views on technology, and consider its daily use globally beneficiary. Also, the belief that acquiring digital skills is key for children's future was more present in the parents' account. Some consider that not learning how to use digital technologies would be a professional handicap.

Compared to the first interviews, researchers saw parents increasingly acknowledging digital technology as a source of information and learning tool, especially if the use of digital technology helps their children to answer school requests. Parents in this context tend to support more actively their children in doing their 'digital' homework and help them to search for information online. Parents in this way have the opportunity to see more concretely how digital technology can support learning and literacy. This seems particularly the case in Malta where tablets have been introduced to each pupil as a learning tool from age 8 at national level. This finding seems to confirm the hypothesis we first drew in our analysis based on the first round of interviews and reported in chapter 1. Researchers noted also that the recognition of this new role in the children's life leads to a new diversification of perception of the digital devices themselves. Devices are not perceived equally. Mainly, laptops and PC's can be perceived as a study resource, while tablets and smartphones are more perceived by family members as a toy or as entertainment. One can expect nonetheless that this distinction is not made by Maltese parents concerning tablets,

given the clear role of learning tools they have gained over the period.

In general, parents see digital devices, at first, as a source of entertainment and relaxation for their children, mostly videos and games, as in the first round of interviews. Also, parents still use the attraction and taste that children have for digital activities to their own benefit, when they need the children safely engaged in a calm activity when themselves are doing something else either in the house, mainly while attending to household tasks, or outside the house, especially during waiting or travelling time. This role was described as the 'SOS' or 'babysitter' role in the previous chapter. Comparing the two data sets, this role seems less present in parents and children's accounts in those second interviews.

*Over one year, parents have evolved in their mediation style, now being generally more attentive*

A few parents added the role of 'peacemaker'. When watching a movie or video even aggressive or restless kids can sit calmly and enjoy a relaxing or funny time with their siblings for a while.

This time also gives the parent a window of relaxation and room for organizing household tasks (especially single parents with more than one child).

Some parents feel it can help build stronger family connections because (distant) family members can communicate more often and easily using digital technology or share fun moments.

On the contrary, and more often, other parents feel that the use of digital devices may lead to more tensions between family members, more isolation. Those parents believe that digital media does not encourage social interaction, and fear that they may ultimately lead to loneliness. A few parents refer that their children are to some extent addicted to digital media or fear their overuse.

At the time of the previous interview, [Mother] was happy that [Boy aged 9] preferred to stay indoors and play on computer, because in this way she did not worry where he was. She has a different opinion now, and is concerned that he is staying inside far too long. Instead of playing outside with his friends, he returns from school and sits at the PC for the rest of the day. (Bulgarian national report, p.17)

Online technologies are not very good as children are keen on them and become very addicted. I also notice we spend less time together as everyone sits in his bed or during the dinner with gadgets. But my son needs them for doing his homework, and we all have Smartphones to stay in touch so they are inevitable, that's it - [Russian mother, 29] (Russian national report, p.15).

As illustrated in this interview extract, some parents also report that when children are playing, they don't pay attention to anything else, seeing it as a source of distraction, overuse and ultimately addiction. This often causes tensions between parents and children and represents the Janus side of the positive 'SOS' and 'peacemaker' roles.

When children are on it (digital devices) they don't socialize, and then later they don't know how to socialize, and then they become freaks and no one likes them, [Croatian mother, 37] (Croatian national report, p.12)

(...) I give my smartphone to my daughter because I need to have time to do chores around the house, but then, when I am done, I want my daughter to be available for me. And she can't switch her mind-set from one moment to the other, and it creates tension. It takes time. And we don't always have the time [Portuguese mother, 41]. (Portuguese national report, p.26)

Regarding the fact about overuse offered across the sample, 5 boys (2 in Switzerland and 2 in Bulgaria, 1 in Belgium) were reported to present clear signs of overuse. Over one year, the use of digital technology of those children increased dramatically for different reasons and following different patterns: one to patch the lack of contact of other children or on the contrary to increase the opportunities of socialisation with other children, the other because they found in digital activities a true passion. Only one boy, in Switzerland, presented clear signs of addiction. His critical situation actually increased in one year as its overuse was already reported in the first round of interviews. Others children were reported by their parent as being (a bit) 'addicted' to technology but actually were not reported to present clear signs of overuse or addiction. As

in the first round of interviews, only boys present clear signs of overuse or addiction. This raises the question of gender effect in this phenomenon and needs further investigation to be answered.

In relation to overuse, some parents still fear for negative health effects, particularly on eye- sight and body posture although those points seem less present in this second interview accounts.

We keep telling her she can't hold it two centimetres from her nose, her eyesight will spoil. [Croatian mother, 36] (Croatian national report, p.12)

Moreover, some parents, in Bulgaria especially, reported concerns about inappropriate online content, cyber-bullying and abuse among peers. This might not be much of a surprise if we consider that, within the sample, Bulgarian children are the most connected to social media, in majority already having their own user profile on FaceBook. Indeed, across the study, the only report of mocking misadventure by peers (via Social network) was from Bulgaria.

Another shift was noted regarding privacy, at least among Belgian parents. In the first interview, none of them mentioned privacy as a threat. This year an increasing number of parents were aware of the issues linked to privacy on digital media. It seems that the topic has been very much treated in the Belgian mass media over the considered period. This might explain this evolution and awareness among Belgian parents on the topic. A Portuguese mother also reported this concern.

To sum up, the majority of parents continue to have a positive opinion about the online technologies; they encourage children's curiosity, imagination and desire for learning, and help them to master reading and writing. At the same time, they are increasingly concerned with different risk factors: excessive use and long screen time, isolation of family members, influence of commercial ads and consumerism, privacy, inappropriate online content, cyber-bullying and abuse among peers.

Nonetheless, researchers note that during this second interview parents' opinions are less asserted and extreme, parents also seem less anxious about their children's digital practices.

Mothers tend to be more concerned about time and content while fathers tend to be more lenient and tolerant 'to children's exposition to digital culture -'kill games' in particular- '(Spanish national report, p.3).

As already pointed out in the first round of interviews, mothers and fathers might have different opinions regarding their children's engagement with digital technology, depending on their personal experience, knowledge, perception and the reference point they choose to take advice from. This might create tension sometimes within the family, either between the parents or between parents and children who receive different kinds of instructions.

Favourable opinions about the pedagogical potential of digital media are mostly found among parents with more digital skills and confidence, most of medium and high socioeconomic status. Parents that take the position of not encouraging the pedagogical use of digital tools, nor the articulation with school, although some of them recognize their importance for accessing information, are mostly less confident in the use of technology, more concerned about the possible consequence of mis- and overuse and from lower socioeconomic status.

Nevertheless, parents in their large majority still consider that young children are not very exposed to online risks, and they fear mostly the future use of social media and the acquisition of smartphones. They still postpone mediation questions for 'the time of Social Media' while a majority of children are already using some digital tools of communication daily.

*My fears and worries are only just beginning, because at the moment, I am her filter. I choose who she can communicate with, but in a few years, her circle will be too large for me to control it (Bulgarian mother, 40).*

### 2.3.2 Evolution of parental mediation

As exposed in the section dedicated to parental mediation in the previous chapter, parents' choice for digital mediation strategies depend on a 'beam' of inter-linked factors: their personal experience, their knowledge, their fears and expectations, and the reference points they choose to take advice from (social groups, media, paediatricians and other professionals …). Also, what is considered as 'good behaviour' or 'good parenting' by the society they live in or social groups they belong to, has a major

influence on their parenting choices and parenting styles. Several authors (Clark, 2013; Pugh, 2009; Nelson, 2010) have showed that different socio-economic groups may have different views on what is 'desirable' and what 'good behaviour' could be. Perceptions synthetize the influence of all those factors which are at the basis of parenting choices, style and strategies.

Over one year, parents have evolved in their mediation style, now being generally more attentive on the way their children interact with digital technology. We note here that this might be an indirect effect of the first interview and of the invitation to a second interview.

As reported in the previous section, over one year, researchers saw parents' perceptions towards digital technology being reinforced and sometimes enriched. Researchers saw also parental mediation styles and strategies being reinforced and sometimes enriched.

In general, parents with positive attitudes towards digital technologies are more permissive, participative and explicit in their mediation style, while parents with negative views are more restrictive and less participative.

This reinforcement of the parental mediation style and the diversification of their strategies seems to be due to the children's increase of autonomy and self-confidence in the use of digital devices.

For parents, mediating their children's use of digital technologies also gets more demanding as children acquire enough confidence to challenge the rules, discuss or by-pass them.

Parents with positive views on technology's effects, especially if they recognise its value as learning tools, afford the children with more opportunities to use the technology autonomously.

They also made their parental mediation more supportive, active and explicit. The conscience of the parents regarding the children's autonomy have led some families to sit down and explain to their children how to search online content properly, showing them how to avoid risky keywords or how to use particular functionalities such as voice recognition tools, which are useful to overcome spelling obstacles.

Parents with more negative perceptions of digital tools used by their children, especially if they do not see them as possible learning tools but more as distracting objects or source of increased risks (i.e. overuse, or intensification of social networks use), tend to put measures to restrain and control more their children's digital activities.

There were a few exceptions to this general tendency as in a Spanish family where the father's mediation has been identified as passive, laissez-faire and did not evolve in one-year time. He considers that his daughter, aged 9, has a self-control over devices and he lets her use the digital devices freely on her own.

Indeed, researchers witnessed that the girl was not very much interested in interacting with digital devices. In this case, neither rules nor support were actually needed to mediate the girl's digital engagement as she is not much interested in the matter, at least so far.

### Evolution among restrictive strategies

As described in the first fieldwork, restrictive rules are the most used strategies to balance children's use of screens. As was the case the year before, parents allow the use of digital media mostly during the weekend and holidays. During school-days they allow its use after school-work within time limits and by organizing after-school activities.

Most families are still concerned with access to inappropriate content (i.e. violent or sexual content) and with the psychological effects from the uses of the digital devices (i.e. overexcited reactions, isolation) and that is why they monitor closely what applications children use and download or what sites they visit, if they do not restrict online accessibility of the devices altogether. Usually these rules are well accepted by the children although more seem to question them and negotiate them with their parents.

Integrating the access to digital devices into a rewarding system is also common, as pointed out already in the first fieldwork, although used more as a way to retrieve devices and prevent their use by children for some time.

Some families have reinforced control over the access passwords, and they change them quite often if they realize that the child knows it. This might be an effect of the first round of interviews where a significant proportion of the interviewed parents realised that their children discovered their passwords which did not constitute an access barrier anymore unless they change them regularly.

Password control can serve different goals such as to control time exposure but also to keep the device of adults clean from the 'pollution' their children might leave their device with after use (game apps or influence the personalised features such as adds, auto-suggestion…).

Interestingly, password is also among the digital concept that children grasp better, as described in the previous section. In most cases, children hunt for those passwords to access the forbidden garden, as this Bulgarian girl aged 7 who discovered on her own how to activate her mother's laptop and bypass its password. A Viber call from her smartphone to her mother's profile on the laptop turned on the device and granted her full access. The mother was quite shocked to discover the that her daughter has hacked her computer.

This 7-years old hacker broke into my laptop without knowing my password. I told the sysadmin at my work, and all he could say was that he could not comprehend what was happening with these kids. - Bulgarian mother of a girl aged 7.

Noticeably, on the subject of passwords, interviewers met a tech-savvy 7 years old boy in Belgium who has himself protected his laptop with a password because he was scared about the misuse of his device by other family-members, like deleting programs or changing settings. This way everybody -even his parents- needs to ask the boy permission to use the device. (Belgian national report, p.41). In the same way we consider reverse mediation strategies, this could be considered as reverse restriction strategy.

Coming back to parental strategies, researchers noted a major use of restriction strategies that take a positive form, active distractions, when parents propose attractive off-line activities to limit the digital activities. A Spanish family choose this strategy to make their holidays house a technology-free space for the family. In the following quotation, she expresses the benefits that she found on doing this:

*Since we are [in the countryside house] we talk a lot and we do lots of activities together as a family. I have commented this with my husband and we have both realized that in the countryside house we spend the best moment of our family. In the countryside house we don't have timetables, we set up our routines. When we do hand-crafts, puzzles or other family activities we realize that everything is easier and that [the children] don't miss the digital world - Spanish mother, 39 (Spanish national report, p. 37)*

This mother's account tells us also how this family found the occasions for family bonding through off-line activities. Other parents indeed complain about digital technology putting the family members apart like this Portuguese mother aged 41 who also directed her daughter to other family activities among her supportive and active strategies.

*The mother's parental mediation style combines a close accompaniment, as she participates in activities with the child and tries to stimulate learning, and also supervises attentively the girl's individual uses. The mother uses parental control filters, but she also negotiates rules with her daughter, and tries to provide explanations and justifications for the rules. The mother does not limit screen time, but tries to manage it in the best way possible, directing the child to other activities that they can do together, such as games, reading, crafts, or outdoors activities, when the weather is nice. The mother highlights that what she dislikes the most about digital media is that they reduce the attention time that the daughter devotes to her. The mother feels that they are spending less time together and that the daughter does not pay any attention to her: We had an argument this week, and I told her that she would have to stop using my phone, because I am at home with her and I feel like I'm alone. So, she tries to captivate her interest to other activities that they can do together. (Portuguese National report, p.27)*

Researchers in this study observed also in several cases in Slovenia and Croatia, parents purposefully limiting their children's digital skills, not sharing with them their own knowledge, in order to monitor and manage their digital engagement more easily. On the same theme, parents in Belgium and Portugal have been reported not willing to talk about digital technologies and the associated risks because they think this will encourage them to seek for those risks out. (Belgian national report, p.4; Portuguese national report, p.54)

Regarding technical tools, a minority of parents have installed controlling and monitoring software that help them to check and review the content their children accessed and the time they used it. The researchers that took care of the Bulgarian part of the study noted that, in all interviewed families, parents rather strictly and regularly monitor children's online activities and a majority have installed paren-

tal control software on the devices children use as a way to ensure safety while they have chosen more open and permissive strategies. Researchers consider those developments as partially influenced by the first wave interviews, which alerted the parents to issues of online safety and security. This effect was also noticed in the children's behaviour as reported by this mother from Bulgaria when talking about her 8 years old daughter.

*I noticed a considerable change in my daughter's behaviour after the first interview. She became more careful, she started asking questions like 'is it OK if I do this?*

Others parents have heard about parental control on devices or software such as TV and YouTube. Some of them expressed the willingness to install them but most acknowledge their lack of competences or knowledge in the matter as another Portuguese mother reported here:

*I have been a bit unconcerned about this [online risks], but I think maybe it's time to put the filters on, isn't it? I don't know what it's called ... to stop, … not to see certain things. I don't know how this works but I know it exists (Portuguese national report, p.19)*

We note here that no family has been identified for using YouTube Kids in Spain (sole country of the sample where this service was available at the time of the interviews), a few use built-in restrictions settings (via YouTube filters and Netflix' children profile features). However, as in the first data collection, parents in majority prefer to check the children's activities by being physically close to them when using the device or by reading the device's history afterwards.

Social networks or online games are in general restricted or banned. Children know that they cannot download applications without parent's permission or only free apps. However, in some cases children try to find the way around and download free killer games or any other apps when the parents are not around.

**Strategies to anticipate and to inform the child in advance about time exposure or some other limitations have been developed**

To close this point on restrictive mediation strategies, two considerations.

At first, as the first fieldwork showed already, restrictive strategies are usually put into place to prevent risks that parents believe may happen. Sometimes however, restrictive strategies are chosen in reaction to an incident or a change in the child's behaviour. Those extracts from various national reports illustrate this element.

*Some time ago, [girl, aged 8] played Angry Birds and without realising it, she purchased several golden birds, each costing about 40-45 EUR. After this incident, her father locked the tablet with a fingerprint and she can no longer use it on her own. Through this incident, [girl, aged 8] also learned that every time an application asks for the number of the credit card or other payment, she must close it or tell her parents. (Bulgarian national report, p.13)*

*With regard to having rules and enforcing them, mum and dad feel they are generally more strict now because Naomi started using digital media more frequently and because Irene is sometimes too absorbed by WhatsApp. (Dutch national report, p.8)*

*Only one parent mentioned using an app that monitors which websites the children visit and sends a weekly report via email and one mother uses the built-in restrictions in YouTube's settings. They started using this after their children stumbled onto too violent or sexual content. The most used strategy for monitoring what content the child watches is to be around when the children are using digital media and simply keep an eye out. (Belgian national report, p.43-44)*

*[Bulgarian father, 28] regularly monitors what [Bulgarian boy, 9] is doing online. Some time ago, one of his friends sent him pictures of naked women. [Bulgarian boy, 9] talked with him and told him not to accept and open files with similar inappropriate content. Spas was also told never to use other people's smartphones, after he played games on his grandfather's phone and caused a significantly increased phone bill.*

They also, to some extent, illustrate that children learn from their mistakes in the trial-error path they follow to discover the possibilities of their devices.

Secondly, as the researcher looking at the Spanish part of the study remarked, parents may suffer more from the norms they have established

for managing the digital life of the children than children themselves. At the age of 8-9 children understand the norms and can explain them clearly although they may actively disagree with and resist those norms at times. Children may feel frustration for norms and create tensions around this between children and parents but children do not seem to have the grief or bitterness that parents report. In comparison to the first round of fieldwork, parental mediation tends to be more explicit as children have grown in their cognitive capacities and their understanding. In some families, for instance, strategies to anticipate and to inform the child in advance about time exposure or some other limitations have been developed. Adults believe that these announcements help to avoid arguments and frustrations with the child later on. (Spanish national report, p.38)

### Tendency to evolve from restrictive strategies to more supportive and more permissive approaches

Beyond the influence of socio-economic background of the social norms and representation of the 'good behaviour' as reported in the introduction of this section, we report here the noticeable differences in parental views and mediation that may account for societal differences at a larger scale. Even though the qualitative nature of our data does not allow generalisation, we consider still them being interesting to report and useful to see tendencies across the collected data.

In the sample, parents in Spain, Portugal, Switzerland, Croatia, Slovenia, Belgium rely in majority still on restrictive strategies even though some invested more in supportive and active strategies. Researchers' accounts are coherent between those parts of the study although with this tendency being less perceptible in Slovenia and Croatia.

Parents in the part of the sample from Bulgaria, Russia, Malta, The Netherlands seem to evolve from restrictive to permissive approaches in general while at the same time most monitor more closely their children's use. Analysis shows more variability regarding parental motivation behind those evolutions linked to their particular local context.

In Malta, researchers report that parents still supervise their children's use of digital technologies, but allow them more freedom. They consider that their children no longer need their permission to access the internet as they find them older and more mature than the year before. They evaluate that their children can exercise more self-regulation in their use of digital technologies. They do not feel the necessity any more to restrict their children's use. Parents discussed and negotiated with the children their use of digital technologies, i.e. which videos to watch, and which apps to download. Compared to the first fieldwork, parents seem more confident in their mediation. They seem to show as well a major homogeneity of views and strategies in between families. This change is clearly to put in relation with the major education plan introduced in 2017 that saw the arrival of tablets for each child aged 8 in class. Parents are not the sole mediator of their children's use of tablets. Today, they share this role with school teachers who are entrusted with the supportive and active part of the mediation.

Among Russian families, in general, parental mediation of children's digital technologies use has become more permissive but also less active. Those parents consider that children, being older, can benefit from more freedom online and less control time limits. They also tend to ignore the situation in which children break the devices whereas in the first round of interviews, keeping the integrity of (costly) devices was the goal of some parental roles. Most parents also do not think it necessary any more to sit with their children or to monitor their use. Parents seem less interested in controlling their children online and their usage of devices. Some consider monitoring not needed anymore as their children now use the device in such a way they will not break the device or delete data. (Russian national report, p.15) We note as well that the free time for Russian children seems to have shrunk considerably compared to the other cases of the sample as school duties seem to have grown in importance and volume.

Bulgarian parents adopted a more permissive approach while increasing their monitoring strategies. Their typical view is that children should not be restricted and deprived, because for them using digital devices represents a good for their development and numerous advantages they can benefit from. Parents' position has evolved since the first interview and they now prefer an open and honest dialogue to prohibitions, while at the same time they monitor more closely their chil-

dren's use. Nonetheless, researchers note also that children's increase of autonomy and self-confidence can account only partially for A noticeable decrease in time and diversity of joint online activities between parents and children.

In families from the Netherlands, in comparison to the previous year, parents generally show more lenience. As the children grow older, parents recognize that their children become more skilled and autonomous and they take their developing interests seriously. Furthermore, they find it important that children learn how to use digital media independently in a sensible way. What other parents of children the same age do also matters. (Dutch national report, p.2)

*In the beginning we held off because I preferred her not doing it, but at a certain stage you have to slowly allow more so she understands how things work. Mother aged 44 of a girl (8) and a boy (6) - The Netherlands*

Croatian families adopt in general restrictive strategies. However, particular change of context may be the occasion for more unattended and permissive use. Indeed, the daily routine of the Croatian children of the sample has changed dramatically in one year. When researchers first met them, most were in their last year of kindergarten. At the time of the second visit, they were attending the first grade of primary school and their daily schedule changed in such a way that they now spend more time alone than before and this time is often correlated with the use of digital devices. 'Parents feel they cannot ban the use of devices during this time because they think children need it to be occupied and not to worry or be scared if they start thinking about the fact that they are home alone. Nonetheless, parents try to instruct their children on the devices they can use or the activities that they perform in those times.' (Croatian national report, p. 20) Actually, those times are real times of freedom for the children who try to get over the restrictions of their parents by different means. Interestingly, the researcher noted that Croatian children gain most of their new and updated skills in this particular time.

We conclude this section on two individual cases that we found respectively interesting and important to report.

Interestingly, researchers reported this case of a family in Belgium 'using no rules and restrictions and where the children attach less value on to digital technologies. They feel like it is nothing special and part of their normal everyday life. Whereas in families where there are stricter rules, researchers noted the children giving something special and highly valued to digital technology, and sometimes screen time is used as a reward'. (Belgian national report, p.43)

It seems that we touch here an 'egg-and-chicken' paradox. Is it really the absence of rules and a permissive approach that leads to a medium interest of the children in digital technology or, may it be the other way around, medium interest in technologies from a child allows for more permissive and open approaches? Are strict restrictive rules inducing children's interest in digital technology or strong interest of children in digital activities demand for more restrictive strategies from their parents? We leave the reader with the question.

Finally, let us make a consideration regarding the limits that open and permissive strategies may have if not accompanied by a minimum of regulation and monitoring measures, based on reported case from Switzerland.

*As the children grow older, parents recognize that their children become more skilled and autonomous*

In this family, since the first interview, the (divorced) mother of a boy aged 8 has evolved in her views and strategies about the digital education of her child. She now finds it important that her child improves his critical thinking and capacities. She wishes him to be able to identify suitable content for himself among the infinity of content that is available online and to protect himself from unsuitable content. Instead of restraining the access to certain content, now she trusts his judgement and self-control. Actually, it looks like she overestimates his abilities to decide what's good for him at his age, since he shows strong signs of media addiction. She wishes to be more consistent in restraining duration of screen time or stop him earlier since the boy mostly would not stop gaming on his own. When his

father or his mother tell him to stop, he knows he can get a bit more screen time in when he asks please just a bit more. (Swiss national report, p.4)

### 2.3.3 Evolution of safety mediation, the role of parents and schools

Compared to the first round of interviews, many parents have talked to their children about inappropriate online content, mostly violent, scary or sexual, and have instructed children not to explore those types of content; however, the majority of them have not approached other issues yet, such as data protection, commercial exploitation or cyberbullying, among others.

Fathers in their safety mediation tend to focus on the technical side of the technology (viruses, filters, …) while the mother focus on strategies that will secure their children's physical and cognitive health as well as social well-being. Fathers are also often more lenient regarding violent games and videos.

Some parents refrain from talking about the risky sides of digital technology with their children as they fear that instead of instructing them to be more cautious about their use, this new knowledge will push them to search for riskier digital experiences.

This has been particularly reported in the case of the Belgian part of the study who already underline this point in the report of the first field work. (Belgian national report, p.4)

Other parents do not possess sufficient experience and competences (knowledge and skills) when it comes to safety measures concerning digital technologies, so they have little knowledge to pass to their children. As they are not confident themselves with the digital devices, they prefer to stick to strict restrictive approaches that they believe efficient to prevent their children from any kind of trouble. As underlined in the previous section, compared to the first data collection, those parents seem to have reinforced their restrictive strategies probably because of the increase of confidence, skills and autonomy of their children. Probably also as an indirect effect of the first interview that might have increased parents' awareness about digital safety issues. Still, their mediation strategies are more focused on time than content; children will still explore the possibilities of the technology following the trial-error path, with little warning of its pitfalls; at the same time restricting strategies diminish children's digital learning opportunities.

*Other parents do not possess sufficient experience and competences (knowledge and skills) when it comes to safety measures*

On the other hand, our analysis based on this data collection seem to suggest a positive correlation between open and supportive approaches, children's awareness to risks and children's safety skills. Indeed, children from families with an open approach and communication towards digital media also tended to be more aware of the risks associated with the use of digital devices, and more also knew strategies to prevent or mitigate those risks, such as calling a parent when an issue arose or closing the device in absence of parents.

Researchers in Malta also noted that children in general had become more aware of some of the risks associated with using digital technologies and the internet, such as physical and mental harm (e.g. the effects on their eyes and brain), viruses, the danger of encountering strangers etc. Again, this evolution may be accounted among the positive effects of the introduction of tablets at primary level and of the active digital mediation role taken by the schools.

This brings us back to the essential role that school may play in the development of children's digital engagement. Compared to the previous round of interviews, some parents have intensified their expectations regarding the role that technology might play at school because they believe that digital technologies are indispensable for the education of their children. They expect the school to play a key role in the digital enculturation of the new generations.

Other parents, such as most Bulgarian parents, may still support restrictive school policies, which prohibit the presence of private digital devices in the classroom. Indeed, they believe

that otherwise children would not pay attention in class and that peer pressure to own a particular device would be too large. At the same time, those parents are growingly in favour of creative and meaningful inclusion of online technologies in the process of education.

A few doubtful comments on the efficiency of digital education and digital literacy at school were also reported, like this extract from the interview of Russian parents.

*I don't think educational staff should show kids movies, allow them to play a Smartphone or tablet. Neither should they teach kids to use technologies, I will do it better. And as for my son - he does not have lots of free time to play online games or watching videos at the moment, and it is very convenient for me - (Russian mother, 48) (Russian national report, p.12)*

Nonetheless, the data collected in this round of interviews seems to confirm that children enlarge and diversify their digital activities and skills if stimulated by the school. Also, parents tend to support more actively their children's engagement with digital technology and invest more time, and even resources sometimes, if specific digital tasks are requested by the school. However, this role is more easily embraced by parents who are already knowledgeable, skilled and confident with the technology.

*I think that parents should be with their children online and teach them. When [his daughter] became a pupil, we [both parents] started teaching her to use text editors, making presentations, drawing and editing images so she could be able to have her homework done. (Russian father, 45) (Russian national report, p.12)*

For this technophile Russian father, helping his daughter to do her homework with digital technology was obvious. Parental knowledge in digital technologies allied to meaningful integration of it at school level, including in homework, seem to potentiate the learning opportunities of children.

On the other hand, some of the less privileged parents complain and disagree with the use of digital technologies in the school context that would represent an extra cost for them (updated devices, costs of data use …). In this respect, some even disagree with the fact that schools communicate by email.

**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

Chapter 3

# Parental perceptions and parenting strategies: tendencies at cross-national level

Chapter 3

# Parental perceptions and parenting strategies: tendencies at cross-national level

## 3.1 The influence of personal and individual elements: experiences, knowledge, attitude and skills, and socio-economic background

One of the main common findings emerging from this research at cross-national level is that children develop digital skills from a very young age (kindergarten), mostly in the home context, by observing and mirroring parents' and older siblings' digital behaviour. They develop their digital skills according to their needs and interests using a trial-and-error path, which is not risk-free.

Parents on the other hand attempt to balance and safeguard their children's digital use, with more or less success. Parents' choice regarding parental mediation strategies and style - permissive, authoritative, authoritarian and laissez-faire - (see section 3.3 of the first chapter of this report) - rely on numerous interlinked influencing elements such as personal experiences, knowledge, attitude and skills, but also socio-economic background and the social norms of the groups they belong to, considering the individual level.

All those elements influence the way parents perceive the use of digital technology, their parental mediation style and strategies and, in fine, the way children use digital technology in the home context.

The data analysis reported in the previous chapter tends to suggest the following correlations when considered at cross-national scale:

- Favourable opinions about the pedagogical potential of digital technology are mostly found among parents with more digital skills and confidence, most of medium and high socioeconomic status. They are more inclined to actively support actively their children's use of digital technology.
- Parents that encourage less (or do not encourage) the use of digital tools, are mostly less confident in the use of technology, more worried about possible consequences of (mis- and over-) use of digital technology and from lower socio-economic status (mis and over) use of digital technology and from lower socioeconomic status.

Similar findings have been reported in recent years by other research teams for older children and teenagers for TV and digital media in US and Europe (Clark, 2013; Pugh, 2009; Nelson, 2010; Hollingworth, Mansaray, Allen, & Rose, 2011; Paus-Hasebrink, Bauwens, Dürager, & Ponte, 2013)

## 3.2 The influence of contextual and societal elements

Individual elements present a high variability between parents, families and within and between countries, whereas contextual elements seem to affect also the way parents mediate the use of digital media by their young children and those elements may ac-

count for differences between parental mediation style at cross-national level.

To evaluate the importance of contextual factors perceptible at cross-national level, we explored the different styles of parental mediation across our data, addressing two questions: (1) what are the trends of parental mediation styles adopted towards young children at cross-national level; and (2) what specific contextual factors influence parental mediation. This part of the report relies in part on the data analysis presented already in a published article (Brito, Francisco, Dias, & Chaudron, 2017).

Chapter 1, section 3.3 of this report presents in details the different parental mediation styles as found across the sample.

As the basis of the analysis, we chose the matrix proposed by Valcke et al. (Valcke, Bontea, de Wevera, & Rotsa, 2010), which relates parental mediation of internet (here enlarged to digital technology) to the overall parenting styles.

We refer to Chapter 1, section 3.3 for an illustration and a complete description of the matrix. Here we provide a brief overview.

The matrix is the result of the crossing of two elements of parental mediation disposed following two axes: parental demand/control and parental warmth/support. This leads to four mediation styles - authoritative (mainly supportive strategies including rules that foster children self-regulation), authoritarian (mainly restrictive strategies to control and monitor children's behaviour, little or no support), permissive (mainly open strategies with no fixed rules but occasional monitoring of children's activities and negotiation with children) and laissez-faire (essentially no control and no support).

Across the sample, the authoritative style, where parents tend to combine different mediation strategies, including active and supportive mediations and different strategies of restrictions (social, active distraction, technical), was the most common parental mediation style related to digital technology use. These parents chose strategies in coherence with their dual perception of the technology, on one hand, the positive views (e.g. learning tools, source of information or inspiration) and on the other hand, the negative perceptions (e.g. the possible risks associated with technology: health and cognitive issues, addiction, isolation.

Less represented across the sample, but still important, is the permissive style, parenting style chosen by parents with mainly positive perceptions towards digital technology.

The less frequent parenting style was the laissez-faire. The majority of those families had limited time, knowledge and/or resources to mediate the digital activities of the children while at the same time they extensively use digital devices as 'babysitter' and 'SOS'. Most of them are single parent families.

The authoritarian style, chosen by parents that have the most negative perceptions regarding children's use of digital technology was the least common. Those parents develop strategies to protect their children from activities and behaviour that they consider inappropriate or potentially harmful. These parents rely mainly on restrictive strategies and enforce rules such as time of use or restricted apps, without room for negotiation.

### 3.2.1 Mapping parental perceptions and parenting strategies

Looking at our data at cross-national level in a mapping exercise requires first to consider the nature of our data, meaning qualitative data. Qualitative data represent an account of certain realities in great detail but do not provide statistical representativity.

Nonetheless the mapping exercise of elements of parental mediation may provide indications which are worth confronting with the results of other research, bearing in mind this limitation. The following exercise is therefore to be taken as such.

When we map the different parenting styles identified in the analysis of our dataset, beyond variations linked to different socio-economic contexts, our results point interestingly to important geographic differences within Europe. We identified two axes:

- **a north-south axis along which parental perceptions and attitudes towards technology vary from positive/supportive in the north, to negative/restrictive in the south;**
- **an east-west axis along which parental choices regarding children's access to technology varies from widespread and open access in the east, to restricted access in the west;**

We note nonetheless two disruptions in the 'open-limited' continuum in the central part of the east-west axis. Indeed, in three countries, centrally situated in Europe (Croatia, Slovenia and Switzerland), children's access to digital technology is restricted more tightly as their parents show a preference for the authoritarian style of mediation, whereas in Western European countries, parental mediation strategies belong mostly to the authoritative style, with less rigid rules and restrictions and more support aiming at self-regulation. Most parents in the Russian part of the sample also share those mediation strategies.

Data from Lithuania and Latvia show another disruption on the north-south axis but not in the same way. In Lithuania, a significant share of the interviewed parents perceived digital technology as being negative or at least not necessary for their young children. Data also reveal a tendency among them to strictly restrict children's use of technology and to direct them towards 'Back to nature' activities. This puts Lithuanian parents closer to parents from southern Europe.

In Latvia, parents share the positive perceptions towards digital technology that we found among parents from other northern countries. Investing in digital devices and using them quite intensively is a normal. Nonetheless, whereas in Finland, Norway, Denmark and the Netherlands parents tend to support and actively mediate their children's use of technology, in Latvia, interviewed parents are at the same time permissive in terms of content while being restrictive regarding time of exposure. They actually show more commonalities in their parenting practices with parents in Bulgaria and Romania.

Therefore, when we consider both axes - parental perceptions and attitudes (positive -negative; north-south) and parental choices regarding children's access (open-restricted; east-west) and the noted disruptions - four groups of countries emerge (Figure 12):

- **Northern European countries** (Nordic countries and the Netherlands), where parents mainly perceived the positive sides of digital technology and which favoured supportive and active mediation and rather open but monitored access to content.
- **Southern and Western countries and Lithuania and Russia** see parents that perceived positive but also negative sides of digital technology and mediated their children's use, using mainly restrictive mediation both in terms of time and content while being nonetheless supportive and sometimes active.
- **Central European countries** had more parents that see the use of digital technology by children more negatively and mediated their children's use more strictly both regarding time and content with restrictive mediation and less support.
- **Eastern European countries and Latvia**, where parents perceived both negative and positive sides of digital technology, used restrictive mediation to some extent regarding time but provided their children with open access to content.

An EU Kids Online's analysis showed in 2013 similar findings regarding variation in the parental mediation of 9 to 16-year-olds' internet at cross-national level (Helsper, Kalmus, Hasebrink, Bence, & Jos, 2013). In this study, Most Central and Southern European countries, Ireland and the UK saw parents who prefer restrictive mediation. Whereas, in Northern European (especially Nordic) countries, parents favoured active mediation of children's internet use. Eastern European countries had more parents who are what the authors defined as 'all-rounders', meaning that they use active and restrictive mediation including via technical means (Czech Republic, Cyprus) or 'passive' mediation, where parents practise all three types of mediation below the overall sample average, particularly active mediation and monitoring and technical restrictions (Bulgaria, Romania, Slovenia, Lithuania).

Our qualitative data seems to confirm the general tendencies of this mapping also for the mediation of digital technology of younger children, with nonetheless the nuances of parents using as more authoritative than authoritarian style of mediation in Central Europe and the particular cases of Latvia and Lithuania.

### 3.2.2 Comparing levels of digitalisation and integration of digital technology at school at country level

What would be the contextual elements differing from a one country to another, that could explain the

tendencies of preferred parental mediation style mapped in four groups at the European scale?

When we study and compare the contextual elements present in the interviews, the accounts from the northern countries are striking. In their interviews, parents in Finland, Norway, Denmark and the Netherlands countries state digital technology as being 'natural' for them and for their children, whereas in southern countries, parents found them difficult to manage and some even oppose 'digital activities', preferring 'natural (meaning normal) childhood activities' such as tree-climbing or playing outdoors. Parents from the northern group of countries show a high degree of integration of use of digital devices in their everyday life.

They also account more often for meaningful use of digital technology at school, including kindergarten, and after-school clubs (coding) compared with to other groups. Researchers also noticed the marked tendency compared to other countries of parents supporting their children in doing their homework using digital technology but also playing with them with game consoles, or hunting for Pokémon together, as with a family in the Netherlands.

The presence of digital technology in class seems rather anecdotal in the accounts of parents and children from other countries. They may report on the presence of interactive whiteboard or PC's in the classroom, used by the teachers but rarely by the pupils. Parents in Eastern countries are the ones that view digital technology at school the least positively. Although they recognise the benefits that appropriate digital classes would provide, they consider digital devices at school disruptive, and some are in favour of banning them from schools.

Others state that ICT classes are useless as the parents judge themselves better teachers of the subject matter. Based on this comparison, we made the hypothesis that the level of digitalisation of the society and the level of integration of digital technology at school might be good candidates to account for differences in parental mediation at cross-national level. Therefore, we looked for several indicators at international level of those two phenomena and compared their mapping to the results of our data analysis, the mapping of elements of parental perceptions and parental mediation strategies at European scale.

## Digitalisation of the society at national level

To evaluate the level of digitalisation of a country we looked for indicators that allowed the measurement of the level of penetration and degree of acceptance of digital technology.

We first considered data elaborated by the Dutch Statistic Office based on the Eurostat - EU-28 Households as close as possible to the data collection time (2015-2017), the percentage of households benefitting from internet access at home (2015-2017), the percentage of households with broadband internet access at home (2017), the percentage of persons (aged 16-74) with mobile internet access (2017). In addition, we looked at the Digital Economy and Society Index (DESI) that measures the integration of digital technology in business and the Digital Intensity Index (DII) that measures the availability at firm level of 12 different digital technologies both for 2017.

**Eurostat - EU-28 Households - Internet access**

Finland, Denmark and the Netherlands ranked within the top 6 of the considered EU-28 set of data along with Sweden, Luxembourg and the United Kingdom, systematically. Their percentage of households benefitting from internet access at home is close to saturation, over 95% in 2017 while already over 90% in 2015 for Finland, at rank 6 (Eurostat, level of Internet access).

The percentage of households with broadband internet access at home in 2017 was over 90% for all: Denmark, 92%; Finland, 93% and The Netherlands, 98% (Eurostat, type of communication to the Internet).

The percentage of persons (aged 16-74) with mobile internet access in 2017 was respectively 79% in Finland, 83% in Denmark and 87% in the Netherlands (Eurostat, mobile Internet access).

Bulgaria, Greece, Romania and Lithuania are all at the bottom end of the ranking for the percentage of households with internet access at home in 2015, with 59% for Bulgaria and 68% for both Romania and Lithuania.

The three countries saw an important increase in internet access at home in 2017 as their percentages were respectively 67%, 76% and 75%, catching up with Croatia that kept its percentage of households with internet ac-

cess at home (77% in 2015- 76% in 2017).

Portugal, Latvia and Cyprus follow with a percentage increasing from 2015 of several points and reaching rates of respectively 77%, 79% and 81%.

Italy, Slovenia, Czech Republic, Spain, Malta and Belgium follow with percentages between 80 and 86%. Germany is ranked 7th with 90% of households with internet access at home in 2015, increasing to 93% in 2017.

*Hypothesis: the level of digitalisation of the society and the level of integration of digital technology at school might be good candidates to account for differences in parental mediation*

The situation is similar for the percentage of households with broadband access at home in 2017. Bulgaria (67%), Greece (71%), Romania (74%) and Lithuania (75%) appear at the bottom of the ranking. Portugal, Latvia, Croatia follow with 76%. Cyprus, Italy, Slovenia, Spain, Czech Republic, Belgium and Malta show rates between 79 and 85%. Germany is at the same level as Denmark with 92%.

Data on the percentage of the persons (aged 16-74) with mobile internet access in 2017 provide a different view as Italy and Croatia are now at the top end of the series with respectively 32% and 51%. Nonetheless Romania (53%), Lithuania (55%), Bulgaria (56%), Latvia (57%) keep together and closely follow Portugal (58%), Czech Republic (60%) and Slovenia (63%). Cyprus (70%) shows a high rate of mobile internet connection compared to internet connection at home, close to Malta (71%). The percentages for Germany and Belgium are at 75% while Spain follows Finland with 78% of the persons (aged 16-74) with mobile internet access.

**Digital Economy and Society Index (DESI_2017) and Digital Intensity Index (DII_2017)**

As for the composite indicators, Finland, Denmark and The Netherlands are in the top 6 - with Ireland, Sweden and Belgium - of the Digital Economy and Society Index (DESI_2017) that measures the integration of digital technology in business in 2017. Romania, Bulgaria and Latvia are showing the lowest scores on the DESI_2017 index, while Lithuania is far above the EU28 mean and is placed in 9th position after Czech Republic and Slovenia but before Germany, Portugal, Spain, Malta, and the UK while Croatia, Cyprus and Italy follow, below the EU28 mean.

The picture shown by the DII_2016 is very similar for the Digital Intensity Index (DII) that measures the availability at company level of 12 different digital technologies.

At the top of its ranking for 2016, we found Denmark, Finland and Norway, followed by Sweden, the Netherlands and Malta (see Note 3 p. 18).

Romania, Bulgaria and Latvia score lowest on the index, while Lithuania is ranked 10th after Malta, Belgium, and the UK but before Spain, Slovenia, Czech Republic, Germany, Croatia, Portugal and Cyprus.

## Integration of digital technology in schools at national level

Regarding the integration of digital technology in schools, mass media often report the excellence of the Nordic education system thanks to their high results on the OECD-PISA study (OECD, 2015). They are also reported in literature and media as leading the way to develop the 'the skills for the 21st century'.

At international level, OECD, based on the PISA study 2012 constructed an Index of computer use at school based on nine activities using computers at school (chat on line; using e-mail; browsing the Internet for schoolwork; downloading, uploading or browsing material from the school's website; posting work on the school's website; play simulations at school; practice and repeat lessons, such as for learning a foreign language or mathematics; doing individual homework on a school computer; and using school computers for group work and to communicate with other students) (OECD, 2015).

Although this information does not fit our needs (the countries of our sample are not all OECD countries; the data are quite old with respect to our data collection time and consider secondary schools) looking at the ranking

of this index can still be informative. Denmark, Norway are in the first and second positions of the index with respective values of 0.9 and 0.7 above the average, followed by Australia (0.6) and the Netherlands (0.5). The Czech Republic is in 5th position (0.4), Spain (0.2) and Slovenia (0.1) show integration of ICT in school slightly above the average at that time. Switzerland was positioned at the average (0.0). Portugal (-0.1), Italy, Croatia, Belgium (-0.2), Latvia and Russia (-0.3) were below the average but not as much as Shanghai-China, Japan and Korea (-1).

More relevant for our exercise is a Survey of Schools: ICT in Education which provided at the request of the European Commission a snapshot image in 2013 of the integration of ICT in schools across Europe, based on over 190,000 responses from students (including grade 4, 9 years old), teachers and head teachers collected and analysed during the school year 2011-12. (European Commission, 2013).

Building on the results of this first survey, the European Commission launched the 2nd Survey of Schools: ICT in Education, in July 2017 which will assess the progress and estimate costs to connect primary and secondary classrooms in the EU.

While waiting for those fresh data, results of the first survey can still provide us with some background elements of the contextual situation of our interviews carried between 2015 and 2017. It is important to note that the response rate was insufficient to make a reliable analysis in four countries (Germany, Iceland, Netherlands and UK) while Croatia, Iceland, Norway and Turkey successfully completed the survey.

**Connectedness and equipment**

The survey showed that most schools in 2012 were connected at least at a basic level (indicated by having, for example, a website, local area network, virtual learning environment). Between 25 and 35% of students at grade 4 are in highly equipped schools. Leading the way, Denmark, Norway and Sweden had the lowest ratios student to PC's/Laptop at all grades, followed by Spain, Malta, Cyprus and Belgium. Denmark, Norway and Portugal showed most evidence of the 'Bring Your Own Device' practice. Malta, Denmark, Finland, Norway and Estonia had lower than average ratios of student to interactive whiteboards. Denmark, Estonia, Luxembourg, Norway and Sweden had the highest bandwidth. High levels of virtual learning environment provision could be seen in Norway, Portugal, Finland, Sweden and Denmark.

**Use (and non-use) of infrastructure**

The majority of teachers of grade 4 used internet for their preparation. Fewer used it as pedagogical tool. High levels of teacher use at grade 4 were reported in Malta, Turkey, Slovenia, Ireland, Estonia, Cyprus and France and at grade 8 (aged 13.5) in Turkey, Portugal, Ireland and Estonia.

**Policies and strategies**

One in two students were in schools where the use of ICT for teaching and learning was discussed among staff. Formalised school policies regarding the use of ICT affects around 50 % of the students. Policies covering ICT use in general and specifically in teaching of subjects, are much rarer: only around 20% of students are in such schools. Higher percentages of students are in this situation in Denmark, Turkey, and Slovenia, while lower percentages are evident in Austria, Croatia, Italy and Greece.

In Lithuania around 70% and in Romania around 65% of students at all grades were taught by teachers for whom it was compulsory to participate in ICT training, while 13% or less of students are taught by such teachers in Italy, Luxembourg and Austria. In Norway around 80% of students at all grades were taught by teachers who had undertaken ICT training provided by school staff.

**Confidence of the students**

Generally speaking, students at all grades across countries declared quite a high level of confidence in their ability to use the internet safely, with students across all grades in Portugal, Poland, Norway, Lithuania, Slovakia, Estonia and the Czech Republic scoring particularly highly. Conversely, students across all grades in Bulgaria, Greece, Latvia, Cyprus and Luxembourg had relatively low mean scores in their confidence to use the internet safely.

### 3.2.3 Mapping levels of digitalisation and integration of digital technology at school against parental perceptions and parenting strategies

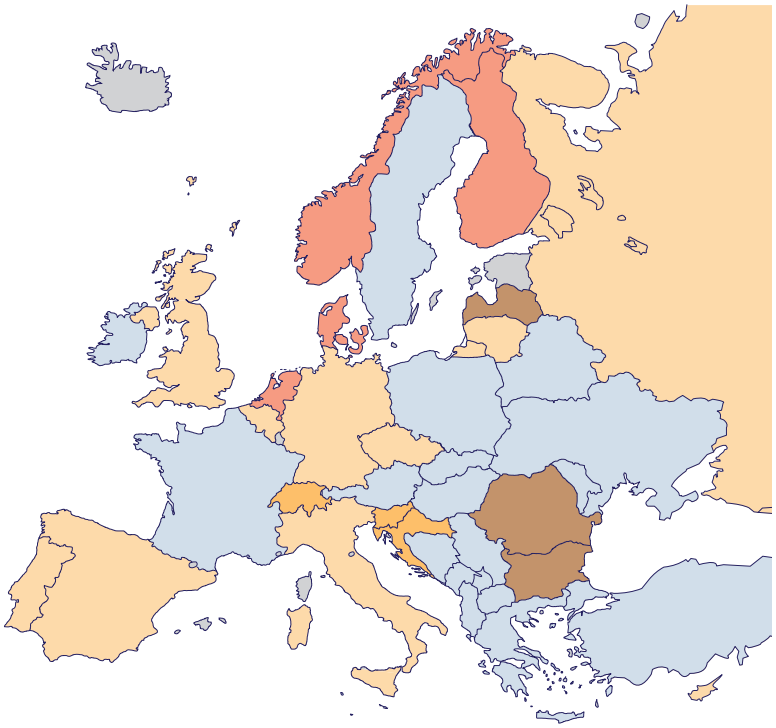
Looking first at the mapping of the

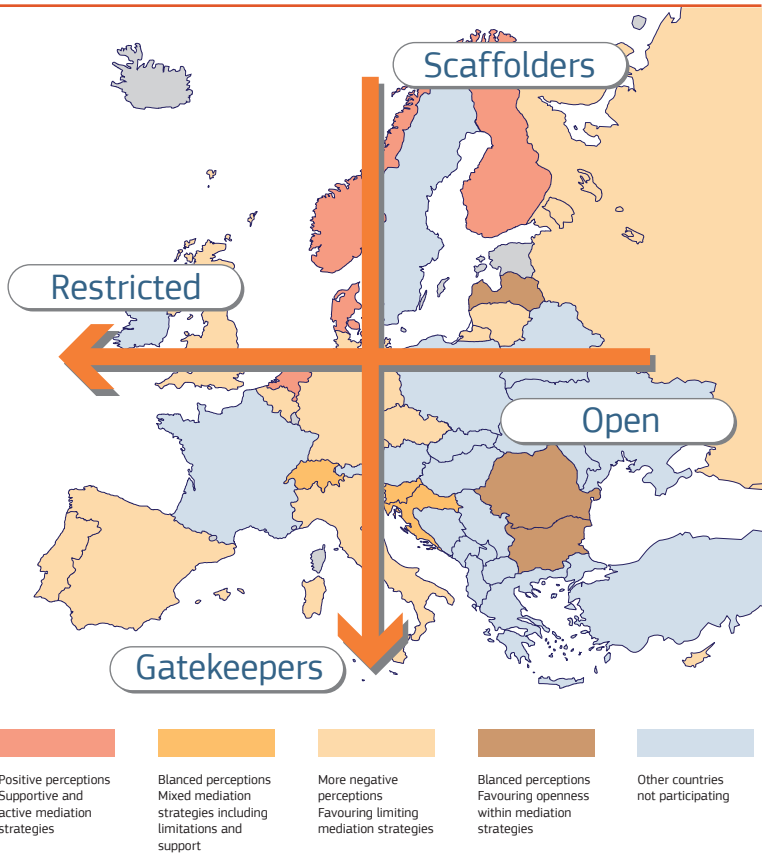
considered indicators of digitalisation of society (the level of penetration of internet in households, of the mobile and personal access, and the integration of digital technology at business level) clearly shows Bulgaria, Romania, and Latvia at the back of the digitalisation wave in Europe. Croatia is not far ahead of them concerning the penetration of internet access in households but shows slightly better scores on both indices than the last three. Lithuania also has a low score concerning the penetration of internet access in households but shows in the top ten of both indices DESI_2017 and DII (2016), considering the integration of digital technology in business. Portugal and Cyprus show better scores on both indices than the last three, especially DESI_2017 for Portugal (11th), a slightly higher percentage of internet connection at home and they benefit from a higher percentage of persons connected to mobile internet, especially Cyprus. Italy, Slovenia and the Czech Republic, Spain, Malta and Belgium show similar medium percentages of internet connection at home while in this respect Germany scores close to the Nordic countries.

However, the results are more differentiated for them all regarding personal mobile internet access and both indices. When we compare all indicators for those 'medium' countries, Italy shows fewer elements of digitalisation than Slovenia and the Czech Republic. Spain, Malta, Germany and Belgium together with the UK -that scores below Malta and Belgium for the DII (2016) and just above the EU mean for the DESI_2016, even though it stands in the top 6 regard-

**FIGURE 12**

**Mapping of parental perceptions and parenting strategies.**
Source: European Commission





ing internet access - are following the track opened by Finland, Denmark and the Netherlands, which stand at the forefront of the digitalisation wave.

As for Norway, Switzerland, and Russia, being out of the EU-28 database, we had to refer to international data that ranked Norway at the top of the classification of Internet users per country, with 98% penetration, Switzerland is close to Germany and Belgium with 87% while Russia with 73% is close to the position of Romania and Lithuania.

Regarding some important elements of integration of digital technology at school, again, Denmark, Norway and Finland stand out showing the best scores in most of the considered elements while Malta, Cyprus and Portugal show interesting scores on connectedness, equipment and the use of digital technology in class.

This is not surprising for Malta, given their high level of penetration of internet connection in households. It is more of a surprise for Cyprus and Portugal who are showing low or medium ranks on the considered indices. At the same time students in Cyprus are among the least confident along with students in Bulgaria and Latvia while students in Portugal, Lithuania and Czech Republic show the most confidence. Still students in Norway and Denmark are the ones that maximise their knowledge and confidence thanks to the facilities of accessing quality digital technology both at school and at home.

Comparing those two sets of indicators to our mapping that distinguishes parental perceptions towards digital technology and parenting mediation of children's technology use in four groups of country (Northern European countries; South and Western countries, Lithuania and Russia; Central European countries; Eastern European countries and Latvia), it seems that indeed variation of contextual elements such as the level of penetration of internet in society and the level of integration of digital technology at school can account at least partially for those differences as mapped in our comparison exercise.

*Variation of contextual elements such as the level of penetration of internet in society and the level of integration of digital technology at school can account at least partially for those differences as mapped in our comparison exercise*

It is clearly for the Northern European Countries of our sample (Denmark, Finland, Norway and the Netherlands) and for the Eastern countries (Bulgaria, Romania, and Latvia). Distinguishing their effects for the South and Western countries and Lithuania and Russia and Central European countries would require further and deeper research as other contextual elements might be preponderant or have a major impact.

For example, a third contextual element can explain the shared positive views and common parental mediation strategies of this group, at least for the Nordic countries, is the homogeneity of the society in terms of typology of population create homogenous social norms: the typology of families and their size (i.e researchers reported the difficulty to find single child families in Denmark); the openness of actions (viewed by all- no blinds on the windows of the houses); shared values, as the concept of fairness (Joint Research Centre of the European Commission, 2017) as viewed in Norway (i.e researchers reported the case in Norway of neighbours trusting each other easily regarding the digital meditation of their respective children as they agreed in sharing the same parenting style and parental strategies,).

Bulgaria, Romania, Latvia and Lithuania, beyond boundaries, have the past communist history in common the past of history of the 20th-century is still present and affect their population in their everyday choice. Parents' choice for open access and particularly in Bulgaria, their preponderant care of providing children with the up-to-date tools to keep the pace, for not being left out socially may still be a trace of the counter-reaction to closeness and restriction of media that followed the democratic change. (Hasebrink, Livingstone, Haddon, & Ólaf sson, 2009) already reported the classification of European countries in

four groups 'as described in terms of the values orientation characteristic of their culture: Protestant Europe, Catholic Europe, English speaking Europe and Ex-communist Europe', made by the European Values Survey in 2000. Looking more in depth at the differences of values conveyed by the main beliefs of a population of a country would probably help in distinguishing the West European countries from countries situated centrally following the crossing of the intersection of the north-south and east-west axis.

## 3.3 Introduction to country portraits

As to give the possibility to the reader to enter more into details in the results of the study, country by country, the reader will found a section entitled Country portraits, at the end of this report. This section provides for each of the 21 sub-national part of the study: a short overview of the macro level context and a summary of the findings as reported by the national research groups for the first round of interviews made between autumn 2014 for the seven pilot countries (Belgium, Czech Republic, Finland, Germany, Italy, Russia and the UK) and Spring 2017 for the last interviews made in Lithuania. This section follows the same structure in presenting the analysis of each sub-national part of the sample: an overview of the macro-level context, key findings and surprising findings.

The entire sample of this study is described in Annex 4.

**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

Chapter 4
# Conclusion

Chapter 4

# Conclusions

This report presented the main findings and outcomes from fieldwork that was conducted in 234 families in 21 countries across Europe between autumn 2014 and spring 2017, coordinated the Joint Research Centre of the European Commission. It reported on young children's usage of digital technologies, their perceptions and the digital skills they may acquire in the home context. It provided insights about the perceptions and attitudes of their parents regarding digital technologies and their use by young children. It underlined the potential benefits, challenges and consequences associated with their (online) interactions with digital technologies. It contrasted the findings within homes with other factors that may influence children's usage, perceptions and skills outside the household context, as for example the school context.

They focus on the following research questions:

- How do children under the age of 8 engage with digital technologies?
- How do the different family members perceive them?
- How do parents manage their younger children's use of technologies? What role do they play?

Moreover, it examined how children use digital technology and how parents how the perceptions, usage and skills with digital technology change over time among the young children and their parents. This was done thanks to a second data collection, conducted between June 2016 and January 2017 and involving 56 families already interviewed in the first fieldwork in 10 countries.

The study tried to provide answers to the following research questions:

- How did the engagement of children under the age of 8 with online technologies evolve over the course of a year?
- How did the perceptions of the online technologies by the different family members evolve over the course of a year?
- How did parents' mediation of young children's use of online technologies evolve over the course of a year?
- Has the role that the online technologies play in the children's and parents' lives changed over a year?

The study also tried to determine which, if any, of these changes occurred as a result of the first interview.

## In a nutshell

In this study, we saw that young children's use of digital technology is influenced by personal elements of the children such as their interest in the digital devices themselves and the activities which are enabled by devices and software - entertainment (video watching and gaming), learning and searching for information, communication (via i.e. video calls, instant messaging and social networks), creativity for which often off-line activities are enriched by digital activities or the other way around.

The key role of parents and schools in developing children digital competences.

Young children's use of digital technology is further influenced by the digital behaviour of the grown-ups in the family, parents and older siblings particularly, as children learn to interact with digital technology by observ-

ing experienced users, following an individual and autonomous trial-error path which is not risk-free. Parents play a major role in the use of digital technology by young children.

Their parenting styles and choice of mediation strategies depend on their views towards technology (positive, negative, balanced). Those parental perceptions towards digital technology depend in their turn on the parents' personal digital competences (knowledge, skills and attitudes), on their level of confidence in technology use, but also on their socio-economic background and the social norms of the groups they belong to.

Finally, we saw that parental perceptions are also affected by contextual elements which are unique to each society/country such as the level of penetration and acceptance of digital technology in the society or the level of meaningful digitalisation of the schools.

We also saw that schools and teachers can play a major role in the way young children use digital technology meaningfully and to their benefit, starting as early as kindergarten. Indeed, the study shows how meaningful integration of digital technology as a tool in the classroom and at home as support to homework is important for the diversification of the children's digital skills in the school context but also in the home context.

Indeed, meaningful integration of digital technology at school, and particularly within homework, increases the positive perception of parents towards technology and the active support of parents in the development of the children's digital skills including creativity and critical skills, both essential to increase safety and security skills.

Moreover, the Survey of Schools: ICT in Education (European Commission, 2013), interestingly, stated that students taught by teachers confident in their own ICT competence and positive about ICT use in teaching and learning, but facing low access and high obstacles to use it at school, reported more frequent use of ICT during lessons compared to students taught by teachers having high access and facing few obstacles, but not being very confident in their own digital competence nor positive about ICT use for teaching and learning.

These findings demonstrate that confident and supportive teachers are needed to effectively use digital technology and exploit its potential; it also shows motivated teachers are able to make the best use of poor digital infrastructure. As for parents who provide more support developing their children's digital skills when they perceive digital technology more positively, the positive views of teachers towards digital technology seems more important than the level of equipment in the schools.

Also, the same survey (European Commission, 2013) reported that students showed better digital skills if they benefit from good levels of digital infrastructure and material both at home AND at school.

This tends to demonstrate that increasing the coherence between the digital offer of the home and the school is beneficial for children also because they can use the same tools and devices in both contexts, in a digital continuum. Coming back on the findings of the present study, we saw finally an ex-centric movement of the elements that influence children's digital engagement with time, as the children grow. Very young children rely particularly on parents, siblings, and other close family members to get inspired in their use of digital technology; to get help and support.

In pre-teens age, already autonomy and independence start to be a necessity for children, also in their use of digital devices. The influence of parents tends to shrink as early as age 8-9 while the influence of peers increases, as well as the influence of vloggers and other popular figures of the digital sphere (remote, physically, but close virtually).

The ecological system of children digital engagement

All those findings map Bronfenbrenner's theory of the Ecology of Human development that argued that individuals exist within overlapping ecological systems that are 'a set of nested structures, each inside the next, like a set of Russian dolls' (Bronfenbrenner, 1979) . The first of these structures is the microsystem; this is the immediate environment in which the child or children under study are located at any point in time, which can be home, early years setting, community group and so on.

The mesosystem links two different microsystems together, for example the home and classroom. The third level, the exosystem, involves contexts in which children are not active participants but which impact significantly on children's lives. For example, parents' workplaces might have

an impact on parents' approaches to child rearing. Finally, the macrosystem is the larger cultural and social context that impacts on the way in which children live, such as the political system or cultural values of the society in which they live. To these initial systems, we would like to add the technosystem (Johnson & Puplampu, 2008) (Johnson G. M., 2010) in which children from a very early age find elements of influence of their behaviour for example, a video on YouTube that influences an off-line game.

Nonetheless, where Johnson & Puplampu see the techno-system as a subsystem of the microsystem focusing on children interactions, our study tend to see the techno-system as being transversal to all systems as it actually influences each of the systems at one or more levels. For example, a YouTube vlog, an education platform made by a Ministry of Education are elements of the techno-system and of the macrosystem at the same time that interact directly with the child and influence its digital behaviour.

A parents' blog or a web platform supporting parents that belong at the same time to the technosystem and the exosystem may influence parents in their parenting choices and, in fine, in the way children interact with digital technology. Finally, we saw that the importance of time in the rapid evolution of the various elements that participate in shaping children's use of digital technology. We consider therefore the chronosystem that represents the evolution of the elements and their interactions with time.

We conclude our report in the light of Bronfenbrenner's model on the necessity to pay attention to the interrelation of a range of elements that shape individuals' engagement with technology, in particular the elements that this report put in evidence in relation to children's diversity of digital skills: the positive views of parents and teachers towards digital technology, parents and teachers' confidence, meaningful integration of digital technology at school.

We therefore underline particularly the need to invest at European level in the meaningful integration of digital technology for a balanced digital education and rich digital literacy from early childhood education and care level.

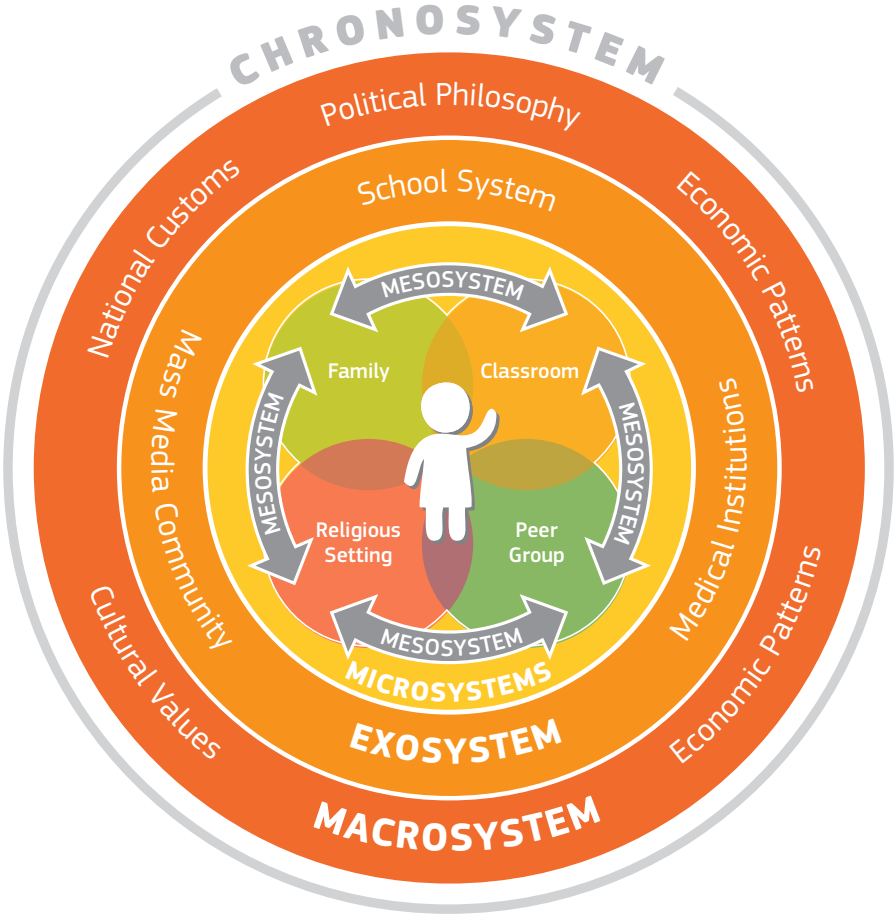
Campaigns and services should be developed to support such digital literacy and digital confidence among parents, particularly parents with little resources and single parents.

### Critical analysis of the findings

The sampling strategy (interviewing at least 10 families per country with children aged 0-8, as disverse as possible, in the first field work and interviewing in a second field work a year later, a minimum of 5 of the 10 fami-

**FIGURE 13**

**Bronfenbrenner's ecological system model of child development**
Source: European Commission



lies which participated in the first data collection which were willing and able to participate again) provides rich and in depth data that allow the exploration of a new phenomenon.

The sample was varied enough to indicate certain trends regarding perceptions, usage and skills with digital technology of children and parents, and to show how perceptions, usage and skills with digital technology have changed over time among the family members (parents and children) across Europe.

The sample allowed also seeing trends at cross-national level. Nevertheless, it is not representative at national level and does not allow for the making of conclusions that could be considered applicable to and valid for each of them. Only further research choosing a quantitative approach would provide relevant conclusions in this prospect.

### How could the study be improved?

Between the pilot, the enlargement and advanced part of the study, the protocols and tools such as card games have been improved mainly to reduce the length and language difficulties of the questions. The preliminary questionnaire integrated in the advanced study, which was sent to the families prior to the second round of interviews, was very helpful. The researchers obtained a good overview of the digital life of each family. The questionnaires were also used to adapt the interview guides to each family, as questions were made more specific and relevant. This saved time, as unnecessary repetitions were avoided, and focused the conversation on aspects that were important for each family.

Some families had problems with filling in the questionnaire. The numerical coding in the tables was confusing and we recommend that no such coding is used in cases when respondents are expected to fill in the questionnaire on their own (without assistance of a researcher). Sometimes parents mixed up the information about which child is using or owns a particular device, and sometimes they listed devices which were used/owned in the past.

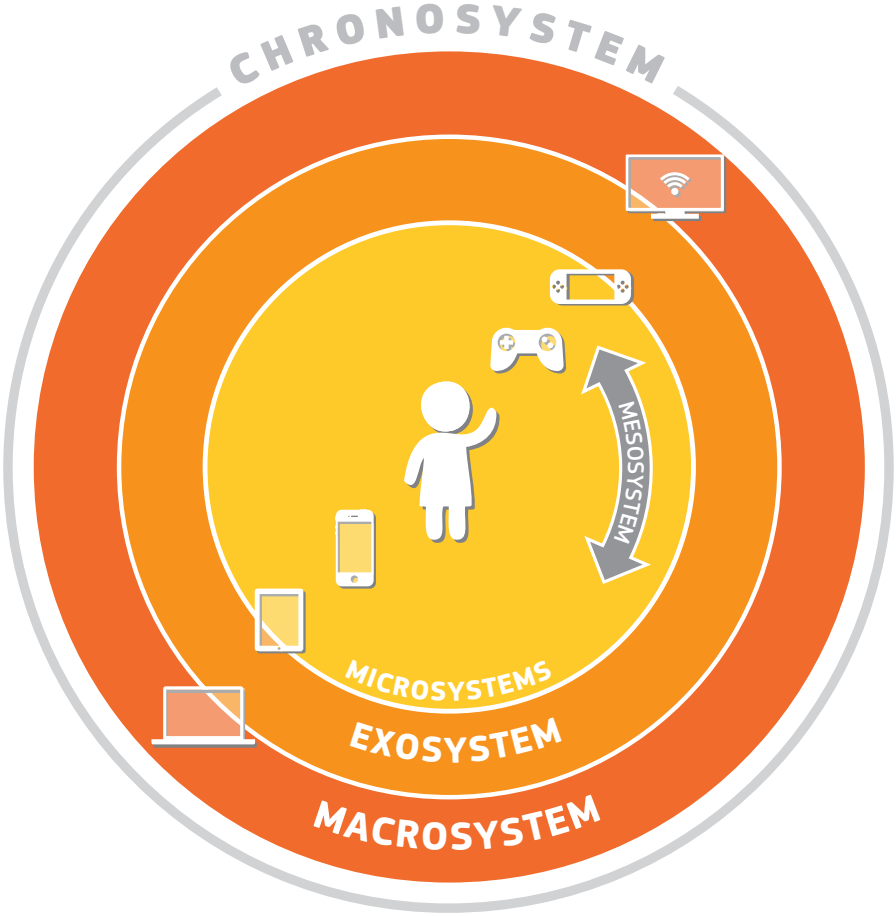
For this reason, the icebreaking exercise 'My Digital Family' was a very appropriate introduction to the interview. It engaged both child(ren) and parent, but most importantly it helped the researchers to verify the information provided by the parent in the pre-interview questionnaire.

Quite a few mistakes or misunderstandings from the preliminary questionnaire were corrected during the icebreaker. Compared to the 'daily timetable' opening activity from the first study, 'My Digital Family' was considerably more interesting and productive in obtaining relevant information.

**FIGURE 14**

Vicsualisation of the techno-system within the Bronfenbrenner's ecological system model of child development

Source: European Commission



The revised interview protocol for children proved to be still very long and children lost interest and got tired easily. The card game was key to engage the children, but could not constitute the basis of the interviews. Observations of practical demonstration of children's online skills and activities are particularly recommended. Interviews with children should employ even more interactive methods and games.

### What is the future direction for research on this topic?

This study, thanks to its exploratory method allowed highlighting trends at European level of how children aged 0-8 use digital technologies and how parents mediate this use and what key role schools can play in an even development of key digital skills at European level of its young citizens.

Nonetheless, to confirm those trends and acquire granularity in the results, future studies should address in a more systematic way the digital literacy competences (knowledge, attitude and skills) that children possess and how these competences relate to age, parental mediation, family context and access to technology. Further research choosing a quantitative approach would provide relevant conclusions in this prospect.

This will be valuable information on which to base any policies and practices to guide educational reforms or other national and European policies.

Also, we saw big changes and evolvement regarding that digital engagement of children between 6-7 and 8-9 years old, but also between children aged 0-2, 3-4, 5-6 which more or less corresponds in the cognitive stages of children and mapped at day-care, kindergarten and school level.

Further research on early childhood digital engagement would be necessary to provide adequate knowledge to support European and national policies.

**Young Children (0-8) and Digital Technology**

A qualitative study across Europe

# Country portraits

# Belgium

## National socio-economical context

- A sovereign state in western Europe, small and densely populated: 11.2 million people.
- Home to two main linguistic groups: Dutch-speaking and French-speaking.
- Diverse economy: heavily service oriented.
- Relatively low unemployment rate: 8 5 %.
- Number of families: 4 790 102, of which 2 024 809 are married, 24 310 are divorced, 602 036 are legally cohabiting and 471 424 are single-parent households (2014).

## Internet and digital technology

The following data are based on the Dutch-speaking population, because the research takes place in Flanders.

- 91 % have an internet connection.
- Digital devices: 97 % of the Flemish population have a TV, 79 % a laptop, 51 % a desktop, 47 % a GSM, 69 % a smartphone and 58 % a tablet.
- Social media: 70 % of the population have an account on Facebook and 19 % on Twitter.

## General pattern of parenthood

Most parents are searching for a good balance between being restrictive and supportive. Communicative strategies are usually applied by high and average socioeconomic status (SES) families while low-SES families rely on more restrictive strategies. The same pattern can be found for mediating digital media.

## Schooling system for children from 0 to 8-year-old

- Pre-school education begins at the age of 3, but is not mandatory. Nevertheless 98 % of Flemish children go to pre-school.
- Compulsory primary education is aimed at children between 6 and 12 years old. During

these 6 years of study the children learn basic skills: reading, writing and arithmetic.

- In some pre-schools, technologies are present, but mostly to play educative games. In primary education, the use of ICT is already present in the first year. The ICT skills that have to be achieved in primary school are defined in the cross-curricular goals written by the Flemish government.
- This is defined in the attainment targets for primary schools.

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- Belgium is a country of working parents, and the availability of after-school and holiday-time activities for children reflects this. Usually the most popular activities are swimming, dance, art, football and music.
- Most parents are still working when the school stops, on most weekdays at 4 pm but on Wednesday at 12 pm. Hence, most children go to after-school care.

## Belgium - Key findings

1. Children grow up in media-rich homes. Their daily contact with digital media, however, does not automatically lead to high use of these devices. The opposite is also true, and children have access to devices that are not present at home. The latter is the case for instance when they use digital tools at school or at their grandparents' home.
2. Young children love to use digital media, but they also (and even more) enjoy non-digital activities, such as playing outside, practicing sports, playing with toys or reading a book. Except for fanatic gamers, they would like to play games all day long. Most of the digital activities children do link strongly to their offline interests and activities. When a child, for example, likes to play football, he or she will look for games and/or films on the same topic.
3. The top three children's digital media activities consist of watching video clips on YouTube, playing games and watching TV. Children's main reason to use these digital technologies are fun and entertainment, and to a lesser extent communication and learning things. Very few kids use digital media to search for information for their homework, unless the teacher (or parent) has specifically asked for it. The devices they use to perform these activities are the tablet, TV, computer and game consoles. When available, the children strongly prefer the tablet above the laptop or the computer. This is mainly due to the ease of use of the touch-screen technology. Smartphones are rarely used by children, and then most often to keep them occupied when on the go. Smartphone use happens under strict control of the parents, because they fear young children can easily break the device or can do something wrong.

4. Most of the children have basic operational knowledge and skills in using digital media. These basic skills are improve markedly when they often perform the activity. Most children, for example, know which button to press to start their favourite game but not how to start another game. Some children have more advanced digital media skills, and are able to use digital media tools quite independently. They are able to navigate from one screen to another, to write an email or to search for information through Google. But most children also experience many situations in which they fail to achieve their goals through digital media. The latter was particularly noticeable in the case of the younger children (under the age of 5), who have trouble in starting to play games on their game consoles and/or in searching for information online other than YouTube films or digital games. They face these difficulties because of their state of cognitive development. Because of their very limited digital media skills, many young children turn to parents and/or siblings to perform their digital media activities.

5. Concerning young children's critical use of digital media, we notice that young children are largely unaware of what the 'internet' is. Consequently, they are largely unaware of the opportunities and risks that can be associated with its use. They know they have to be careful, but they do not completely understand why.

6. The children learn their digital media skills from watching and learning from parents, older siblings, grandparents and friends. When they have a first impression of how to use a particular digital tool, many children want to figure out how they can perform other activities on their own.

7. Parents, in general, believe that digital media are positive for their children. On the one hand, they believe that digital media can help their children to learn things, both in terms of motor skills and cognitively. On the other hand, they use these media to keep their children occupied when they have to work or do household tasks.

8. At the same time, parents find digital media rather risk-filled and challenging, something that needs to be regulated and controlled. They are most worried about the health implications, social impact, unfavourable economic consequences and inappropriate language and content. However, parents do not always communicate with their children about these risks. They believe it will make children curious about these inappropriate activities. Most of the parents are convinced that their children will not get into trouble through their use of digital media. Parents think that their children do not have sufficient operational skills to be able to come into contact with or to seek risk-filled content. Most parents thus postpone these risks to the future, to when the children will use social media for example. Parents seem to have little knowledge about their children's digital media activities.

9. Parents, however, are not the only ones who influence children's digital media use. Children also learn a lot about digital media through siblings, grandparents, friends and school. Many older siblings play the role of a tutor.

10. Grandparents also play a big role in young children's digital media use. When the children stay at their grandparents' home, after school or at the weekend before their parents are home, they often also have access to a wide variety of digital tools of which the tablet is their favourite. Most children reported that the grandparents teach them nothing new, as

they perform the same activities as they do at home. The grandparents do assist them more and apply fewer rules. The influence of friends and peers is rather limited, unless the digital media consumption at home is strongly restricted.

## Belgium - Surprising findings

1. Most children prefer playing outside to using digital technologies, except for the heavy gamers.
2. Unlike the report from last year, no child or parent mentioned Skype. On the other hand, some children have their own email address.
3. Parents perceive the smartphone as a personal and fragile device. Consequently, the smartphone was perceived as less important for the children.
4. Most children recognize advertisements and consider them annoying.
5. Parents do not always communicate with their children about risks related to the use of digital media. They believe it will make children curious about engaging in inappropriate activities.
6. Parents do not perceive many risks of their children's use of digital technologies, but they instead anticipate risks and problems in the future when their children have more cognitive and motor skills. The fear is mainly directed towards social media.
7. Most children teach themselves how to work with the tablet through trial and error.

# Bulgaria

## National socio-economical context

- Bulgaria is a south-east European country, located at the heart of the Balkan Peninsula. According to the 2011 census, its population is 7 364 570 people. About 85 % are Orthodox Christian Bulgarians, while the three largest minorities are Turks, Roma and Muslim Bulgarians.
- The most important economic sector is services, where 57.7 % of workforce are employed, followed by 35.2 % in industry (extraction of metals and minerals, production of steel, chemicals, machinery and vehicle components and petroleum refining) and 7.1 % in agriculture. The average salary is the lowest in the EU at EUR 488 00 per month, with over 20 % of workers receiving a minimum wage of EUR 1 per hour. Gross domestic product (GDP) per capita is less than half of the EU average, according to Eurostat data. After reaching a record low of 5.8 % in 2008, unemployment increased as a result of the financial crisis, to 12.9 % in 2013, but has been decreasing since then by roughly 2 % per year and currently stands at 8 %.
- Over the past 25-30 years, Bulgaria has experienced a significant decrease in the number of births, while the share of children born to unmarried parents has been rising. While the number of legal marriages is falling, the number of divorces is increasing. The average household size is 2.7 persons. 38.3 % of families do not have children, 39.1 % have one child, 20 % have two and only 2.6 % of families have more than three children. 14.7 % of all families with children are single-parent families (in 80 % of these cases, the single parent is the mother, and in 20 % the father).

## Internet and digital technology

- According to data from the National Statistical Institute, 59.1 % of Bulgarian households have access to the internet. While this means that the internet penetration is the lowest in the EU, it is a significant improvement compared to 2010, when only 33 % were online. Families with children are considerably more likely to have the internet at home - 85 % compared to 51 % among families without children.
- The EU Kids Online research shows that 95 % of Bulgarian children who use the internet access it at home (61 % have access in their own room). 83 % are online every day, with an average screen time of 120 minutes per day.

- The share of households that own a personal computer is 56.3 %, a laptop 37 %, a tablet 21 % and a mobile phone 92 % (41 % of households own a smartphone).

## General pattern of parenthood

- Family and parenthood are among the most important values for Bulgarians, but the dynamic and unfavourable socioeconomic situation means that for most Bulgarian parents, having a child is associated with numerous challenges. While parenthood is perceived in a predominantly positive light (love, joy, fulfilment), it is also linked with certain negative feelings (stress, worries, lack of personal freedom, anxiety, strain).
- Parenthood in Bulgaria is a social activity. Parents actively look for information and rely on advice and help from their own parents, other relatives, friends and colleagues at work. Grandparents and other family members (e.g. older siblings) usually participate in childcare. This is partially a heritage of tradition, but also a necessity, as many parents do not have sufficient time and/or financial means. This uncertainty often leads to overprotection - parents are excessively concerned with potential bad influences from other children, adults, media, food, etc. Many parents therefore have an inclination towards close care and spoiling of children.
- Bulgarian children are often raised to become successful and competitive as individuals, while their social sense and skills to contribute to the common good are rarely prioritised. The most important goal many parents teach their children to pursue is achieving a high standard of living and being better or more successful than others. Parents pay great attention to satisfying the material needs of their children and making sure they have all the toys and gadgets their peers have.
- Physical punishment is still relatively widespread (over one third of Bulgarian parents say that hitting children is an acceptable way of disciplining them). On the other hand, most parents deliberately want to move away from the authoritative style of their own parents and prefer to take on a role of their children's best friend.

## Schooling system for children from 0 to 8-year-old

- Compulsory schooling starts at the age of 5, when all children must start attending kindergarten/pre-school. School attendance is compulsory until the age of 16. In larger Bulgarian cities, nurseries and kindergartens do not have sufficient space for very young children, so many children are taken care of by a parent (maternity leave is 410 days, after which mothers are entitled to parental leave until the child reaches the age of 2) or grandparents. In smaller towns and villages, nurseries and kindergartens are quite rare.
- During the 2015/2016 school year, 81 % of all children attended kindergartens. Out of 478 948 primary school children, 14 452 left school during the 2014/2015 school year (in almost half of the cases, the reason was emigration of the family).
- According to state educational standards, children in kindergartens (aged 5-6) receive basic knowledge about ICT (and can distinguish between different devices and know

some of their functions). ICT has a well-defined place in primary education starting from the first grade. However, the curriculum focuses on development of children's technical skills, while the attention devoted to their digital literacy and safe and positive use of ICT is insufficient.

| Age | Schooling type |
|---|---|
| 0-3 | Nursery |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

Many children (especially in larger cities) stay in school until quite late (5-6 pm), attending after-school care, or are looked after by their grandparents or other family members. As many parents feel that the schools do not provide a good education, numerous children (even as young as 7-8) attend additional classes in mathematics or foreign languages. Sport is also widely considered as important, as are art classes (singing, dancing, etc.).

## Bulgaria - Key findings

1. Online technologies are an inseparable part of the lives of all children from our sample families. Even the families with the lowest incomes have at least one television set and a computer. Most families have two or three TVs, two computers and two tablets as well as smartphones and children start using them as early as 3 or 4. As a rule, those who have older siblings become active users at a very early age, and they learn by looking at and imitating their brothers and sisters.

2. Tablets and smartphones are the favourite devices of children. For those children who do not have access to a tablet or smartphone the favourite device is a laptop or a PC. While television is watched daily by all children, none has named it as a favourite device. Game consoles do not appear to be popular with children in this age group, while DVD and MP3 players seem obsolete, as children prefer to watch videos online and listen to the music stored on smartphones.

3. Children are quick to learn basic operational skills. About a half of the children from the study can be considered independent users, but a display of more advanced online competencies is rare. Children see the internet as a given. They do not know what online space represents and how it functions. For them, games, films and music simply exist and are there for them to watch and play. Some children are not passive consumers, but are able to produce content as well (making audio and video clips, taking photographs, producing drawings using programmes like Paint).

4. Almost all children use the devices solely for entertainment. This is especially true for children from low-income families, though in these families parents also report the most significant benefits. All children love to play games - mostly on smartphones, tablets and PCs/laptops, and less often on game consoles. They most often play by themselves, but playing

games with siblings or parents (usually fathers) is also quite common. An equally popular pastime is watching films, animation, TV serials and video clips. They also watch commercials and visit online shops.

5. Several children use technologies for communication (Viber, Skype, Facebook). Six children have a Facebook profile, which was set up by their parents or older siblings with the parents' permission. Parents say that without it, their child would be socially isolated, as most of their peers are on Facebook.

6. Children clearly distinguish between those devices which they consider their own and those that belong to parents or are used by all family members. In the latter case, they seem more concerned with the family rules regulating the use of these devices and follow them much more strictly.

7. The majority of parents have a positive opinion about online technologies, as they encourage children's curiosity and desire for learning. However, few underscored the educational value of devices and most stress the importance of developing traditional literacy such as handwriting and reading. Technologies also help parents, who sometimes use the devices as 'babysitters'. On the other hand, they are concerned that if they are used too often and for too long, technologies represent a health risk.

8. Parents are also concern about the 'stranger danger', but they see it as a distant risk. Few share concerns related to exposure to violent content that can potentially scare the child. Few parents also worry about the commercial and consumerist aspects of the online world and about misleading information children might come across, despite evidence that children are keen on watching advertisements or browsing online shops. Exposure to content that is inappropriate or harmful for children is not perceived as a significant risk at this age, because according to the parents children rarely explore unknown territories online and only use the sites and apps they are familiar with and which have been checked and installed by their parents. However, it became clear that children intentionally access apps such as Facebook, Messenger and Instagram without their parents being aware of this and that they often come across inappropriate music by chance on YouTube.

9. All parents declared that they need more information about how to better mediate their children's use, how to effectively create balance between online and offline activities and how to better protect their children from harm online. Many were interested in the long-term implications of the use of digital devices. They reported that information on that issue is scarce and difficult to obtain and they showed a readiness to follow recommendations if such are available.

10. No family enforces strict, well-defined rules for children's use of technologies. Most rely on active but permissive parental mediation, doing their best to provide the children with an appropriate example and model to follow. Nevertheless, there are several rules that are observed in the majority of families: limitation of the screen time to 1 to 2 hours per day; children not being allowed to take devices outside of the home if the parents are not with them; and devices not to be used during meals or when having guests. Only one family has installed parental control software on the devices children use.

11. Most of the children have a strong emotional attachment to their devices. This seems to be

related to the way in which parents communicate the value of these devices, mainly underscoring their price. Some parents mention that they do not attribute importance to technology on purpose, so that they are not perceived as valuable belongings by the child. In these families, children showed the least attachment to the devices.

## Bulgaria - Surprising findings

1. One of the more surprising findings was the fact that six out of 10 interviewed children aged 6-7 have a Facebook profile. The parents, who have in most cases created the Facebook profiles of their children, explained that a majority of the children's peers (pre-school or first grade) have Facebook accounts and therefore their children would not fit in and would feel isolated without a Facebook page of their own. All parents underlined that they were aware of the potential risks and they took care to keep the children safe by regularly monitoring their Facebook activity. The interviews revealed that their monitoring was less thorough than some parents like to claim. When asked how many Facebook friends his 7-year-old son has, one father replied about 60. The boy, however, proudly reported that he had over 100 friends.

2. Having said that most accounts were set up by parents, one exception needs to be noted - the family BG10. The parents were strongly against Facebook, describing it as utterly inappropriate for young children. When talking about their son's online activities, they stressed that their son used the computer only for good purposes - to play games, listen to music and watch animated films and not to browse various sites including Facebook (BG10m25). It turned out that their son also had a Facebook profile, created by his friend (a 7-year-old).

3. Another surprising finding was that despite the pervasiveness of online technologies in the lives of the children and the common ownership of devices, their use is not addressed by educators. Children are either allowed to use them unrestricted in school or kindergarten, or devices are outright prohibited (with doubtful success). While Wi-Fi access is provided in most educational institutions, digital literacy is not on the agenda, and the schools do not communicate with parents about the children's positive and safe use of technologies.

4. Yet another surprising finding was that parents do not intentionally encourage positive and creative use of technologies. Most of them believe that simply using the devices makes children experts and no tutoring is necessary. This position probably stems from the fact that parents themselves do not use technology creatively. In families where parents have an IT background, tutoring takes place and children are encouraged to code or use Photoshop. Only one family reported using educational apps purposefully, but they were preinstalled on the device and the children quickly got bored.

5. Parents show no understanding of the socio-emotional implications of the use of online technologies. Apart from the threat of paedophiles and other ill-intended strangers, parents do not consider online interactions as risky and none of them mentions peers as a potential harm in situations such as bullying. This is probably due to the limited early use of devices as communication tools. However, this is still surprising given that in many families, there is an older sibling and for teens online bullying is the most common harm online.

# Republic of Croatia

## National socio-economical context

- Croatia gained its independence in 1991 after separating from Yugoslavia. The separation was not easy and was followed by 5 years of war. The second half of the 1990s was marked by a fairly bad economic situation due to post-war recovery in some territories, transition to a free-market economy and a badly handled process of privatisation. Croatia joined the EU in 2013. It has a population of around 4 200 000, the majority of whom are Croatian (90.42 %). Most are Roman Catholic (86.28 %). The official unemployment rate is 13 %. The population is ageing, with the average age being 42.6.
- The average family size is 2.8 persons, and the average number of children per family is 1.5, which means that the standard family consists of two adults and one or maximum two children. However most families (whether the parents are married or not) do have children (54.3 %). Divorce rate is quite common, with almost every third marriage ending this way. In recent years, more and more young people have been migrating to other European countries in search of work.

## Internet and digital technology

- The number of households with computer and internet access has been increasing every year. In 2015, 76.7 % of households owned a computer, which was 11.2 % more than the year before. On the other hand, nearly one quarter of households still has no internet access, most often because they have no need for it or they find it is too expensive.
- The data from 2011 show that 57.4 % of people older than 10 years know how to use the internet, 45.2 % know how to edit a text and 53,1 % know how to use email.
- In 2013, the International Computer and Information Literacy Study (ICILS) showed that Croatian students achieved slightly higher than average results when compared to the general average in all European countries involved in the research. There were four possible levels of information literacy and most of the pupils from Croatia (42 %) were at the second level, 21 % were on the third level and only 1 % at the highest level. The research also showed that while in other European countries there is one computer available for every 18 students, in Croatia, one computer is available for every 26 students.

## General pattern of parenthood

- There is not much data on how parents in Croatia monitor and regulate their children's interactions with digital technology, depending on their different education levels or socioeconomic status. Existing research shows that parents who have a higher level of education and higher socioeconomic status are more likely to ask for help regarding guidelines in all areas of child rearing, including the use of digital technology.
- Unfortunately, in general the Croatian government also seems to invest less than other European countries in programmes and services that aim to increase the well-being of children and families.

## Schooling system for children from 0 to 8-year-old

- Compulsory school attendance begins with the first class of primary school. All children who are 6 years old by 1 April of a given year are obligated to start school in September. In addition, there is now a mandatory pre-school programme for all children and it is free of charge. For children who are in kindergartens, this programme is incorporated in the kindergarten curriculum, and for those who do not attend kindergarten, classes are organised in the afternoons, two or three times a week, at their local kindergarten (they need to attend 250 hours of pre-school programme) in total. Still, not all children are enrolled in such programmes. Before starting school, pre-schoolers can attend kindergarten, from 3 to 6 years of age, whereas babies and toddlers (from 1 to 3 years) mostly go to nurseries. Due to the high unemployment rate, many mothers stay at home with their children at this time. Since the number of nurseries is not sufficient, and the number of children in such nurseries is quite high and is not balanced with the number of caretakers, many young children are either looked after by grandparents or, more rarely, babysitters at home. These babysitters are not trained for such a job, and are often paid without being officially employed.
- Kindergartens are mostly poorly equipped with digital devices, and teach no digital literacy skills in an organised manner. They usually have a TV and a DVD player, but no internet connection. Children are not allowed to bring their own devices.
- In schools, children in higher grades can attend informatics classes that are not mandatory. Until then they have no chance to use a computer or any other digital device in school. They are also discouraged from bringing their own devices, mostly because teachers find that even having smartphones during class interferes with the pupils paying attention to class.
- It is interesting that most schools in Croatia have a digitalised system for monitoring pupils' achievement in school - containing their grades, test reports and teachers' notes on progress, behaviour and achievement. All parents and pupils are given access passwords at the beginning of school year, and teachers are obligated to put all such information into the system regularly. This requires them to be trained for such purposes, and the state provides them with such training and technical support during the school year.

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- In the lower grades, most schools have an organised after-school programme that children can attend if they want but for which there is a charge (some schools have this opportunity for the first, second, third and even fourth grades). This includes lunch after school, and the teacher's assistance in doing the homework that would usually be done at home. The remaining time is spent doing different sports or crafts, going outside for a walk or similar relaxing activities. Children who do not attend such a programme are usually taken care of by grandparents, older siblings or family members, and parents if they are unemployed.
- In summer most children spent the majority of their free time on outdoors activities.

## Republic of Croatia - Key findings

1. For all the families in the sample, digital technology is an integral part of their lives, but it hardly dominates family daily routines. This means that even though children love to use digital devices, they also enjoy doing many outdoor activities or playing with their toys, and in most of the families these activities take far more time than engaging with digital technology.
2. Children use a limited range of digital devices, which often include computers and smartphones or tablets. However, compared to those devices, the most dominant form of interaction with digital technology involves watching television, which is still the most available media, and the most present in the lives of children in the sample.
3. Use of tablets is not as widespread as expected. Only half of the families own a tablet and only in four of them are children allowed to use them. One of these families obtained a tablet only a few weeks prior to the interview. The reasons for this are not quite clear, but probably include financial reasons, because most of the families that do not have a tablet are of lower socioeconomic status. It is also interesting that in two of the families that have a tablet it is not the device that the children most often use.
4. As for personal ownership, three children have their own tablets, one has a personal computer and four have mobile phones, but not always including a SIM card.
5. Most children use digital devices to watch cartoons on television or a computer. They also play simple free games and watch video clips on YouTube, using a computer, a smartphone or a tablet.
6. Most of them use an internet search engine to find interesting information, but almost exclusively with the help of their parents or older siblings. Also, this activity is something that

happens only on occasions, and is not a part of their regular interaction with digital devices. They are more likely to use the search engine to find some interesting content regarding cartoons or characters they like.

7. They mostly use the devices on an individual basis and to have fun and to relax.

8. Children find it difficult to understand the difference between online and offline practices. They are instructed to react to pop-ups by calling their parents, or just pressing 'no', but they do not know the difference between playing a game online or offline.

9. In general, their digital literacy skills are low. They have a limited grasp of the device and game navigation - they can play a game that has been downloaded for them, or in some cases download it and install it by themselves. Some of them can look for interesting video clips on the internet, but only if they have simple names because of their limited reading and writing skills. Most of them can take pictures with smartphones, but none of them know how to edit or share those pictures. They obtained these skills mostly through observation and limited instruction.

10. They do not fully grasp the opportunities, as well as risks, of digital technology use. A positive perception of the technology includes the idea that these devices are entertaining, and the negative that it can hurt your eyes and make you 'act goofy'.

11. Parents emphasise the negative effects of digital technology, but later have difficulty explaining what in fact they think is bad. As negative consequences they mention health implications - addictive or aggressive behaviour, consequences for eyesight and posture and that other areas of life might get neglected if children have too much screen time. They are worried about the effect of social networks once children gain access to them. As for the fear of children being contacted by strangers, this is something they relate to children's future use of digital technology.

12. Positive implications are related to acquiring digital literacy skills. Parents emphasise the ability of digital technology to help children acquire and improve skills they would otherwise have no chance to observe. Using digital technology also makes it easier to gain access to various forms of information that can help children to learn. Some games of logic and apps can also help children's cognitive development.

13. Parental mediation strategies are quite diverse. There are different strategies involved regarding time and content, with most children having strict time limitations and more freedom when it comes to content they watch. However some families have practically no limitation whatsoever.

14. Parents only allow their children to use free games and applications - none of the parents ever bought one on purpose.

## Republic of Croatia - surprising findings

A few surprising finding emerge from this research project.

1. The first is that in cases where parents reported negative effects of the use of digital tech-

nology, even after changing the rules and setting time limitations, their children are still allowed to use the devices (including television) for quite a long time when compared to other families in the sample. However, at the same time these parents consider their rules to now be very restrictive.

2. A low level of tablet use is reported by parents in this study, when compared to other countries. For example, the Ofcom survey (2014) found that in the United Kingdom, 54 % of children aged from 5 to 7 years use tablets. In the Croatian sample, only four families allow their children to use tablets.

3. The families with lower socioeconomic status do not always have fewer devices. For example, the family HR08 with no income other than social welfare has, in fact, five smartphones - one for each member of the family, including the 6-year-old boy. He doesn't have a SIM card in his phone, but he does have some simple games installed and is allowed to play them.

4. Most parents have profiles on social networks but - with the exception of one boy who sometimes plays a game on his mother's Facebook profile - they do not let their children use them. However, they occasionally show them photos of friends and relatives. Yet, when thinking about the good sides of technology use, parents didn't mention this aspect of communicating with friends. At the same time, they expressed concerns regarding their children's future encounters with social networks.

# Cyprus

## National socio-economical context

- As of 1 January 2016, the population of Cyprus was estimated to be 1 172 071 people. This is an increase of 1.09 % (12 592 people) compared to the 1 159 479 the year before.. The sex ratio of the total population was 1 044 males per 1 000 females, which is higher than the global ratio. The unemployment rate decreased to 11.60 % in July 2016 from 11.70 % in June.
- According to the European Union Statistics on Income and Living Conditions (EU-SILC), the average size of private households in Cyprus ranged from highs of close to three persons when compared to 2.4 persons in the EU as a whole in 2013. A crude marriage rate of 6.7 was recorded in 2012. Marriage is a common form of family structure, with a low proportion of single-parent families being recorded.

## Internet and digital technology

- In the Digital Economy and Society Index (DESI) 2016, Cyprus has an overall score of 0.42 and ranks 23rd out of the 28 EU Member States. Fast broadband connections are available to 84 % of households (against 71 % in the EU as a whole) but internet take-up is relatively low. Only 69 % of households subscribe to fixed broadband and Cyprus has a low level of regular internet users (70 %), with 26 % of the Cypriot population never having used the internet (the EU average is 16.4 %).
- Cypriot internet users engage nevertheless in a broad range of online activities. They read news online (79 %), listen to music, watch films and play games online (55 % in 2014), use the internet to communicate via voice or video calls (62 %) or through social networks (75 %) and obtain video content using their broadband connections (though video on demand - 23 %). For most of these activities, engagement among Cypriots is higher than overall in the EU.

## General pattern of parenthood

- Families of all socioeconomic statuses are supportive of seeing their children educated and attending tertiary education. While families of medium and high SES are more likely to have children attending universities abroad, families of low SES have their children

attending public schools and national universities or international universities with very low fees (i.e. in Germany and Hungary).

- Parents seem to have accepted that new technologies are part of today's life and as this trend is increasing they want their children to learn how to use them.

## Schooling system for children from 0 to 8-year-old

- The educational system in Cyprus is centralised. The responsibility for educational policy and the administration of Greek-Cypriot schools and the schools of all the other groups lies with the Ministry of Education and Culture. Specifically, the ministry is responsible for the development of educational policy, enforcement of educational laws and the preparation of educational bills. It also prescribes the syllabus, the curricula and the textbooks used in all levels of education (Ministry of Education and Culture, 2007).
- The educational system is divided into four levels: pre-primary (under the administration of the Department of Primary Education), primary education, secondary education and tertiary education (Ministry of Education and Culture, 2007). Pre-primary education has been compulsory since 2004. Access is free to all children who attend public kindergartens. The main aims of pre-primary school are children's overall cognitive and emotional development; the development of skills, attitudes, values and principles; and preparation for primary school. Primary education lasts 6 years and is for children aged 6 years old and above. There are both public and private primary schools.

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- Electronic devices are in general part of the parent's and children's lives. Children as young as 2 years old seem to be using these devices to a certain extent (games, cartoons, music). The only common activity (all members of family involved at the same time) done using digital technologies is watching films on TV. No children are allowed to take digital media to school, but some are allowed to take the devices to restaurants and to the houses of friends.
- The use of digital devices by children increases a lot during the summer because of the increased free time they have as schools close and the weather is hot, therefore they tend to stay indoors, in cooler places. Children use the digital media as a way of spending their time when they are alone, so they view it as a game that keeps them company when other children are not around. Many children report no interest in using these devices when friends come over.
- The vast majority of children are enrolled in after-school leisure activities such as swimming, ballet, football, etc.

## Cyprus – Key findings

1. Electronic devices are part of the parent's and children's lives in all the families interviewed in Cyprus. Children as young as 2 years old seem to be using these devices to a certain extent (games, cartoons, music). No children had an online profile in any social networking side.
2. Parents seem to have accepted that new technologies are part of today's life and this trend is increasing by year, and they want their children to learn how to use them.
3. The only common activity (all members of family involved at the same time) done by using digital media is watching movies on TV.
4. No children are allowed to take digital media with them to school, but some are allowed to take the devices in restaurants and at the houses of friends. Moreover, the use of digital media by children increases a lot during the summer because the free time of the children increases as well.
5. Children use the digital media as a way to spend their time when they are alone, so they view digital media as a game that keeps them company when other children are not around. A lot of children reported no interest in using these devices when friends come over.
6. The children do not realize the online dangers that they are exposed to when they use digital media. Most of them only reported that the digital devices can harm their eyes.
7. The parents are mostly worried about the fact that digital devices can lead to isolation and that people can become addicted when they use them a lot. A number of them expressed worries regarding the future use of digital devices by their children since it can lead to talking to strangers.
8. Most parents understand that it is important for their children to familiarize with the use of digital media. The fact that their children are gaining a lot of new knowledge through the use of these devices is viewed as a huge positive.
9. Most parents don't have specific rules because they feel that the use of their children is not very high. Some parents check the games downloaded by their children and if inappropriate they delete them. Only three families have set specific time frames for digital media use.
10. Rules reported were not decided by discussing with children and were set entirely by the parents.
11. The digital media are also viewed as a great help by some parents who find it hard to do house work when their children demand attention.

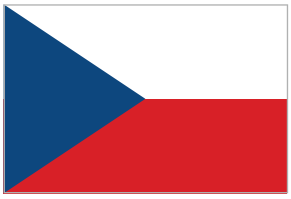
## Cyprus – Surprising findings

1. The youngest children of two families (CY2b4 and CY8b5) are much more interested in digital media compared to their oldest brothers (CY2b7 and CY8b7). They also know how to download games from PlayStore whilst their oldest brothers do not know how.
2. The families with lower socioeconomic status do not have fewer devices. For example, both

parents of family 10 are unemployed but the family owns a TV, a computer, a laptop, a PlayStation, a PlayStation Portable (PSP), a tablet (iPad) and three mobile phones. This demonstrates the importance of technology in our everyday life.

3. It is also important to mention that only one family uses protection filters for their children.

# Czech Republic



## National socio-economical context

- The Czech Republic has an advanced social market economy with stable positive annual growth rate. Based on the ISIC classification , the main economic activities are manufacturing and real estate activities ([1]). In July 2016, the unemployment rate was 4.0 %, the lowest in the EU ([2]).
- In typical Czech families, there are two children (44 % of families with children) or one child (40 %). There is usually just one family per housing unit, meaning just parent(s) and children live together, separately from the extended family or other families. Among families with children, 40 % are single-parent families ([3]).

## Internet and digital technology

- Around 1995, the internet started to slowly spread among Czech households. The first data comes from 2005, when 19 % of household were connected. More detailed information has been available since 2007, when separate data for households with and without children were gathered, showing higher acceptance of the internet among households with children - in 2007, 50 % of them were connected to the internet, compared to 32 % nation-wide ([4]).
- In 2015, 94 % of households with children had an internet connection and personal computer (compared to 73 % in all households); the percentage is similar all across the country and there seems to be no difference between bigger and smaller cities. However, the rate varies a great deal based on the household income ([5]).

## Schooling system for children from 0 to 8-year-old

- Compulsory schooling usually starts at the age of 6 years with the first grade of primary school. Approximately 20 % of children start compulsory schooling at the age of 7 years.
- Kindergartens are available for children from 3 years of age until the start of compulsory schooling. Priority acceptance is given to children aged at least 5, i.e. 1 year before compulsory schooling. Kindergarten is the most common form of pre-school childcare; in the school year 2015/2016, more than 90 % of 4- and 5-year-olds attended them

and 83 % of 3-year-olds. 38 % of 2-year-olds also attended (if the kindergartens had vacant places).

- Other less common forms of pre-school childcare are paid babysitters or friends and extended family. Parents can receive a maternity leave and parental leave allowance until a child reaches the age of 3.
- In the pre-school curriculum, ICT is mentioned rather vaguely in the communication competences section as an example of everyday media which children should know how to use. However, there are no further details or mentions in the instructional manuals.
- ICT knowledge and skills constitute a substantial part of the primary school curriculum. In the first 5 years of primary school, children should learn to use essential hardware and software and about basic technical security, the prevention of health problems, communication through email, chat or phone, searching for and elementary use of text and graphic editors ([6]). But it is up to the individual schools to decide how early or late to start to teach these skills.

## After-school and leisure activities

- Many schools provide after-school care for children while their parents are still at work. Usually there is no organised programme; children are free to play together or alone or to do their homework, while just being watched over. Additionally, some schools provide organised regular artistic, scientific or sport clubs, which can be both paid or free.
- Many types of afterschool activities are organised by various actors (municipalities, the state or administrations, churches, NGOs, private operators). They vary by subject (art, science, sport, foreign languages or generally educational and supportive, such as scouting) and by level of organisation and the involvement required from the child (from open clubs where anyone can come at any time to school-like courses which require the child's regular presence and preparation between lessons). In middle class families, children usually attend some of the courses.

## Czech Republic - Key-findings

1. New media are a stable part of children's lives. Children vary in the extent to which they use media and in the activities that they perform with them. Their activities that involve technologies are an enlargement of the activities from their offline life: media are another toy for children, another source of information and another device for watching programmes. Children develop their offline interests through technology, such as searching for content associated with their favourite musicians or athletes.
2. Some parents underestimate the risks of the use of technologies by their children.
3. Children are digital natives, but only to some extent. They can easily handle digital devices, control and install a wide range of applications, and search on the internet. But they encounter situations that they do not manage. Parents note that children learn to deal with digital devices more easily than they do themselves, but at the same time children digital activities

and behaviour reflect the cognitive development of children, since 7-year-olds still do not control critical thinking or distinguish strongly between the real and the unreal.

4. Parents have more control over their children thanks to mobile phones. But at the same time, they can lose control over the activities of children with mobile phones. Parents sometimes buy phones for their children to control them when they are not with them personally, i.e. they can call them when they go to school on their own. The mobile is also seen as the first private device of the child, and parents are losing control of what children are doing with mobile phones and what games and applications they have on them.

5. Media can be a help to parents. They also use technologies to 'entertain' children. Sometimes they even speak about 'putting children aside' with technology or 'watched, taken cared of' by technology, in other words, getting the children safely busy with technology. At the same time, parents try to use the technologies in this way to a degree, for example, when children are bored, such as when they are waiting for something or are on long journeys.

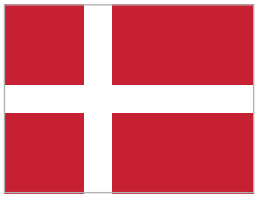
## Czech Republic – Surprising findings

1. Parents see the risks of technologies as lying especially in the future, particularly in adolescence when children get involved in online social networks, which can lead to harassment from other internet users, both peers and adults. However, parents underestimate the risks already present, since they consider that 'children are only playing with technology'. However, many of the children in our research have encountered violent content in games and describe the commercial risks. Additionally, one girl was searching for pages about weight loss and had installed a 'strip game' for adults on her phone.

2. The usage of smartphones by younger children is clearly a specific topic for further research. Phones generally turn out to be the first private property of a child, and one where their privacy is respected by the family. The child also perceives the phone as 'my device'. However, this brings risks since children can install applications that may not be safe on smartphones. It is necessary to focus on this area in further research in the future.

3. It seems that in families where technologies are primarily a reward and there are explicit rules regarding their use, children prefer the technologies to usual toys to a greater extent than in families where technologies are only one of the possible activities, which are not necessarily a reward. It is possible that children with implicit rules list among their favourite activities primarily playing with 'normal' toys like Lego or dolls or doing sports activities. In contrast, children with stricter rules have technologies among their favourite activities more often. However, we do not know whether the families with strong rules could have set them on the basis of a bigger desire of a child for technologies, in order to 'protect' them.

# Denmark



## National socio-economical context

- Denmark is the smallest of the Nordic countries, with a population of 5 707 250. The country has a diverse economy, primarily based on high tech and medical industries and agriculture, and is characterised by extensive government welfare provisions. 6.5 % of the population were unemployed in 2015.
- Despite net immigration to the country, the number of children has decreased from 1 202 289 in 2012 to 1 167 460 in 2016. The average household size is 2.1 persons. Divorce rates are generally high and 48 % of all marriages end in divorce.

## Internet and digital technology

- Denmark has a high IT penetration, with 94 % of households having access to the internet in the home. 98 % of schoolchildren have internet access at home. More than 90 % of children under the age of 7 have access to a tablet in the home.
- The general pattern of media use is changing rapidly from flow television to on demand and streaming services.

## General pattern of parenthood

- Danish parents are generally pragmatic in their approach towards child rearing in general and children's media use in particular. Danish children are given access to digital media and technologies at a very early age.

## Schooling system for children from 0 to 8-year-old

- Children generally attend school from the year of their sixth birthday.
- Most children attend age-integrated (0-5) day care, kindergarten and before that nurseries or private day care.
- ICT use is encouraged by government policies, in schools as well as in kindergartens. In kindergartens there are large differences in use and implementation. Schools are generally not very restrictive when it comes to students' use of ICT, formally or informally.

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- Most children in the first 3-4 years of primary school attend after school clubs, most often located at the school.
- A vast majority of children attend leisure activities outside school. Among the most popular activities are football, handball, gymnastics and swimming.

## Denmark - Key findings

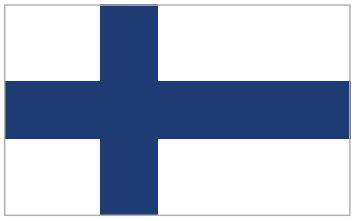
1. Danish children are heavy users of digital media. Their parents encourage this use even though they may have some concerns regarding time usage and specific content.
2. Parents are aware that issues regarding online behaviour and safety will be relevant for their children - at a later age. At this point, they find their children's use of digital technologies mostly unproblematic.
3. Parents are generally pragmatic in their regulation of children's use of digital media and technologies. They encourage their use for relaxation and for fun.
4. The iPad is the most commonly used (and preferred) technology among all the children in the study. Apps are the most common tools for gaming, streaming and browsing.
5. Children under the age of 8 are rarely 'online'; they use online content, but they do not often engage in practices such as online gaming or social networking. This should be kept in mind with respect to the formulation of policies and recommendations.
6. 'The internet' is a non-concrete issue for the children in the study. They may be aware of whether they have Wi-Fi access or not but they do not consider the internet to be a 'space', and they do not use it for communication.
7. Broadcast television is becoming less important for the families in the sample. Most of the children's television (and film) viewing is streamed content - often, via apps such as Netflix and Ramasjang ([7]) or via YouTube (app or webpage).

## Denmark - Surprising findings

1. As mentioned above, children in the study use the internet frequently, but they do not necessarily know what the internet is.
2. Access to 'the Net' is what makes the iPad, YouTube and Netflix work, but the children are not otherwise aware of the possibilities and pitfalls of the internet.

3. Parents are aware that, when the children get older, they will need to discuss the risks of being online, but, at this point, it does not make much sense to start having these discussions.
4. This study, therefore, indicates that research and policymaking in this area should focus less on online behaviour and risks and more on more active and creative uses of media and ICT to stimulate critical thinking in both children and parents in a more nuanced way.

# Finland



## National socio-economical context

- Gross national product per capita was about EUR 38 000 in 2015, when the livelihood structure was split between private services (49.9 %), public services (20.7 %), construction (6.22 %), industry (20.3 %) and primary production (2.88 %). The median income of all home economies was about EUR 22 000 in 2014. The volume of exports in 2015 was EUR 58.8 billion, split between chemicals (18.,8 %), paper products (16.8 %), metal products (14.7 %), machinery (13.5 %), electric and electronic products (12.1 %), vehicles (7.5 %), wood products (4.6 %) and food and beverages (2,3 %). The unemployment rate in October 2016 was 8.1 %.
- At the end of 2015 there were 1 475 000 families. 50.4 % were couples, either married or cohabiting, with no children. 37.1 % are families with children. The percentage of single-parent families was 12.3 %. Women with a child/children accounted for 10.2 % and men in the same situation 2.1 %. The average size of a family in 2015 was 2.8 people and 74.4 % of the population lived in a family.

## Internet and digital technology

- In December 2016 88% of Finnish people were using Internet. Almost everybody under the age of 55, were users of Internet. 72% of Finns were using the Internet many times every day. Most often it was used to dealing with daily matters, searching and retrieving information, communicating and following up the media. Computers with Internet connection and various mobile devices like smartphones are very common in homes.

## General pattern of parenthood

- The raising of children is the subject of constant and lively discussion among parents and educators in the Finnish information society. This proves the importance of the issue. The main paradigms in the discussion are the level of limitations and restrictions in their upbringing and the amount of intimacy and love on the other hand. It seems that parents and educators try to find a balance between these. Regarding ICT, children seem to be more familiar with the technology than their parents. On the other hand, the contents of the ICT are generally seen as a big challenge by the educators.

## Schooling system for children from 0 to 8-year-old

- Children enter the compulsory 9-year basic education at the age of 7. Starting from autumn 2016, pre-school for 6-year-olds is compulsory as well. Pre-school does not focus on teaching academic skills such as literacy and mathematics.
- Before pre-school families have different solutions for their children's day care. The most common form is the municipal day-care system, which covers the whole country. There are also high-quality private day-care centres all over the country.
- There is a quite comprehensive maternity allowance system covering time before childbirth and time after it.
- Schools are fairly well equipped with ICT and the use of it has an established position in the National Core Curriculum Framework (Board of Education, 2014) and municipal school curricula - including programming. The focus is on teaching 21st century skills and multi-literacy.

## After-school and leisure activities

- The latest legislation and curricular directives governing schools' extramural morning and afternoon activities are from 2011. Participation is voluntary for the families and may be covered by a participation fee. 98 % of the municipalities offer the possibility.
- Sports clubs, parish youth clubs and many other actors offer extramural activities after school hours. A rough estimation is that 70 % of children participate in some activity. Different kinds of sports are very popular among Finnish youngsters all year around.

## Finland - Key findings

1. Families have many technological devices at home which offer online audio-visual programmes even for very young children. In this context, TV has lost its dominance and even children's TV programmes are not necessarily watched as live broadcasted but rather at a more suitable time using on-demand programme services (Yle Areena of the Finnish national broadcasting company) or other programme services available on the Internet (e.g. YouTube).
2. In addition to the audio-visual programmes, various digital games are popular among the children. It seems however, that hand held console games are also losing their popularity and games which are available on the Internet conquer the place of these console games. Digital games really play a big role in the children's use of technology in this study. Some children even claimed that phones which do not afford gaming are boring. Parents have also had quite positive attitudes towards gaming, because they think that children will learn important substance of school subjects and also social skills while playing.
3. Quite many of the parents in the study were very keen and regular users of digital technology. Nevertheless, they cannot be regarded as techno overenthusiastic in such a way that would want their children only playing with these modern devices. On the contrary, they

were worried about the children using enough time engaging in other activities or hobbies, such as playing traditionally. Therefore, they controlled the time their children used with these devices, and had set rules and screen time limits for them.

4. Most of the time spent with the new technology was for entertainment purposes: watching audio- visual programs and gaming. Information seeking played a minor role in the interview data. It is worth noting, that although the parents willingly supported gaming within the certain time limitations, they did not regard computer gaming as equal to playing in the traditional sense. Do they maybe think that computer gaming is more limited and does not withhold enough space for the children's own choices and creativity, but instead, is more limited in regards to ready-made rules and options?

5. However, the parents reported that in some cases, a question related to children's interests or needs emerged and the parents searched for information on the Internet. In these occasions it seemed that the parent had been searching the information and the child had more of an observer's role. It remained unclear how much children were able to use internet independently. But there were also a few children who were efficient independent users of search browsers, such as Google, and used them according to their needs for finding videos for instructional purposes or for their entertainment. In order to meet their goal children used different strategies depending on their ability to read.

6. It is worth pointing out that there is still a lot to do in teaching how to use technology at home and other informal environments as well as in formal learning environments in kindergarten and schools. Especially important is that teachers in all levels work in partnership with the parents as has been proposed in the new National Curriculum Framework (Board of Education).

## Finland - Surprising findings

1. It is sometimes hard for parents to be knowledgeable enough about digital technology. For example, there is no clear definition of a smartphone, and some of the parents therefore have difficulties in understanding whether a phone is a smartphone or not. However, it might not be such a significant piece of information in most cases. For example, in one family both parents were working as software engineers and they approached the question from a professional point of view. Thus they probably thought more about the technical rather than commercial definition of a smartphone. They knew that the phone was a touchscreen phone that the child used to access YouTube and therefore there was internet access on the phone. In another family there was a different kind of situation. In that family, the mother said that her children's phones were not smartphones, but the older child claimed he had a smartphone and surfed the internet with it. In this family, the parents do not really know what kind of devices the children have and what they can do with them.

2. Online games also seem to cause some difficulties to parents. They did not always know whether a game was on the internet or if it had been downloaded to the device. After a short pause for thought, the parents were usually able to name at least one online game that their child was using. Some of the parents also understood that it was possible in some games that the child could chat with strangers, because they are played online. But the parents

concluded overall that the interview made them think consciously about both the benefits and the disadvantages of the online technology.

3. One surprising finding was the way in which parents create rules with their neighbours. Many of the families have noticed that their children always visit a home in the neighbourhood where there is a game day. The parents have therefore been in contact with each other, and agreed on joint rules. They have decided on the game days together, hence all the children who spend time together have the same game days. This makes it easier for the parents to supervise their children and they cannot play games every day.

4. It seems that traditional play has moved to a digital format. Instead of playing with paper dolls, girls can now do the same thing in MovieStarPlanet, for example. Many of us took good care of soft toy dogs or cats when we were children. A while ago there were Tamagotchis, but nowadays children do not need a separate device to take care of their pets. They can just do it on their computers, tablets and smartphones; the player in a game can even have a whole farm and not just one animal.

5. Contrary to the assumption that technology separates family members and isolates them within their own rooms, in this study, the interviews revealed the opposite. The families often have technological tools, such as tablets or iPads, in their living rooms, where several family members are active participants in the same game or they watch audiovisual programmes together, which are easily available as explained above. In some families, this arrangement was also considered a safety issue if the parents were able to control their children's engagement. The role of older siblings was also significant - they resembled assistants in teaching the younger siblings.

6. Generally, the parents were not very worried about the safety of using ICT tools, although they mentioned that the use of smartphones was difficult to control. One surprising finding was that the parents did not always know what the children are able to do with their devices. Moreover, some children were not aware of the fact that the game they had been playing was readily available in the internet. Interestingly, the parents were also confused about the availability of various types of devices, services and suppliers.

# Germany

## National socio-economical context

- The country consists of 16 federal states and has a population of 82.2 million, including 8.7 million foreigners and 17.1 million people with an emigration background. Live births are reported at 0.74 million and deaths at 0.93 million. The average of the mother when she first gives birth is 29.5 years. The total fertility rate is 1.5 and the rate of childlessness is 22 %.
- A total of 43.5 million people are in employment. 1.7 million are unemployed, giving an unemployment rate of 3.9 %. Economic growth (GDP) is 1.9 %, and the estimated inflation rate is 0.5 %.

## Internet and digital technology

- ICT is widely diffused in society and its use is considered as very important.
- Commonly families own multiple devices. The younger the parents are the more unlikely they are to own a PC. Younger families tend to smartphones, tablets or at the most laptops, if they are required for their professional working life.

## General pattern of parenthood

- High SES families are supportive of their children receiving education and learning based on their direct experience, in an explorative way, while lower SES families place less stress on individual hobbies or functional leisure time activities. Nonetheless, this just describes a tendency and not a family pattern per se.

## Schooling system for children from 0 to 8-year-old

- Compulsory schooling starts at the age of 6. Some children born during the summer months may start school at the age of 5 or even 7.
- At the age of 0-3 nursery is optional. Alternatively, grandparents or childminders take care of the children.
- The amount of time that children spend in kindergarten varies widely. Most of them are

open from 7 am to 3 pm, but a lot of all-day kindergartens are also available.

- ICT is present even in kindergartens and it is a definite part of school education, even at primary level.

| Age | Schooling type |
|---|---|
| 0-3 | (Nursery) |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- Different care options are available for children after school. There is care via crèche, grandparents or mothers or fathers. Family care options are more likely in rural areas, while crèches are most likely in urban areas.
- Broad spectrums of diverse activities are undertaken. Normally parents connect with parents of their children's same-age friends.
- Societally valued activities for children include outdoor activities such as zoo visits.

## Germany - Key findings

1. Children in our sample engaged with ICT in different ways. Despite the broad range of new media technology found, most households had at least a combination of smart TV, CD/MP3 player, DVD player and computer. Children chose consoles and tablet PCs over all other options when available, but still favoured offline toys and games too, especially when those were related to mutual activities with parents, siblings or friends. Depending on the age, most children were able to use ICT on their own. As we progressed with our data collection we recognised that the older the children the more skill they had already in use of ICT. Those skills were acquired by shadowing parents or older siblings, while the older children showed more advanced skills in this technique and learned faster to handle ICT. Being slower in the learning process did not keep younger children from demanding it from their parents or siblings.
2. While parents tend to have a critical view when their children handle ICT, children perceived those technologies as fun and a source of joy, delivering a whole new range of exciting possibilities. The more fun a device was able to deliver, the more children were likely to describe it as a positive experience. On the contrary children had negative connotations with devices when they had encountered bad or scary content.
3. They still do not worry about ICT and accept it as a natural part of their social environment. Parents on the contrary seem to judge ICT primarily by the time children spend with it and whether the technology is appropriate for the age. Many parents were concerned about long-term issues when their children used new media technology. One family in our sample reported severe psycho-social consequences originating from excessive use of ICT like aggressive behaviour when the child had no access or was called upon to stop, problems

focusing when not handling an ICT device and sleep disturbances.

4. While children accept new media technologies as a natural part of their environment many parents have still to learn to use them. Most parents only use ICT for business activates and communication, although especially the younger ones also use them for leisure time too. In some cases, we observed parents using devices as a babysitter for a certain time.

5. Children mostly use new media technologies for entertainment and joy, as well as mutual activities and communication. Smartphones are the melting pot since they provide several options like gaming, music, watching videos and communication at once.

6. Consequently, families prefer offline activities rather than ICT-related ones when they are together. If parents and children used new media technology together, parents stayed in the role of a tutor most of the time.

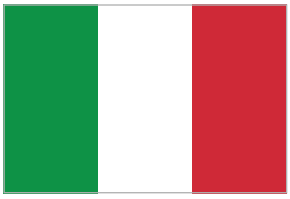
7. When left alone, children liked to use ICT a lot but in most cases they were regulated by their parents. Rules were set stringently and imperatively in many cases but some parents tried a more flexible approach aiming for a more autonomous intercourse with ICT. In general rules and regulation were bound to the children's level of consciousness and perception to use ICT safely and the content itself. Furthermore, they seem to originate from health concerns in the first place, but over the course of the study, we could observe a reduction of complex social situations and concerns about negative long-term consequences, because of parental insecurity as predictors for rules as well. Despite the circumstances and how and why rules and regulations were created many children tried to circumvent them whenever they had the chance, even if overstepping would mean severe consequences.

## Germany - Surprising findings

1. Some very young children were able to handle quite a broad variety of media and ICT devices with surprising knowledge about how they functioned. For example, some children were owners of meta devices, which combined several functions of other ICT devices, such as a Kiddyzoom; this is a camera that allows children to take pictures and play games, also in combination with photographs taken, and to listen to music. The devices mentioned or similar devices were reported to be of the greatest interest for the children, while not being perceived as ICT devices due to the lack of internet access. This applies even to the parents.

2. Unregulated use - which is indicated not only by an intense time of use, but also and more precisely through psycho-social consequences, even at this early stage of development - requires regulation by parents, if the child is not able to self-regulate. Interestingly, parents noticed that TV use caused some problems in earliest childhood and this happened again with other ICT devices half a year later, when at least some regulative measures - in terms of TV use - had been implemented.

# Italy



## National socio-economical context

- Italy is a southern European country with a population of 60 665 551 inhabitants. It is still ranked as one of the most industrialised nations of the world and the third largest economy in the euro area. However, it has been strongly hit by the economic crisis, and unemployment rates (especially of young 15-to-24-year-olds) are still above the EU average.
- Italy is an ageing society with 13 369 754 people aged over 65, compared to 8 281 859 children aged 0-14 in 2015. The average size of households dropped from 3.3 in 1971 to 2.4 in 2011. The average fertility rate, though, has slightly increased, from 1.27 children per woman in 2002 to 1.39 in 2013.

## Internet and digital technology

- The number of Italian households with internet access has increased from 52.4 % in 2010 to 66.2 % in 2015. 64.4 % of households have a broadband connection, though the amount of mobile-only broadband access is increasing - from 6.6 % in 2010 to 18.6 % in 2015.
- The internet is more diffused among young people and households with children: 89 % of households with children have access to the internet. 45 % of children aged 6-10, 81 % of those aged 11-14 and 90 % of teenagers aged 15-19 are internet users.
- The European Commission's 'Survey of schools: ICT in education' (2013) ranks Italy among the countries with the lowest percentages of students having access to internet-connected desktop computers in Europe at grade 8. Also, in terms of internet-connected laptop computers at grade 8 Italy is among the bottom group of countries, and the situation is the same for all other grades. The percentage of students in schools without broadband is higher than the EU average, particularly at grade 4, where more than one in three students are in a school with no broadband.

## General pattern of parenthood

- National statistics show that households with children are more likely to adopt new tech-

nologies earlier and to have media-rich homes. Nonetheless, the way parents regulate their children's access to and use of digital media varies consistently depending on parents' education, socioeconomic status and own familiarity with the internet and digital technologies. Higher educated parents are more concerned with promoting children's empowerment, thus balancing online activities (with a preference for educational content and apps) with a variety of outdoor activities and afterschool programmes. Lower educated parents often feel inadequate in mediating their children's relationship with technologies and favour a restrictive approach based on rules. However, lower socioeconomic families are also more likely to use technologies as digital babysitters or 'surrogate parents', to keep children busy and safe while they are engaged in household chores.

- Independently from income or education, parents who are digitally literate are more confident in promoting positive uses of technologies and supporting their children's digital literacy practices.

## Schooling system for children from 0 to 8-year-old

- Compulsory school attendance begins with the first class of primary school, usually when the child is already 6 years of age. Pre-schoolers can attend kindergarten, from the age of 3 to 6, whereas babies and toddlers are either looked after by grandparents or babysitters at home or attend nurseries. The number of nurseries is still insufficient to meet the demand.
- Though not compulsory, attendance at early childhood education is nearly universal in Italy: 98 % of 4-year-olds are enrolled in early childhood education, compared to 88 % on average across OECD countries.
- The 'Piano Nazionale per la Scuola Digitale: la Buona Scuola' ('National Plan for Digital Schools: the Good School'), launched in 2015 by the Ministry of Education, University and Research (MIUR), encourages the adoption of new technologies in the pre-school context in order to support children's learning. More specifically, the teaching of coding is extended to pre-schools and a new teacher profile will be trained and employed also in the pre-school context, namely the so-called 'animatore digitale' (the 'digital trainer').

| Age | Schooling type |
|---|---|
| 0-3 | (Nursery) |
| 3-6 | Kindergarten/pre-school |
| 6-8 | Two first grade of primary school |

## After-school and leisure activities

- After school, children are usually looked after by grandparents or mothers (if employed part-time) and engage in various afterschool activities. The range of after-school programmes directly organised by school is also expanding, including sports, English classes, drama classes or free leisure activities. As a consequence, children's leisure time is highly structured and this

influences the (overall limited) time that children of this age spend with technologies.

## Italy - Key findings

1. Children grow up in media-rich homes. However, a high level of presence of digital devices in the home does not necessarily mean ICTs are made available to the children, nor does it necessarily lead to high use. The computer and, occasionally, the father's smartphone, in this sample, are reserved for work and more serious uses.

2. Children's access to and interactions with digital devices are strongly mediated by their parents. However, the extended family also represents an important source of socialisation of children with digital media. It is especially remarkable that online technologies are a way to develop an intra-generational bond between grandparents and grandchildren.

3. Children's online activities are articulated around a set of interests and practices, including their passionate engagement with TV content as well as other toys. Playing games, watching videos and, occasionally, communication on WhatsApp or via email were the most common online activities practiced by children.

4. Most children have basic operational skills, but some have also acquired more advanced online competencies. Safety skills are also common, especially closing pop-ups by clicking on the 'X'.

5. Younger children with older siblings are facilitated in acquiring digital skills for two reasons: they usually socialise with digital technologies when they are younger, and they are actively supported by their older siblings.

6. Positive perceptions of ICTs among children include the idea of online technologies as entertainment devices, as educational devices and as spaces of autonomy from younger siblings.

7. While children of this age have a limited or no perception of online risks, two main negative views of online technologies emerged, one more related to the child's direct experience and one more adherent to parental mediation. The first includes problematic experiences with pop-ups and in-app purchases. The second mirrors the main concerns expressed by adults and relates to the belief that overuse of these devices is associated with negative health issues, such as damaging sight or becoming indolent or lazy dull.

8. Parental perceptions of the potential opportunities and risks of technologies inform children's own attitudes and perceptions, and directly shape the availability of technological items and online activities that children had to explore.

9. Positively, new technologies (especially tablets and apps) are perceived by parents and grandparents as educational tools that help stimulate children's cognitive development. Tablets are viewed as a way to pursue the child's interests in a safe environment (e.g. watching videos on YouTube instead of watching 'stupid' or inappropriate cartoons on TV).

10. Risk perceptions, directly expressed by parents or informing their mediation strategies, include: health issues; overuse; inappropriate content; and commercial risks. However, parents tended to postpone negative online experiences to the future, when their children would be

pre-adolescents or teenagers.

11. New online technologies tend to have a minor role in children's and parent's lives. Parents, in particular, emphasise the importance and the centrality of a wide range of 'non-mediated', 'non-technological' indoor and outdoor activities.

12. In general things that brought families together were not technology-driven: they went for walks or rides, watched TV, etc.

13. On the other hand children seem to look at the new technologies with great interest and fascination. The perceived relevance of ICTs to the child is quite independent from their own use and the amount of parental regulation.

14. Inside the family and the household's economy, new (digital) technology represents both a challenge and a resource. On one hand children's digital media use is perceived as something problematic that needs to be carefully regulated and controlled: digital media and new technology contribute to making family management more complicated (use restrictions by parents; quarrels between siblings). On the other hand these tools are seen as available resources to encourage social interactions inside the household.

15. Parents seem to be more focused on regulating screen time and balancing digital media use with other everyday activities. By contrast, grandfathers in our sample were particularly engaged in 'active mediation'.

16. The majority of parents perceive rules as effective tools to educate children and teach them how to self-regulate. Main rules adopted by parents include: setting limits to screen time; limiting children's autonomy; and regulating permitted content and activities. Technologies are also used as disciplinary tools, to reward or punish the child for their school achievement or behaviour.

17. Typically, there are two kinds of responses to the rules set by parents. In the majority of cases children have completely interiorised parental rules. In other circumstances, instead, children are not fully aware that parents are limiting their use of technologies.

## Italy - Surprising findings

1. One of the most surprising findings that emerged from the pilot study is the positive role at times played by grandparents, who are actively engaged in socialising children to online technologies, selecting appropriate content for their grandchildren and encouraging the acquisition of skills and digital literacy. Grandparents are also usually more permissive and complicit with the child, thus providing even those children who are highly regulated at home with the opportunity to experiment with new technologies.

2. A second remarkable finding is the observation of potential age divides in skills and self-confidence: for example, in one household (I5) parents and grandparents agreed that the younger girl (aged 4) was more confident with the iPad than her older sister. She was deemed to have learned more easily and faster how to use it, and her approach was perceived as being more 'natural'. The impression of the younger sibling being more self-confident and comfortable when using the tablet was also confirmed by direct observation of the two

girls interacting with different apps. Similarly, parents in Family 1 note that their younger daughter, aged 3, 'knows perfectly how to use it, she is much more skilled, the touchscreen technology is perfect, at 2½ years old she could do everything, but she doesn't know how to manage it from an emotional point of view' as I1f explains.

3. A consistent finding across households was also the emergence of contradictions, or inconsistent accounts by parents and children: more specifically, parents tend to value as important experiences for the child activities and experiences that the child has not mentioned and vice versa. This is the case with communicative abilities, with parents naming communicative practices (the use of Skype or WhatsApp) among the things the child is able to do and does at least occasionally, while the child does not even mention them. Another example concerns different perceptions of devices: I7f, for example, thinks that his 7-year-old boy does not appreciate the computer and finds it 'obsolete' because it does not have a touchscreen. By contrast, the child is excited about having access to the computer and says this makes him feel older. Obviously, since his younger, 2-year-old twin siblings also have also access to his own iPad, the computer (and the smartphone) are valued as symbolising his own autonomy and older age.

4. Less surprising, but still remarkable, is the observation that being 'a good parent' is associated more with restrictions than with active engagement with children's online activities: the parents seemed eager to show they were limiting the screen time of children. Part of this restrictive approach to children's digital media is also the choice to lend children their own devices instead of giving them a device for private use. This choice, however, is counterproductive, as parents' smartphones are not configured to and designed to be used by younger children: in-app purchases are a common risk of use of parents' smartphone by a child.

# Latvia

## National socio-economical context

- Latvia is one of the Baltic states located in north-eastern Europe with a population of 1 968 957 inhabitants at the end of 2015. Population growth has been negative since 1991, although in recent years the situation has been improving. The number of children aged 0-14 has increased by more than 8 000 since 2012 and at the beginning of 2016 accounted for 15.3 % of the total population. The leading sectors of the economy are transportation and logistics, financial and insurance activities and information technologies and related services. The average Latvian family consists of 2.74 persons and the average number of children per woman in Latvia is 1.65.

## Internet and digital technology

- Inhabitants of Latvia are very active internet users: 80 % of the population can be reached on the internet. In 2015 76.1 % of Latvian households had computers and 76.0 % had internet access. The internet is used more among households with children and is still increasing: from 90.8 % in 2012 to 93.6 % in 2015. Latvia had the seventh highest average speed of internet connection in the world the same year. The most active mobile internet users are pupils and students (92 % of the total population) and persons from 16 to 24 years (87 %).
- Improvement of the possibilities to use ICT in schools is one of the national objectives for 2014-2020. Many schools have interactive whiteboards. Several schools already have a 'digital classroom', providing a tablet for each student. Pupils are very open to the use of ICT in schools, and 75 % even would like to use social networks in the learning process.

## General pattern of parenthood

- Parents would like to give access to technologies and try to do that, but they would like information about how to keep a good balance between different kinds of activities. Parents with a high income are more interested in keeping a good balance between use of technologies and other activities, but parents with a low income do not provide access to all the technologies because they cannot afford them. Sometimes the balance is lost due to a lack of information on how to provide different technologies for children in a safe way.

## Schooling system for children from 0 to 8-year-old

- Children are involved in pre-school preparation from the moment they start attending kindergartens or pre-primary education institutions. Pre-school education is available from the age of 1.5 years, but children may enter at any age from 2 to 6 years. It is mandatory for 5- and 6-year-olds who do not attend pre-school education institutions to participate in pre-primary education programmes. The objective of the pre-school education curriculum is to ensure the multi-faceted development of a child's personality, to promote health and readiness to enter the primary stage of basic education. Pre-school education is considered a comprehensive first stage of general education and all children have to complete it by the time they are 7 years old. This deadline may be extended for a year due to specific health or psychological problems by parental request or doctors' request or recommendation.
- ICT skills are not defined in curriculum for that age group, which means that there are no organised activities to provide specific knowledge of ICT..

| Age | Schooling type |
|---|---|
| 0-1.5 | (Nursery) |
| 1.5-5 | Kindergarten/pre-school |
| 5-6 | Pre-school |
| 7-8 | Two first grades of primary school |

## After-school and leisure activities

- After pre-school and school, children are usually engaged in various afterschool activities or sometimes looked after by mothers, fathers or grandparents (if employed part-time). The range of after-school programmes directly organised by school is also expanding, including sports, English classes, drama classes, robotics activities or free leisure activities. The leisure time of children who live in cities is highly structured, but for children who live in countryside, activities are not so structured. However they do not have access to technologies, and this influences the (overall limited) time that children of this age spend with technologies.

## Latvia - Key findings

1. The obtained data show that a wide range of technologies and intensive use of them is considered as a norm in the households. Children's technical skills correspond to the particular age, and the reasons for using technologies are increasingly associated with entertainment rather than with searching for practically useful information or performing deliberate learning activities, but they also indicate a certain type of habit.
2. Families rarely practice a joint and purposeful acquisition of technologies; this is mostly supported from the parents' side or based on unsupervised children's attempts and a principle of randomness. Several reasons for parents' lack of participation could be mentioned: they are not interested in helping children to learn to use the technologies because they see a

learning potential in this activity; they themselves are unable to handle the technologies sufficiently skilfully to be able to teach their children; they consider them to be negative and so, although they have purchased the technologies and allow the child to use them, as a matter of principle, they do not consider it to be appropriate to help children to learn to use them; or they have not immersed themselves in this issue, thus allowing the process to run its course.

3. Although neither the parents' nor the children's use of technologies as a whole suggested any specific potential threats, their regular habits do not necessarily indicate an in-depth understanding or systemic strategic approach in their actions. In general, the parents do not implement a well-considered media education, and they have not purposefully developed an approach to technology use based on psychological and pedagogical arguments. This is indicated by the inconsistency in imposing the rules and requirements (time of the day, duration, type of technology, operational specifics), and their implementation. For example, on one side allowing or retrieving digital technology time as reward or punishment and on the other side, permitting free use of technology in order to free time of the parents to meet their own needs.

4. The fact that media education is not implemented purposefully is justified by the parents' lack of a media competence that would increase their confidence regarding the appropriate choice of parenting approach. Understanding both the usefulness and potential risks of the technologies is more abstract and intuitive. Their arguments are often irrational and do not come from in-depth studies of the literature or from the conclusions of field specialists, but are rather based on personal assumptions and oral messages from the media and from bystanders. Several families believed that media education becomes relevant at a certain age, which is not defined within this study, and that the interviewed childrenhave not yet reached such an age. Therefore, in the parents' opinion, a poorly targeted approach is still acceptable.

5. The parents' lack of knowledge or unwillingness to analyse the issues regarding the impact of technologies is also revealed by the children's superficial understanding of the risks associated with technology use. The children associate the risks of technology use more with physical threats, which are more evidently identifiable by them and easier to understand - they are aware of mechanic/technical damage to the devices themselves and the potential damage to the physical or mental health of individuals and issues of privacy or safety only in abstract terms.

6. Children's technology use habits have correlations with parents' understanding and practice of technology use. A number of features of parents' understanding and logical courses of action can be identified:

   (a) the parents who use technologies actively themselves, but give relatively little thought to the content and superficially reflect on the consequences of technology use. They are more familiar with the child's digital activity habits and are less sceptical about their interest in technologies, and are mostly slightly critically liberal with regard to the child's urge to use technologies on a daily basis. The parents in this model prioritise the value and importance of technologies, but they pay secondary attention to the child's physical and emotional safety.

   (b) the parents who use technologies actively themselves. They look into the content

and see the correlations between the use and consequences, are more demanding with regard to the child as a user, and do not only limit the number, types, duration of use of the technologies, but also ask children to critically assess the role of technologies in general according to their age and their positive and negative features. They also orient children towards self-discipline with regard to technology use by providing parental assistance with the virtual reality.

(c) the parents who see more negative trends in the existence and use of the technologies. They are passive and comparatively rarely use technologies. In such a model, raising a child tends to be dominated by a prohibition on using technologies, which is not explained with reasonable arguments, or minimal attention is paid to children's technology usage habits.

(d) the so-called rational technology use model in which the parents are aware of the role of technologies in the present and the future and consider them to be normal routine components of the family. However, they are aware of and understand the risks involved with regard to the raising of children by trying to achieve balance between the virtual and real activities and by promoting the understanding of the child, as opposed to other models where parents are more focused on the inheritance of views, by not clarifying the reasons and therefore not promoting the child's ability to judge and media competence. In this model the parents, unlike the others, believe that the media competence should be gradually formed from an early age.

(e) data from the study allowed the identification of a gender contrast in the parenting approach, in which the fathers are relatively less prejudiced and more technically competent technology users, and delegate more freedom to their children. Mothers are more conservative technology users, they develop more detailed rules for children's use and remind also their husband the example their own use could be an for their children.

7. Despite the extensive range of technologies both in households with low income and high income, the children attach high priority to real-life activities - playing, gaming, physical activities and social contacts - suggesting that the environments are separate and the child is able to choose what he/she prefers in each of them.

8. Inconsiderate and non-purposeful media education in families also influences the purchase of technologies, mostly due to the availability and affordability of the product in the market, changing fashion trends in technology acquisition - which is associated with affiliation to certain social circles - and the implementation of a penalty and reward system rather than care for achieving particular parenting and learning objectives.

## Latvia - Surprising findings

1. In the interviewed families, technologies themselves are considered to be important, because they are expensive and fragile devices that children could damage. It is concluded that the parents often focus on product preservation, but are unaware of the potential risks to children's safety. Some parents believe that children are still too small to need to be talked to about the potential risks. Children are subject to parental rules regarding the time they spend on technology. But it is not always clear whether the time limits are determined according to the needs

of the child or the necessity for other family members to use the technologies, or the need to protect of the device itself from (i.e. fall, misuse leading to the breaking of the device).

2. A lack of parental mediation on child safety issues was observed. A discussion of the criteria for evaluating the digital literacy of the interviewed children confirms that the interviews do confirm exactly those criteria that deal with the awareness of potential risks and problem solving in the digital environment. The parents consider that 6-7-year olds are too young for a discussion on these matters.

3. When analysing the activities that the children would gladly like to do, in the first place come those such as drawing, playing board games and active play such as riding a bicycle or ball games, and only then come activities in the digital environment.

# Lithuania

## National socio-economical context

- Lithuania is a small country in northern Europe with a population of 2.8 million ([8]).
- There are approximately 1 267 000 households and the average household consists of 2.38 persons. According to Statistics Lithuania, 861 400 families were recorded in the 2011 census. Married couples accounted for 38.9 % of the total number of household members, single-parent families with children younger than 18 accounted for 3.6 % and families with children younger than 18 accounted for 18.4 % ([9]).
- According to the most recent census data, the average size of a family was 3.03 in 2011. 58.2 % of families with children younger than 18 were raising one child, 33.7 % were raising two children and 8.1 % three or more children. Marriages last, on average, 13.2 years (Statistics Lithuania, 2012). The rate of divorces is high, at almost 50 %.
- Lithuania has a high percentage (22 % as of 2015) of citizens living in poverty when compared to other European countries and a similar one to that of other Baltic states. The unemployment rate in Lithuania was 7.3 % in May 2017 ([10]).

## Internet and digital technology

- Lithuania ranks 13th in DESI 2017. Its performance is above the EU average in all dimensions, except for human capital, where progress has been limited. Lithuania continues to perform well in connectivity but is growing more slowly than the EU average. It has improved significantly in the integration of digital technologies and in digital public Services. The number of Lithuanians going online in 2016 increased at the same pace as the EU average but levels of digital skills remain below the EU average.
- Lithuanian internet users engage in a variety of online activities and continue to lead the EU ranking for online news consumption, while and many users engage in e-banking and video calls ([11]).

## Schooling system for children from 0 to 8-year-old.

- Pre-school education is not mandatory. It is for children from age 3 to 6 and its cost is partially covered by the state. Primary school lasts for 4 years, from the age of 6 to 11.

- Compulsory schooling starts at 7, and pre-school is also available should parents wish to enrol their children.
- Before starting their primary education, children may be educated at home and/or by pre-school education institutions. There are two distinct stages of formal pre-school education: pre-school education for children aged 6 and younger; and pre-primary education for children from 6 to 7 years (in exceptional cases from 5 to 7. Pre-school education is offered by nurseries, nursery kindergartens, kindergartens, kindergarten schools, etc.
- The pre-primary education is designed to assist a child to prepare for school and to equalise the level of knowledge of all pre-school pupils. The curriculum for this stage can be offered by schools or by other education providers. The curriculum of pre-primary education is standardised, while the curriculum of pre-school education is more individualised, designed by schools.
- None of the stages of pre-school education are mandatory. Parents who decide to educate their children at home may receive pedagogical and psychological assistance ([12]).

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten |
| 6-8 | Two first grade of primary school |

## Lithuania - Key findings

1. The most popular device among the children is the tablet, which is usually used for entertainment and relaxation. When parents want to have some time for themselves, they allow the children to use the tablet. The older children quite often save money with the goal of purchasing a tablet of their own, or put it on the wish list for Santa Claus. The time when children get a tablet of their own is when they start going to primary school or later, when the device is needed in the educational process at school. A tablet or smartphone may also be used by parents as the means to calm a child in stressful situations, such as when attending a hospital. Almost every child in such circumstances (even at a very young age - 2-3 years) may be found holding a smart telephone or tablet in their hands.
2. Parents are relatively strict and have established rules over the time spent with smart devices. Usually they start from a limit of half an hour a day and when the child grows bigger, the time could be extended to 1 hour a day. Some children obey, but others tend to break the rules. Grandparents are inclined not to be so strict and allow the children much more time. When grandparents get tired of the noise the children are breaking, using digital technology is one strategy for them to relax and have some peace for themselves.
3. As technologies develop so fast, the younger children (2-3 years) are getting to know technologies at a younger age than the children who are currently 7-8 years old. Even a few years makes a difference. Those who are 8 now got the smart devices to try when they were 5 or 6.

4. Contemporary parents belong to the new generation, which is saturated with technologies and overloaded with information. They counter this with the slogan 'Back to nature', which is becoming more and more popular among the young, educated families. This accounts for the popularity of outdoor kindergartens, primary schools that do not allow smart devices to be brought into classrooms and restrictions placed on the usage of such devices at home. Thus, they try to protect their children and try to oppose to the influences of technologies. As an alternative, they find and suggest to their child a great variety of outdoor activities, including sports, travelling, etc. They also involve the child in joint activities such as board games, reading books, playing with popular toys - Lego, cars, dolls, etc. Many children attend dancing, singing or drawing classes or are occupied all day long with a variety of alternative activities.

## Lithuania - Surprising findings

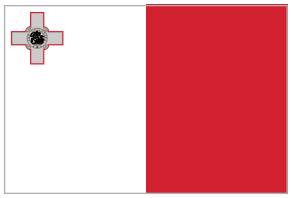
1. It was interesting to find out that in families with 2 or more kids, the oldest one takes the lead and is the most active in exploring the possibilities of smart devices as well as learning how to operate them. The younger brother/ sister will be less interested or will show less initiative. The younger child will usually ask the older brother/sister to assist/ show/do/ or find what he/she wants or will act as a silent observer of the activities that the older sibling is involved in.

2. Another interesting observation is that the younger children (2-3 years) get to know about technologies at a younger age as compared to children who are currently 7-8 years. Even a few years make a difference, as technologies develop so fast. Those who are 8 now got to know the smart devices for the first time when they were 5 or 6. Nowadays children are attracted to these devices from below the age of 2 years.

3. Parents are rather strict, controlling the time spent on smart devices. They imagine that they are completely monitoring the situation, but in many cases, they are aware that children are allowed much more freedom while spending their time at the grandparents.

4. Contemporary parents belong to the new generation that is overwhelmed by technologies and overloaded with information. They counter this by trying to bring themselves and the children 'back to nature'. This tendency is becoming more and trendier among the young, educated families. This accounts for the popularity of outdoor kindergartens, primary schools that do not allow smart devices to be brought into classrooms and restrictions placed on the usage of such devices at home.

# Malta



## National socio-economic context

- Malta has a population of circa 420 000 and became a member of the European Union in 2004 and of the euro area in 2008. The main drivers of the economy are tourism, trade and manufacturing. Highly trained workers, relatively low labour costs and membership in the EU attract foreign investment. Unemployment is relatively low at below 4 %.
- Malta has circa 150 000 families; 3.2 % are single-parent families and 23.8 % are couples with children. The average household size is 2.9, with one child. The divorce rate is less than 1 per 1 000 persons.

## Internet and digital technology

- Over 80 % of households have access to computers, while 73 % of the population aged 16 to 74 are regular internet users. Over 70 % of the population make use of mobile phones.
- 60 % of internet users make use of e-government services and 64 % use online shopping and services.
- 82 % of computer users have basic e-skills and 32 % of internet users use Cloud computing services.

## General pattern of parenthood

- The extended family is still fairly strong in Malta. Quite a number of 0-3-year-olds are cared for by grandparents. Mothers are usually the main carers of young children. However, in recent years the provision of universal childcare has increased the number of working mothers of young children.

## Schooling system for children from 0 to 8-year-old

- Formal education in Malta is offered by the state, the Catholic Church and the independent sector. It is divided into four stages: early years (from 3 to 6 years), junior years (from 7 to 11 years), middle years (from 11 to 13 years) and secondary years (from 14

to 16 years).

- Almost all children attend kindergarten classes from the age of 4, although this is not obligatory.

| Age | Schooling type |
|---|---|
| 0-3 | Childcare |
| 3-6 | Early Years |
| 6-8 | Primary Junior Years |

## After-school and leisure activities

- Children in Malta spend between 6 and 8 hours at school and most of them are enrolled in a number of extracurricular activities like football, ballet, different clubs, etc. in the after-school hours or during the weekend. After-school clubs are organised in state schools.
- The sunny and warm Mediterranean weather throughout the year permits many outdoor activities for families and children. There is increased awareness about child obesity, with educational and sports campaigns being organised to counter this.

## Malta - Key findings

1. Promoting emergent literacy. Our findings showed that although the children read digital books, print books were also valued highly by most of the families. Young children's experiences with literacy at home determine the development of emergent literacy. There is already some evidence about the impact on literacy development of increased use of touchscreen tablets, like iPads, in homes and early education settings. Studies like that of Neumann (2016) showed a positive association between children's access to apps and print knowledge. A positive association was found between the frequency of writing with tablets and print awareness, print knowledge and sound knowledge. Further research is required to investigate the effects of tablet writing on literacy development. Such research should illuminate policy and practice in this field and provide the sufficient basis for parental and early childhood teacher education. Parents and educators need to recognise how print and e-books can complement each other.
2. Internet safety. Most of the parents expressed concern about the internet safety of their children. Parents should become more aware of the ways in which their children are using digital devices and of what they are in fact watching and playing.
3. School curricula and teacher preparation. Most of the children in our study experienced digital technologies and texts at school too. Schools should include digital awareness and education in a more systematic way in their early childhood education curricula. Early childhood educators require relevant training in the use of digital technologies, both in their initial teacher education and as part of their ongoing professional development.
4. Home-school links. It is important that children receive consistent messages about the use

of digital technologies from home and school. Early childhood educators need to be able to strengthen the home-school links with regard to the use of digital technologies. This should ensure better harmonisation between the parents and the teachers when guiding the children in the use of digital technologies.

5. Libraries. The local community needs to provide additional digital resources for children to support families and schools. Libraries are to make available age-appropriate and educational apps for children. They are to offer programmes about the benefits and risks of digital technologies for parents and children.

6. Technology Use Policy. Clear policies about internet safety in homes and schools are to be developed and made accessible. Children, parents and teachers in Malta are presented with literature in both Maltese and English about internet safety outlining both the benefits and risks of online activities. Policymaking should be evidence-based. More research is required on the uses of digital technologies in homes and in schools to guide policy.

7. Public awareness about the impact of digital technologies. There needs to be more public awareness about the impact of digital technologies on contemporary life. Public awareness campaigns by public agencies about the use of digital technologies should target the general public and specific sectors like children, parents, educators, etc.

## Malta - Surprising Findings

1. The parents claimed that they supervised their children's online activities. However, when asked specific questions, some of them could not identify which sites their children were accessing and which games they were playing. Parents need to become more engaged and involved in the online life of their children. They need to be supported to be able to reduce their children's exposure to inappropriate content. Parents need to make more efficient use of the parental control apps. More effective and user-friendly apps should be developed to allow parents to monitor better the online activity of their children. Parents are to explain to their children and to discuss with them the reasons for establishing boundaries for their online activity. In this way, children gain the maturity to be able to engage in the required self-regulation.

2. Bilingual and multilingual settings. In view of bilingual and multilingual settings, like the Maltese context where both Maltese and English are the languages of schooling, more digital content needs to be made available in the home languages and in diverse languages. Most of the digital content available is in English. Child friendly apps in local languages should be developed and promoted.

# The Netherlands

## National socio-economical context

- The Netherlands is a small and densely populated country in western Europe with a population size of 17 million ([13]). It borders Germany to the east, Belgium to the south and the North Sea to the (north)west.
- The average size of households is 2.2 people. On average, women have 1.7-1.8 children. This number has been and is still declining. When couples first have children, their average ages are 31 years (for mothers) and 34 years (for fathers). Marriages last, on average, 15 years; 30 % of divorces take place after a marriage of 20 years or more ([14]).
- The Netherlands has among the lowest percentages of citizens living in poverty as compared to other European countries and the country is among the richest. Also, the percentage of people who have a job is among the highest in Europe. Strikingly, the amount of part-time work is by far the highest: half of the working population works part-time ([15]). Related to the latter is the high percentage of children in childcare.

## Internet and digital technology

- In 2015, 91.4 % of all households had access to the internet. For families with children, this was 98.8 % ([16]). The smartphone (98 %), laptop (93 %) and tablet (88 %) were the devices most frequently present in the homes of families with young children in 2016. Children's ICT usage mostly takes places in the shared space of the living room ([17]). In families with a lower socioeconomic background, children more often have ICT in their own bedroom ([17]).
- The amount of media use has been stable for a long time, yet since 2006 it has been increasing due to more frequent usage of the TV and the internet. The most frequently used medium has been, and remains, the TV. Those with a lower socioeconomic background spend more time watching TV, while those with a higher socioeconomic background are more likely to be early adopters of new media ([18]).

## General pattern of parenthood

- Most Dutch parents adopt an authoritative parenting style, such as giving explanations

and talking about consequences. They generally place great value on autonomy and assertiveness. Authoritarian parenting, for instance giving punishments, is less popular. Single parents and parents with lower socioeconomic backgrounds more often use authoritarian measures ([19]).

## Schooling system for children from 0 to 8 years

- Until their fourth birthday, children can attend a day nursery or crèche. The percentage of children under 4 attending childcare (formal or non-formal) is among the highest in Europe. However, Dutch children spend just about the least amount of time in childcare. Some children are taken care of by childminders and relatives (e.g. grandparents), but this is less common in the Netherlands compared to eastern European countries ([15]).
- Every child must attend school full-time from the age of 5. However, nearly all children start going to school at the age of 4.
- The frequency of ICT use in schools is among the highest in Europe ([20]).

| Age | Schooling type |
|---|---|
| 0-3 | Childcare |
| 3-6 | Early Years |
| 6-8 | Primary Junior Years |

## After-school and leisure activities

- In 2015, 356 000 children attended after-school care, which is slightly more than the number of very young children attending day-care ([16]).
- The leisure activities Dutch children enjoy most are: playing outdoors, playing games, drawing or handicrafts and watching TV. Some activities become more popular as children grow older, for instance hanging out with friends, sports and using the internet. In addition, board games are gradually being replaced by digital games. Whether children spend time indoors or outdoors is partly dependent on the weather ([21]). The Netherlands has a maritime climate and rainfall is common throughout the year.

## The Netherlands - Key findings

1. One important factor influencing whether and how children use new technologies is their access to them at home. The television (either digital or analogue) was the device most frequently used across families, followed by the digital television and the tablet. In a slight majority of the families that were interviewed none of the digital devices were in the target children's possession. Instead, they were either considered 'family devices' or the devices were in the parents' possession and children were allowed to use them. In four families the target child did own a mobile device. The largest discrepancy that was observed between media usage and ownership existed for the television, followed by the tablet. Furthermore, a range of circumstances either enabled or limited children's engagement with the technolo-

gies present: whether or not the parents considered a device a 'family device', the availability of preferred activities and devices, the amount of leisure time available and the ways in which parents managed their children's use of technologies

2. New technologies such as tablets, smartphones and, to a lesser extent, laptops and personal computers seem to fulfil many purposes. Children and parents used them for gaming, connecting with friends and relatives, watching videos and music clips, engaging in school- or work-related activities and searching for information. The children that were interviewed differed in the range of possibilities they used. This variability was observed between families, but also between siblings within families, and depended to a great extent on children's interests and practices adopted in the family.

3. Several target children used a digital device to follow up on a particular interest or as an extension to regular play. A special case of interest-driven media engagement was that children's digital media use was sometimes influenced by family practices, i.e. the interest different family members had and the activities they preferred to engage in. Furthermore, in some cases, children incorporated new technologies in their regular play, for example by making video clips of their own songs and putting them on YouTube.

4. There are factors outside of the immediate family environment that influence children's engagement with new technologies. The single most influential one mentioned was school. In one family the children attended a so-called 'iPad school', where most learning activities are provided by means of tablets. In most schools, however, digital technologies did not dominate classroom practice and were used as a complement to learning through print materials. In these schools personal computers instead of tablets were available to children; in some families the parents indicated that children were allowed to bring their own device to school at fixed times of the week. If schools employed digital devices as a supplement to print materials, children were familiar with educational platforms such as Ambrasoft and several parents provided them with the opportunity to practice at home as well. Other factors outside of the family that influenced children's digital media use were very varied. In some families, the extended family, especially grandparents, played a role. Peers, too, influenced what children did with technologies. In this manner, children were sometimes exposed to apps or devices they did not have available in the home, for instance Facebook.

5. Using the tablet and television are among the most popular activities for children to engage in. Several children also indicated that the smartphone, iWatch, MP3 player, toy tablet and game consoles were great fun. Yet the number of children who chose these devices was smaller, reflecting that differences between children existed in their affinities for technologies. An important finding was that young children's preference for new technology was generally balanced out by their preference for non-media play such as swimming, drawing and outdoor play.

6. Parents vary in their support of children's digital media use. Some can be labelled as advocates or, at least, positive suppliers: they provided a rich home media environment, offering their children ample opportunity to explore digital devices. Other parents were (explicitly) negative and limited their children's media use accordingly. Then there were parents who can be qualified as 'in-betweens': they allowed the use of digital media, acknowledged positive and negative aspects and encouraged non-media play. However, most parents men-

tioned both 'the bright and the dark side' of digital media.

7. The word most frequently associated by parents with new technologies is 'educational'. This qualification was often accompanied by words such as 'necessary competences', 'curious', 'informative' and 'challenging' and was related to the sense generally shared by parents that children benefited from digital media by acquiring skills and knowledge required for school and in their later lives. Furthermore, a slight majority of the parents mentioned that digital devices stirred the children's imagination. Yet some other parents mentioned that this could be a negative thing, for example because some images are too worrying for young children.

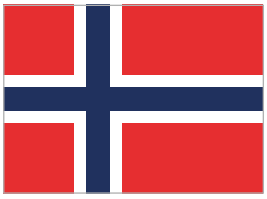
8. There may be a fine line between positive and negative aspects of new technologies. In all but one family at least parents in addition to labels like 'educational' and 'fun' chose one of the words 'addictive', 'distractive' or 'tension'. One parent provided an explanation for this: whether or not digital media were experienced by him and his wife as a negative influence depended on the social circumstances. For example, when visiting a restaurant they sometimes keep the child busy facilitated isolation by providing digital media as a babysitter, but they found it annoying when their daughter was absorbed by a digital device and tended not to see or hear her parents.

9. Three types of what we call 'mediation styles' can be tentatively distinguished. These should be seen as the emphasis parents tend to place on particular values, for instance freedom, balance or protection. 'Freedom within boundaries': these were parents who allowed their children much room for exploring digital media. Although all these parents had certain (implicit) rules, they provided many opportunities for access to devices, gave much leeway in the sense that they were lenient with respect to time spent on media use and in some cases even explicitly encouraged children's use of digital devices. 'Striving for balance': these were parents who were not necessarily very strict over their children's media use, but at the same time tried to prevent digital devices from playing too big a role in their children's lives, both by encouraging them to undertake other activities and by employing rules that restricted media use to some degree. 'Maximising limits': these were parents who aimed to protect their children against negative effects of digital media, for instance social isolation, and took measures (some quite strict) to explicitly limit their children's media use.

10. Measures parents adopt to limit their children's media use take various forms. These measures involved physical limitations (e.g. using password protection), stimulating or enforcing alternative activities (e.g. outdoor play) and explicit rules. Parents mentioned various rules that applied to four different domains: the acquisition and use of specific content (e.g. not being allowed to download apps); timing (e.g. no television on weekday mornings); the combination of content and timing (e.g. no energising media activities before bedtime); location or context (e.g. no media during play dates); and control (e.g. having to ask permission to use a device).

11. Some parents monitor their children's media use rather than set very strict rules. This sometimes resulted in on-the-spot decisions, such as parents ad hoc telling their children to stop when they felt they had spent too much time using a device, without having agreed on a maximum time beforehand.

# Norway



## National socio-economical context

- Norway has been ranked as number 1 by the Human Development Index of the UN from 2009 until the present. The unemployment was 4.8 % in June 2016. Norway is the world's second largest exporter of fish, the third largest of gas and the fifth largest of oil. The population is only 5.2 million.
- Birth-rate is 1.86 (range 10 in Europe), and the average size of family is 2.20 persons. 76 % of children live together with both parents and 24 % with one of them. 80 % of children live together with siblings.

## Internet and digital technology

- Some Norwegian research institutions were permanently connected to the internet in 1982 (tests were conducted in 1973, as the first country outside the United States). The internet was made available to the public in general in 1991. By 1999 Finland and Norway were among the world leaders of internet users per capita (30 %). In 2008 71 % used internet, and in 2011 98 % of families with children had internet at home.
- In 2016 84 % of children aged 1-16 years of age had access to tablets, 75 % to desktop computers, 62 % to game consoles and 55 % to mobile phones. 18 % of children aged 5-6 years have their own smartphone.

## General pattern of parenthood

- In a national survey of 2015 83 % of the parents said they thought parents and other caretakers should have the main responsibility for protecting children in their use of media. Parents and children talking together is widely regarded as the best way to protect children from unsuitable media content.

## Schooling system for children from 0 to 8-year-old

- Schooling starts at age 6.
- 'Barnehage' is the pedagogical day institution within early education and care that 9 out

of 10 1-6-year-olds attend. Very few aged under 1 attend because parents are entitled to 46 weeks at full salary, or 56 weeks at 80 % pay in maternity benefits.

- The national framework for 'barnehage' of 2006 states: 'Children ought to experience digital tools as a source for play, communication and collecting information'. The same year 'digital skills' were added as the fourth basic skill in the Norwegian school framework.

| Age | Schooling type |
|---|---|
| 0-3 | Barnehage' = Kindergarten / Pre School / Nursery |
| 6-8 | Two first grades of primary school |

## After-school and leisure activities

- The primary school has a before- and after-school care for grades 1-4. Common leisure free-time activities, besides using ICT, are sport (outdoor and indoor), hiking and using playgrounds and some children attend various activities offered by cultural schools and voluntary organisations.

## Norway - Key findings

1. Children find tablets fun to use. They enjoy watching YouTube and TV shows, playing games and making things with the technology, which therefore is an important part of their lives. The new (online) technology is not the only thing they spend their spare time on. Parents are generally good at organising alternative non-digital activities, and the children themselves show by means of picture cards that they enjoy other activities than the digital ones.

2. The average weekly use of digital devices is 13 hours for the study's 11 7-year-olds.

3. All the families in the study have TVs, tablets and video game consoles. Smartphones are available to the children in about half the families, as the children either own one or can borrow the parents' phones. The tablets are the most popular of these devices, but since most of the activities can be carried out on most of the devices, children will often switch between the available devices. The TV has become smart and is a place for streaming services, and is used for this purpose even by the youngest. They are just as likely to watch NRK Super through apps on a tablet as on TV.

4. Through seamless transitions from digital to non-digital activities, children pick up ideas and inspiration from games, films, NRK Super and the internet and use them for play and offline activities.

5. YouTube is the most commonly used website among the children. They often use things from YouTube as a starting point for that seamless transition to non-digital activities. Another popular app is the construction game Minecraft.

6. The children mostly respect the age restriction for a game. In a couple of cases, boys play games intended for a much older age group. The argument in favour of this is either that

they are with their father when playing, or that the game does not give them nightmares.

7. For the most part, the children are independent and competent users. They learn by trying and failing, or from siblings/other children. In some cases, it is the fathers (mostly) who have shown them things.

8. Children mostly use interactive digital technology on their own, even when they sit next to each other with their tablets. Video game consoles are an exception here; they are often used together with others. They are also to some degree used as a regular family activity.

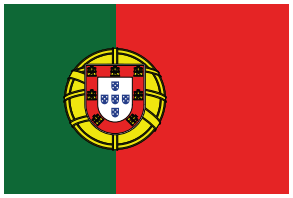
9. Parents consider their children's use of digital technology a positive thing to the extent that they can learn something from it. They are more worried about the time the boys in particular spend playing video games. Any undesirable content (violence and sex) they might come across on YouTube and in the video games, is a concern to some. However, several parents say that some children apparently have to spend time on games and websites to avoid becoming excluded socially when they get older.

10. A majority of the adults use constructive strategies to regulate their children's use. In several of the families, the children are consulted, so that they work out the rules for use together. However, even when rules are in place, many families prove unable to enforce them in practice. The need for regulation increases with the age of the children. Most of the youngest ones, who are girls in this study, do not use digital online technology so much that their parents have found it necessary to regulate its use. For those children who do need regulations, according to their parents, the rules are mostly such that they hardly allow for video games on weekdays (0-1 hour), while the regime is more liberal on weekends (2-3 hours per day). Homework must be done first. Only one family used technical filtering of undesired content, but many realised that it was probably time to introduce this measure soon.

## Norway - Surprising findings

1. We found that surprisingly few families had technical filtering to protect the children against what they considered inappropriate content, but most understood that it was about time to install a filter.

# Portugal



## National socio-economical context

- Portugal is the most western continental European country with a population of 10 329 005 million and an almost average standard of living according to EU figures. The country has a diversified economy; though mostly service based, it thrives on tourism, the main exports are manufacturing, cellulose, and petroleum refined products. After hitting a record 16 % in previous years, the unemployment rate has been steadily decreasing.
- The average size of households has decreased from 2.8 in 2002 to 2.6 in 2011, with 1 656 602 children aged 0-14 in 2001 and 1 572 329 in 2011.

## Internet and digital technology

- The number of households with computer and internet connection via broadband has increased, from 19.7 % in 2005 to 68.5 % in 2015.
- Mobile phone users increased from 10 571 100 in 2004 to 18 973 597 in 2014, as well as subscribers of mobile internet access, from 1 223 566 in 2004 to 2 732 700 in 2014.
- In primary schools, in 2004, there were 12 548 (64.4 %) computers with an internet connection and in 2014 that number increased to 71 275 (83.7 %). There are no data available regarding pre-school education.

## General pattern of parenthood

- Digital technologies are present in most Portuguese homes, regardless of the family's income. Parenting style and parental mediation of technology varies according to the parents' digital skills and general attitude towards technology. More skilled parents share digital entertainment with their children, but also try to prevent that digital technologies replace outdoors activities, sports and social contact.
- Their perception of digital technologies is ambivalent, recognizing opportunities and dangers. Less skilled parents tend to value more the acquisition of digital competencies by their children, and perceive them as an opportunity for the future. Thus, they tend to be more permissive.

## Schooling system for children from 0 to 8-year-old

- Pre-school education begins at 3 years of age and is not mandatory. Children who do not attend pre-school may be left with nannies, grandparents or other family members. At the age of 6/7 children start compulsory primary school education.
- The attendance at pre-school education slightly increased from 259 788 children in 2005 to 264 660 in 2015. On the other hand, primary school attendance slightly decreased from 1 153 057 in 2005 to 1 041 698 in 2015.
- In pre-school, technologies are present in the 'knowledge of the world' topic, including 'technological world and technology use'. In primary education, the use of technology and computers appears in the first year topics 'Transcribe and write texts' and in 'Speaking'; and in the second year 'Reading and Writing'.

| Age | Schooling type |
|---|---|
| 0-3 | Nursery |
| 3-6 | Kindergarten |
| 6-8 | Primary Junior Years |

## After-school and leisure activities

- After school, some children go home with grandparents. They can also stay in school and attend several activities, although most are paid. Usually the activities are swimming, ballet, judo, karate, among others. After the activities, which can last several hours, the children go home with their parents or other relatives.
- Portuguese families like to have shared recreational activities during the weekend. In the warmer months, on the country's coast, going to the beach is very popular, as well as visiting recreation centres and swimming pools. In the winter, families tend to stay at home.

## Portugal - Key findings

The main question of the research project is: in what ways, if any, are children and/or their families empowered by the use of new (online) technologies? This question is organised to two axes, individual-family dynamics and use-perceptions dynamics, thus producing four research topics. Our main findings are presented according to these.

1. Digital technologies are mostly regarded as 'entertainment'. Children used them mostly to play games and watch videos, usually of cartoons, and YouTube is one of the favourite apps. Except for one family (for financial reasons), all families have access to at least one television, one tablet and a Wi-Fi connection at home. Some had more than one tablet and several game consoles. Children under the age of 8 use digital devices frequently. Usually, their first contact with digital media is propitiated by the availability of the parents' own personal devices in the home (Barr et al., 2005). It is usually the smartphone that first attracts their attention, from an early age that is sometimes less than 1 year. When the occasional use of the parents' digital devices becomes too frequent, the parents tend to buy the children their

own devices, because of the children's insistence and also because the parents want to 'free' up their own devices. The tablet is usually the parents' choice, followed by consoles such as the PlayStation and the Wii.

2. The tablet is the children's absolute favourite. In many respects, it has been replacing the TV as the main focus of attention in the home. Children like the heavy stimulation of sounds and colours, they enjoy the interactivity and diversity of activities possible and they also like the portability of the device. Inside the home, the tablet is their new 'BFF', while outside it is an 'anti-boredom' solution. In spite of the diversity of activities allowed by the tablet, the most common ones are games. Children are usually allowed to choose the games on their own, with parental monitoring, and they prefer games related to fictional universes they enjoy. The children's choices of games are strongly gendered: boys choose games related to superheroes and car races, usually involving violence, while girls prefer the 'pets and princesses' universe, choosing games related to hair, make-up, dressing up and taking care of animals. Some of the interviewed children played other types of games related to logic, mathematics and memory. Others read digital storybooks, or had apps for learning English. However, finding this type of app installed was rare, and when we did, they were not the child's favourite. Internet access is quite limited, with the most frequent activity being watching videos on YouTube.

   Children do not engage in social networking yet. There was only one case of playing a multi-player game online, but the child was not even aware of it; he believed he was playing 'against the computer'. Although television was less frequently referred to in children's dialogues, when questioned about their activities and preferred devices, it was also a device that was very widely used by the whole family. When we arrived at families' homes the television was always on and on a children's channel. Children mainly use television for entertainment. They enjoy watching mostly cartoon channels such as Panda, Panda Bigs or the Disney Channel. There were a few families who mentioned computer use by children. Although children enjoy using it and play some online games, some parents mentioned that they do not let the children use it because they are afraid that they might damage it, and it is a work tool for them, with important documents.

3. We also found two sorts of 'mirroring' phenomena. On the one hand, the children's digital activities tend to mirror their offline preferences. For instance, if a child plays soccer, he or she will enjoy playing a soccer game on the PlayStation. If a child has pets, he or she tends to like games for taking care of pets. On the other hand, the children's activities also tend to mirror the parents' preferences. For instance, if a mother likes playing logic games, her child will see her play and get interested, and she will allow. If a father likes the Star Wars universe, he will play the game with his son on PlayStation, and will not bother if it is not age-appropriate.

4. Concerning digital skills, the majority of children are very at ease with their digital devices, mostly tablets and consoles. They can connect and disconnect the console, they know how to access the App Store or Google Play and install apps, as well as uninstall them. They are aware of which activities require the internet or not, and are able to evaluate the devices' capability of memory and processing. They can manage memory space and distinguish free apps (the ones they are allowed to install) from the paid ones. They also know how to perform other tasks as taking photographs and editing them, and also making small videos. Concerning searches, being able of reading and writing does make a difference, because before acquir-

ing these skills, children tend to follow suggestions from the search engines and YouTube, but start to type words on the search boxes when they are able to read and write. However, children reveal being very savvy and resourceful, and find their own strategies for achieving their goals, such as memorizing icons and even letters.

5. About parental mediation, parents do not participate very much on their children's digital lives. Although there are some times when parents play with the children, most parents complain about lacking the time to do so, and children are often left alone to play with the tablet or the console while the parents are busy working from home or doing house chores. Some of the parents recognize using the tablet as a sort of 'babysitter'. Parents are available for teaching children, but the children prefer to explore and try on their own. They only ask the parents for help as a last resource, when they tried everything they knew and failed. When there are older siblings, the children prefer asking them for help, when the siblings are younger, the 6 and 7 years old often teach their younger sisters or brothers to play. Some parents recognize their lack of digital skills and tell us about situations when they were surprised because their children are able to do things they do not know how to do or even help them solve some of their digital difficulties. Furthermore, the perception of parents about their children's digital skills and knowledge usually does not match reality - children observe the parents and pick up on conversations, knowing more than the parents realise. Most children are perfectly aware about what Facebook is, even though they do not use it.

6. Overall, children do not perceive digital technologies as being dangerous in any way. Some of the children report on some fears though, namely coming across content that might be scary on YouTube (and these children often tell about previous experiences including nightmares and being afraid of being alone or in the dark after watching scary videos on YouTube), and becoming 'addicted' if they play for too much time.

7. For most of the children, the tablet is just one more toy, something they use to play. For some children, it reaches the status of 'favourite toy', and some parents even refer to it as a 'friend'.

8. Most parents also regard digital media as toys at this stage, as the main activity of the children is in fact playing games. Some parents have occasionally searched online to answer some question from the children, or some doubt related to homework, but they agree that schoolwork has not so far stimulated such types of activities. Nearly half of the children have some sort of ICT class at school or as an extracurricular activity, but they do not use computers or laptops for activities related to homework or school at home. Because parents perceive the tablet as a toy, and because they lack the time for searching for more educational apps and for stimulating their children to play with them, this device is only seldom used for pedagogical purposes. Learning activities are under-explored by parents and children, and largely undervalued. Some parents claim that the children need time to play, but others believe that children learn while they play, although they are developing different skills to those that they learn in school, such as hand-eye coordination, and trial-and-error approaches.

9. The technologies, like the computer, are important for parents, especially at professional level. On a personal level, apart from online searching, entertainment or watching some TV programmes, parents do not mention many activities.

10. Parents regard digital technologies more as a sine qua non requirement for their children's

future than as something positive. They consider digital devices as 'life facilitators', making everything faster and easier. And they believe they will be indispensable tools for their children, in school and later in their professional lives. However, most parents are nostalgic about their 'analogic' childhood, claiming that they would like their children to play more outdoors and with other children. For them, their childhood represents closeness to nature, pureness and innocence, and they believe that experience is partly lost with digital technologies. The freedom afforded by digital technologies and the easy access to information also make children more aware of their world, with all its good and bad. When it comes to the 'dark side' of digital technologies, parents' opinions are more diverse. The disadvantages most often referred to are a decrease in 'resourcefulness' and also in social interaction. Parents consider that the 'easy and now' afforded by digital media, and also the diversity of activities, makes children more restless, unsatisfied and frustrated when facing adversity. Also, children tend to give up easily and change activities instead of trying, practicing and being resilient. Parents also do not like that digital media are a motivation for children to stay indoors and play alone. They prefer that their children engage in more physical activities outdoors, preferably playing with other children.

11. Although aware of some dangers, among which parents highlight bullying and paedophilia as the greatest fears, they consider it is too soon to worry, as their children are not exposed to online contact with strangers yet. The access to the internet and the activities performed online are limited, and parents believe they are informed about everything their children do online. Also, not being able to read and write proficiently, let alone in English, keeps children more limited and controlled. But the parents know that there is an expiration date on this status quo, and it is coming fast. Parents admit that they have not given much attention to internet safety yet, but they plan to in the near future. Some of the parents have already lightly approached some of these issues with the children, particularly in mother-daughter conversations. Most parents agree on one point: awareness, information and dialogue are the best way to deal with these dangers, as complete monitoring of teenagers will be impossible and might even be counterproductive. While the children were using the devices, when they were playing, pop-up advertisements for games or food appeared several times. We asked them what those pop-up windows were and they quickly said it was to 'buy things' and eliminated them in order to continue the game. However, parents seemed to have no knowledge or any concerns regarding the exposure of children to advertising.

12. The rules concerning digital technologies are a complex issue. Among all the families interviewed, we have not found similar situations; each family negotiates their own rules, mostly depending on their own contexts and experiences. The way parents educate children, family dynamics and family values are related to the way technologies are used at home. In most households, there are some rules but they are flexible and negotiated. For instance, the use of digital devices tends to be more limited in time during the week, and more permissive during the weekend. Most parents set rules concerning the time of use, rather than the type of activity performed. The average amount of time parents find reasonable for playing with digital devices during the week is 1 hour per day, and 2 to 3 hours during the weekend. Parents mention concrete effects of letting the children play for too long, such as being agitated, irritable or nervous, difficulty falling asleep and having nightmares. If a family has experienced these downsides of excessive use, they tend to have stricter rules, particularly for the younger siblings if that is the case. However, parents admit exceptions to these rules,

particularly if they are busy, or if they are outside the home and need to keep the children entertained and well behaved. Concerning content, most parents monitor online activities. Some children need to ask permission before installing apps on their tablets. Others are allowed to install apps, but the parents monitor the content of the tablet from time to time and may ask them to uninstall any app they find inappropriate. The criteria for evaluating this might be the age classification of the app, the perceptions and attitudes of the parents concerning certain cartoons or characters, and violence. Mothers are more sensitive to violence and usually do not allow games involving fighting. Fathers are more permissive, particularly if they enjoy that kind of games themselves. It is on YouTube that children are more exposed to inappropriate content, and parents are aware of that. Some of them only allow children to watch videos accompanied by them, others keep a close eye on the screen and a perceptive ear to the sounds, monitoring discretely. We found two families where there are no rules at all. However, the situations differed, as one family was very permissive, and in the other, dialogue was the basis for negotiating the use of digital media.

13. The biggest concern of parents regarding the use of technologies for their children is contact with strangers, naming Facebook as the primary enhancer of this danger, especially for the older children who already know how to read and write. On the other hand, as already mentioned, as younger children cannot read and write, parents consider their use of technologies not to be harmful, so children are limited to certain activities, such as playing games and watching videos on YouTube. These activities are seen as innocent activities by the parents.

14. Most parents try to divert the attention of their children to other activities, except when they are busy. The smartphone is referred as an 'emergency' resource for keeping children entertained outside the home, at a restaurant or waiting for a doctor's appointment for instance. During long car trips, the tablet is usually the choice to avoid boredom and complaints from the children. This means that children tend to be left alone with their devices, having the opportunity to explore.

15. Parental mediation strategies, such as co-use, where parents and children share the device, or active and constructive mediation strategies (Livingstone and Helsper, 2008) in order to raise awareness and educate children regarding the use of the devices and online content are underused. This attitude may be related to the fact that parents consider that their children are making a safe use of these devices, even when connected to the internet. They tend to focus parental mediation strategies on older children, in particular those who already know how to read and write fluently, as already mentioned above. We also observed that mothers tend to be more permissive when it comes to letting children use their own devices, smartphone, tablet or laptop, while the fathers usually forbid it.

16. Also, the children's attitudes are different. Some of the interviewees tell us that they would play for a lot longer if the parents let them. This is more common among boys. Most girls like playing with the tablet but they also enjoy other activities, such as drawing, watching television or playing with toys.

17. Not only there is a discrepancy between the perceptions of parents and children about digital skills and knowledge, but the perceptions of rules and times of usage also differ. Some children say they play all they want while the parents tell us they limit the time of usage. Other children complain about playing for too little time and the parents describe their us-

age as excessive. When the parents do not have many digital skills themselves, they tend to overrate the children's 'accomplishments' but also to be more restrictive.

18. As mentioned above, technologies are important in the lives of families, particularly children. They use them mainly as another entertainment tool and another way to have fun and play. With just a single device they have access to a wide range of activities; playing different types of games (be it their favourite film characters, playing with puzzles, soccer, or dressing and applying make-up to dolls); listening to music; or reading. Parents did not mention that they often used technologies for entertainment, relating them more (mostly the computer) to professional activities. We cannot fail to mention that most families put a high value on outside activities. Families in which both parents work more at home are families that provide more time for the children to interact with the technologies.

19. We did not find much difference between the perceptions and attitudes of parents about digital technologies. Rather, they seem to be interconnected and co-negotiated. Parents expose children to their own digital devices, and the first contact tends to be biased by the parents' own practices and preferences.

20. Above all, digital devices, and mostly the tablet, play the role of 'toy'. Both the parents and the children regard the tablet as a device for entertainment, for playing. Parents do mention other uses that we have already explored, namely being a 'babysitter' that helps them to keep the children entertained when they are busy, and being an 'SOS' tool for when they have tried other strategies to keep their children entertained and they have not worked. For the children, the tablet is a 'companion', a 'friend'.

## Portugal – Surprising findings

Three findings are worth highlighting due to their surprising nature.

1. One is the fact that income and education seem to play no role in determining access to digital devices and the acquisition of digital skills. In the cases of the parents with lower income and education, all the households had at least one digital device, and most had several. If the children did not have certain devices at home, such as consoles and laptops, they were able to have access at school and at their friends' houses. This easy access allowed the development of digital skills that do not differ much from the families with higher income and education.

2. The other is the lack of use of digital technologies for educational purposes, school-related or not. The tablet is regarded solely as a toy, and its potential as a tool for learning is ignored.

3. In the parents' opinion, children who can read and write are taking more online risks than those who do not. So some younger children end up using the devices in a more autonomous way and parents have never bothered to alert them to possible dangers that could materialise as inappropriate language or obscene images. However, with older siblings parents were already concerned about discussing possible dangers online.

# Romania

## National socio-economical context

- Romania is situated in Eastern Europe. Formerly a communist country, it became a democracy in 1989 following a violent revolution, went to a democratic regime with free market. Romanian is a Romance language, and the predominant religion is Christian Orthodox. The majority of the population are Romanian, with Hungarian, Roma and German minorities. Since 2007, the country has been a member of the EU. The population is a bit under 20 million, and is rapidly ageing with a low birth rate. The official unemployment rate is 4.6 %.
- The average family is 2.6 persons. Where there are children, the classical model is of two adults and one, maximum two, children.
- An important phenomenon, especially after 2007, is migration for work, particularly for jobs requiring low qualifications, among people of working age, from poor or underprivileged areas. This means that children are often left in the care of the extended family.

## Internet and digital technology

- ICT had a slow initial penetration, mainly in universities and research institutes, but caught up later. In recent years, very high internet speed and a broad coverage of cable TV combined with a culture oriented towards the latest trends has encouraged Romanians to buy expensive gadgets despite their lack of economic power.
- There is a clear preference for Microsoft operating systems (Windows) and Android on portable devices, because people lack the resources to invest in anything other than the device and have a preference for free or pirated software.

## General pattern of parenthood

- High SES families are supportive of seeing their children educated and learning based on direct experience and being explorative while lower SES families focus more on encouraging their children to be nice, polite and obedient.
- Both strategies are reflected in the way in which children from both groups relate to digital technology, with the former being more ‘explorers’ and the latter more ‘followers’.

## Schooling system for children from 0 to 8-year-old

- Since 2013, the compulsory schooling has started in elementary school, with the 'grade zero', a preparatory class, for children aged 6, that forms the passage from kindergarten, which is not attended by all children, to school.
- With 'maternal' leave (recently including the fathers) of up to 2 years, children are usually taken care of by one of their parents up to that age. The monthly payment amounts to 85 % of the monthly average of the parent's income, 1 year prior to the birth of the child, so parents are encouraged to stay at home and take care of their children. Since crèches are almost extinct (they belonged to the factories in communist Romania), most parents either use their extensive family to take care of the child after that age and prior to kindergarten or employ the services of nannies (usually, from the black economy, with no proper education in carrying out this role and mostly based on informal credentials).
- Children cannot bring their own technological devices to kindergartens and schools; most kindergartens are endowed with a TV set, a DVD player and some computers, but these are used on special occasions, not during the everyday educational processes, or are used as babysitters. In schools, there are 'informatics' laboratories with computers and internet connections, also used only occasionally or even never (due to locked doors and a definite concern not to 'ruin' the computers). Although teachers are catching up with technology, they are not formally trained, so there is a divide between the younger teachers, who are more savvy and the older ones, who tend to be 'technologically naive' (with honourable exceptions to both parties).

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten |
| 6-8 | Two first grade of primary |

## After-school and leisure activities

- Children are usually collected from school by members of the extended family (usually grandparents) when parents are at work, particularly in small towns and rural areas. In bigger cities, after-school programmes have started to develop, either on the school premises or in private facilities, for the more affluent parents.
- The activities mostly frequently undertaken depend on the family's values and principles, and also on money. Thus, those parents who have greater ambitions over education send their children to sports activities or to learn to play instruments or chess or to learn foreign languages, while the others spend their time either indoors, playing and consuming media products of some kind, or outdoors, depending on the weather (cold weather and rain are a deterrent to such activities).

## Romania - Key findings

1. The majority of the Romanian households are still in the computer era (desktop or laptop), with just one family in the sample having given up their computer when it broke and replacing it with tablets, smartphones and smart TV. Still, if given an alternative, kids prefer to migrate to mobile devices, with the tablet as the most widely used, since it is seen by the children as being more accessible, in terms of the competences required, as well as in terms of mobility. While the TV is part of most children's daily routine, the Play Station Portable (PSP), Playstation or Wii are less present.

2. Video games seem to be the activity shared by all the children aged 5-8, when it comes to digital technologies. There are neutral and universal games - played by girls and boys alike (e.g. escape and obstacle games) - and games stereotyped as 'girlie' (cooking, fashion, making things) or as 'boys' games' (fights, cars, football - GTA, FIFA) - which are being played accordingly.

3. Romanian children watch online videos: for the younger ones, YouTube functions as an extension or alternative to the cartoon channels on TV, whereas older children discover user-generated content (vlogs, tutorials etc.). Some kids search actively for promotional videos for their favourites toys which they enjoy watching.

4. Content creation: all the children in the Romanian sample know how and love to take pictures and videos; some of them also use drawing and painting apps.

5. Some of them use digital technology in order to engage in communication. This kind of engagement is especially important for children whose parents are abroad for work (a frequent situation in Romania).

6. Most of the Romanian parents do not consider the smartphone to be a necessary device for children at this age. Paradoxically, when the child becomes older and receives a smartphone, this gives the parents a feeling of safety (due to the permanent contact with the kid), but at this younger age, the presence of the smartphone is seen by parents as an element of insecurity, leaving the child exposed to possible acts of robbery.

7. For children, there is a desire to own technology in itself, adding it in an endless accumulation of devices into some panoply of the toys the child already has.

8. For the parents, most of the time the acquisition of technological devices is a cost-driven one, with the rule: the cheaper, the better

9. Parents see digital technologies as a positive thing, offering their children opportunities (e.g. entertainment and information) and helping them in parenting (i.e. as a babysitter). The family often gathers around technology for shared activities (e.g. playing games).

10. Both the parents and the children in the Romanian sample tend to consider as 'technology', and thus worth investing in, solely the devices themselves; content and software are only seen as collateral elements one takes 'for free' from the internet.

11. The interviewed parents consider that the educational opportunities of digital technology are not available for 6-8-year-olds. Children of this age are seen as either too young for the

informative side of the internet, as they cannot yet read, or as too old for the educational apps that both children and parents see as boring.

12. Some parents acknowledge the influence of the educational apps or websites over their children's learning of English, regretting the lack of interesting educational content in Romanian.

13. Parents list some worries - excessive use, inadequate content (violence and sexuality) and health concerns - that they link with digital technology; in fact, they are not specific to digital technology, but translated from older media.

14. With few exceptions, these concerns are seen either as future threats, or as being under control because the child internalises the regulations and self-regulates his/her activities, or as a possibility parents try hard to avoid, or, lastly, as a risk for 'other' families and 'other' children, not their own.

15. Beyond the universal rule of 'no paid applications', there are other rules, concerning time of use, content or contacts (for those kids who already have an account on a social media or communication platform).

16. Concerning time of use, there is a difference between children aged 5-6 and those aged 7-8 year, as the latter have started getting homework to do and have less spare time.

17. The majority of the parents in the sample are involved in some form of active mediation of their child's digital life. There are three stages of mediation, not all of them present in all the families: (1) once the device enters the family, the initial operational competencies are learnt from the parents in an overt learning session, at the parent's initiative; (2) the child asks for advice and help in specific situations in which he or she has an interest; and (3) when the parent wants to enlarge the child's view of the internet or to teach the child how to use it more efficiently.

18. Many parents control or supervise children'⍰s digital activity, but some of them practice an unobtrusive mediation, from the shadows, which gives children some (still) space of safety. Others, however, are much more intrusive, paying no respect to the private space of the child - on the tablet, in this case.

19. For some parents, there is a tension between the use by the child of the mobile devices perceived as 'personal' (and, thus, part of the child's private space) and the desire to be a 'good parent', in control of the child's online life, and the desire to show this.

20. Most of the parents are not aware of the parental control options available on fixed or mobile devices; also, most admit to using digital technologies in a punishment/reward system.

## Romania - Surprising findings

1. Some parents see parenting the digital lives of children as optional and surprisingly decide not to get involved in it. Thus, some parents who are otherwise very dedicated to their children' education, teaching them critical media skills among others, suddenly withdraw when it comes to the digital world or certain specific devices (RO01 stays away from mobile and convergent media, including when it comes to their use by her daughter, RO01g6). The

absence of her mother in her use of mobile technologies is visible in the daughter's digital skills, but not at an operational level, since she knows, intuitively, what she has to do in order to play games, but rather at the level of understanding the functionality and of verbalising the operations she performs. Thus, in the activities in which she is accompanied (supported/assisted) by her mother, the girl is able to explain in complex sentences and with a rich vocabulary what she does, what she has to do, what she must do and how to do it. This competence stops suddenly when it comes to her digital world activities.

2. Another specific finding is the lack of readiness and awareness from parents when it comes to investing in quality content and their exclusive preference for 'free' content. It is not just a matter of not investing money, but also time to search for such quality content. For the majority of the parents, the digital technology is reduced to the device itself. The children see things with a little more nuance; some of them, with a lower level of digital competencies, are more attracted by the physical device, regardless of its capabilities and its actual further use, while others, who already have clear interests in some content (games or other apps) refer to this content as being important, and not solely the physical device.

3. In the same way, the lack of parental interest in what happens with the device, and how it is actually used, means that the only criterion when it comes to acquisition is price related. These devices prove to be less reliable, and break easily, but the majority of parents do not bear the maintenance costs in mind when acquiring them and eliminate by default any concern for the device, once acquired. That means that the acquisition often proves to be rather restricting, rather than offering real opportunities.

4. If traditionally children used to learn to read more quickly than to write, digital technologies (among other factors) seem to favour writing, as many of the children who are familiar with their letters are more willing to write than to read. Thus RO01g6 knows her letters and writes 'books' (stories she writes in capital letters, on sheets of papers her mother has to 'bind' together afterwards) but does not read by herself. The same is true for RO10b5; according to his mother, one of his favourite games is to write in Word lists of people who are important to him, but, again, he does not read. This inversion of the traditional order of activities related to 'literacy' can be explained by the fact that the digital world requires a type of engagement where writing remains a key element: after launching a search the results can be text, video, images or games, but the search itself still relies on the written text. It is possible this might change in the near future, with the perfecting of various sorts of software for voice recognition in other languages than English; RO10b6 had already tried to initiate voice searches on Google, but was only successful with short words and after many attempts.

5. Not that surprisingly, given the fact there is literature on this subject (Vancea and Olivera, 2013; Madianou and Miller, 2013), but important enough to warrant some in-depth research, in our view, is the important role of technology in the families where one parent is away, working abroad. This is a frequent situation in Romania, where many women have gone to work in other European countries (for various periods of time, from a few weeks of seasonal agricultural work, to several months or even years), leaving the children at home, to be taken care by the father or by the grandparents (Toth et al., 2007). For these children, the digital technologies represent the gateway through which they have access to their par-

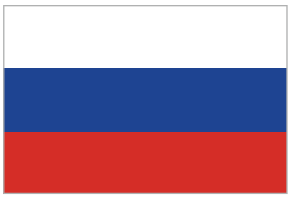
ent and not just an accessory in their life - thus becoming a primary need.

6. There are major differences between children's competences in using the two main operating systems on the mobile devices; they clearly prefer the Android, as they perceive the IOS as 'too difficult'. We do not know if that is a result of the weak spread of iPads in Romania (or if there is a circular determination between the two facts), but families that have an iPad also have an Android-based tablet.

7. If previous research (Chaudron, 2015) showed that parents tend to postpone worries, placing the risks somewhere in the future, our research confirmed this view and showed that parents perceive the opportunities offered by digital technologies in the same manner - as available to only the older children. Teachers share the same perception on future opportunities (through the information the internet offers, usually in a written form), destined for older children, and postpone using digital technologies for educational purposes until later.

8. Parents tend to mediate differently the digital life of their children, being more available to actively mediate the older children (getting actively involved in the search for educational content). In these cases, younger children are left with a heritage of downloaded apps without parental active mediation (the download history remains in the Cloud, in the App Store) - R005b3 knows he can only download the apps with a little cloud, which are, in fact, educational apps his mother had already downloaded for his older brother - when they use the same account, or the apps even remain on the tablet itself, if it has been down to the younger brother, as happened for R009.

# Russia



## National socio-economical context

- Russia is the biggest country in the world (17 075 400 square km) with a population of 146.5 million and a great diversity of ethnic groups and communities, and a rich cultural heritage.
- Due to the huge reserves of natural resources, the country has a mostly industrial-based economy. The main exports include oil and oil products, natural gas, metals, wood products, diamonds, platinum, chemicals (titanium, ammonia, steel, nitrogen-potassium fertilisers, etc.) and a broad range of civil and military industrial products (space and aircraft equipment, nuclear reactors, atomic engines, fibre lasers, PC software, etc.).
- Russia takes 14th place in the international GDP standings (2015), which is lower than some west European EU members (UK, France, Italy and Germany) and closer to that of Spain and the Netherlands. The unemployment rate varies across the regions, but averages 5.8 % (2016).
- Because of its great cultural diversity, there are many family models, with specific traits depending on the particular region, traditions, religion and other factors. At the same time, the divorce rate is high - 52.6 % (divorced couples/marriages registered rate, 2015) - which means that every second child grows up with only one parent (in most cases the mother).

## Internet and digital technology (at national level)

- Broadband internet penetration is currently 70.5 % and the majority of families in big towns and cities have several devices (both stationary and mobile) at home. Both Android and IOS are popular.
- In 2013, more that 90 % of Russian teenagers were spending an average of 3-4 hours daily on the internet, and even more during the weekends, while 1 in 7 teenagers spent more than 8 hours, or a third of their life, online (Soldatova et al., 2013). Most adolescents aged 10-17 use their own mobile phones, and younger children use parental devices.
- ICT is used very actively in Russian educational institutions. Between 2010 and 2014, the number of PCs in schools increased from 1 169 million to 2 031 4 million, or 1.73

times. In 2014, there were 7.64 pupils per PC in primary and secondary schools.

## General pattern of parenthood

- The most common family model in Russia is patriarchal, which means that the father is mostly responsible for the household income and the most serious family decisions, while the mother looks after the children until they go to pre-school or primary school. Therefore, fathers are mostly indifferent to what their children do online, whereas mothers spend more time with kids and, thus, have to mediate their activities in general and, in particular, their usage of devices. Both parents usually perceive digital technologies as an essential part of family life but are very inconsistent in their strategies (using devices as a digital nanny, breaking rules they have set for children, etc.).
- As a rule, grandparents and siblings take an active part in a child's upbringing but do not have a direct influence on how little children use devices. However, elder siblings may sometimes teach the younger ones to use the internet and other aspects of ICT.

## Schooling system for children from 0 to 8 years

- Compulsory schooling starts at the age of 7 years (though in some cases children are allowed to go school at 6.5).
- Children who do not attend pre-school usually stay at home with nannies, grandparents or other family members, and attend sports classes or groups where they can obtain basic reading and number skills. Many parents would like their little children to attend kindergarten but there is a great lack of available places.
- Usually children are allowed to bring their devices (if they have any) to the classroom but in general, personal ICT usage is only allowed during the breaks. In primary schools, children use PCs during their informatics lessons. According to the latest health regulations in Russia, LCD monitors can be used for up to 20 minutes in the first and second grades of primary school, and interactive boards for up to 5 minutes without interruption but for not more than 25 minutes within one lesson. In order to prevent eyestrain, it is prohibited to use more than two types of electronic devices within one lesson (SanPin, 2015).

| Age | Schooling type |
|---|---|
| 0-3 | Crèche |
| 3-6 | Kindergarten |
| 6-8 | Two first grade of primary |

## After-school and leisure activities

- Children are usually taken care of by parents, grandparents, siblings or nannies after school. Leisure time activities depend on the age - the smaller the child is, the more leisure time he/she spends with close relatives.

- At the age of 7-8 children start spending more time alone (and therefore more time with devices). Among the most common device-free leisure activities are going for a walk with relatives (depending on the weather), playing with toys, including Lego, doing puzzles, drawing and reading.

## Russia - Key findings

1. Our findings show that the majority of Russian children under 8 years old are familiar with different devices, and are pretty confident and active online users. The average age for starting to use devices is 3 years old (it varies from 1.5 to 5 years old). As a rule, children begin using devices inspired by their parents or elder siblings. At 5 years old most of them have experience of using different devices - smartphones, tablets, laptops, etc. Smartphones and tablets are the most popular devices, because of their multi-functionality and portability.

2. About a half of the interviewed children, have their personal tablets already, bought specially for them, or the ones they 'inherited' from parents or elder siblings. Most parents agree that special tablets for children without access to the internet are the most suitable devices. They often buy a tablet for pragmatic reasons - it does not contain any advanced functions, and is therefore not very expensive. Therefore, it would be better if a child broke a cheap tablet rather than his or her father's main PC.

3. Almost all children use devices for entertainment - gaming and watching cartoons. Children attending primary school also use digital technologies for learning and studying, particularly for doing their homework. Both children and parents say that the quality of educational applications and games is quite poor.

4. The majority of parents and children note that most children learn to use devices autonomously. Almost none of parents specifically taught their child to use a tablet or a smartphone. Most children practice the trial and error method. What also plays a great role is latent learning - little children observe adults and step by step try to repeat what they're doing with devices. Parents often have the wrong impression about their children, underestimating their actual knowledge and digital skills. Most children are able to turn on the device, search for games and find them and use browsers when they need to find a cartoon; some of them can also take photos and record videos, and install and delete programs downloaded online. First grade pupils obtain some knowledge and skills in their informatics lessons. As a rule, it is harder for them to work with PC and laptops - partly because they lack the experience, and partly because of the specifics of these devices themselves.

5. The digital literacy of children under 8 years old is rather fragmented and one-sided. Little children are confident with apps they use frequently - games and video hosting - whereas all the other opportunities of online technologies are outside of their knowledge. Possibly this is connected with inconsistent process of digital learning. The idea that modern children are able to learn about digital technologies without help of adults is a myth, which is, nevertheless, widespread among Russian parents.

6. On average, interviewed children use tablets and other devices for no longer than an hour daily. At weekends and in special circumstances (long journeys) the time period may increase significantly - up to 3-4 hours. In addition, many parents observe that time spent with devices increases if the weather outside is bad (usually in autumn or winter) and the

children do not know what to do at home.

7. Most parents say that without limits their children would spend much more time with devices. The majority of them are also afraid of the consequences of overuse of digital technologies, and in particular vision problems, and so they do their best to control strictly the time their children spend with tablets. However, there was only 1 family out of the 10 where the kid actually had problems concerning overuse of a tablet. In all other families, interviewed children had no problems with self-control while gaming or watching cartoons. It can be concluded, therefore, that parents tend to exert extra control over their children, and prevent them from using devices by setting very tough time limits.

8. Most parents are active digital users - they use technologies for work, entertainment and communication. The results show some correlation between the intensiveness of device usage by children and adults, but it is rather mixed. On the one hand, children from families where members are active online users have access to many more devices and have an example of adults using them very intensively. As a result, these children start to learn about the devices earlier and more actively. On the other hand, parents who frequently use online technologies are much more aware of their benefits and deficiencies. Because of this, they are more responsible and limit the time their children are allowed to spend with devices.

9. The majority of interviewed children perceive devices positively, with interest and enthusiasm. They demonstrate their digital skills with pleasure, and enjoy talking about them with researchers. Still, their attitudes to devices are rather diffuse and common, based on their personal experience only. As previously mentioned, children usually use devices for gaming and to watch cartoons so the loss of an internet connection is the most serious problem they have ever faced. Possibly, as a result, they have no idea about online risks and threats.

10. We can make some conclusions about children's attitudes to devices indirectly, by observing the way they behave when a device is absent. Most kids stay quite calm if their parents remove a device; some of them totally forget about digital devices when they have other interesting activities, like playing with friends or family members. Still, there are several children who become very upset and fractious, and may begin to behave badly if the device is taken away.

11. The majority of adult respondents admit that digital technologies are an integral part of modern life, and therefore children must learn to use them from an early childhood. Nevertheless, parental attitudes are quite contradictory and ambiguous. On the one hand, parents claim that digital devices have a great educational potential. On the other hand, it can be clearly seen that actually most of them use tablets and other devices as a digital nanny - in situations when they need to keep their child busy. Possibly, however, modern parents are quite well aware of online threats, and only give a device in extreme cases (e.g. on board a plane), when the child does not have an opportunity to do anything else.

12. Parents are mostly concerned about the overuse of devices, negative content and dangerous connections through social networks. In addition, we have found that the younger the parents are, the more positive their attitude towards online technologies, and the greater their awareness about online threats and risks. Older parents seem to be more conservative.

13. The majority of parents control their children's' device usage, primarily through time limits

and programs installed on the device. They use traditional parenting methods to determine what their children do online, and many of them try to organise their kid's timetable so that he/she has as little free time for devices as possible. None of the parents has any special technical tools for control. Usually mothers just look through the games and cartoons, which her child likes or plays with, and makes a decision about whether to install them, or not.

14. The rules concerning device usage exist only in some families. In several families where rules have been implemented directly by parents, children may not even know about them. In addition, as some parents notice, there is no need to set rules if a child is busy at school and extra classes. One of the most common rules we were told about refers to devices that a child is or not allowed to use - in many families a child has his/her personal device, usually a tablet, and is not allowed to use parental devices. Parents often strictly prohibit children from using parental devices because of safety issues and fears that their child might break the device. The other common rule is a time limit, which depends on the family and situation. In addition, most parents forbid using devices at school (or pre-school). Among the most unusual rules we met was the 'clean hands' one - a child should wash his/her hands before using any device. Still, most adults understand that there is a great sense in implementing rules, and plan to do that in future, when their children become older. Several parents contemplate using technical tools, especially those allowing content filtering.

15. In general, our findings show that their parents determine the role that digital technologies play in small children's life is reduced to entertainment- gaming and watching cartoons- and in most cases it. Almost all adults said they bought their kid a tablet for education and learning but in fact, these devices are only used for entertainment, when it is hard to occupy the children with anything else.

16. Even very advanced and up-to-date parents appear to have a certain unconscious bias about digital technologies, and one that they do not even fully realise. According to their words, tablets, smartphones and other devices are essential in a modern media world. However, in fact parents use traditional methods of upbringing that were in use when they themselves were small. This approach is particularly apparent when it comes to choice of cartoons when family members get together - modern animation is perceived as 'bad and mind-numbing' whereas old cartoons from the mother or father's early childhood are 'good and educative'.

17. Because devices often serve as digital nannies, parents do not find it necessary to teach their children to use tablets and smartphones. As a result, children must obtain digital skills autonomously and the outcomes are rather fragmented and one-sided, as are rules concerning their usage. It seems that parents perceive of tablets as malum necessarium (an 'inevitable evil') and tend to restrict children over their usage. That is why mediation strategies are mostly passive and interdictory. Even those parents, who pay lots of attention to general issues of upbringing, think firstly about the minimisation of harm when it comes to online technologies.

18. We have to admit that modern parents do not believe in the educational potential of online technologies, and therefore fail to incorporate them in the upbringing process. In their opinion, digital technologies' presence in children's lives is unnecessary and must be strictly controlled by adults in a unilateral way (so that a child's agreement is not necessary). Whilst we have such a situation, digital technologies will remain no more than an expensive toy, and the digital literacy level among children will stay very low.

## Russia - Surprising findings

1. During the research, we found an evident contradiction between parental attitudes to on-line technologies and devices, and their usage in the process of bringing up small children. Almost all parents declare that it is hard to imagine modern life without the internet and devices, but when it comes to their own child, they do their best to reduce his/her usage to minimum.

2. We also find it very surprising that none of the devices in the families we surveyed contained passwords, which would have prevented children from using them without their parents.

# Slovenia

## National socio-economical context

- Slovenia is considered a developed country, with a population of just over 2 million. In 2017 it achieved 4.4 % GDP growth, 1 % inflation and an unemployment rate of 6.4 %. Almost two thirds of workers are employed in services, and the remainder in industry and construction. Slovenia benefits from a well-educated workforce, well-developed infrastructure and its location at the crossroads of major trade routes.
- There are currently 576 177 families, out of which 75 % contain children. The typical size of a household is 2.47 persons. The marriage rate was 3.2 per 1 000 inhabitants in 2016. Out of 1 000 marriages, 376 ended in divorce. In recent years, an average Slovenian family had 1.16 children (1.56 children if we take into account only families with children; they represent three quarters of all families). Families with only one child prevailed (53 %), followed by families with two children (36 %). Every third family consists of at least one child participating in education aged 0-5 years (pre-school), 6-14 years (elementary school) or 15-18 years (upper secondary school).

## Internet and digital technology

- The use of the internet is widespread. According to official polls in 2004, 44 % of citizens between the ages 10 and 74 were at least monthly internet users, which is above Europe's average. In the same period, 47 % of households had an internet connection (43 % through broadband). In 2012, the percentage of users among citizens as a whole was 70 %, whilst in households it was 74 % (73.3 % of broadband). In 2017, the share of households with an internet connection was 82 %, whilst the share of individuals using it every day was 68 %.
- In the first quarter of 2017, 80 % of households had a computer (78 % in 2015). 63 % of households had a portable computer (60 % in 2015), 44 % a desktop (46 % in 2015) and 29 % a tablet computer (24 % in 2015). 82 % of households had access to the internet (78 % in 2016). The presence of children influences the equipment of households with a computer or access to the internet. Almost all households with children had a computer (97 %), half of them a tablet and 98 % access to the internet. 73 % of households without children were equipped with a computer, 21 % with a tablet and 75 % with access to the internet. Households with children and without access to the internet (2 %)

stated as a reason most often that they have access to the internet elsewhere (33 %). Households without children, where a quarter were without access to the internet, stated as a reason most often that they don't need the internet (66 %) and 25 % stated that they lack the necessary skill for its usage (source: SURS).

## General pattern of parenthood

- Slovenian parents adopt a restrictive approach when it comes to digital technologies and small children, providing them with a variety of choices of offline and outdoor activities instead of screen time. However, as children grow, they become more authoritative in their attitudes.

## Schooling system for children from 0 to 8 year old

- School education starts at the age of 6. Before that, most children attend kindergarten, but if the family has an option, children will be cared for at home up to the age of 3. Almost 80 % of pre-school children attend kindergarten. In the last 10 years the number of children enrolled in kindergartens has increased by almost a half (from 58 127 in the school year 2006/2007 to 86 284 in the school year 2016/2017).
- At the age of 6, children start basic education, entering a primary school that lasts for 9 years. In the school year 2016/2017 the average class had 18.8 pupils. This number varies depending on the organisational form of schools. In independent and central basic schools there were on average 20.5 pupils per class, and in subsidiary schools only 10.6 pupils per class. In kindergarten, children do not use digital technologies. In primary school, 6 % of schools use a computer for mother tongue instruction and mathematics in the first year. In the second year, the percentage increases to 10 % and by third year, to almost 16 %. It moves around from one fifth to a third over the next grades and reaches peaks in the last grade, grade 9, at 37 %.

| Age | Schooling type |
|---|---|
| 1-5 | Kindergarten |
| 6-15 | Primary school |
| 15-19 | Secondary school |
| 19< | Higher education |

## After-school and leisure activities

- After school, children are mostly taken care of by parents. The majority of them attend two to five after-school activities, mostly sports, dance or music. The most valued activity for children in Slovenia is considered to be music school and spending as much time doing outdoor activities as possible in all seasons.

## Slovenia - Key findings

1. Watching cartoons is still the key activity for children from 0-8, mostly on TV, and also via YouTube on laptops and tablets.
2. Watching online videos via YouTube, for educational purposes (e.g. parents explaining to children natural occurrences, how things work, etc.) is popular amongst children and parents. Parents appreciate this enhancement of their 'knowledge' provided by digital technologies. Children also like to watch tutorials (e.g. on Lego), created by users.
3. Online games are an attractive and catchy activity for the majority of children in the sample. However, not all parents are of the same opinion and therefore not all children have access to online games. Also, not all children that have access are enthusiastic players. Most of them still prefer offline activities after a certain time playing online games.
4. Most of the children in the sample like to take pictures or videos via smartphones, tablets or even cameras, and some of them also know how to share their created content via SMS.
5. Very few of the Slovenian children in the sample use digital technology in order to engage in communication (SMS and Skype - no emails or social networking sites as yet).
6. All of the Slovenian parents in the sample consider the smartphone as a device that is not yet necessary for children at this age.
7. Only two children from the Slovenian sample own their own tablet, one of which is a children's tablet. Several more are allowed to use their parent's tablet.
8. Most of the children know how to access YouTube on their parent's smartphone or tablet, but only two of them know how to install/delete apps.
9. Slovenian parents would like their children to have more apps and educational resources available in their own language.
10. Parents perceive the technologies as a positive advance in their children's' lives but one that does not need to be used as yet at such a small age.
11. All parents supervise children's screen time, on TV or other device, some with more explicit agreements, some with less. Usually, children are allowed to have from 15 minutes to an hour of screen time on a typical day.
12. Most parents in the sample believe that sitting with children, co-using and mentoring children's technology use is better than using parental control apps.
13. The most common parental concerns about children's use of technology are excessive use and access to inappropriate/aggressive content.
14. Half of the parents in the sample use technologies as a punishment-reward system. One family uses it only for punishment (restrictions), whilst others do not use it in this way.
15. At this age, children do not have a clear of what the internet is, let alone of the risks they might encounter.

16. At this age, looking for information equals searching for video content on YouTube and/or games and apps in the App Store on smartphones and tablets. Some of the children know that information can be searched for through Google images search.

## Slovenia – Surprising findings

1. Parents want to appear as if they have not elaborated mediation strategies but the fact is that they do mediate in an indirect way by providing children with as many outdoor and creative offline activities as possible to keep them busy.

# Spain

## National socio-economic context

- Spain is located in the Iberian peninsula, in the south-west of Europe, and has a population of almost 47 million inhabitants (close to 10 % with an immigrant background). The national language alongside four other official languages in different regions (Catalan, Basque, Galician and Aranese). The demographic density is quite unbalanced and is concentrated on Madrid and the coast. Catalonia is among the most densely populated autonomous communities in the country.
- Living standards have grown steadily over the last three decades, and Spain is now in the top 20 countries in terms of GPD, with 75 % of the economy dedicated to the service sector. However, it is also a country strongly affected by the economic recession that began in 2008, with unemployment rates currently over 20 % and one third of children at risk of poverty in 2015.

## Internet and digital technology (at national level)

- Digital technologies have profoundly penetrated Spanish social life. According to reports from the Telecommunications Industry, Spain is one of the leaders in Europe in terms of domestic access to fibre high-speed internet connections. About 80 % of the population own smartphones, close to 40 % other tablet devices and 70 % laptop computers. As expected, children and youth are the lead users and adopters of digital technologies, with 90 % of children already using digital devices and computers regularly at the age of 10.
- However, implementation of digital technologies in public governance and formal education has been much slower and current public policy efforts (slowed down by the current economic context) have focused on facilitating the use of digital technologies in citizen transactions with public administration and the implementation of digital technologies and media in schools.

## General pattern of parenthood

- Spanish families are increasingly diverse and include new family forms such as single-parent families by choice, same-sex couples and marriages and late-forming families. This diversification of family forms has also been accompanied by the diversity of family

organisations, informal support systems and various forms of professional assistance for the parenting and child-rearing needs of these emergent family forms. Fertility rates and the average size of families have decreased over recent decades in Spain, and are now among the lowest in Europe (1.47). Yet, the percentage of women who remain 'voluntarily childless' is comparatively low in comparison to other European countries. Rather, the pattern is towards delaying childbearing. A consequence of this is that the size of families is also decreasing and currently about three tenths of Spanish children grow up without siblings.

## Schooling system for children from 0 to 8-year-old

- Compulsory education in Spain begins at 6 years of age. Before that children may attend early childhood education. The second cycle of this stage (3-6 years of age) is integrated (and free) in the public system with primary schools and is attended by practically 100 % of the child population. The demand for placement in the 0-3 cycle is higher than available places both in the private and public sectors and families have to develop a variety of strategies for childcare that complement or substitute enrolment in early childhood education before the age of 3.
- Spanish is the official language in education. Catalonia is one exception as Catalan is the official vehicular language of the regional educational system. Recently, an increasing number of schools have been implementing an extensive Spanish-English bilingual educational programme.

| Age | Schooling type |
|---|---|
| 0-3 | Early Childhood Education (ECE, First Cycle) |
| 3-6 | Early Childhood Education (ECE, Second Cycle) |
| 6-8 | First Cycle of Primary Education (PE, Compulsory, starting at 6) |

## After-school and leisure activities

- After-school childcare and leisure varies depending on geographical context and family conditions but is a major concern for Spanish working parents, as the Spanish working day is among the longest in Europe. Families in urban contexts make use of extended school hours, paid childcare and grandparents. Grandparents have played an increasing role in young children's day-to-day care over the last two decades, due to the incorporation of women into the labour force and, in the last few years, as a buffer to the impact of the economic crisis on Spanish families. Family leisure plays a very important role in family life and the weather conditions in Spain allow families to spend time outdoors, both in urban and rural contexts for most of the year. Most Spanish-origin children have frequent contact with their extended families.

## Spain - Key findings

1. For most children the two favourite digital devices are tablets and the television (TV). They report that they use the digital devices primarily for leisure: to play game applications, watch videos and children's cartoons or shows and, to a lesser degree, to read digital storybooks. For the young children in our study, who are entering or are in their first year of primary education, digital devices do not seem to be too tied to educational uses. Although families do report that their children's schools have and use some digital technologies, for the moment, they do not see any demands from schools to use digital technologies at home for educational purposes. Tablets and the TV are said to be used with autonomy by children within the controls and rules the parents have arranged. Other digital devices such as laptop computers or smartphones are also used by some young children but in a more limited way and with more parental supervision. Very few of the target children in the study have their own mobile phone (but old mobile devices in the family are given to the child as a game (without Sim cards). In addition, none of the children says that they use social media - although some of the games they play might have involved creating profiles.

2. Within families, digital devices are used for leisure, and by parents also for work-related purposes. Family schedules are organised to include many other forms of activity, outdoor play and leisure, not only those that involve digital media and devices.

3. Most homes are equipped with multiple digital devices, several of which are owned and used regularly by parents, and the presence of digital technology in the home does not seem to be clearly tied to aspects such as family composition, geographical location or even family income. However, the uses of digital devices are more closely connected to parental occupation and parental ideologies.

4. Children are described as having learnt 'on their own' to use digital media. However, this process includes practices such as close observations of how parents use and interact with digital devices and learning through interactions around digital technology with older siblings and extended family (especially cousins). Nonetheless, young children report needing assistance to set up various digital devices, and most parents control very closely what is downloaded and installed on the digital devices their children use.

5. Children perceive digital technologies in primarily positive terms, as they are associated with leisure and play and as an opportunity for young children to explore and pursue their interests. When children mention risks or negative aspects, it is clear (and often mentioned explicitly) that they are repeating parental views or explaining the reasons parents have given them to enforce particular rules or restrictions.

6. Parents see children's engagement with digital technologies as an unavoidable fact of their children's lives that will only increase as children grow up. This increased use will include more relevance in children's schooling, and all parents foresee that digital technologies will be an integral part of their children's future work life.

7. Parents do express concerns in relation to risks associated with digital technologies such as accessing content that is inappropriate for their children (primarily violent content) and/or interacting with strangers through online platforms and games. Parents do not seem to use, give credit or have had good experiences with content-controlled application and filters or

the parental control features of the applications they use.

8. Parents also perceive digital technologies as in competition with traditional forms of play and outdoor and physical activity, as well as other forms of leisure and socialisation they want to promote in their children. Most families report organising after-school schedules and routines, which include multiple activities and commitments, that limit the amount of time children can spend with digital devices. Parents admit using digital technologies as a way of keeping children 'entertained' while they have to attend to other family demands, but this is not the primary way families report spending their after-school time.

9. Parents mediate and organise their children's digital experiences in two main ways. The first is setting up clear controls and restrictions on children's online access through digital devices (by turning off the device's Wi-Fi connection, controlling what applications are installed, etc.). This allows children to use digital devices in a rather autonomous way, but this use is primarily individual and disconnected from the internet or from online features of applications. The second way is allowing online connectivity of the digital devices for children and then being more engaged with how children use digital technologies and possibly even using them alongside or with their children. There is a strong interplay between parents' fears or perceptions of risks and the controlling strategies they set up.

## Spain - Surprising findings

The analysis of data has led to some unexpected or surprising findings. These are exploratory findings that deserve further research.

1. Differences between technology in rural and urban schools. Although our data include only one interview with a family living in a rural area, it was surprising to find out that the children in this family had an intense technology life associated with the school; for instance, they had a school blog addressed to the students - this is untypical in the Spanish literature, where the use of blogs managed by schools is usually addressed to families (González-Patiño, 2015) and blogs are typically used as a strategy for providing a bridge between school and families and involving families in school life. Some children from urban families in our study showed researchers their school blog with the same enthusiasm with which they discussed other non-school activities such as watching YouTube videos or playing games. In the future, it would be interesting to diversify the sample of families and include a larger set of families living in rural areas, to be able to explore what may be characteristics of rural schools in relation to digital technologies, which perhaps operate under the assumption that digital technology can especially help rural children to be more connected with others and other settings. More generally, the way in which technology is embedded in school practices and how this may impact children's everyday engagements with technology at home is another interesting issue that deserves further research. What do children think about the digital technologies provided by their school and how is home technology used with school goals in the case of primary school students? How do they incorporate school uses of technology in their life? Are the devices used in each setting similar? Are the goals for digital technologies similar in the homes and schools of young children?

2. Social class. In our sample, some of the more socioeconomically disadvantaged families pos-

sess as much technology at home as other, wealthy families. This might involve buying the latest devices taking advantage of promotional offers or through credit payment plans. This raises important questions regarding material constraints. Why are some families putting their home finances under stress to enjoy digital technologies? How are digital technologies tied to social status? How are the market and digital technology providers influencing this trend? However, although we might find similar degrees of technological equipment across homes and families, mediating strategies seem a bit different: the more socioeconomically advantaged families tend to be more restrictive with time exposure to digital technology and are more aware of the dangers, so they control the children's engagement with technology much more than families with fewer socioeconomic resources.

3. Ruling passions shape children's options, engagements and uses of technology. Contrary to the extended view according to which children are passive consumers of technology, our results show that their passions (e.g. dancing, cooking) determine what children chose to do with the devices. Technology is used by children to cultivate their passions. As an illustrative example, when we asked children what 'three devices or things they would take with them to a desert island', in some cases the answer did not include digital technology devices but objects related to their passions. This shows that technology is not the first priority for children by default.

4. Offline/online synergies. Linked to the last point, children in our study have given examples of a continuity between offline and online leisure practices. These include games that they like and they have in both offline and online versions (e.g. Minecraft), passions that they develop offline and online (e.g. cooking, chess, dancing in extracurricular classes and using the iPad to search for videos for dancing, or dancing games in the Wii) or abilities developed offline that then are meaningful in particular online contexts. Regarding the last idea, for example, ES6b7 learned about modelling airplanes with his grandfather, who also had a simulation program for piloting a plane. ES6b7 explained that piloting planes was his strength when playing video-console games since he had developed the ability with his grandfather.

5. Where is communication? From the very beginning, digital technologies have been associated with communication practices (e.g. calling, mailing, texting) and in recent years, this has extended to leisure (e.g. solitary games and games with other players). Interestingly, the focus/emphasis of the children's and adults' discourse is on leisure or the academic potential or usage of digital devices. In contrast, the communication functions of digital technologies were mentioned in the interviews to a lesser degree. This finding opens up new questions. Were these results a consequence of how the study was conducted? Will this pattern change as children grow up? Are these children 'early adopters' of a way of using technology that will gain momentum in the future?

6. As stated above, this study has provided important insights into young children's and their parent's engagement with digital technology. Nevertheless, future research in this area could address more specific research questions. Based on the findings collected in Spain, some of the questions that need to be addressed more in depth include how children learn to use these devices. The main opinion expressed by parents on this point is that children learn on their own, exploring the affordances of the device through trial and error or making the best of moments where adults help (e.g. writing words on Google). However, ethnographic obser-

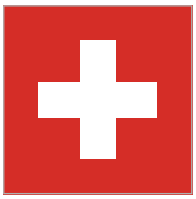
vation should be done to understand how children appropriate the devices' affordances and develop digital skills in practice and provide more accurate accounts of how young children 'really' learn how to use digital devices and media.

7. Development of younger siblings' digital literacy. Children usually have conversations about technology issues: they teach or help each other or share their discoveries or achievements. Older children have a key role in the development of younger siblings, since the latter ask for help when they encounter a difficulty (e.g. writing on Google, managing publicity messages). Does this occur only in one direction? Or is development more complex and does it also involve younger siblings showing new things to older siblings? Another question that deserves further research is how families with more than one child establish the mediating strategies that support usage and digital literacy, if these are different across siblings, and how differences are managed in the context of the family.

8. Siblings and their attitudes towards technology. Technology, devices and applications constitute elements that make siblings closer (e.g. they play together) but they also constitute an element that differentiates them and puts them apart. Differentiation operates in the type of applications or games they prefer, something that is especially obvious in the case of gender differences. In this regard, it would be interesting to observe how technology games are incorporated in children's identities at home, at school and in the peer-sphere.

9. The role of the larger family and peers in access to newness and digital learning. Aunts, uncles and older cousins play a role in children's digital development. They might introduce their own digital practices to the children and spend time with them, teaching them how to use devices, programs and applications. They also share their own leisure and play practices with children. Moreover, members of the extended family, above all cousins of the same age or slightly older, are for young children a source for learning about new games, applications and devices. These relationships within the extended family are important in the Spanish sample and should be explored further in the future.

# Switzerland



## National socio-economical context

- Switzerland is located in the heart of Europe, neighbouring Austria, France, Germany, Italy and Liechtenstein. It is small in size (41 285 km$^2$) and population (8 312 100) ([22]). The official languages are German (63.5 %), French (22.5 %), Italian (8.1 %) and Rhaeto-Rumantsch (0.5 %) ([23]).
- Switzerland ranks above average regarding many measures of well-being like health status, environmental quality, education or income relative to other countries ([24]). The unemployment rate is low (3.2 %).
- A typical household size is 2.2 people. On average, women have 1.5 children. Marriage is still common and 80.4 % of children live in the family they were born in. The divorce rate is rising and amounts to 41.4 % at the time of writing. On average a woman is 30.7 years old at the birth of her first child. Compared to other countries there is a higher risk that the poverty of a family will rise with the number of children.

## Internet and digital technology

- In 2015 91 % of all households had internet access. The usage varies from less than 1 hour (11 %) to 1-5 hours (41 %) and from 6-15 hours (32 %) to more than 15 hours (15 %) per week ([22]).
- The most frequently used devices are smartphones, televisions and computers/laptops. The presence of children in households can be seen as a key factor for higher amounts of devices. Almost all households with children are equipped with smartphone(s) (98 %), computer/laptop (97 %) and television (95 %) ([25]). Children name the smartphone as their favourite device. Approximately every fourth child has a smartphone in their own room and every fifth child a tablet and/or laptop/computer. Families with a higher socio-economic status have a wider range of devices.

## General pattern of parenthood

- Mothers are more involved in raising children than fathers. Although a lot of women work part-time, fathers are still mostly in the role of the main breadwinner ([26]). The three

most common acquisition models of families with children under the age of 7 are:

- father working full time, mother not working (29.3 %);
- father working full time, mother working between 1 and 49 % (29 %); and
- father working full time, mother working between 50 and 89 % (20,3 %) ([27]).
- Swiss parents find independence/autonomy and determination the most important qualities to teach their children ([28]).

## Schooling system for children from 0 to 8 years

- The schooling system differs by region. Therefore, children normally start kindergarten between the age of 4 and 5 but on request of the parents this can vary by 1 year. As it is compulsory 100 % are attending.
- Before compulsory schooling there are several possibilities. Crèche can start as early as 12 weeks until 3 years old. (Forest) play groups for children (from the age of 2) are quite popular. Maternity leave lasts 14 weeks, during which time employees may not be laid off. Supplementary childcare is common; 74 % use this possibility for pre-school children and 54 % during school. It is divided into institutional (used by 30 %) and non-institutional (used by 44 %) childcare; the latter means that private people look after the children (e.g. a nanny or grandparents).
- Schools are individually equipped with devices; the usage varies by region and teacher. Certain regions are working with a new curriculum that integrates media and IT in class (Lehrplan 21) ([29]). Lehrplan 21 started in 2017 and is only a recommendation as there is no national ICT policy. Many cantons will implement it.

## After-school and leisure activities

- After school children are either taken care of by one of their parents, mostly the mother, or by the abovementioned care facilities. It is common for mothers to work part-time. The hours of work depend on the age of the youngest child and the family situation (single mothers work more) ([22]). Some schools offer midday meals.
- The most popular leisure activities of children between 6-7 years old are play and spending time with friends and family. Spending a lot of time outside is very common, even when it snows during the time. Around three quarters of children meet up with friends at least once a week ([25]).

## Switzerland - Key findings

1. Children are fascinated by all kinds of digital technology and they play an integrated yet not dominant role in their lives. Affinity and demand for digital media use vary among children based on their individual predisposition and the influence of their parents but they all are curious about ICT and keen to explore it more.

2. Children's online and offline activities are well balanced. Traditional play and outdoor activities are common in Swiss families and greatly enjoyed by children; digital media is simply another source of entertainment. Social activities with family members or with other children are mainly preferred over playing with digital media.

3. Swiss children are modest users with rather basic skills. Digital skills vary among young children, depending on what they are allowed and encouraged to do by their parents. In international comparison, Swiss children do not spend a lot of time with digital media and their skills are rather basic.

4. Children learn the handling of digital media intuitively and rather incidentally by watching others. They mostly learn more complex processes like making several devices work together or using new games with the help of their parents.

5. Children use digital media for both relaxation and personal challenge. Whereas DVDs and audiobooks are happily played repeatedly for relaxation purposes, kids enjoy applications and activities with an exciting, competitive edge which challenge them to reach new levels, bring new information and give them a possibility to prove themselves and improve their skills.

6. Children love playtime with their parents, no matter if it is online or offline, and would love to have more of it. Children who have no siblings and those who spend a lot of time in external childcare, in particular, want their parents to spend time with them and like them as partners for playing with media too.

7. Parents have a role model function. Children's perception of the relevance of ICT is mainly triggered by their parents' media use. Parents are mostly aware of their role model function for balanced media use but also sometimes find it hard to live up to it. A healthy media regulation requires the allocation of time and engagement from the parents.

8. A trusting relationship is essential for monitoring children's activities and being able to protect them from risks. Most parents manage to maintain a trusting relationship with their children, so the kids would come to talk to them about uncomfortable experiences or things they do not understand. In addition, children in general do not use ICT without their parents' permission, even though devices mostly are not locked for children.

9. Young children have no clear concept of the internet and the possibilities and risks that are related to it. They understand that devices need to be protected (with passwords and careful handling) but mostly have no understanding of how being online could bear negative consequences for them and their identity. In terms of possibilities, they perceive digital media (namely Google) as a source of incredible knowledge that has an answer, picture or video for any possible question or topic.

10. Children's favourite digital device is the tablet PC but in general, activities are more important than the device they are used on. The tablet seems to stand out as the device that is most fun to use for kids since it is easy to navigate via apps and a big touchscreen. Moreover, it has the broadest range of options for use. For most other devices, the activity it is used for seems to be more important than the device itself. The TV is still a favourite source for passive media consumption due to its endless and self-created content. Watching films

on YouTube is popular as well due to its never-ending content. Portable devices seem to be preferred since they can be used in cosy places. Children love to listen to audiobooks, also as a passive background story when drawing or playing traditionally.

11. Children perceive the TV programmes and online content as an endless source of entertainment, which seems to have an addictive effect on them and makes it hard for them to let go of them. Media with limited and therefore known content, such as DVDs, audiobooks, games they have already played, etc., seem to be easier to turn off if needed because the children can always come back to them.

12. Digital devices are commonly used as momentary caregivers in certain situations, for example, when parents are doing housework or in public situations to keep children occupied for a while. Most but not all parents use the 'babysitter function' responsibly and simply combine the screen time of their kids with situations where it is practical in terms of family organisation.

## Switzerland – Surprising findings

1. Engagement in mediation is a matter of interest and time. Time and engagement allocated to children's education and the mediation of screen time seems to be a crucial factor concerning the personal relevance of ICT to the children. High income and/or high education alone are not crucial factors. Highly educated full-time working single mother CH05m42 relied on digital devices in terms of keeping her son entertained. Her lack of time seemed to make it impossible to implement a healthy media regulation for her child. The boy showed strong signs of digital media addiction. In addition, the level of education does not necessarily correlate with the awareness of risks to the child due to inappropriate content such as shooter games etc. CH05m42 was the most tolerant of all parents regarding her son's YouTube browsing, during which he happened to watch videos not suitable for his age. Personal willingness to engage in the mediation seems to be very individual and not necessarily dictated by time. For example, the mother CH02m33, who is currently not working, does not engage much with her son's media use as long as the content does not interest her personally.

2. The activity matters more than the device. For children the particular device does not seem to make much of a difference, it is the application/the use that matters. An audiobook listened to on an iPod is just as attractive as on a CD. The tablet PC stands out as the device children seem to be fascinated by, partly because of the handling. It seems to be more interesting due to the touchscreen and the variety of possibilities and is more popular than the smartphone due to its larger screen.

3. Digital media can affect real relationships. Online games can be important enough for a parent to provoke a conflict within the children-parent-relationship in real life. The girls of CH04 played a sequence of their father's favourite game on his smartphone and made a mistake that caused him to lose virtual money. The fact that he got very angry with them affected them in a sustained manner as they could still recall the incident and were very apologetic about it.

4. Gaming as coping strategy for aggressive behaviour. In the case of highly agitated CH07b11, shooter games (Blitzbrigade' function as a coping strategy to compensate aggression, which

seems to help reduce aggressive behaviour towards his siblings and mother. 'I like it because it is fun, not because it is brutal,' he said. 'I have fun playing it, it's not so terrible for me.'

5. Young children have no clear concept of what 'being online' means. They understand that devices need to be protected (with passwords and careful handling) but mostly have no understanding of how being online could bear negative consequences for them and their identity. In terms of possibilities, they perceive digital media (namelyGoogle) as a source of incredible knowledge that has an answer, picture or video for any possible question or topic.

6. Some young children have their own device and decide about screen time autonomously. CH02b7 (iPod Touch) and CH05b6 (iPad) have unlimited access without having to ask. Whereas 7.5-year-old CH02b7 seems to find a way to responsibly regulate his screen time, 1.5-year younger CH05b6's media use has got out of control to the point that he does not play without his tablet PC when he is alone.

# United Kingdom

## National socio-economical context

- The United Kingdom is made up of England, Northern Ireland, Scotland and Wales. The population is 62.8 million.
- The UK's economy remains one of the largest in the world, but it has changed over recent decades to become more reliant on service industries rather than manufacturing. Deindustrialisation has led to areas of low socioeconomic wealth in parts of the country. In January 2015, the rate of unemployment was 5.8 %.
- The UK has one of the highest levels of public debt in the developed world, which has led to significant government reductions in the welfare state in recent years.
- The average household size is 2.3 people. 15 % of dependent children live in cohabiting couple families, and 23 % live in lone parent families. In 2015, 45 % of families with dependent children had one child in the family, 40 % had two children and 15 % had three or more dependent children.

## Internet and digital technology

- The UK has had high technology usage for decades. 92.3% of the population used the Internet in 2015. 80% of adults had broadband access (fixed and mobile) in 2015 and 93% owned mobile phones.
- Over half of 3-4s and three-quarters of 5-15s used a tablet in 2015.

## General pattern of parenthood

- Children in the UK are given access to digital media technologies from a young age. There are some differences with regard to socioeconomic status, with low-income families more likely to enable children to have access to 'edutainment'-style technologies than middle- and upper-class parents.

## Schooling system for children from 0 to 8-year-old

- This is different for each of the countries in the UK, as follows:

- England: 3- and 4-year-olds are entitled to 15 hours of free nursery education. Some children may attend childminders, others state-funded and private nurseries, toddler groups and so on. Children begin formal schooling from the first September after his/her fourth birthday.

- Northern Ireland: Funding for free pre-school education is available for children in the year prior to entering compulsory education aged 3 to 4. Pre-schooling may be offered by state-funded nursery schools and units, or voluntary and private settings. Children begin formal schooling in the September of the school year after their fourth birthday.

- Scotland: Children are entitled to a part-time funded nursery place from the beginning of school term following the child's third birthday. They are then entitled to a full year of nursery education in the year prior to attending primary school (ages 4-5). They attend pre-school class prior to joining a Primary 1 class from the August after their fifth birthday. Pre-school classes are offered by state-funded providers, including schools, and private providers.

- Wales: Children are entitled to a part-time funded nursery place from the beginning of the school term following the child's first birthday until the child enters compulsory schooling at the age of 5. These places can be voluntary or private settings, or state-funded settings.

- Childcare outside of free funded nursery places is expensive, and the use of grandparents to support childcare has risen.
- ICT provision is mixed. Whilst it is recognised in the various early years' curricula, there is a lack of consistency in how much technology early years settings and schools own, and how much it is used.

## After-school and leisure activities

- Some children take part in after-school clubs, located at the school. They may also attend gym/dance classes etc. Some may attend private music/subject classes, although this is not likely if the family has a low income.
- Leisure activities outside the school include sports, swimming and use of playgrounds. Children are rarely left alone to play outside due to perceptions of risk.

## UK - Key findings

1. The young children led active, varied lives in which technology played an important part. Technology use was balanced with many other activities, including outdoor play and non-digital toys. Technology was embedded in daily life, with extended family members and networks outside the home playing a key role in socialisation and communication.
2. Tablets had a growing popularity and importance in young children's digital lives, particularly for leisure. The touchscreen interface means that young children were able to access tablets more independently at an earlier age than technologies such as laptops. A primary use was playing games, displacing games consoles as the technology of choice. Gaming was often restricted to a narrow range of titles, played repetitively.

3. Children used portable devices to watch films, videos and television programmes, including streaming, on-demand and catch-up services. There was evidence of cross-platform brand recognition, with linked games, films, websites and soundtracks often favoured by children (such as Disney or CBeebies products). The portability of devices has probably led to a decrease in the number of children with televisions in their bedrooms.

4. Educational apps were not commonly used by children aged 6-7, especially compared with younger children. Digital educational engagement was generally restricted to information gathering using a laptop or computer, creative production (such as drawing apps), instructional online videos and factual programming (via YouTube clips). Where children used digital devices creatively to take photographs or generate video clips, parental mediation was still required to edit and complete the process.

5. Parents tended to focus explicitly on deliberate uses of digital devices for learning or fun, but they recognised that these devices were also used to fill the gaps in daily life when parents were busy and children needed to be occupied or entertained. Consequently, much of young children's use of digital devices was individual in nature, even little noticed by parents. Meanwhile, shared family activities tended to centre on non-digital activities that signalled 'good parenting' (in the eyes of parents) or on traditional media uses such as family television viewing in the living room.

6. Parental spending priorities tended not to include app purchasing, favouring instead free apps, physical toys, books and magazines. This may expose children to in-app purchasing and targeted advertising, which are less prevalent in paid-for digital products.

7. Children accessed a limited number of websites, usually assisted or overseen by parents or older siblings. These included YouTube, Google, CBeebies and Wikipedia. Children tended to have little or no understanding of the scope of the online world or associated risks. They could be relatively skilled in navigating some devices or apps but lacked skills in relation to others, and both their skills and limitations often went unrecognised by parents. Moreover, while children were often able independently to figure out how to navigate a device, app or game, we observed more diversified skills and knowledge in those families where parents or older siblings spent time with the younger child explaining or playing on a device.

8. Parents' strategies for managing children's internet use were patchy, tending to rely on ad hoc observation or the need to intervene given children's lack of skill. Many parents believed that robust strategies did not need to be developed until children got older, despite evidence that, on the one hand, some children could bypass safety settings while, on the other, some children would welcome new ideas or further guidance about how to use the devices and apps available to them.

9. Encountering violence and strong language were of greater concern to parents than sexual content or unwanted contact. Parents would welcome advice on fostering children's online safety. Advice from schools appeared to be limited, nor did there appear to be substantive communication between schools and families on issues relating to technology.

## UK - Surprising findings

1. One of the interesting findings that has emerged in this study was the disconnect that sometimes occurs between parents' and young children's accounts of technology use. This is often the case with older children and young people (e.g. Valentine, Marsh and Pattie, 2005; Livingstone and Bober, 2006; Livingstone and Helsper, 2008), but since young children often had their parents or carers close by in the home, it is more surprising that this gap existed also for them. For example, one of the Sheffield mothers outlined how she ensured that her children could not access devices independently: 'The devices, I do have control in that there are pass codes, so I have to put the password in before they can start using them. So none of them know my - even the 12-year-old can't use the iPad without me putting the control in, so it has to come through me before they can put it on' (UK5m). However, one of her 6-year-old twin daughters entered the password for the iPad when asked by the researcher to demonstrate her use of the device. Her mother was surprised to see her on the device when she entered the room, and the child blamed her mother for revealing the password when she herself used the iPad:

   *Mother: How did you get on to that?*

   *Girl: I don't know.*

   *Researcher: She put a password in.*

   *Mother: Oh! Have you...?*

   *Girl: It's straight up the middle.*

   *Mother: So you figured it out. Right, we've got to change that again now.*

   *Girl: Well it's your fault 'cos you're, like, showing us.*

2. A further point of interest was the way in which Minecraft was creating opportunities for numerous siblings to play together simultaneously. Whilst family use of virtual worlds has been noted in previous studies (e.g. Marsh, 2011), that has tended to be simultaneous use of a site using two separate accounts on two different devices, with avatars meeting on screen. In this study, two families (UK5, UK10) played together on Minecraft using one device and were able to save the separate Minecraft worlds of family members on the same iPad.

3. Another surprising finding relates to the lack of explicitly educational apps and games. The primary purpose of tablets was generally for gaming, in contrast to tablet use by younger children and pre-schoolers. There may be several factors at play here.

   Parents of pre-schoolers may be more likely to download educational apps, such as number or spelling games, as a preparation for school. Older children saw tablets as part of leisure time, and may seek to avoid educational products.

   Fewer pre-schoolers possessed their own tablets, suggesting that content is curated by adults. With the older age group, the tablet was more likely to be for their exclusive use, meaning that they chose their games, rather than being presented with a selection by a parent.

The target age group was 3-4-years old at the launch of the iPad and competitor products, meaning that they were already too old for the plethora of educational pre-school products now available. They and their parents therefore did not associate tablets with educational ends, and may not be aware of the range of products in this genre.

Books, especially encyclopaedias, were presented to the researchers on several visits, yet the equivalent apps (by mainstream publishers such as Dorling Kindersley) were absent. There may be a perception by parents of 7-year-olds that 'book learning' cannot be delivered on a tablet, whereas parents of younger children may be seeking out more educational apps as their children grow, on subjects such as astronomy, dinosaurs or the human body, since they were already accustomed to digital education.

4. Finally, the mothers in both UK2 and UK4 used YouTube to show their young children poverty - they wanted them to understand how lucky they were and how difficult life could be in other parts of the world.

# Notes country portraits

(1) International Standard Industrial Classification of All Economic Activities (ISIC), United Nations

(2) ČSU, https://www.czso.cz

(3) Eurostat, http://ec.europa.eu/eurostat

(4) MŠMT http://www.msmt.cz

(5) Národní ústav pro vzdělávání http://www.nuv.cz/

(6) Metodický portál RVP http:// rvp.cz

(7) Ramasjang is a television channel, a webpage and an app distributed by the Danish Broadcasting Corporation (DR) and aimed at 3-7-year-olds. There is a similar channel, including a webpage, aimed at 7-12-year-olds, called Ultra. Both channels are tax funded and non-commercial, and both channels (like DR as a whole) must live up to certain public service obligations including the obligation to offer daily news, both broadcast and online, for children in the oldest age group.

(8) Source: Official Statistics Portal.

(9) Source: Statistics Lithuania

(10) Source: Lithuanian Labour Exchange

(11) Source: Digital Economy and Society Index 2017 - Lithuania

(12) Source: SKVC Center for Quality Assessment in Higher Education.

(13) Source: Central Bureau for Statistics (CBS).

(14) Source: CBS.

(15) Source: Eurostat.

(16) Source: CBS.

(17) Report Iene Miene Media 2016.

(18) SCP report Media: Tijd in Beeld.

(19) SCP report Gezinsrapport 2011: Een Portret van het Gezinsleven in Nederland.

(20) Source: OECD report Students, Computers and Learning.

(21) Report Samen Doen, Samen Zijn: de Jeugd van 2012.

(22) Source: Federal Statistical Office (FSO).

(23) Source: http://www.myswitzerland.com/de-ch/sprachen-in-der-schweiz.html

(24) Source: http://www.oecdbetterlifeindex.org/countries/switzerland/

(25) Source: https://www.zhaw.ch/storage/psychologie/upload/forschung/medienpsychologie/mike/Bericht_MIKE-Studie_2015.pdf

(26) Source: Federal Statistical Office (FSO). https://www.bfs.admin.ch/bfs/de/home/statistiken/wirtschaftliche-soziale-situation-bevoelkerung/gleichstellung-frau-mann/vereinbarkeit-beruf-familie/belastung-erwerbsarbeit-familienarbeit.html

(27) https://www.bfs.admin.ch/bfs/de/home/statistiken/bevoelkerung/familien/familienergaenzende-kinderbetreuung.assetdetail.349335.html

(28) Sources: https://www.econ.uzh.ch/dam/jcr:5947dea9-93e2-4728-9195-2c346bb7c935/Doepke_Zilibotti_0816.pdf and http://www.worldvaluessurvey.org/WVSDocumentationWV5.jsp

(29) Source: http://www.lehrplan.ch

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**Young Children (0-8) and Digital Technology**
A qualitative study across Europe

# Annexes

# Annex 1

## Young children (0-8) and digital technology: Second interview Research Questions Chart v.01_2016 Protocol for interviewing parents

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Protocols for the first round of interviews have been published as Annex of the first report.

Chaudron, S., Beutel, M. E., Černikova, M., Donoso Navarette, V., Dreier, M., Fletcher-Watson, B., . . . Wölfling, K. (2015). Young Children (0-8) and Digital technolgy. Luxembourg: Publications Office of the European Union. Tratto da http://publications.jrc.ec.europa.eu/repository/handle/JRC93239

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This protocol has been built to monitor changes between two interviews in the same family, at a distance of one year time or so, over the following dimensions

1. Devices: new, drops, expectations
2. Activities/Interests/Opportunities: new, drops
3. Skills: Kind of skills that children have acquired, lost
4. Mediation/rules
5. Perceptions: the way they see digital technology, the same as before, different?

Additionally, we will also monitor the effect of the first interview on the 5 points above.

The general focus on the interview is monitor change and its reason. The WHY did it change?

---

**Important remarks**

** The targeted child (children in case of twins) remains the same for comparison purposes even though the child might be older than 8 years old by the time of the second interview

** Please, make sure that the parent who answer the pre-questionnaire is the one who is interviewed.

** Please, let parents know that you will (perhaps) raise slightly the same question along the interview. Make sure they understand this is a research tool.

** This protocol provides questions that are to be considered as a collection of questions in which the interviewer are invited to pick the relevant ones. It can be considered as tool box full of tools (questions) that at the end will help in monitoring the change in the interview family over the 5 dimensions.

---

**Introduction - recalling memory**

The first set of questions is meant to provide the context of the first interview back in the memory of the interviewees and so its content.

It starts with localizing the interview back in time: the week-day, the time of the day, the weather conditions, and any specific things that you collected in the first interview that you can already feel might have changed over time (you were 6 months pregnant, your car was just brand new, you had just two kittens,...

**Example:**

Do you remember when we came last time?

It was a rainy/sunny/ Saturday morning of September. You were just back with (the target child) from ballet classes

It follows with recalling them the object of the interview and the research.

What do you remember of your last conversation? The subject? The questions? The feelings?

and any other question that will support this goal of recalling the moment of the first interview and its content.

The following questions opens the core of this interview, the focus on change over time in practices, usages, behaviours, perceptions of the digital technology in family of young children by the different family members.

Each section will start with a couple of questions that will drive the interviewee towards his/her memory on a particular point of the first interview. They will be marked in Blue.

Moreover, you will found comments that will help you with the questions into [...], The comments will help you to understand the purpose of the question or the importance of linking it with another questions or with a part of the pre-interview questionnaire.

**Example:**

[Confront this answer with Q9 of the pre-questionnaire 'From who did your child learned to use his/her favorite digital technology?']

1. Devices: new, drops

We remember that in your household you had X/Y/Z, do you know where they are now?

We know from the pre-interview you have X/Y/Z: is it correct?

We remember from our previous interview that you had A, B, C in the household, we think that X/Y/Z is new:

- Is it correct? Any other that you might have forgotten?
- How it has come to your home? Do you wanted it? Did you buy it yourself? Did you receive it? Do other relatives/social circles have it as well?

- Did you expected the device to be useful to you or for a particular thing/activity? Did it met your expectations?
- If Yes, how? Would you recommend this device to others?
- If No, how? Do you regret having this device?
- Do you prevent the access of your children to the device in a way or another? What are the measures? Does it work? Are they the same strategies as last year?
- You said in pre-questionnaire that you share/ do not share this device/these devices with your child? Is it correct? Was it a decision you took or it just came naturally? Why?
- Were you afraid of how to handle the new device with your children? Why?
- (if relevant) How do you manage the age difference in-between your children for accessing the device?
- Do you exchange about your strategies with partner/parents/family? Members/friends/ school parents/ teachers/other community? Did you have to set different measures?
- Do you have any source that you trust because it offers good tips and advices? E.g. blogs, journals, friends, school evenings, museums,... Did you ever trust them? How do you know about them? Have you recommended?

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**2. Activities/Interests/Opportunities: new, drops**

joined with

**3. Skills: Kind of skills that children have acquired, lost**

[This first question will remind the context. The aim is to make the transition from devices to activities/skills]

(Referring to the favorite device) We remember from the family portrait that your child used to use X/Y/Z device for activities like watching YouTube/gaming/taking or editing pictures/video/ painting/writing/doing homework/contacting friends or family. Its favorite device was X at the time of the first interview. In the pre-interview questionnaire you gave us devices X, Y, Z as the three most favorite of your child. From the activity my digital family that you draw all together at the beginning of this interview we saw that your child claimed having X /Y as its favorite.

- is it a surprise for you? YES/NO, Why?
- Would you prefer your child having a different favorite device? YES/NO, Why?

[Question on perceptions] [Note that this question is a bit different to the one "Do you regret having this device" (dimension 1). Avoid the question in case it has been commented before.]

**Activities and skills**

We remember your child like to do X/Y/Z. [This question opens a set on activities and skills]

- Are they still enjoying it?
- Did you see that your child dropped some activities since last year? Which one? Why do you think it happened? And when the school started again?

Your child was able to X/Y/Z (e.g. download an app, searching a video on YouTube, exchange messages on Facebook). In the questionnaire you said your child is capable of X/Y/Z now.

[Confront this answer with Q7 and 8 of the pre-questionnaire on perceptions]

- How do you know that they are capable of this? Did they tell you? Do you see them? Do you though them? Do you do it together? ...
- Did your child learn anything new over the summer? Can your child do something new with digital technology since the summer? Since the start of school?

[This question is meant to have information on formal (at school) and informal learning (out of school), the emphasis on "summer" and "start of school" is helpful to differentiate formal and informal contexts]

- How did they learn the new skill(s)? (Parent showed them, contact with other children, other family member, summer camp, school, workshops, museums, libraries, cultural events, YouTube, they learn by themselves ...).
- When did you realize that they were capable of this new skill? [specially relevant if the parent says that children learn by themselves]

[Confront this answer with Q9 of the pre-questionnaire 'From who did your child learned to use his/her favorite digital technology?' ]

**Learning strategies**

Is your child being challenged by any particular digital activity?

- How is he/she facing the challenge? What are their learning strategies?
- Were they the same as last year's?
- Where new learning strategies come from?
- Are you comfortable/happy with those new skills?
- If yes, why? In which way do you think is it good/beneficial for them?
- If no, why? In which way do you think is not so good for them?
- Would you like your child learning focus on other skills? Which ones? Why? [Please, open the question to non-digital skills]

**Focus on school**

- Is the school allowing/supporting/integrating digital technologies? Has it change from last year? Which types of devices do they allow in school/in class [note that school/class is not the same]?

- How do you feel, what do you think about the school's position on this?

- What do you think should be the 'ideal' school role on digital technologies and digital skills?

Focus on the social order

- How are devices/digital skills important socially in your child's life? Does digital skills have an impact in the way children are included/excluded in the group or an activity. Was it the same as last year?

- Is your child attending informal groups after schools that supports digital skills? Was it already following this group already? E.g. coding sessions [If not already mentioned]

[Confront this answer with Q4 and Q5 of the pre-questionnaire 'How important are digital technologies for the children, for you and for the family life?' and 'Which aspects would you say that digital technologies bring in your family life?']

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**4. Mediation/rules**

[Some of the questions here may overlap with the ones pointing on perceptions]

- What are the few things that you always remind your child to do about digital technologies (if any)? Are they the same as last year?

- If YES, which one? Why is it important to you? Do your partner share the same views?

- If NO, which one? why are they different?

- Do your partner share the same views as you ? YES, NO, WHY ?

- Was it already like this last year? Did any of you change mind or evolve on this subject? If Yes, what happened? How did it matters and have you change your mind?

**Conversation with the child**

In Q12 of the pre-questionnaire, you/your partner told us that you usually talk about X/Y/Z with your child.

- Can you recall the first time you had this kind of conversation with your child?

- How the conversation came up?

- Did you planned it or did you felt the need for it?

- Was your child receptive?

Conversation between the parents

[This information is helpful to understand how mediation strategies are decided and negotiated]

What about you and your partner?

- Do you talk about these issues as well?
- Do you have any other concerns?
- Which are the recurrent themes?
- What do unchain/motivate the conversation? A particular situation? a ruling topic of conversation? A conversation with other people?

[In case of separated parents, if the theme emerge, it would interesting to know about how do they manage to communicate/decide on digital technology in the life of their child.]

- Do both parents agree on this? Do you have different point of views on this?

**Rules**

We remember that you had X/Y/Z rule (or no rules) regarding your child usage of digital technology.

- Is the rule still effective?
- Did you had to change/modify/adapt strategy? and why?
- Did you see a change of interest/device/behavior/friends/social world?

[Please, repeat the questions for each rule that we tracked down in the first interview, or at least the more important ones].

**Mediation**

[Please, start from the Q12 in the pre questionnaire, where there is a map of the activities that have been a topic of conversation between the parents and the child during the last month.]

[Get inspired by the following questions to get deeper in the understanding of parental mediation and its change over time. Please refer and cross-reference the question to the answers provided by the parent in the pre-interview questionnaire]

- For which activity/ies do you have clear rules? Where these rules already in a year ago? Or are they new? or adapted? Why are these rules necessary?
- We remember you or your partner share X/Y/Z digital activities with your child. Do you still do share them? Do you have any new ones? Why?
- We remember you or your partner did not shared much digital activities with your child. IS it still the case or not? Why?
- In the questionnaire you/your partner say that you chose free apps only /payable apps only/ payable apps along with free apps. What are your views there? Is this choice the same like

last year? Did you change your mind?

- In the pre-questionnaire [Q3, Where and with who is the different digital devices of the household used] you/your partner say that you share your smartphone with your child. How do you manage? Do you have rules? If yes, which one. If no, why there is any rule? Was it the same last year? Do you negotiate the rules?

**Risk and prevention**

[if risks prevention/ safety concerns did not emerge till now]: You told us in the first interview that you were worried about X safety concern issues. Now your child has gained one year and can do more things (with digital technology; has gained autonomy, skills increased social circle ...), so now, what is your perception? Do you think your child is safer or more at risk today? or equally safe?

[if the possible effects of the first interview did not emerge till now, here you have a bunch of questions to raise]:

- You, we, remember the first interview (ex: It was a Saturday morning, your husband was there, it was a rainy day, you were planning to go to the cinema in the afternoon....) BUT can you remember what happen when you closed the door? Did you talk about the interview? With your child? Partner? Parents? Siblings? Friends? Class teacher?
- Did the interview gave you the opportunity to reflect about your digital technology family life? Did you realized something thanks to it? Did you change or decided you would change something after it? Yes, what, Why? Did you succeed?
- Did you inform yourself further?
- Did you ask anything to your child? What did they said after our visit?
- Did you change your own way of using digital technology (in general and/or in presence of your child?)

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5. Perceptions: the way they see digital technology, the same as before, different?

In the pre-questionnaire [Q5] you/your partner said that digital technologies bring X/Y/Z to your family life.

- (raise for all the items that emerge) In which circumstances is?
- Is there any other thing that you want to comment?

You can use the 'word card game' available on the share drive to help through this part of the interview. The card game provides words only, (like 'babysitter', 'boring', 'imagination', 'educational', 'addictive') perceptions close to the ones present in the question 5 of the pre-interview questionnaire. If the two parents are presents, please provide one card game for each.

**Closing**

Provide a brief summary of the change you could monitor over the interview.

- What would be the tips you would give to new parents? (at least 3)
- What would be the tips you wanted to have when you child was 3 years old regarding parenting his/her digital life?
- What are the tips you would like to receive now that your child is XX year old?

Thank the parents for this conclusion and ask if they have any leftover questions they would like to ask.

# Annex 2

## Young children (0-8) and digital technology: Second interview Research Questions Chart v.01_2016 Protocol for interviewing children

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Protocols for the first round of interviews have been published as Annex of the first report.

Chaudron, S., Beutel, M. E., Černikova, M., Donoso Navarette, V., Dreier, M., Fletcher-Watson, B., . . . Wölfling, K. (2015). Young Children (0-8) and Digital technolgy. Luxembourg: Publications Office of the European Union. Tratto da http://publications.jrc.ec.europa.eu/repository/handle/JRC93239

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This protocol has been built to monitor changes between two interviews in the same family, at a distance of one year time or so, over the following dimensions

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2. Activities/Interests/Opportunities: new, drops
3. Skills: Kind of skills that children have acquired, lost
4. Mediation/rules
5. Perceptions: the way they see digital technology, the same as before, different?

Additionally, we will also monitor the effect of the first interview on the 5 points above.

The general focus on the interview is monitor change and its reason. The WHY did it change?

---

**Important remarks**

** The targeted child (children in case of twins) remains the same for comparison purposes even though the child might be older than 8 years old by the time of the second interview

** This protocol provides questions that are to be considered as a collection of questions in which the interviewer are invited to pick the relevant ones. It can be considered as tool box full of tools (questions) that at the end will help in monitoring the change in the interview family over the 5 dimensions.

---

**Introduction - recalling memory**

The first set of questions is meant to provide the context of the first interview back in the memory of the interviewees and so its content.

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**Example:**

- Do you remember when we came last time?
- It was a rainy/sunny/ Saturday morning of September. You were just back with (the target child)from ballet classes
- It follows with recalling them the object of the interview and the research.
- What do you remember of your last conversation? The subject? The questions? The feelings?
- and any other question that will support this goal of recalling the moment of the first interview and its content.

The following questions opens the core of this interview, the focus on change over time in practices, usages, behaviors, perceptions of the digital technology in family of young children by the different family members.

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1. Devices : new, drops

[To remind the child the devices it owned/used/favorite at the first interview]

- I remember you had /used/ owned a x,y,z, ...
- Do you know where they are?
- Do you still use them?
- Is it still yours / yours dad's mum's ...?
- [if relevant] I remember you were expecting to use /to own (your dad's old phone, a new PSP for Christmas, a laptop/smartphone for school ...), did you get it? or another? or are you still expecting it?
- What new device do you use/own? How come do you have/use it? (WHY)
- I remember your favorite one was X, now from the first activity, the table 'my digital family we just did together with your parents',
- I see that it is still X, is it correct?
- Why so?
- What can you do with it that you cannot with others? (if any)
- What can you do better with it than with the others? (if any)
- Do you think it will be the same next year?
- I see it is Y now, is it correct?
- Why so?
- What can you do with it that you cannot with others? (if any)

- What can you do better with it than with the others? (if any)
- Do you think it will be the same next year?
- What happened to your old favorite one?

---

2. Activities/Interests/Opportunities: new, drops

- [Referring to the favorite device] What do you do with it? (You watch YouTube?, you game? you take pictures, video? You edit pictures, video? You paint? You write? It helps with your homework? You contact your friends, your family?)
- I remember you were very fan of X and you used to (watch videos on the topic, draw, search information on, was part of online community, playing it with friends online, with your dad, your sister, Grand-ma...)

(**)

- Is it still the same? YES
- Do you look for the same kind of videos, information, pictures?
- Do you share it with the same people? (Friends, siblings, family members, teachers, babysitter, people online you never met?)
- For example what did you do about it yesterday/ few days ago/ last week-end?
- Where do you do this/these activity/ies?
- Where do you actually prefer doing this/these activity/ies? Are you allowed to?
- When do you do this/these activity/ies?
- When do you actually prefer doing this/these activity/ies? Are you allowed to?
- Do you think it will be the same next year?
- Is it still the same? NO
- So, what are you interested in now?

(If the interests are unchanged, this question might show also just a change caused by migration of the activity to another device (for instance, watching TV on the tablet)

- That is a change, why did you change?

(This question will help us to monitor change in interest, in skills, as they could answer 'it is boring now, its is childish, I can read now, ...or change of rules from the parents, of access to a device, influence of new friends trends, growing effect - 'it is boring now', 'I can read now,', no time anymore, negative experience, ...)

- What do you do to support your interest in xxx? (focusing on digital technology, we can

prompt them on :watch videos on the topic, draw, search information on, being part of online community, playing/watching it with friends offline, online, with your dad, your sister, Grand-ma, ....)

- Do others know about this change (family members, friends ...)? What do they think about it?
- For example what did you do about it yesterday/ few days ago/ last week-end?
- Where do you do this/these activity/ies?
- Where do you actually prefer doing this/these activity/ies? Are you allowed to?
- When do you do this/these activity/ies?
- When do you actually prefer doing this/these activity/ies? Are you allowed to?
- Do you think it will be the same next year?
- I remember you were also doing those activities Y, Z, ... and you used to (watch videos on the topic, draw, search information on, was part of online community, playing it with friends online, with your dad, your sister, Grand-ma, ....)

Rephrase questions (**) of the previous paragraph

- I remember you also wanted to do those activities Y, Z, ... and you used to (watch videos on the topic, draw, search information on, was part of online community, playing it with friends online, with your dad, your sister, Grand-ma, ....)

Rephrase questions (**) of the previous paragraph

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3. Skills: Kind of skills that children have acquired, lost

- What skills would be needed for being good in your X (favorite activities)? What do you need to know, what do you need to do in order to be good in X (your favorite activities)?
- How do you know that those skills are important?

(The question seeks to obtain information about the ways children develop their skills and gain knowledge about an activity/game, etc. A rephrase of the question could be: Where/when did you learnt that these skills/things/actions are important to be good in X activity?)

- Can you do all this yourself? Are you able to do it yourself?
- Was or is it difficult to learn? Did you have to try several times? Did it take long to pick up?
- I remember last year, you could do X, Y; Z... is there something you do not do anymore? or less often?
- Did you learn anything new with technology over the summer break?

(This question is to focus on activities out of school, in an informal environment. 'over summer'

helps also the child to picture him/herself back in time)

- Did you learn anything with technology new during the last weeks, since school started again?
- How did you learn yourself? When (after school, week-ends, at school, during lessons, during breaks ...)? With whom?
- school teacher (1)
- friends at school/ schoolmates (2)
- friends not at school (2)
- mother (3)
- father (4)
- siblings (5)
- grandparents (6)
- other adult family members (7)
- other young family members (7)
- themselves (8)
- other (9) _____
- I do not know (10)

- Do you think that those skills (things you know to do) that you learn through X (your favorite activity) are useful for other things? Which one for example?

(It might be a difficult question for the children but let's give it a try)

- Are you envious of or inspired by the skills of someone? (a parent, a sibling, a friend, a cousin, ...). Why?
- Did you teach or being supportive with someone about technology? What did you pass on, to whom? Did it work?
- school (1)
- friends at school(2 a)
- friends out of school (2 a)
- mother (3)
- father (4)
- siblings (5)

- grandparents (6)
- other adult family (7 a)
- other young family members (7 b)
- themselves (8)
- others (9) ...

**Specifically about gaming:**

- when you LOSE / WIN at this game, do you celebrate? Are you happy? Frustrated? Exhausted? Relief? Full of joy? Tired? Full of energy? Sleepy? With the will to play again? Ashamed? Do you scream? Do you jump? Do you through objects? Do you shout at people?
- Do you share your performance with your parents, your siblings, your friends, at school ...

---

4. Mediation/rules

- Are there some digital activities that you are not doing anymore? (Watching YouTube, cartoons, music, vlogs, tutorials, .... gaming at particular games, taking pictures, videos, drawing, editing them, using skype, SN, ....)
- Why? Is it boring now? Not interesting anymore? Are you still allowed to?

**Permission**

- I remember you had to ask permission for ... / you could do YY only after homework / on weekends / in the kitchen only / ... Is it still the case?
- I remember you did not have to ask permission for ... / you could do YY, XX at any time... Is it still the case?
- When and for doing what do you need permission from your parents or other adults?

**Password**

- What is a password? What is the use of a password?
- Do you need password to access a smartphone/ tablet/ game console/ laptop/ PC/ TV...? Do you need password to access a game? What kind of password, figures, or shape, words, digital print?
- if YES (***)
- Is the password new? Was it there before summer?

('Before summer' helps the child to picture him/herself back in time)

- Who has the password? You? Your parent? Your siblings? Your friend? Did you share it with them? How come they know it?
- Why is there a password there? What does it help?

(This question seeks to see if the child can feel or see a purpose of putting a password of access on a device. If yes, which one)

- if No (***)
- Did you ever have to use a password? If yes, when was it? Before summer? Before Christmas? When you were at kindergarten?
- Have you ever created a password? Did someone help you? Does someone know it? With whom would you share it?

**Help**

When do you need help with technology? What for? In what moments? Searching information online, installing apps, enter in a game ...

- Who do call for help? (Siblings, parents, grand-parents, friends, teacher...) Do they usually help? How? Do they help you by teaching/showing you what to do? Or they are just solving that problem to allow you to continue?
- Do you like this help?
- Since summer, did you help anyone with technology?

**Safety mediation**

Did you ever find yourself in a weird or uncomfortable situation with technology since summer?

[This question seeks to see if the child would like to report uneasy situation that they experienced with digital technology use like 'funny' videos or games, ... The reference in time since summer' is to help the child to picture him/herself in time.]

- If Yes,
- What did you do?
- What will you do if it happens again?
- Why these things happen?
- Since summer, did your mum or your dad talk with you about things that is better not to do with technology? of things you have to pay attention to while using technologies? Things that you have to report to them?

- Did you ever hear about that? From where? From whom? Did anyone else talk to you about that?
- [If computer virus were not mentioned yet ] Do you know what a computer virus is? Who told you, you remember? Do your computer ever get virus? What did you do?

[This set of question has been added on the suggestion of Rita. In Portugal children did not talked about this but we didn't and either! And in Norway this was largely mentioned for the children. Such question might help to understand if there is really a difference and why]

**Co-usage or not**

Do you use technology with your parents? Which devices? For which activity?

- Do you ask your parents to share this activity with them or do they come to you and propose this activity? Did you share this activity last week? How many times? Where were you? Did you share this activity before summer as well or is it new?
- When you use technology on your own or with other children (siblings, friends, cousins...). Where do you do that? Where are your parents (and other adults of the household) what do they do? Was this situation the same before summer or is it new?

**Rules - Time**

I remember you could play/ watch/ draw ... for XX (20 min, 1 hour... ) Is it still the case? Can you 'play' longer or play less? Do you feel that you 'play' more or less than before summer? Before last Christmas? Why do you think? (New rules? new activities? no more devices? new devices? request from school?)

- How can you tell that you have 'played' that time? Do you use a watch?
- What do you do if you want to 'play' more? (this will tell us how the rule is implemented)
- What happens if you complain about the rule?
- Was it like that before summer? Before Christmas?
- If you have to use technology for school are the rules still the same?
- I remember you did not have to ask permission for ... / you could do YY, XX at any time... Is it still the case?
- When and for doing what do you need permission from your parents or other adults?

**Rules - Space**

I remember you could/ could not play/ watch/ draw ... in the garden/ in your room/ at school/ at the restaurant... Is it still the case?

- If YES,
- Are you happy with this?
- Would you like it to be different?
- Do you think it will change next year or when you are older?
- If NO,
- So what happen? Could you use it now / or not anymore in XX? WHY so?
- Are you happy with this?
- Would you like it to be different?
- Do you think it will change next year or when you are older?
- Is this rule the same for you, for your siblings, your cousins, your friends ...? WHY?

**Rules - Social**

I remember you *Social rule* (like had to turn off technology when you had friends over or visits, or had to wash your hands before using technology ...). Is it still the case?

- If YES,
- Are you happy with this?
- Would you like it to be different?
- Do you think it will change next year or when you are older?
-
- If NO,
- So what happen? Could you use it now / or not anymore in XX? WHY so?
- Are you happy with this?
- Would you like it to be different?
- Do you think it will change next year or when you are older?
- Is this rule the same for you, for your siblings, your cousins, your friends ...? WHY?

---

5. Perceptions: the way they see digital technology, the same as before, different?

Card game and Smiley: categorization of activities and devices between like/neutral/do not like

- Why is this your favorite one?

- Why is this the one you like the less?

(Confronting the results with 1st interview)

- I remember it was not the same last time? Why so?

+ Ask the % coded questions if you have not before in the interview.

- Can you live without your favorite technology?

- I remember that you told me that digital technology could be bad for (eyes, brain, school,...). Do you think it still? Do you see other bad things now? Why? Did someone told you so? Whom? Did you experience something?

- I remember that you told me that digital technology could be good for (relax, play, homework. ....). Do you think that way still? Do you see other good things now? Why? Did someone tell you so? Whom? Did you experience something?

**Tips/Advices**

- What would be your advices/tips to other children for using technology at its best, having good time, avoiding bad time?

Imagine your perfect device (if enough time, ask drawings of it too)

- Do you know if your mum or dad had or could use your *favorite device* when they were your age?

- if NO,

- Why?

- What was their favorite toys? Do you know?

- if yes,

- Was it the same?

- What it their favorite device too? Do you know?

So now, to finish, imagine your perfect device

- What would it look like?

- What could it do?

- How big would it be?

- Would you share it? With whom? Why?

- Would you be ready to spend some money to buy it yourself?

Closing

# Annex 3

## Young children (0-8) and digital technology 2016: Second interview - Pre-Interview questionnaire How young children's use of Digital technology change overtime

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Dear participants,

We thank you very much for accepting to be part of this step further in our research. You have been contacted by one researcher / a team of two researchers from [NAME OF YOUR UNIVERSITY] which will conduct the interview with the family, at home, just as last time. As in the previous research, your participation along with the participation of other 215 European families helped us in having a cross-national picture of how families of your children use these technologies and what their opportunities and risks are.

Your participation to the first step of this study permitted already to improve knowledge on that field considerably as this study is among the first one in world on the topic looking at its cross-national dimensions.

We are now looking at how your perceptions, your usage and your skills change with time as family members, parents and child.

All families that have participated to the research are being contacted. Indeed we would like to be able to come back in your family for other interview so to be able to measure the change of perceptions, usage, skills with digital technology over time, parents and children. For this step we would like to know if you agree for another interview that will follow the same scheme of the last one (for about 2 hours) and to full fill in a short questionnaire before (+/- 30 min.). We are looking for a pool of (min. 5 families), we hope to be able to meeting you again and having you participating in this new step of research. Should the number of families willing to participate in [YOUR COUNTRY] be higher than (min. 5), only (min. 5) will be selected for the second interview based on the characteristics of the family so to ensure diversity of situations, important for the study.

The results will inform future research and policymakers on the benefits and challenges of young children's use of digital technology. By learning about the views, experiences and concerns of families, we hope to help create a better digital technology and education for our children.

## Pre-interview questionnaire

The following short questionnaire is meant to gather in a systematic and uniformed way in all participating families some information on which later on our interviewers will build on the interview.

Yours and your child's/children study-related information will be kept confidential, unless anonymized and used only for research purposes and scientific publications. Anonymization is a process that removes or replaces identity information from a communication or record.

Please complete the questionnaire for yourself and the child that was already interviewed in our previous research. This child (or children if they are twins) should be by now between 7 and 8 years old. We thank you beforehand for the time and insightful information you will offer us.

---

Family Code : _ _ _ _

Please report here the family code that has been given to you by the research team. It should be formed by two letters followed by two figures. Ex: RO05

---

Q1

Below, there are some digital technologies listed. For each, please indicate, whether it is present at home, owned by you or/and your children or the family as a shared tool. You can choose more than one option for each digital technology.

| | present at home | owned by myself | owned by my partner | owned by the child | owned by siblings | owned by family | do not have it at home |
|---|---|---|---|---|---|---|---|
| tablet (1) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| computer (2) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| laptop (3) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TV (4) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| smart TV (5) | | | | | | | |
| smartphone (6) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| game console (Wii, PS) (7) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| mobile game console (PSP) (8) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| smartwatch (8) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| other (9) (Smart toys, leapad, smartwatch, drones, ….) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Q2

Below, there are some digital technologies listed. For each, please indicate, whether it is used by you or/and your children. You can choose more than one option for each digital technology.

| | used by the children | used by myself | we do not use it |
|---|---|---|---|
| tablet (1) | ☐ | ☐ | ☐ |
| computer (2) | ☐ | ☐ | ☐ |
| laptop (3) | ☐ | ☐ | ☐ |
| TV (4) | ☐ | ☐ | ☐ |
| smart TV (5) | ☐ | ☐ | ☐ |
| smartphone (6) | ☐ | ☐ | ☐ |
| game console (Wii, Play Station) (7) | ☐ | ☐ | ☐ |
| mobile game console (DS, PSP) (8) | ☐ | ☐ | ☐ |
| other (9) (Smart toys, leappad, smartwatch, drones, ….) | ☐ | ☐ | ☐ |

Q3
Below, there are some digital technologies listed. For each, please indicate, where it is used (e.g. spaces that are shared, like living room, restaurant, waiting room, … or individual spaces like bedroom, treehouse, ...). Also, please indicate how it is co-used within your family (e.g. you and your partner, you and your child, etc.). You can choose more than one option for each digital technology.

| | where | | | with who | | |
|---|---|---|---|---|---|---|
| | shared spaces | individual spaces | alone | with child | with partner | together as a family |
| tablet (1) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| computer (2) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| laptop (3) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TV (4) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| smart TV (5) | | | | | | |
| smartphone (6) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| game console (Wii, Play Station) (7) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| mobile game console (DS, PSP) (8) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other (Smart toys, leappad, smartwatch, drones, ….) (9) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Q4. On the scale from 1 to 5, where 1 means not important at all, and five means very important, please evaluate the importance of digital technologies for you, your children and your family life in general. **How important are digital technologies** for the children, for you and for the family life? Please, choose only one option.

| How important are digital technologies for | not important at all (1) | not important (2) | moderately important (3) | important (4) | Very important (5) |
|---|---|---|---|---|---|
| the interviewed child (1) | ☐ | ☐ | ☐ | ☐ | ☐ |
| children (if it is the case) (2) | ☐ | ☐ | ☐ | ☐ | ☐ |
| you (3) | ☐ | ☐ | ☐ | ☐ | ☐ |
| your partner (4) | ☐ | ☐ | ☐ | ☐ | ☐ |
| family life (5) | ☐ | ☐ | ☐ | ☐ | ☐ |

Q5 Which aspects would you say that digital technologies bring in your family life? You can choose more than one option.

- ☐ Better family bonding
  - ☐ Keeps children quiet
  - ☐ Damage social bounds
  - ☐ Good reward-punishment strategy
  - ☐ Challenging
  - ☐ Provides moment to relax
  - ☐ Isolation between family members
  - ☐ As a part of a ritual (e.g. watching a movie before going to bed)
  - ☐ Boredom
  - ☐ Distracting
  - ☐ Useful to learn something
  - ☐ A solution to boredomness
- ☐ Quarrels, tensions between family members
- ☐ Overuse or addiction
- ☐ Better social bounds
- ☐ Neglecting offline activities
- ☐ Sustain imagination and creativity
- ☐ they make the children too pumped-up and stressed
- ☐ sustain parent/child shared interest and activities
- ☐ they make the level of sound in the house too loud
- ☐ answer to curiosity
- ☐ other _____

Q6 What is your child's favourite digital technology ?
Below, there are various digital technologies listed. Please, rank them according to their preference for your child, writing numbers from 1 to 3 in front of each digital technology, 1 meaning favourite one and 3 the least favorite.

1.
2.
3.

Please chose from this list :

- tablet (1)
- computer (2)
- laptop (3)
- TV (4)
- smart TV (5)
- smartphone (6)
- fixed game console (Wii, Play Station) (7)
- mobile game device (DS, PSP) (8)
- Other (Smart toys, leappad, smartwatch, drones, ….) (9)

Q7 There are some activities you can do with digital technologies listed below. On the scale from 1 to 5, where 1 means very bad and 5 means very good, please assess how **good YOU are** at these activities.

| | very bad (1) | bad (2) | Partially bad partially good (3) | good (4) | very good (5) |
|---|---|---|---|---|---|
| using digital media for school or work | ☐ | ☐ | ☐ | ☐ | ☐ |
| watching videos (YouTube, Vimeo,...) | ☐ | ☐ | ☐ | ☐ | ☐ |
| downloading music/films | ☐ | ☐ | ☐ | ☐ | ☐ |
| streaming music/films | | | | | |
| using social media (Facebook, Instagram, Snapchat,...) | ☐ | ☐ | ☐ | ☐ | ☐ |
| playing games | ☐ | ☐ | ☐ | ☐ | ☐ |
| downloading apps | ☐ | ☐ | ☐ | ☐ | ☐ |
| looking up information | ☐ | ☐ | ☐ | ☐ | ☐ |
| sending emails | ☐ | ☐ | ☐ | ☐ | ☐ |
| producing digital content (e.g. text, tables, images, video) | ☐ | ☐ | ☐ | ☐ | ☐ |
| making editing to content (images, video) | ☐ | ☐ | ☐ | ☐ | ☐ |
| taking steps to protect my devices (e.g. using anti-viruses,pass words, filters). | ☐ | ☐ | ☐ | ☐ | ☐ |
| taking steps to protect my data (e.g. using anti-viruses,pass words, filters). | ☐ | ☐ | ☐ | ☐ | ☐ |

Q8 There are some activities your child can do with digital technologies listed. On the scale from 1 to 5, where 1 means very bad and 5 means very good, please assess how good **your child** is at these activities .

| | very bad (1) | bad (2) | Partially bad partially good (3) | good (4) | very good (5) |
|---|---|---|---|---|---|
| using digital media for school | ☐ | ☐ | ☐ | ☐ | ☐ |
| watching videos (YouTube, Vimeo,...) | ☐ | ☐ | ☐ | ☐ | ☐ |
| downloading music/films | ☐ | ☐ | ☐ | ☐ | ☐ |
| streaming music/films | | | | | |
| using social media (Facebook, Instagram, Snapchat,...) | ☐ | ☐ | ☐ | ☐ | ☐ |
| playing games | ☐ | ☐ | ☐ | ☐ | ☐ |
| downloading apps | ☐ | ☐ | ☐ | ☐ | ☐ |
| looking up information | ☐ | ☐ | ☐ | ☐ | ☐ |
| sending emails | ☐ | ☐ | ☐ | ☐ | ☐ |
| producing digital content (e.g. text, tables, images, video) | ☐ | ☐ | ☐ | ☐ | ☐ |
| making editing to content (images, video) | ☐ | ☐ | ☐ | ☐ | ☐ |
| taking steps to protect his/her devices (e.g. using anti-viruses,pass words, filters). | ☐ | ☐ | ☐ | ☐ | ☐ |
| taking steps to protect his/her data (e.g. using anti-viruses,pass words, filters). | ☐ | ☐ | ☐ | ☐ | ☐ |

Q 9 From who did your child learn to use his/her favourite digital technology? You can select more than one option.

- ☐ school (1)
- ☐ friends (2)
- ☐ mother (3)
- ☐ father (4)
- ☐ siblings (5)
- ☐ grandparents (6)
- ☐ family (7)
- ☐ themselves (8)
- ☐ other (9) _____
- ☐ I do not know (10)

Q10 Which of the following things, if any, do you (or your partner/other carer) sometimes do?

| | yes (1) | no (2) | don't know (3) |
|---|---|---|---|
| talk to my child about what he/she does on digital technologies (1) | ☐ | ☐ | ☐ |
| sit by my child while he/she uses digital technologies (2) | ☐ | ☐ | ☐ |
| stay nearby my child while he/she uses digital technologies (3) | ☐ | ☐ | ☐ |
| use digital technology together, doing shared activities (4) | ☐ | ☐ | ☐ |
| encourage my child to explore and learn new things by using digital technologies on its own (5) | ☐ | ☐ | ☐ |
| use software or parental controls to filter, restrict or monitor the child's use (6) | ☐ | ☐ | ☐ |
| use of rules for parental controls to filter, restrict or monitor the child's use (7) | ☐ | ☐ | ☐ |
| use time limits or set particular moment of days only to restrict the child's use (8) | ☐ | ☐ | ☐ |
| propose alternative non digital activities to restrict the child's use (9) | ☐ | ☐ | ☐ |
| Supervise with regular checks the digital activities of my child (10) | ☐ | ☐ | ☐ |
| talk about the rules for parental controls to filter, restrict or monitor the child's use (11) | ☐ | ☐ | ☐ |

Q11 Under which conditions is your child CURRENTLY allowed to do these digital activities, or not?

| | can do this any time (1) | can only do this with permission or supervision (2) | can never do this (3) | don't know (4) |
|---|---|---|---|---|
| using digital media for school or work | ☐ | ☐ | ☐ | ☐ |
| watching videos (YouTube, Vimeo,...) | ☐ | ☐ | ☐ | ☐ |
| downloading music/films | ☐ | ☐ | ☐ | ☐ |
| streaming music/films | ☐ | ☐ | ☐ | ☐ |
| using social media (Facebook, Instagram, Snapchat,...) | ☐ | ☐ | ☐ | ☐ |
| playing games | ☐ | ☐ | ☐ | ☐ |
| downloading free apps | ☐ | ☐ | ☐ | ☐ |
| downloading paid apps | ☐ | ☐ | ☐ | ☐ |
| looking up information | ☐ | ☐ | ☐ | ☐ |
| sending emails | ☐ | ☐ | ☐ | ☐ |
| producing digital content (e.g. text, tables, images, video) | ☐ | ☐ | ☐ | ☐ |
| making editing to content (images, video) | ☐ | ☐ | ☐ | ☐ |
| taking steps to protect my devices (e.g. using anti-viruses,passwords, filters). | ☐ | ☐ | ☐ | ☐ |

Q12 About which of the following activities have you, your partner or another carer talked or explained/suggested things to your child in the last month?

| | yes (1) | no (2) | don't know (3) |
|---|---|---|---|
| social rules in using digital technology | ☐ | ☐ | ☐ |
| using digital media for school or work | ☐ | ☐ | ☐ |
| negative experiences of using digital technology(cyber-bullying, identity theft, ...) | ☐ | ☐ | ☐ |
| watching videos (YouTube, Vimeo,...) | ☐ | ☐ | ☐ |
| downloading music/films | ☐ | ☐ | ☐ |
| streaming music/films | ☐ | ☐ | ☐ |
| using social media (Facebook, Instagram, Snapchat,...) | ☐ | ☐ | ☐ |
| playing games | ☐ | ☐ | ☐ |
| downloading apps | ☐ | ☐ | ☐ |
| looking up information | ☐ | ☐ | ☐ |
| sending emails | ☐ | ☐ | ☐ |
| producing digital content (e.g. text, tables, images, video) | ☐ | ☐ | ☐ |
| making editing to content (images, video) | ☐ | ☐ | ☐ |
| taking steps to protect devices (e.g. using anti-viruses,passwords, filters). | ☐ | ☐ | ☐ |
| taking steps to protect data, privacy web reputation (e.g. using anti-viruses,passwords, filters). | ☐ | ☐ | ☐ |

Q13 What is your year of birth, your child's and your partner's year of birth?

| | mine (1) | my child's (2) | my partner's (3) |
|---|---|---|---|
| e.g 1965 (1) | | | |

Q14 What is your sex and your child's sex?

| | | |
|---|---|---|
| mine (1) | ☐ male (1) | ☐ female (2) |
| my child's (2) | ☐ male (1) | ☐ female (2) |

Q15 What is your nationality?

Q16 What is your mother tongue and what is your child's mother tongue?

| | mine (1) | my child's (2) |
|---|---|---|
| mother tongue? (1) | | |

Q17 Which school grade is attending your child ?

| | my child's |
|---|---|
| School year | |

Q18 Does your child know how to read and to write ?

| | Words (1) | Phrases (2) | Texts (3) | not at all |
|---|---|---|---|---|
| My child reads | | | | |
| My child writes | | | | |

Q19 What age are the children of the same household?

| | Sibling 1 (1) | Sibling 2 (2) | Sibling 3 (3) |
|---|---|---|---|
| e.g 1965 (1) | | | |

Q 20 Which statement best describes your current employment status?

- ☐ working (paid employee) (1)
- ☐ working (self-employed) (2)
- ☐ not working (looking for work) (3)
- ☐ not working (temporary layoff from a job) (4)
- ☐ not working (disabled) (5)
- ☐ not working (retired) (6)
- ☐ not working (other) (7) _____
- ☐ prefer not to answer (8)

Q 21 What is your perception about your total household income?

- ☐ far below average (1)
- ☐ somewhat below average (2)
- ☐ average (3)
- ☐ somewhat above average (4)
- ☐ far above average (5)
- ☐ prefer not to answer (6)

Q 22 Would you like to add something? Would like to tell us something?

Q 23 Would you like to ask something?

# Annex 4

## 0-8 All Sample Integrated 2014-2017 - BE Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BE2014 | B1 | B1m | High | | Latin | n/a | M | 40 | Tertiary | | / |
| BE2014 | B1 | B1f | High | | Latin | n/a | F | 41 | Tertiary | | / |
| **BE2014** | **B1** | **B1b6** | **High** | | **Latin** | **n/a** | **M** | **6** | **1st grade** | | **/** |
| BE2014 | B1 | B1g0 | High | | Latin | n/a | F | 0 | / | | / |
| BE2014 | B2 | B2m | Low | | Asian | n/a | F | 39 | High school | | / |
| BE2014 | B2 | B2b9 | Low | | Asian | n/a | M | 9 | 3rd grade | | / |
| **BE2014** | **B2** | **B2b8** | **Low** | | **Asian** | **n/a** | **M** | **8** | **2nd grade** | | **/** |
| BE2014 | B2 | B2b4 | Low | | Asian | n/a | M | 4 | Kindergarten | | / |
| BE2014 | B2 | B2bgm | Low | | Asian | n/a | F | 72 | | | / |
| BE2014 | B2 | B2bgf | Low | | Asian | n/a | M | 76 | | | / |
| BE2014 | B3 | B3m | High | | Caucasian | n/a | F | 37 | Tertiary | | / |
| BE2014 | B3 | B3f | High | | Caucasian | n/a | M | 41 | Tertiary | | / |
| **BE2014** | **B3** | **B3b6** | **High** | | **Caucasian** | **n/a** | **M** | **6** | **1st grade** | | **/** |
| BE2014 | B3 | B3b4 | High | | Caucasian | n/a | M | 4 | Kindergarten | | / |
| BE2014 | B4 | B4m | High | | Caucasian | n/a | F | 35 | Tertiary | | / |
| BE2014 | B4 | B4f | High | | Caucasian | n/a | M | 34 | Tertiary | | / |
| **BE2014** | **B4** | **B4g6** | **High** | | **Caucasian** | **n/a** | **F** | **6** | **1st grade** | | **/** |
| BE2014 | B4 | B4b4 | High | | Caucasian | n/a | M | 4 | Kindergarten | | / |
| BE2014 | B4 | B4g4 | High | | Caucasian | n/a | F | 4 | Kindergarten | | / |
| BE2014 | B5 | B5m | Low | | Asian | n/a | F | Unkr | None | | / |
| BE2014 | B5 | B5f | Low | | Asian | n/a | M | Unkr | None | | / |
| **BE2014** | **B5** | **B5b6** | **Low** | | **Asian** | **n/a** | **M** | **6** | **1st grade** | | **/** |
| BE2014 | B6 | B6m | High | | Caucasian | n/a | F | 36 | Tertiary | | / |
| BE2014 | B6 | B6f | High | | Caucasian | n/a | M | 40 | High school | | / |
| **BE2014** | **B6** | **B6g6** | **High** | | **Caucasian** | **n/a** | **F** | **6** | **1st grade** | | **/** |
| BE2014 | B6 | B6b2 | High | | Caucasian | n/a | M | 2 | / | | / |
| BE2014 | B7 | B7m | High | | Caucasian | n/a | F | 34 | Tertiary | | / |
| BE2014 | B7 | B7f | High | | Caucasian | n/a | M | 31 | High school | | / |
| **BE2014** | **B7** | **B7b7** | **High** | | **Caucasian** | **n/a** | **M** | **7** | **1st grade** | | **/** |
| BE2014 | B7 | B7b4 | High | | Caucasian | n/a | M | 4 | Kindergarten | | / |
| BE2014 | B8 | B8m | Low | | Caucasian | n/a | F | 37 | Tertiary | | / |
| **BE2014** | **B8** | **B8g6** | **Low** | | **Caucasian/A** | **n/a** | **F** | **6** | **2nd grade** | | **/** |
| BE2014 | B8 | B8g3 | Low | | Caucasian/Af | n/a | M | 3 | Kindergarten | | / |
| BE2014 | B9 | B9m | Low | | Caucasian | n/a | F | 30 | None | | / |
| BE2014 | B9 | B9f | Low | | Caucasian | n/a | M | 45 | None | | / |
| BE2014 | B9 | B9g5 | Low | | Caucasian | n/a | F | 5 | Kindergarten | | / |
| **BE2014** | **B9** | **B9g7** | **Low** | | **Caucasian** | **n/a** | **F** | **7** | **1st grade** | | **/** |
| BE2014 | B9 | B9?10 | Low | | Caucasian | n/a | Unk | 10 | Unknown | | / |
| BE2014 | B9 | B9g10 | Low | | Caucasian | n/a | F | 10 | Unknown | | / |
| BE2014 | B9 | B9b15 | Low | | Caucasian | n/a | M | 15 | Unknown | | / |
| BE2014 | B9 | B9b19 | Low | | Caucasian | n/a | M | 19 | Unknown | | / |
| BE2014 | B10 | B10m | High | | Caucasian | n/a | F | 38 | Tertiary | | / |
| BE2014 | B10 | B10f | High | | Caucasian | n/a | M | 38 | High school | | / |
| **BE2014** | **B10** | **B10g6** | **High** | | **Caucasian** | **n/a** | **F** | **6** | **1st grade** | | **/** |
| BE2014 | B10 | B10b9 | High | | Caucasian | n/a | M | 9 | 3rd grade | | / |

# 0-8 All Sample Integrated 2014-2017 - BE Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BE2015 | BE1 | BE1f49 | High | | Belgium | n/a | M | 49 | Secondary | | Independent IT'er |
| BE2015 | BE1 | BE1m45 | High | | Belgium | n/a | F | 45 | Secondary | | Independent shop owner |
| BE2015 | BE1 | BE1g9 | High | | Belgium | n/a | F | 9 | 5th Primary | | / |
| **BE2015** | **BE1** | **BE1g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE2 | BE2f55 | Low | | Belgium | n/a | M | 55 | Bachelor | | / |
| BE2015 | BE2 | BE2m39 | Low | | Belgium | n/a | F | 39 | Bachelor | | / |
| **BE2015** | **BE2** | **BE2g6** | **Low** | | **Belgium** | **n/a** | **F** | **6** | **1st Primary** | | **/** |
| BE2015 | BE3 | BE3f40 | High | | Tunisian | n/a | M | 40 | Master | | Full-time sales person |
| BE2015 | BE3 | BE3m39 | High | | Belgium | n/a | F | 39 | Bachelor | | Part-time Teacher |
| **BE2015** | **BE3** | **BE3b8** | **High** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE3 | BE3g4 | High | | Belgium | n/a | F | 4 | Kindergarten | | / |
| BE2015 | BE4 | BE4f36 | High | | Belgium | n/a | M | 36 | Master | | Full-time project manager |
| BE2015 | BE4 | BE4m37 | High | | Belgium | n/a | F | 37 | Bachelor | | Part-time employee |
| **BE2015** | **BE4** | **BE4b7** | **High** | | **Belgium** | **n/a** | **M** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE4 | BE4b5 | High | | Belgium | n/a | M | 5 | Kindergarten | | / |
| BE2015 | BE5 | BE5f39 | High | | Belgium | n/a | M | 39 | Bachelor | | Full-time employee |
| BE2015 | BE5 | BE5m40 | High | | Belgium | n/a | F | 40 | Bachelor | | Part-time speech therapist |
| BE2015 | BE5 | BE5b10 | High | | Belgium | n/a | M | 10 | 5th Primary | | / |
| **BE2015** | **BE5** | **BE5b8** | **High** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE5 | BE5b5 | High | | Belgium | n/a | M | 5 | Kindergarten | | / |
| BE2015 | BE6 | BE6f36 | High | | Belgium | n/a | M | 36 | Bachelor | | Full-time employee |
| BE2015 | BE6 | BE6m36 | High | | Belgium | n/a | F | 35 | Bachelor | | Full-time employee |
| **BE2015** | **BE6** | **BE6g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE6 | BE6g3 | High | | Belgium | n/a | F | 3 | Kindergarten | | / |
| BE2015 | BE7 | BE7m | Medium | | Belgium | n/a | F | / | Bachelor | | Part-time employee |
| **BE2015** | **BE7** | **BE7b8** | **Medium** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE7 | BE7g5 | Medium | | Belgium | n/a | F | 5 | Day care | | / |
| BE2015 | BE8 | BE8f39 | High | | Belgium | n/a | M | 39 | Master | | Full-time engineer |
| BE2015 | BE8 | Be8m38 | High | | Belgium | n/a | F | 38 | Master | | Part-time business leader youth film festival |
| BE2015 | BE8 | BE8b8 | High | | Belgium | n/a | M | 8 | 3th Primary | | / |
| **BE2015** | **BE8** | **BE8g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE9 | BE9m43 | High | | Belgium | n/a | F | 43 | / | | Career coach |
| **BE2015** | **BE9** | **BE9g8** | **High** | | **Belgium** | **n/a** | **F** | **8** | **3th Primary** | | **/** |
| BE2015 | BE10 | BE10f | Low | | Belgium | n/a | M | / | Primary | | / |
| BE2015 | BE10 | BE10gm70 | Low | | Belgium | n/a | F | 70 | Primary | | / |
| BE2015 | BE10 | BE10b9 | Low | | Belgium | n/a | M | 9 | 4th Primary | | / |
| **BE2015** | **BE10** | **BE10b7** | **Low** | | **Belgium** | **n/a** | **M** | **7** | **Kindergarten** | | **/** |

# 0-8 All Sample Integrated 2014-2017 - BE Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BE2015 | BE1 | BE1f49 | High | | Belgium | n/a | M | 49 | Secondary | | Independent IT'er |
| BE2015 | BE1 | BE1m45 | High | | Belgium | n/a | F | 45 | Secondary | | Independent shop owner |
| BE2015 | BE1 | BE1g9 | High | | Belgium | n/a | F | 9 | 5th Primary | | / |
| **BE2015** | **BE1** | **BE1g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE2 | BE2f55 | Low | | Belgium | n/a | M | 55 | Bachelor | | / |
| BE2015 | BE2 | BE2m39 | Low | | Belgium | n/a | F | 39 | Bachelor | | / |
| **BE2015** | **BE2** | **BE2g6** | **Low** | | **Belgium** | **n/a** | **F** | **6** | **1st Primary** | | **/** |
| BE2015 | BE3 | BE3f40 | High | | Tunisian | n/a | M | 40 | Master | | Full-time sales person |
| BE2015 | BE3 | BE3m39 | High | | Belgium | n/a | F | 39 | Bachelor | | Part-time Teacher |
| **BE2015** | **BE3** | **BE3b8** | **High** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE3 | BE3g4 | High | | Belgium | n/a | F | 4 | Kindergarten | | / |
| BE2015 | BE4 | BE4f36 | High | | Belgium | n/a | M | 36 | Master | | Full-time project manager |
| BE2015 | BE4 | BE4m37 | High | | Belgium | n/a | F | 37 | Bachelor | | Part-time employee |
| **BE2015** | **BE4** | **BE4b7** | **High** | | **Belgium** | **n/a** | **M** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE4 | BE4b5 | High | | Belgium | n/a | M | 5 | Kindergarten | | / |
| BE2015 | BE5 | BE5f39 | High | | Belgium | n/a | M | 39 | Bachelor | | Full-time employee |
| BE2015 | BE5 | BE5m40 | High | | Belgium | n/a | F | 40 | Bachelor | | Part-time speech therapist |
| BE2015 | BE5 | BE5b10 | High | | Belgium | n/a | M | 10 | 5th Primary | | / |
| **BE2015** | **BE5** | **BE5b8** | **High** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE5 | BE5b5 | High | | Belgium | n/a | M | 5 | Kindergarten | | / |
| BE2015 | BE6 | BE6f36 | High | | Belgium | n/a | M | 36 | Bachelor | | Full-time employee |
| BE2015 | BE6 | BE6m36 | High | | Belgium | n/a | F | 35 | Bachelor | | Full-time employee |
| **BE2015** | **BE6** | **BE6g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE6 | BE6g3 | High | | Belgium | n/a | F | 3 | Kindergarten | | / |
| BE2015 | BE7 | BE7m | Medium | | Belgium | n/a | F | / | Bachelor | | Part-time employee |
| **BE2015** | **BE7** | **BE7b8** | **Medium** | | **Belgium** | **n/a** | **M** | **8** | **4th Primary** | | **/** |
| BE2015 | BE7 | BE7g5 | Medium | | Belgium | n/a | F | 5 | Day care | | / |
| BE2015 | BE8 | BE8f39 | High | | Belgium | n/a | M | 39 | Master | | Full-time engineer |
| BE2015 | BE8 | Be8m38 | High | | Belgium | n/a | F | 38 | Master | | Part-time business leader youth film festival |
| BE2015 | BE8 | BE8b8 | High | | Belgium | n/a | M | 8 | 3th Primary | | / |
| **BE2015** | **BE8** | **BE8g7** | **High** | | **Belgium** | **n/a** | **F** | **7** | **2nd Primary** | | **/** |
| BE2015 | BE9 | BE9m43 | High | | Belgium | n/a | F | 43 | / | | Career coach |
| **BE2015** | **BE9** | **BE9g8** | **High** | | **Belgium** | **n/a** | **F** | **8** | **3th Primary** | | **/** |
| BE2015 | BE10 | BE10f | Low | | Belgium | n/a | M | / | Primary | | / |
| BE2015 | BE10 | BE10gm70 | Low | | Belgium | n/a | F | 70 | Primary | | / |
| BE2015 | BE10 | BE10b9 | Low | | Belgium | n/a | M | 9 | 4th Primary | | / |
| **BE2015** | **BE10** | **BE10b7** | **Low** | | **Belgium** | **n/a** | **M** | **7** | **Kindergarten** | | **/** |

# 0-8 All Sample Integrated 2014-2017 - BG Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BG2016 | BG04 | BG04m41 | Medium/+ | (*) | Bulgarian | (*) | F | 41 | Tertiary | (*) | Own business (children's parties & events) |
| BG2016 | BG04 | BG04f48 | Medium/+ | (*) | Bulgarian | (*) | M | 48 | Tertiary | (*) | Own business |
| **BG2016** | **BG04** | **BG04g8** | **Medium/+** | **(*)** | **Bulgarian** | **(*)** | **F** | **8** | **Primary school – first grade** | **(*)** | |
| **BG2016** | **BG04** | **BG04b8** | **Medium/+** | **(*)** | **Bulgarian** | **(*)** | **M** | **8** | **Primary school – first grade** | **(*)** | |
| BG2016 | BG04 | BG04b4 | Medium/+ | (*) | Bulgarian | (*) | M | 4 | Kindergarten | (*) | |
| BG2016 | BG05 | BG05m40 | Medium/- | (*) | Bulgarian | (*) | F | 40 | Tertiary | (*) | Office employee |
| **BG2016** | **BG05** | **BG05g8** | **Medium/-** | **(*)** | **Bulgarian** | **(*)** | **F** | **8** | **Primary school – second grade** | **(*)** | |
| BG2016 | BG07 | BG07m43 | Medium | (*) | Bulgarian | (*) | F | 43 | Tertiary | (*) | Accountant |
| BG2016 | BG07 | BG07b12 | Medium | (*) | Bulgarian | (*) | M | 12 | Primary school – sixth grade | (*) | |
| BG2016 | BG07 | BG07b10 | Medium | (*) | Bulgarian | (*) | M | 10 | Primary school – fourth grade | (*) | |
| **BG2016** | **BG07** | **BG07g7** | **Medium** | **(*)** | **Bulgarian** | **(*)** | **F** | **7** | **Primary school – first grade** | **(*)** | |
| BG2016 | BG09 | BG09m26 | Medium/- | (*) | Roma | (*) | F | 26 | Primary | (*) | Cleaning lady |
| BG2016 | BG09 | BG09f28 | Medium/- | (*) | Roma | (*) | M | 28 | Primary | (*) | Taxi driver |
| **BG2016** | **BG09** | **BG09b8** | **Medium/-** | **(*)** | **Roma** | **(*)** | **M** | **9** | **Primary school – second grade** | **(*)** | |
| BG2016 | BG09 | BG09g4 | Medium/- | (*) | Roma | (*) | F | 4 | Kindergarten | (*) | |
| BG2016 | BG10 | BG4m26 | Medium/- | (*) | Roma | (*) | F | 26 | Primary | (*) | Unemployed |
| BG2016 | BG10 | BG4f29 | Medium/- | (*) | Roma | (*) | M | 29 | Primary | (*) | Manual worker |
| **BG2016** | **BG10** | **BG4b8** | **Medium/-** | **(*)** | **Roma** | **(*)** | **M** | **9** | **Primary school – second grade** | **(*)** | |
| BG2016 | BG10 | BG4b6 | Medium/- | (*) | Roma | (*) | M | 6 | Preschool | (*) | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - BG Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BG2015 | BG01 | BG01f40 | Low | (*) | Bulgarian | (**) | m | 40 | Tertiary | | / |
| BG2015 | BG01 | BG01m40 | Low | (*) | Bulgarian | (**) | f | 40 | Tertiary | | / |
| **BG2015** | **BG01** | **BG01g6** | **Low** | **(*)** | **Bulgarian** | **(**)** | **f** | **6** | **Preschool** | | **/** |
| BG2015 | BG02 | BG02m36 | Low | (*) | Bulgarian | (**) | f | 36 | Tertiary | | / |
| **BG2015** | **BG02** | **BG02b7** | **Low** | **(*)** | **Bulgarian** | **(**)** | **m** | **7** | **Preschool** | | / |
| BG2015 | BG03 | BG03f40 | Low | (*) | Bulgarian | (**) | m | 40 | | | / |
| BG2015 | BG03 | BG03m33 | Low | (*) | Bulgarian | (**) | f | 33 | Secondary | | **/** |
| BG2015 | BG03 | BG03b10 | Low | (*) | Bulgarian | (**) | m | 10 | Primary school – third grade | | / |
| **BG2015** | **BG03** | **BG03b7** | **Low** | **(*)** | **Bulgarian** | **(**)** | **m** | **7** | **Primary school – first grade** | | / |
| BG2015 | BG03 | BG03g1 | Low | (*) | Bulgarian | (**) | f | 1 | Infant | | / |
| BG2015 | BG04 | BG04f48 | High | (*) | Bulgarian | (**) | m | 48 | | | / |
| BG2015 | BG04 | BG04m40 | High | (*) | Bulgarian | (**) | f | 40 | Tertiary | | / |
| **BG2015** | **BG04** | **BG04g7** | **High** | **(*)** | **Bulgarian** | **(**)** | **f** | **7** | **Preschool** | | **/** |
| **BG2015** | **BG04** | **BG04b7** | **High** | **(*)** | **Bulgarian** | **(**)** | **m** | **7** | **Preschool** | | / |
| BG2015 | BG04 | BG04b3 | High | (*) | Bulgarian | (**) | m | 3 | Kindergarten | | / |
| BG2015 | BG05 | BG05m39 | Low | (*) | Bulgarian | (**) | f | 39 | Tertiary | | / |
| **BG2015** | **BG05** | **BG05g7** | **Low** | **(*)** | **Bulgarian** | **(**)** | **f** | **7** | **Primary school – first grade** | | **/** |
| BG2015 | BG06 | BG06f40 | Medium | (*) | Bulgarian | (**) | m | 40 | | | / |
| BG2015 | BG06 | BG06m39 | Medium | (*) | Bulgarian | (**) | f | 39 | Tertiary | | / |
| BG2015 | BG06 | BG06g13 | Medium | (*) | Bulgarian | (**) | f | 13 | Secondary school | | / |
| **BG2015** | **BG06** | **BG06g8** | **Medium** | **(*)** | **Bulgarian** | **(**)** | **f** | **8** | **Primary school – second grade** | | / |
| BG2015 | BG06 | BG06b5 | Medium | (*) | Bulgarian | (**) | m | 5 | Kindergarten | | **/** |
| BG2015 | BG07 | BG07m42 | High | (*) | Bulgarian | (**) | f | 42 | Tertiary | | / |
| BG2015 | BG07 | BG07b11 | High | (*) | Bulgarian | (**) | m | 11 | Primary school – fifth grade | | / |
| BG2015 | BG07 | BG07b9 | High | (*) | Bulgarian | (**) | m | 9 | Primary school – third grade | | **/** |
| **BG2015** | **BG07** | **BG07g6** | **High** | **(*)** | **Bulgarian** | **(**)** | **f** | **6** | **Preschool** | | / |
| BG2015 | BG08 | BG08f35 | Low | (*) | Bulgarian | (**) | m | 35 | | | / |
| BG2015 | BG08 | BG08m35 | Low | (*) | Bulgarian | (**) | f | 35 | Tertiary | | / |
| BG2015 | BG08 | BG08g13 | Low | (*) | Bulgarian | (**) | f | 13 | Secondary school | | **/** |
| **BG2015** | **BG08** | **BG08g7** | **Low** | **(*)** | **Bulgarian** | **(**)** | **f** | **7** | **Primary school – first grade** | | / |
| BG2015 | BG08 | BG08b5 | Low | (*) | Bulgarian | (**) | m | 5 | Kindergarten | | / |
| BG2015 | BG09 | BG09f28 | Low | (*) | Roma | (**) | m | 28 | Primary | | **/** |
| BG2015 | BG09 | BG09m25 | Low | (*) | Roma | (**) | f | 25 | Primary | | / |
| **BG2015** | **BG09** | **BG09b7** | **Low** | **(*)** | **Roma** | **(**)** | **m** | **7** | **Primary school – second grade** | | / |
| BG2015 | BG09 | BG09g3 | Low | (*) | Roma | (**) | f | 3 | Kindergarten | | / |
| BG2015 | BG10 | BG10f30 | Low | (*) | Roma | (**) | m | 30 | Primary | | / |
| BG2015 | BG10 | BG10m25 | Low | (*) | Roma | (**) | f | 25 | Primary | | **/** |
| **BG2015** | **BG10** | **BG10b8** | **Low** | **(*)** | **Roma** | **(**)** | **m** | **8** | **Primary school – second grade** | | / |
| BG2015 | BG10 | BG10b5 | Low | (*) | Roma | (**) | m | 5 | Kindergarten | | / |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - CH Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CH2017 | CH01 | CH01m41 | Medium high | | Swiss | | f | 41 | Tertiary | | Information industry |
| CH2017 | CH01 | CH01f43 | Medium high | | Swiss | | m | 43 | Tertiary | | Entrepreneur in food service industry |
| **CH2017** | **CH01** | **CH01g9** | **Medium high** | | **Swiss** | | **f** | **9** | **2nd Primary (just started 3rd)** | | |
| CH2017 | CH01 | CH01b4 | Medium high | | Swiss | | m | 4 | Just started Kindergarten | | |
| CH2017 | CH02 | CH02m34 | Low | | German | | f | 36 | Tertiary | | Education |
| **CH2017** | **CH02** | **CH02b8** | **Low** | | **German** | | **m** | **8** | **2nd Primary (just started 3rd)** | | |
| CH2017 | CH05 | CH05m43 | Medium high | | Swiss/German | | f | 43 | Tertiary | | Health industry (self-employed) |
| **CH2017** | **CH05** | **CH05b7** | **Medium high** | | **Swiss/German** | | **m** | **7** | **1st Primary (just started 2nd)** | | |
| CH2017 | CH06 | CH06m34 | Low | | Swiss | | f | 34 | Tertiary (BSc) | | Student (MSc degree) and working in educatic |
| **CH2017** | **CH06** | **CH06g8** | **Low** | | **Swiss** | | **f** | **8** | **1st Primary (just started 2nd)** | | |
| CH2017 | CH07 | CH07m37 | Medium low | | Indian | | f | 37 | Tertiary (BSc) | | Health industry (currently out of job) |
| **CH2017** | **CH07** | **CH07g7** | **Medium low** | | **Swiss (Indian)** | | **f** | **7** | **1st Primary (just started 2nd)** | | |
| CH2017 | CH07 | CH07b10 | Medium low | | Swiss (Indian) | | m | 10 | 3rd Primary (just started1st Sec.) | | |
| CH2017 | CH07 | CH07b12 | Medium low | | Swiss (Indian) | | m | 12 | 2nd Secondary (just started 3rd) | | |

# 0-8 All Sample Integrated 2014-2017 - CH Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CH2016 | CH01 | CH01m40 | Medium high | | Swiss | | f | 40 | Tertiary | | Journalist |
| CH2016 | CH01 | CH01f43 | Medium high | | Swiss | | m | 42 | Tertiary | | Entrepreneur food service industry |
| **CH2016** | **CH01** | **CH01g7** | **Medium high** | | **Swiss** | | **f** | **7** | **1st Primary** | | |
| CH2016 | CH01 | CH01b3 | Medium high | | Swiss | | m | 3 | Forest play group | | |
| CH2016 | CH02 | CH02m35 | Medium high | | German | | f | 35 | Tertiary | | BA Linguistics (currently searching for a job) |
| CH2016 | CH02 | CH02f45 | Medium high | | German | | m | 45 | Tertiary | | Psychiatric nurse |
| **CH2016** | **CH02** | **CH02b7** | **Medium high** | | **German** | | **m** | **7** | **1st Primary** | | |
| CH2016 | CH03 | CH03m38 | Medium high | | German | | f | 38 | Tertiary | | Remedial teacher for mentally disabled |
| CH2016 | CH03 | CH03f41 | Medium high | | Swiss | | m | 41 | Secondary | | Video editor |
| **CH2016** | **CH03** | **CH03b6** | **Medium high** | | **Swiss/German** | | **m** | **6** | **Kindergarten (just started 1st Primary)** | | |
| CH2016 | CH03 | CH03g5 | Medium high | | Swiss/German | | f | 5 | Kindergarten | | |
| CH2016 | CH04 | CH04m36 | Medium low | | Swiss | | f | 36 | Tertiary | | Speech therapist |
| CH2016 | CH04 | CH04f52 | Medium low | | Swiss | | m | 52 | Secondary | | Carpenter (formerly Application developer) |
| **CH2016** | **CH04** | **CH04g7** | **Medium low** | | **Swiss** | | **f** | **7** | **Kindergarten (just started 1st Primary)** | | |
| CH2016 | CH04 | CH04g8 | Medium low | | Swiss | | f | 8 | 1st Primary | | |
| CH2016 | CH04 | CH04g4 | Medium low | | Swiss | | f | 4 | Kindergarten | | |
| CH2016 | CH05 | CH05m42 | Medium high | | Swiss/German | | f | 42 | Tertiary | | Medical Doctor |
| **CH2016** | **CH05** | **CH05b6** | **Medium high** | | **Swiss/German** | | **m** | **6** | **Kindergarten** | | |
| CH2016 | CH06 | CH06m32 | Low | | Swiss | | f | 32 | Tertiary (BSc) | | Student (MSc Social Work) |
| **CH2016** | **CH06** | **CH06g7** | **Low** | | **Swiss** | | **f** | **7** | **Kindergarten (just started 1st Primary)** | | |
| CH2016 | CH07 | CH07m36 | Medium low | | Indian | | f | 36 | Tertiary (BSc) | | Physiotherapist (currently out of job) |
| **CH2016** | **CH07** | **CH07g6** | **Medium low** | | **Swiss (Indian)** | | **f** | **6** | **Kindergarten (just started 1st Primary)** | | |
| CH2016 | CH07 | CH07b9 | Medium low | | Swiss (Indian) | | m | 9 | 2nd Primary (just started 3rd) | | |
| CH2016 | CH07 | CH07b11 | Medium low | | Swiss (Indian) | | m | 11 | 1st Secondary (just started 2nd) | | |
| CH2016 | CH08 | CH08m39 | High | | Swiss | | f | 39 | Secondary | | Worked in Finances. Now entrepreneur in the |
| CH2016 | CH08 | CH08f50 | High | | Swiss | | m | 50 | Tertiary | | Marketing Manager |
| **CH2016** | **CH08** | **CH08b7** | **High** | | **Swisss** | | **m** | **7** | **Kindergarten (just started 1st Primary)** | | |

# 0-8 All Sample Integrated 2014-2017 - CY Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CY2015 | CY1 | CY1m39 | High | | Cypriot | | F | 39 | Lyceum | | Housewife |
| CY2015 | CY1 | CY1f42 | High | | Cypriot | | M | 42 | Lyceum | | Builder |
| **CY2015** | **CY1** | **CY1b7** | **High** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY1 | CY1b3 | High | | Cypriot | | M | 3 | - | | |
| CY2015 | CY2 | CY2m38 | Medium | | Cypriot | | F | 38 | University | | X-Ray Specialist |
| CY2015 | CY2 | CY2f39 | Medium | | Cypriot | | M | 39 | University | | Unemployed |
| **CY2015** | **CY2** | **CY2b7** | **Medium** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY2 | CY2b4 | Medium | | Cypriot | | M | 4 | - | | |
| CY2015 | CY2 | CY2b2 | Medium | | Cypriot | | M | 2 | - | | |
| CY2015 | CY3 | CY3m35 | Low | | Cypriot | | F | 35 | University | | Kindergarten Teacher |
| CY2015 | CY3 | CY3f38 | Low | | Cypriot | | M | 38 | University | | Painter |
| **CY2015** | **CY3** | **CY3b7** | **Low** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY3 | CY3b4 | Low | | Cypriot | | M | 4 | | | |
| CY2015 | CY4 | CY4m40 | Low | | Cypriot | | F | 40 | University | | Nurse |
| CY2015 | CY4 | CY4f | Low | | Cypriot | | M | - | - | | |
| **CY2015** | **CY4** | **CY4b7** | **Low** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY4 | CY4b24 | Low | | Cypriot | | M | 24 | Lyceum | | |
| CY2015 | CY4 | CY4g17 | Low | | Cypriot | | F | 17 | Lyceum | | |
| CY2015 | CY4 | CY4g20 | Low | | Cypriot | | F | 20 | Lyceum | | |
| CY2015 | CY5 | CY5m36 | Medium | | Cypriot | | F | 36 | University | | Social Worker |
| CY2015 | CY5 | CY5f36 | Medium | | Cypriot | | M | 36 | University | | Police officer |
| **CY2015** | **CY5** | **CY5b7** | **Medium** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY5 | CY5g11 | Medium | | Cypriot | | F | 11 | 6th Primary School | | |
| CY2015 | CY5 | CY5g15 | Medium | | Cypriot | | F | 15 | 4 High School | | |
| CY2015 | CY6 | CY6m42 | High | | Cypriot | | F | 42 | University | | Teacher |
| CY2015 | CY6 | CY6f42 | High | | Cypriot | | M | 42 | University | | Teacher |
| **CY2015** | **CY6** | **CY6b7** | **High** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY6 | CY6b11 | High | | Cypriot | | M | 11 | 6th Primary School | | |
| CY2015 | CY6 | CY6g14 | High | | Cypriot | | F | 14 | 3rd High School | | |
| CY2015 | CY7 | CY7m31 | Low | | Cypriot | | F | 31 | University | | Nurse |
| CY2015 | CY7 | CY7f35 | Low | | Cypriot | | M | 35 | University | | Driver |
| **CY2015** | **CY7** | **CY7g7** | **Low** | | **Cypriot** | | **F** | **7** | **2nd Primary School** | | |
| CY2015 | CY8 | CY8m36 | Medium | | Cypriot | | F | 36 | University | | Drama teacher |
| CY2015 | CY8 | CY8f38 | Medium | | Cypriot | | M | 38 | University | | Salesman |
| **CY2015** | **CY8** | **CY8b7** | **Medium** | | **Cypriot** | | **M** | **7** | **2nd Primary School** | | |
| CY2015 | CY8 | CY8b5 | Medium | | Cypriot | | M | 5 | _ | | |
| CY2015 | CY8 | CY8g3 | Medium | | | | F | 3 | _ | | |
| CY2015 | CY9 | CY9m41 | Medium | | Cypriot | | F | 41 | University | | Bank executive |
| CY2015 | CY9 | CY9f44 | Medium | | Cypriot | | M | 44 | University | | Civil engineer |
| **CY2015** | **CY9** | **CY9b8** | **Medium** | | **Cypriot** | | **M** | **8** | **3rd primary school** | | |
| CY2015 | CY9 | CY9g10 | Medium | | Cypriot | | F | 11 | 6th Primary school | | |
| CY2015 | CY10 | CY10m33 | Low | | Cypriot | | F | 33 | College | | Unemployed |
| CY2015 | CY10 | CY10f33 | Low | | Cypriot | | M | 33 | Lyceum | | Unemployed |
| **CY2015** | **CY10** | **CY10b8** | **Low** | | **Cypriot** | | **M** | **8** | **3rd primary school** | | |

# 0-8 All Sample Integrated 2014-2017 - CZ Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CZ2014 | C1 | C1m | / | | / | | F | 35 | Apprenticeship | | |
| **CZ2014** | **C1** | **C1g7** | **/** | | **/** | | **F** | **7** | **2nd class of primary school** | | |
| CZ2014 | C1 | C1b1 | / | | / | | M | 1 | - | | |
| CZ2014 | C2 | C2f | / | | / | | M | 37 | University | | |
| CZ2014 | C2 | C2m | / | | / | | F | 39 | University | | |
| **CZ2014** | **C2** | **C2b7** | **/** | | **/** | | **M** | **7** | **2nd class of primary school** | | |
| CZ2014 | C2 | C2g6 | / | | / | | F | 6 | 1st class of primary school | | |
| CZ2014 | C3 | C3m | / | | / | | F | 35 | University | | |
| CZ2014 | C3 | C3f | / | | / | | M | 35 | University | | |
| **CZ2014** | **C3** | **C3b7** | **/** | | **/** | | **M** | **7** | **2nd class of primary school** | | |
| CZ2014 | C3 | C3b3 | / | | / | | M | 3 | - | | |
| CZ2014 | C4 | C4f | / | | / | | M | 38 | Apprenticeship | | |
| CZ2014 | C4 | C4m | / | | / | | F | 40 | University | | |
| **CZ2014** | **C4** | **C4b7** | **/** | | **/** | | **M** | **7** | **2nd class of primary school** | | |
| CZ2014 | C4 | C4g4 | / | | / | | F | 4 | - | | |
| CZ2014 | C4 | C4g20 | / | | / | | F | 20 | Secondary School | | |
| CZ2014 | C5 | C5f | / | | / | | M | 40 | Secondary School | | |
| CZ2014 | C5 | C5m | / | | / | | F | 41 | Secondary School | | |
| **CZ2014** | **C5** | **C5g7** | **/** | | **/** | | **f** | **7** | **2nd class of primary school** | | |
| CZ2014 | C5 | C5g5 | / | | / | | F | 5 | - | | |
| CZ2014 | C6 | C6m | / | | / | | F | 35 | Higher vocational school | | |
| CZ2014 | C6 | C6b9 | / | | / | | M | 9 | 3rd class of primary school | | |
| **CZ2014** | **C6** | **C6b7** | **/** | | **/** | | **M** | **7** | **2nd class of primary school** | | |
| CZ2014 | C7 | C7m | / | | / | | F | 39 | University | | |
| CZ2014 | C7 | C7f | / | | / | | M | 41 | University | | |
| CZ2014 | C7 | C7b9 | / | | / | | M | 9 | 4th class of primary school | | |
| **CZ2014** | **C7** | **C7b7** | **/** | | **/** | | **M** | **7** | **2nd class of primary school** | | |
| CZ2014 | C7 | C7g5 | / | | / | | F | 5 | - | | |
| CZ2014 | C7 | C7g0 | / | | / | | F | 0,5 | - | | |
| CZ2014 | C8 | C8f | / | | / | | M | 41 | University | | |
| CZ2014 | C8 | C8m | / | | / | | F | 40 | University | | |
| CZ2014 | C8 | C8b10 | / | | / | | M | 10 | 4th class of primary school | | |
| **CZ2014** | **C8** | **C8g7** | **/** | | **/** | | **F** | **7** | **2nd class of primary school** | | |
| CZ2014 | C8 | C8gf | / | | / | | M | 76 | University | | |
| CZ2014 | C9 | C9f | / | | / | | M | 37 | University | | |
| CZ2014 | C9 | C9m | / | | / | | F | 36 | University | | |
| **CZ2014** | **C9** | **C9b8** | **/** | | **/** | | **M** | **8** | **2nd class of primary school** | | |
| CZ2014 | C9 | C9g6 | / | | / | | F | 6 | 1st class of primary school | | |
| CZ2014 | C10 | C10m | / | | / | | F | 35 | University | | |
| **CZ2014** | **C10** | **C10g7** | **/** | | **/** | | **F** | **7** | **2nd class of primary school** | | |

# 0-8 All Sample Integrated 2014-2017 - DE Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DE2014 | G01 | G01m43 | Medium | | German | | F | 43 | High- and formally mid-level | | Part-time employee |
| DE2014 | G01 | G01f48 | Medium | | German | | M | 48 | | | Employee |
| **DE2014** | **G01** | **G01b5a** | **Medium** | | **German** | | **M** | **5** | | | |
| **DE2014** | **G01** | **G01b5b** | **Medium** | | **German** | | **M** | **5** | | | |
| DE2014 | G02 | G02m43 | Medium | | migration backgrc | | F | 43 | High- and formally mid-level | | Unemployed |
| DE2014 | G02 | G02f58 | Medium | | German | | M | 58 | High- and formally mid-level | | Employee |
| **DE2014** | **G02** | **G02b7** | **Medium** | | **German** | | **M** | **7** | **High- and formally mid-level** | | |
| **DE2014** | **G02** | **G02g7** | **Medium** | | **German** | | **F** | **7** | **High- and formally mid-level** | | |
| DE2014 | G03 | G03m33 | Medium | | German | | F | 33 | Formally mid-level | | Employee |
| DE2014 | G03 | G03f34 | Medium | | German | | M | 34 | Formally mid-level | | |
| **DE2014** | **G03** | **G03b4** | **Medium** | | **German** | | **M** | **4** | **Formally mid-level** | | |
| DE2014 | G04 | G04m32 | Medium | | German | | F | 32 | High- and formally mid-level | | Part-time employee |
| DE2014 | G04 | G04f33 | Medium | | German | | M | 33 | High- and formally mid-level | | Self-employed |
| **DE2014** | **G04** | **G04g3** | **Medium** | | **German** | | **F** | **3** | **High- and formally mid-level** | | |
| DE2014 | G04 | G04g1 | Medium | | German | | F | 1 | High- and formally mid-level | | |
| DE2014 | G05 | G05m38 | Medium + | | migration backgrc | | F | 38 | High-level | | Part-time employee |
| DE2014 | G05 | G05f40 | Medium + | | German | | M | 40 | High-level | | Employee |
| **DE2014** | **G05** | **G05g6** | **Medium +** | | **German** | | **F** | **6** | **High-level** | | |
| DE2014 | G05 | G05b4 | Medium + | | German | | M | 4 | High-level | | |
| DE2014 | G05 | G05g1 | Medium + | | German | | F | 1 | High-level | | |
| DE2014 | G06 | G06m34 | Medium | | German | | F | 34 | High- and formally mid-level | | Employee |
| DE2014 | G06 | G06f38 | Medium | | German | | M | 38 | High- and formally mid-level | | Employee |
| **DE2014** | **G06** | **G06b6** | **Medium** | | **German** | | **M** | **6** | **High- and formally mid-level** | | |
| DE2014 | G06 | G06g4 | Medium | | German | | F | 4 | High- and formally mid-level | | |
| DE2014 | G07 | G07m37 | Medium + | | German | | F | 37 | High-level | | Employee |
| DE2014 | G07 | G07f40 | Medium + | | German | | M | 40 | High-level | | Employee |
| DE2014 | G07 | G07b8 | Medium + | | German | | M | 8 | High-level | | |
| **DE2014** | **G07** | **G07g6** | **Medium +** | | **German** | | **F** | **7** | **High-level** | | |
| DE2014 | G08 | G08m30-40 | Medium + | | migration backgrc | | F | 30-4( | Formally mid-level | | Self-employed |
| DE2014 | G08 | G08f30-40 | Medium + | | migration backgrc | | M | 30-4( | Formally mid-level | | Self-employed |
| DE2014 | G08 | G08g5 | Medium + | | migration backgrc | | F | 5 | Formally mid-level | | |
| **DE2014** | **G08** | **G08g6** | **Medium +** | | **migration backgr** | | **F** | **6** | **Formally mid-level** | | |
| DE2014 | G09 | G09m46 | Medium | | German | | F | 46 | Formally mid-level | | Employee |
| **DE2014** | **G09** | **G09g4** | **Medium** | | **German** | | **F** | **4** | **Formally mid-level** | | |
| DE2014 | G10 | G10m30-40 | Medium + | | German | | F | 30-4( | High-level | | Elevated position |
| DE2014 | G10 | G10f30-40 | Medium + | | German | | M | 30-4( | High-level | | Elevated position |
| **DE2014** | **G10** | **G10b7** | **Medium +** | | **German** | | **M** | **7** | **High-level** | | |
| DE2014 | G10 | G10gm60-7 | Medium + | | German | | F | 60-7( | High-level | | |

# 0-8 All Sample Integrated 2014-2017 - DK Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DK2015 | DK1 | DK1f38 | Medium | | Danish | | m | 38 | Tertiary | | Team Leader at the local municipality |
| DK2015 | DK1 | DK1m40 | Medium | | Danish | | f | 40 | Tertiary | | Development Consultant at library |
| **DK2015** | **DK1** | **DK1g6** | **Medium** | | **Danish** | | **f** | **6** | **Primary** | | |
| DK2015 | DK1 | DK1b4 | Medium | | Danish | | m | 4 | Kindergarten | | |
| DK2015 | DK2 | DK2f34 | High | | Danish | | m | 34 | Tertiary | | Works with IT |
| DK2015 | DK2 | DK2m31 | High | | Danish | | f | 31 | Tertiary | | Lecturer |
| **DK2015** | **DK2** | **DK2b6** | **High** | | **Danish** | | **m** | **6** | **Primary** | | |
| DK2015 | DK2 | DK2b9 | High | | Danish | | m | 9 | Primary | | |
| DK2015 | DK3 | DK3f34 | Medium | | Danish | | m | 34 | Tertiary | | Insurance Controller |
| DK2015 | DK3 | DK3m32 | Medium | | Danish | | f | 32 | Tertiary | | Graduate in Human Nutrition |
| **DK2015** | **DK3** | **DK3g6** | **Medium** | | **Danish** | | **f** | **6** | **Primary** | | |
| DK2015 | DK3 | DK3g3 | Medium | | Danish | | f | 3 | Kindergarten | | |
| DK2015 | DK4 | DK4f37 | Medium | | Danish | | m | 37 | Tertiary | | Engineer |
| DK2015 | DK4 | DK4m35 | Medium | | Danish | | f | 35 | Tertiary | | Teacher |
| **DK2015** | **DK4** | **DK4b5** | **Medium** | | **Danish** | | **m** | **5** | **Primary** | | |
| DK2015 | DK4 | DK4b8 | Medium | | Danish | | m | 8 | Primary | | |
| DK2015 | DK5 | DK5f44 | High | | Danish | | m | 44 | Tertiary | | Chief of Communication at the Government |
| DK2015 | DK5 | DK5m36 | High | | Danish | | f | 36 | Tertiary | | Special Consultant at the Government |
| **DK2015** | **DK5** | **DK5g5** | **High** | | **Danish** | | **f** | **5** | **Primary** | | |
| DK2015 | DK6 | DK6f32 | Medium | | Danish | | m | 32 | Secondary | | Employee at SIEMENS |
| DK2015 | DK6 | DK6m32 | Medium | | Danish | | f | 32 | Tertiary | | Student |
| **DK2015** | **DK6** | **DK6g6** | **Medium** | | **Danish** | | **f** | **6** | **Primary** | | |
| DK2015 | DK6 | DK2g2 | Medium | | Danish | | f | 2 | Kindergarten | | |
| DK2015 | DK7 | DK7m33 | Medium | | Danish | | f | 33 | Tertiary | | Teacher |
| **DK2015** | **DK7** | **DK7b6** | **Medium** | | **Danish** | | **m** | **6** | **Primary** | | |
| DK2015 | DK8 | DK8f37 | Medium | | Danish | | m | 37 | Tertiary | | Innovation Employee at a Venue |
| **DK2015** | **DK8** | **DK8b6** | **Medium** | | **Danish** | | **m** | **6** | **Primary** | | |
| **DK2015** | **DK9** | **DK9g6** | **Medium** | | **Danish** | | **f** | **6** | **Primary** | | |
| DK2015 | DK9 | DK9m30 | Medium | | Danish | | f | 30 | Tertiary | | Health care consultant at municipality |
| DK2015 | DK9 | DK9sf28 | Medium | | Danish | | m | 28 | Tertiery | | Engineer |
| **DK2015** | **DK10** | **DK10b6** | **Medium** | | **Danish** | | **m** | **6** | **Primary** | | |
| DK2015 | DK10 | DK10g3 | Medium | | Danish | | f | 3 | Kindergarten | | |
| DK2015 | DK10 | DK10m35 | Medium | | Danish | | f | 35 | Tertiary | | Works with unemployed youth |
| DK2015 | DK10 | DK10m35 | Medium | | Danish | | f | 35 | Tertiary | | Works at a auction house |

# 0-8 All Sample Integrated 2014-2017 - ES Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ES2016 | ES3 | ES3m39/40 | Low | | Spanish | | f | 40 | University Degree | | Unemployed |
| **ES2016** | **ES3** | **ES3b7/9** | **Low** | | **Spanish** | | **m** | **9** | **4th grade in Primary Education** | | **-** |
| ES2016 | ES3 | ES3g5/6 | Low | | Spanish | | f | 6 | 1st grade in Primary Education | | - |
| ES2016 | ES5 | Es5f39 | Medium - | (*) | Spanish | (**) | m | 39 | Compulsory Secondary Education | (*) | No information |
| ES2016 | ES5 | Es5m37 | Medium - | (*) | Spanish | (**) | f | 37 | Master Degree | (*) | Administrative Assistant |
| **ES2016** | **ES5** | **Es5b6/8** | **Medium -** | **(*)** | **Spanish** | **(**)** | **m** | **8** | **Third grade in Primary Education** | **(*)** | **-** |
| ES2016 | ES5 | Es5g2a | Medium - | (*) | Spanish | (**) | f | 2 | Kindergarten | (*) | - |
| ES2016 | ES5 | Es5g2b | Medium - | (*) | Spanish | (**) | m | 2 | Kindergarten | (*) | - |
| ES2016 | ES13 | ES13m38/3 | Medium + | | Spanish | | f | 39 | Advanced Technical Training | | Administrative Assistant |
| ES2016 | ES13 | ES13f39/40 | Medium + | | Spanish | | m | 40 | Advanced Technical Training | | Chef |
| **ES2016** | **ES13** | **ES13g4/5** | **Medium +** | | **Spanish** | | **f** | **5** | **Kindergarten** | | **-** |
| ES2016 | ES13 | ES13b2/4 | Medium + | | Spanish | | m | 4 | Kindergarten | | - |
| ES2016 | ES9 | Es9f41 | Medium - | (**) | Spanish | (**) | m | 41 | Primary Education | (*) | Unemployed |
| ES2016 | ES9 | Es9m42 | No info | (**) | Spanish | (**) | f | 42 | No information | (*) | No information |
| ES2016 | ES9 | Es9sm42 | Medium - | (**) | Spanish | (**) | f | 42 | Secondary Education | (*) | Unemployed |
| **ES2016** | **ES9** | **Es9g7/9** | **Medium -** | **(**)** | **Spanish** | **(**)** | **g** | **9** | **3rd Grade Primary education** | **(*)** | **-** |
| ES2016 | ES9 | Es913/15 | Medium - | (**) | Spanish | (**) | b | 15 | 4th year in Secondary Education | (*) | - |
| ES2016 | ES9 | Es9sb20/22 | Medium - | (**) | Spanish | (**) | b | 22 | No information | (*) | - |
| ES2016 | ES9 | Es9ss16/18 | Medium - | (**) | Spanish | (**) | s | 18 | No information | (*) | - |
| ES2016 | ES9 | Es9sb9/11 | Medium - | (**) | Spanish | (**) | m | 11 | No information | (*) | - |
| ES2016 | ES10 | ES10f40/42 | High | (**) | Spanish | (**) | m | 42 | University Degree | (*) | Online Marketing Manager |
| ES2016 | ES10 | ES10f39/41 | High | (**) | Spanish | (**) | f | 41 | University Degree | (*) | School Teacher |
| **ES2016** | **ES10** | **ES10b6/8** | **High** | **(**)** | **Spanish** | **(**)** | **b** | **8** | **3rd grade Primary School** | **(*)** | **-** |
| ES2016 | ES10 | ES10b4/6 | High | (**) | Spanish | (**) | b | 6 | Last year of ECE | (*) | - |
| ES2016 | ES11 | ES11f40/42 | Not specif | (**) | Spanish | (**) | m | 42 | University Degree | (*) | Private sector and historian |
| ES2016 | ES11 | ES10f39/41 | High | (**) | Spanish | (**) | f | 41 | University Degree | (*) | Nursing |
| ES2016 | ES11 | ES11g7/9 | High | (**) | Spanish | (**) | g | 9 | 4th grade Primary Education | | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - ES Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ES2015 | ES1 | ES1f43 | High | | Spanish | | m | 43 | At least a university degree | | |
| ES2015 | ES1 | ES1m42 | High | | Spanish | | f | 42 | At least a university degree | | |
| ES2015 | ES1 | ES1b9 | High | | Spanish | | m | 9 | 4th grade of Primary Education | | |
| **ES2015** | **ES1** | **ES1b7** | **High** | | **Spanish** | | **m** | **7** | **2nd grade of Primary Education** | | |
| ES2015 | ES1 | ES1b5 | High | | Spanish | | m | 5 | Preschool | | |
| ES2015 | ES2 | ES2m49 | High | | Spanish | | f | 49 | Spanish Baccalaureate | | |
| **ES2015** | **ES2** | **ES2b6** | **High** | | **Spanish** | | **m** | **6** | **About to start the 1st grade of Primary Education** | | |
| ES2015 | ES3 | ES3m39 | Low | | Spanish | | f | 39 | University Degree | | |
| **ES2015** | **ES3** | **ES3b7** | **Low** | | **Spanish** | | **m** | **7** | **Completed the 1st grade of Primary Education** | | |
| ES2015 | ES3 | ES3g5 | Low | | Spanish | | f | 5 | Completed the final year of preschool | | |
| ES2015 | ES4 | ES4f46 | High | | Spanish | | m | 46 | PhD | | |
| ES2015 | ES4 | ES4m41 | High | | Spanish | | f | 41 | PhD | | |
| ES2015 | ES4 | ES4b9 | High | | Spanish | | m | 9 | Completed the 3rd grade of Primary Education | | |
| **ES2015** | **ES4** | **ES4b6** | **High** | | **Spanish** | | **m** | **6** | **Completed the 1st grade of Primary Education** | | |
| ES2015 | ES4 | ES4b2 | High | | Spanish | | m | 2 | Completed the first cycle of nursery school | | |
| ES2015 | ES5 | ES5f39 | Medium - | | Spanish | | m | 39 | Compulsory Secondary Education | | |
| ES2015 | ES5 | ES5m37 | Medium - | | Spanish | | f | 37 | Master Degree | | |
| **ES2015** | **ES5** | **ES5b6** | **Medium -** | | **Spanish** | | **m** | **6** | **Completed the first grade of Primary Education** | | |
| ES2015 | ES5 | ES5g2a | Medium - | | Spanish | | f | 2 | No schooling | | |
| ES2015 | ES5 | ES5g2b | Medium - | | Spanish | | f | 2 | No schooling | | |
| ES2015 | ES6 | ES6f41 | Medium - | | Spanish | | m | 41 | Compulsory Secondary Education | | |
| ES2015 | ES6 | ES6m41 | Medium - | | Spanish | | f | 41 | Compulsory Secondary Education | | |
| ES2015 | ES6 | ES6g9 | Medium - | | Spanish | | f | 9 | 3rd grade of Primary Education | | |
| **ES2015** | **ES6** | **ES6b7** | **Medium -** | | **Spanish** | | **m** | **7** | **1st grade of Primary Education** | | |
| ES2015 | ES7 | ES7f43 | Medium - | | Spanish | | m | 43 | University Degree | | |
| ES2015 | ES7 | ES7m49 | Medium - | | Spanish | | f | 49 | University Degree | | |
| **ES2015** | **ES7** | **ES7g6** | **Medium -** | | **Spanish** | | **f** | **6** | **1st grade of Primary Education** | | |
| ES2015 | ES7 | ES7b4 | Medium - | | Spanish | | m | 4 | 4th year in Early Childhood Education | | |
| ES2015 | ES8 | ES8f38 | High | | Peruvian | | m | 38 | University Degree | | |
| ES2015 | ES8 | ES8m40 | High | | Peruvian | | f | 40 | University Degree | | |
| **ES2015** | **ES8** | **ES8b7** | **High** | | **Spanish** | | **m** | **7** | **1st grade of Primary Education** | | |
| ES2015 | ES8 | ES8b3 | High | | Spanish | | m | 3 | Early Childhood Education | | |
| ES2015 | ES9 | ES9f41 | Medium - | | Spanish | | m | 41 | Primary Education | | |
| ES2015 | ES9 | ES9m42 | No info | | Spanish | | f | 42 | No information | | |
| ES2015 | ES9 | ES9sm42 | Medium - | | Spanish | | f | 42 | Secondary Education | | |
| **ES2015** | **ES9** | **ES9g7** | **Medium -** | | **Spanish** | | **f** | **7** | **2nd grade of Primary education** | | |
| ES2015 | ES9 | ES9b13 | Medium - | | Spanish | | m | 13 | 2nd year in Secondary Education | | |
| ES2015 | ES9 | ES9b20 | Medium - | | Spanish | | m | 20 | 4th year in Secondary Education | | |
| ES2015 | ES9 | ES9f16 | Medium - | | Spanish | | m | 16 | 4th year in Secondary Education | | |
| ES2015 | ES9 | ES9b9 | Medium - | | Spanish | | m | 9 | 4th grade of Primary Education | | |
| ES2015 | ES10 | ES10f40 | High | | Spanish | | m | 40 | University Degree | | |
| ES2015 | ES10 | ES10m39 | High | | Spanish | | f | 39 | University Degree | | |
| **ES2015** | **ES10** | **ES10b6** | **High** | | **Spanish** | | **m** | **6** | **1st grade of Primary Education** | | |
| ES2015 | ES10 | ES10b4 | High | | Spanish | | m | 4 | Early Childhood Education | | |
| ES2015 | ES11 | ES11f40 | Not specified | | Spanish | | m | 40 | University Degree | | |
| ES2015 | ES11 | ES11m39 | Not specified | | Spanish | | f | 39 | University Degree | | |
| **ES2015** | **ES11** | **ES11g7** | **Not specified** | | **Spanish** | | **f** | **7** | **2nd grade of Primary Education** | | |

# 0-8 All Sample Integrated 2014-2017 - FI Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F1m | | | | | | | | | |
| FI2014 | F1 | | not reported | | Finn | | f | | Completed university | | |
| FI2014 | F1 | F1f | not reported | | Finn | | m | | Completed university | | |
| **FI2014** | **F1** | **F1b7** | **not reported** | | **Finn** | | **m** | **7** | **Year 1** | | |
| FI2014 | F2 | F2m | Low | | Finn | | f | | Studying | | |
| FI2014 | F2 | F2f | Low | | Finn | | m | | Studying | | |
| FI2014 | F2 | F2og11 | Low | | Finn | | f | 11 | Year 5 | | |
| **FI2014** | **F2** | **F2g8** | **Low** | | **Finn** | | **f** | **8** | **Year2** | | |
| FI2014 | F3 | F3m | Medium | | Finn | | f | | Completed university of applied sciences | | |
| FI2014 | F3 | F3f | Medium | | Finn | | m | | Completed university of applied sciences | | |
| FI2014 | F3 | F3ob16 | Medium | | Finn | | m | 16 | Unknown | | |
| FI2014 | F3 | F3ob14 | Medium | | Finn | | m | 14 | Unknown | | |
| FI2014 | F3 | F3og13 | Medium | | Finn | | f | 13 | Unknown | | |
| FI2014 | F3 | F3ob10 | Medium | | Finn | | m | 10 | Unknown | | |
| **FI2014** | **F3** | **F3b7** | **Medium** | | **Finn** | | **m** | **7** | **Year 1** | | |
| FI2014 | F4 | F4m | Low | | Italian | | f | | Completed secondary | | |
| FI2014 | F4 | F4f | Low | | Italian | | m | | Completed vocational | | |
| FI2014 | F4 | F4og17 | Low | | Italian | | f | 17 | Unknown | | |
| FI2014 | F4 | F4og15 | Low | | Italian | | f | 15 | Unknown | | |
| FI2014 | F4 | F4ob14 | Low | | Italian | | m | 14 | Unknown | | |
| FI2014 | F4 | F4ob12 | Low | | Italian | | m | 12 | Unknown | | |
| FI2014 | F4 | F4ob10 | Low | | Italian | | m | 10 | Unknown | | |
| **FI2014** | **F4** | **F4g8** | **Low** | | **Italian** | | **f** | **8** | **Year 2** | | |
| **FI2014** | **F4** | **F4b6** | **Low** | | **Italian** | | **m** | **6** | **Kindergarten** | | |
| FI2014 | F4 | F4yg4 | Low | | Italian | | f | 4 | Unknown | | |
| FI2014 | F4 | F4yb3 | Low | | Italian | | m | 3 | Unknown | | |
| FI2014 | F4 | F4yb1 | Low | | Italian | | m | 1 | Unknown | | |
| FI2014 | F5 | F5m | High | | Finn | | f | | Completed university of applied sciences | | |
| FI2014 | F5 | F5f | High | | Finn | | m | | Completed vocational | | |
| **FI2014** | **F5** | **F5g7** | **High** | | **Finn** | | **f** | **7** | **Year 2** | | |
| FI2014 | F5 | F5g5 | High | | Finn | | f | 5 | Kindergarten | | |
| FI2014 | F6 | F6m | High | | Finn | | f | | Completed university | | |
| FI2014 | F6 | F6f | High | | Finn | | m | | Completed university | | |
| **FI2014** | **F6** | **F6b7** | **High** | | **Finn** | | **m** | **7** | **Year 2** | | |
| FI2014 | F6 | F6g5 | High | | Finn | | f | 5 | Kindergarten | | |
| FI2014 | F7 | F7m | High | | Finn | | f | 42 | Completed Bachelor's | | |
| FI2014 | F7 | F7f | High | | Finn | | m | 42 | Completed university | | |
| FI2014 | F7 | F7ob19 | High | | Finn | | m | 19 | Unknown | | |
| FI2014 | F7 | F7og17 | High | | Finn | | f | 17 | Unknown | | |
| FI2014 | F7 | F7ob9 | High | | Finn | | m | 9 | Year 4 | | |
| **FI2014** | **F7** | **F7g7** | **High** | | **Finn** | | **f** | **7** | **Year 2** | | |
| FI2014 | F8 | F8m | High | | Finn | | f | | Completed university of applied sciences | | |
| FI2014 | F8 | F8sf | High | | Finn | | m | | Unknown | | |
| FI2014 | F8 | F8og19 | High | | Finn | | f | 19 | Unknown | | |
| FI2014 | F8 | F8og18 | High | | Finn | | f | 18 | Unknown | | |
| FI2014 | F8 | F8og15 | High | | Finn | | f | 15 | Unknown | | |
| FI2014 | F8 | F8og12 | High | | Finn | | f | 12 | Year 7 | | |
| FI2014 | F8 | F8ob11 | High | | Finn | | m | 11 | Year 5 | | |
| **FI2014** | **F8** | **F8g7** | **High** | | **Finn** | | **f** | **7** | **Year 2** | | |
| FI2014 | F9 | F9m | not reported | | Finn | | f | 38 | Completed university | | |
| FI2014 | F9 | F9ob9 | not reported | | Finn | | m | 9 | Year 3 | | |
| **FI2014** | **F9** | **F9b7** | **not reported** | | **Finn** | | **m** | **7** | **Year 1** | | |
| FI2014 | F10 | F10f | Low | | Finn | | m | | Completed university | | |
| **FI2014** | **F10** | **F10g8** | **Low** | | **Finn** | | **f** | **8** | **Year 2** | | |
| FI2014 | F10 | F10g5 | Low | | Finn | | f | 5 | Kindergarten | | |

# 0-8 All Sample Integrated 2014-2017 - HR Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HR2016 | HR1 | HR1f37 | High | (*) | Croatian | (**) | F | 37 | Tertiary | (*) | Croatian language teacher |
| HR2016 | HR1 | HR1m37 | High | (*) | Croatian | (**) | M | 37 | Tertiary | (*) | Geography teacher |
| **HR2016** | **HR1** | **HR1b7** | **High** | **(*)** | **Croatian** | **(**)** | **M** | **7** | **1st Primary** | **(*)** | |
| HR2016 | HR1 | HR1b5 | High | (*) | Croatian | (**) | M | 5 | Kindergarten | (*) | |
| HR2016 | HR1 | HR1b2 | High | (*) | Croatian | (**) | M | 2 | Kindergarten | (*) | |
| HR2016 | HR2 | HR2m32 | Medium | (*) | Croatian | (**) | M | 32 | Secondary | (*) | Administrator/Delivery |
| HR2016 | HR2 | HR2f35 | Medium | (*) | Croatian | (**) | F | 35 | Tertiary | (*) | Lawyer |
| **HR2016** | **HR2** | **HR2g7** | **Medium** | **(*)** | **Croatian** | **(**)** | **F** | **7** | **1st Primary** | **(*)** | |
| HR2016 | HR2 | HR2g3 | Medium | (*) | Croatian | (**) | F | 3 | Kindergarten | (*) | |
| HR2016 | HR3 | HR3m41 | High | (*) | Croatian | (**) | M | 41 | Secondary | (*) | Electrician |
| HR2016 | HR3 | HR3f39 | High | (*) | Croatian | (**) | F | 39 | Secondary | (*) | Nurse |
| **HR2016** | **HR3** | **HR3b7** | **High** | **(*)** | **Croatian** | **(**)** | **M** | **7** | **1st Primary** | **(*)** | |
| HR2016 | HR5 | HR5m37 | Low | (*) | Croatian | (**) | M | 37 | Secondary | (*) | Turner |
| **HR2016** | **HR5** | **HR5g7** | **Low** | **(*)** | **Croatian** | **(**)** | **F** | **7** | **1st Primary** | **(*)** | |
| HR2016 | HR6 | HR6m44 | High | (*) | Croatian | (**) | M | 44 | University | (*) | Programmer |
| HR2016 | HR6 | HR6f42 | High | (*) | Croatian | (**) | F | 42 | University | (*) | Self-employed accountant |
| **HR2016** | **HR6** | **HR6g8** | **High** | **(*)** | **Croatian** | **(**)** | **F** | **8** | **3rd Primary** | **(*)** | |
| HR2016 | HR6 | HR6g13 | High | (*) | Croatian | (**) | F | 13 | 7th Primary | (*) | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - HR Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HR2015 | HR1 | HR1f36 | High | (*) | Croatian | (**) | F | 36 | Tertiary | (*) | Croatian language teacher |
| HR2015 | HR1 | HR1m36 | High | (*) | Croatian | (**) | M | 36 | Tertiary | (*) | Geography teacher |
| **HR2015** | **HR1** | **HR1b6** | **High** | **(*)** | **Croatian** | **(**)** | **M** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR1 | HR1b4 | High | (*) | Croatian | (**) | M | 4 | Kindergarten | (*) | |
| HR2015 | HR1 | HR1b1 | High | (*) | Croatian | (**) | M | 1 | Kindergarten | (*) | |
| HR2015 | HR2 | HR2m31 | Medium | (*) | Croatian | (**) | M | 31 | Secondary | (*) | Administrator/Delivery |
| HR2015 | HR2 | HR2f34 | Medium | (*) | Croatian | (**) | F | 34 | Tertiary | (*) | Lawyer |
| **HR2015** | **HR2** | **HR2g6** | **Medium** | **(*)** | **Croatian** | **(**)** | **F** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR2 | HR2g2 | Medium | (*) | Croatian | (**) | F | 2 | Kindergarten | (*) | |
| HR2015 | HR3 | HR3m40 | High | (*) | Croatian | (**) | M | 40 | Secondary | (*) | Electrician |
| HR2015 | HR3 | HR3f38 | High | (*) | Croatian | (**) | F | 38 | Secondary | (*) | Nurse |
| HR2015 | HR3 | HR3b6 | High | (*) | Croatian | (**) | M | 36 | Kindergarten | (*) | |
| HR2015 | HR4 | HR4m40 | Medium | (*) | Croatian | (**) | M | 40 | Secondary | (*) | Electrician |
| HR2015 | HR4 | HR4f37 | Medium | (*) | Croatian | (**) | F | 37 | Secondary | (*) | Administrator |
| **HR2015** | **HR4** | **HR4g6** | **Medium** | **(*)** | **Croatian** | **(**)** | **F** | **6** | **1st Primary** | **(*)** | |
| HR2015 | HR4 | HR4g9 | Medium | (*) | Croatian | (**) | F | 9 | 2nd Primary | (*) | |
| HR2015 | HR5 | HR5m36 | Low | (*) | Croatian | (**) | M | 36 | Secondary | (*) | Turner |
| **HR2015** | **HR5** | **HR5g6** | **Low** | **(*)** | **Croatian** | **(**)** | **F** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR6 | HR6m43 | High | (*) | Croatian | (**) | N | 43 | University | (*) | Programmer |
| HR2015 | HR6 | HR6f41 | High | (*) | Croatian | (**) | F | 41 | University | (*) | Self-employed accountant |
| **HR2015** | **HR6** | **HR6g7** | **High** | **(*)** | **Croatian** | **(**)** | **F** | **7** | **2nd Primary** | **(*)** | |
| HR2015 | HR6 | HR6g12 | High | (*) | Croatian | (**) | F | 12 | 6nd Primary | (*) | |
| HR2015 | HR7 | HR7f46 | Low | (*) | Croatian | (**) | F | 46 | Secondary | (*) | Singer |
| HR2015 | HR7 | HR7m47 | Low | (*) | Croatian | (**) | M | 47 | Secondary | (*) | Deliverer |
| **HR2015** | **HR7** | **HR7g6** | **Low** | **(*)** | **Croatian** | **(**)** | **F** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR7 | HR7b17 | Low | (*) | Croatian | (**) | M | 17 | 3th Secondary | (*) | |
| HR2015 | HR7 | HR7g20 | Low | (*) | Croatian | (**) | M | 20 | Student | (*) | |
| HR2015 | HR8 | HR8m30 | Low | (*) | Croatian | (**) | M | 30 | Primary | (*) | Unemployed |
| HR2015 | HR8 | HR8f28 | Low | (*) | Croatian | (**) | F | 28 | Primary | (*) | Unemployed |
| **HR2015** | **HR8** | **HR8b6** | **Low** | **(*)** | **Croatian** | **(**)** | **M** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR8 | HR8b9 | Low | (*) | Croatian | (**) | M | 9 | 3rd Primary | (*) | |
| HR2015 | HR8 | HR8b10 | Low | (*) | Croatian | (**) | M | 10 | 4th Primary | (*) | |
| HR2015 | HR9 | HR9f36 | Medium | (*) | Croatian | (**) | F | 36 | Tertiary | (*) | Economist |
| HR2015 | HR9 | HR9m38 | Medium | (*) | Croatian | (**) | M | 38 | Secondary | (*) | Deminer |
| **HR2015** | **HR9** | **HR9b6** | **Medium** | **(*)** | **Croatian** | **(**)** | **M** | **6** | **Kindergarten** | **(*)** | |
| HR2015 | HR9 | HR9g2 | Medium | (*) | Croatian | (**) | F | 2 | Kindergarten | (*) | |
| HR2015 | HR10 | HR10m45 | Low | (*) | Croatian | (**) | M | 45 | Secondary | (*) | Electrician |
| HR2015 | HR10 | HR10f34 | Low | (*) | Croatian | (**) | F | 34 | Secondary | (*) | Saleswomen |
| **HR2015** | **HR10** | **HR10b7** | **Low** | **(*)** | **Croatian** | **(**)** | **M** | **7** | **1st Primary** | **(*)** | |
| HR2015 | HR10 | HR10b1 | Low | (*) | Croatia | (**) | M | 1 | Kindergarten | (*) | |
| HR2015 | HR10 | HR10gm76 | Low | (*) | Croatian | (**) | M | 76 | Secondary | (*) | Retired |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - IT Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| IT2014 | I1 | I1f | High | | Italian | | m | 42 | Tertiary | | |
| IT2014 | I1 | I1m | High | | Italian | | f | 38 | Tertiary | | |
| **IT2014** | **I1** | **I1og** | **High** | | **Italian** | | **f** | **7** | **2nd Primary** | | |
| IT2014 | I1 | I1yg | High | | Italian | | f | 3 | Kindergarten | | |
| IT2014 | I2 | I1f | Low | | Italian | | m | 41 | Secondary | | |
| IT2014 | I2 | I2m | Low | | Italian | | m | 38 | Secondary | | |
| **IT2014** | **I2** | **I2og** | **Low** | | **Italian** | | **f** | **6** | **2nd Primary** | | |
| IT2014 | I2 | I2yg | Low | | Italian | | f | 5 | Kindergarten | | |
| IT2014 | I3 | I3m | High | | Italian | | m | 39 | Tertiary | | |
| IT2014 | I3 | I3f | High | | Italian | | f | 38 | Tertiary | | |
| **IT2014** | **I3** | **I3og** | **High** | | **Italian** | | **f** | **7** | **2nd Primary** | | |
| IT2014 | I3 | I3yg | High | | Italian | | f | 4 | Kindergarten | | |
| IT2014 | I4 | I4m | Medium | | Italian | | m | 44 | Tertiary | | |
| IT2014 | I4 | I4f | Medium | | Italian | | f | 41 | Tertiary | | |
| **IT2014** | **I4** | **I4ob** | **Medium** | | **Italian** | | **m** | **7** | **2nd Primary** | | |
| IT2014 | I4 | I4yb | Medium | | Italian | | m | 5 | Kindergarten | | |
| IT2014 | I4 | I4yg | Medium | | Italian | | f | 2 | Nursery | | |
| IT2014 | I5 | I5f | Medium | | Italian | | m | 41 | Secondary | | |
| IT2014 | I5 | I5m | Medium | | Italian | | f | 41 | Secondary | | |
| **IT2014** | **I5** | **I5og** | **Medium** | | **Italian** | | **f** | **7** | **2nd Primary** | | |
| IT2014 | I5 | I5yg | Medium | | Italian | | f | 4 | Kindergarten | | |
| IT2014 | I6 | I6f | Medium | | Italian | | m | 39 | Tertiary | | |
| IT2014 | I6 | I6m | Medium | | Italian | | f | 41 | Secondary | | |
| **IT2014** | **I6** | **I6ob** | **Medium** | | **Italian** | | **m** | **7** | **2nd Primary** | | |
| IT2014 | I6 | I6yg | Medium | | Italian | | f | 5 | Kindergarten | | |
| IT2014 | I7 | I7f | High | | Italian | | m | 42 | Tertiary | | |
| IT2014 | I7 | I7m | High | | Italian | | f | 48 | Tertiary | | |
| **IT2014** | **I7** | **I7ob** | **High** | | **Italian** | | **m** | **7** | **2nd Primary** | | |
| IT2014 | I7 | I7yb | High | | Italian | | m | 2 | baby sitter at home | | |
| IT2014 | I7 | I7yg | High | | | | f | 2 | baby sitter at home | | |
| IT2014 | I8 | I8f | Medium | | Italian | | m | 53 | Secondary | | |
| IT2014 | I8 | I8m | Medium | | Brazilian | | f | 35 | Secondary | | |
| IT2014 | I8 | I8ob | Medium | | Italian | | m | 12 | 2nd Lower Secondary | | |
| **IT2014** | **I8** | **I8yg** | **Medium** | | **Italian** | | **f** | **7** | **2nd Primary** | | |
| IT2014 | I9 | I9f | High | | Italian | | m | 50 | Tertiary | | |
| IT2014 | I9 | I9m | High | | Italian | | f | 48 | Tertiary | | |
| IT2014 | I9 | I9ob | High | | Italian | | m | 10 | 5 Primary | | |
| **IT2014** | **I9** | **I9yb** | **High** | | **Italian** | | **m** | **7** | **2nd Primary** | | |
| **IT2014** | **I9** | **I9yg** | **High** | | **Italian** | | **f** | **7** | **2nd Primary** | | |
| IT2014 | I10 | I10f | High | | Italian | | m | 46 | Tertiary | | |
| IT2014 | I10 | I10m | High | | Italian | | f | 41 | Tertiary | | |
| **IT2014** | **I10** | **I10g** | **High** | | **Italian** | | **f** | **7** | **2nd Primary** | | |

# 0-8 All Sample Integrated 2014-2017 - LT Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LT2017 | LT1 | LT1m40 | Medium | | Lithuanian | | f | 40 | Tertiary | | University teacher |
| LT2017 | LT1 | LT1f43 | Medium | | Lithuanian | | m | 43 | Tertiary | | Lawyer |
| **LT2017** | **LT1** | **LT1b8** | **Medium** | | **Lithuanian** | | **m** | **8** | **1st Primary** | | |
| LT2017 | LT2 | LT2m41 | Medium | | Lithuanian | | f | 41 | Tertiary | | Lecturer |
| LT2017 | LT2 | LT2f38 | Medium | | Lithuanian | | m | 38 | Tertiary | | Military |
| **LT2017** | **LT2** | **LT2b7** | **Medium** | | **Lithuanian** | | **m** | **7** | **1st Primary** | | |
| LT2017 | LT2 | LT2 g10 | Medium | | Lithuanian | | f | 10 | 4th Primary | | |
| LT2017 | LT2 | LT2b13 | Medium | | Lithuanian | | m | 13 | Secondary | | |
| LT2017 | LT3 | LT3m34 | High | | Lithuanian | | f | 34 | Tertiary | | Businessman |
| LT2017 | LT3 | LT3f38 | High | | Lithuanian | | m | 38 | Tertiary | | Dance studio owner |
| **LT2017** | **LT3** | **LT3b2** | **High** | | **Lithuanian** | | **m** | **2** | | | |
| **LT2017** | **LT3** | **LT3b3** | **High** | | **Lithuanian** | | **m** | **3** | | | |
| LT2017 | LT4 | LT4m42 | Medium | | Lithuanian | | f | 42 | Tertiary | | Administrative worker |
| LT2017 | LT4 | LT4f45 | Medium | | Lithuanian | | m | 45 | Tertiary | | Engineer, researcher |
| **LT2017** | **LT4** | **LT4b8** | **Medium** | | **Lithuanian** | | **m** | **8** | **2nd Primary** | | |
| LT2017 | LT4 | LT4b4 | Medium | | Lithuanian | | m | 4 | Kindergarten | | |
| LT2017 | LT5 | LT5m41 | Medium | | Lithuanian | | f | 44 | Tertiary | | Lecturer |
| LT2017 | LT5 | LT5f43 | Medium | | Lithuanian | | m | 41 | Tertiary | | Engineer |
| **LT2017** | **LT5** | **LT5g7** | **Medium** | | **Lithuanian** | | **f** | **7** | **Kindergarten** | | |
| LT2017 | LT5 | LT5b10 | Medium | | Lithuanian | | m | 10 | 3rd Primary | | |
| LT2017 | LT5 | LT5gm66 | Medium | | Lithuanian | | f | 66 | Tertiary /Retired | | |
| LT2017 | LT5 | LT5gf66 | Medium | | Lithuanian | | m | 66 | Tertiary /Retired | | Part-time consulting |
| LT2017 | LT6 | LT6m34 | Medium | | Lithuanian | | f | 34 | Tertiary | | Staff manager |
| LT2017 | LT6 | LT6f39 | Medium | | Lithuanian | | m | 39 | Tertiary | | Computer programmer |
| **LT2017** | **LT6** | **LT6b7** | **Medium** | | **Lithuanian** | | **m** | **7** | **1st Primary** | | |
| LT2017 | LT6 | LT6g6 | Medium | | Lithuanian | | f | 6 | Kindergarten | | |
| LT2017 | LT7 | LT7m46 | High | | Lithuanian | | f | 46 | Tertiary | | Staff director |
| LT2017 | LT7 | LT7f52 | High | | Lithuanian | | m | 52 | Tertiary | | Company owner |
| **LT2017** | **LT7** | **LT7g8** | **High** | | **Lithuanian** | | **f** | **8** | **1st Primary** | | |
| LT2017 | LT7 | LT7g4 | High | | Lithuanian | | f | 4 | Kindergarten | | |
| LT2017 | LT8 | LT8m36 | Medium | | Lithuanian | | f | 36 | Tertiary | | Accountant |
| LT2017 | LT8 | LT8f38 | Medium | | Lithuanian | | m | 38 | Tertiary | | Pilot |
| **LT2017** | **LT8** | **LT8b8** | **Medium** | | **Lithuanian** | | **m** | **8** | **1st primary** | | |
| LT2017 | LT9 | LT9m30 | Medium | | Lithuanian | | f | 30 | Tertiary | | Manicurist |
| LT2017 | LT9 | LT9f30 | Medium | | Lithuanian | | m | 30 | Tertiary | | Computer specialist |
| **LT2017** | **LT9** | **LT9b4** | **Medium** | | **Lithuanian** | | **m** | **4** | **Kindergarten** | | |
| LT2017 | LT10 | LT10m44 | Medium | | Lithuanian | | f | 44 | Tertiary | | Lecturer |
| **LT2017** | **LT10** | **LT10b5** | **Medium** | | **Lithuanian** | | **m** | **5** | **Kindergarten** | | |
| LT2017 | LT10 | LT10gm65 | Low | | Lithuanian | | f | 65 | Retired | | |

# 0-8 All Sample Integrated 2014-2017 - LV Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LV2015 | LV1 | LV1m35 | Low | | Latvian | | f | 35 | Tertiary | | Army officer |
| LV2015 | LV1 | LV1f37 | Low | | Latvian | | m | 37 | Tertiary | | Army officer |
| **LV2015** | **LV1** | **LV1g7** | **Low** | | **Latvian** | | **f** | **7** | **Kindergarten (no school experience)** | | |
| LV2015 | LV1 | LV1b1 | Low | | Latvian | | m | 1 | | | |
| LV2015 | LV2 | LV2m28 | Low | | Latvian | | f | 28 | Secondary | | Assistant of kindergarten teacher |
| LV2015 | LV2 | LV2f27 | Low | | Latvian | | m | 27 | Secondary | | Carpenter |
| **LV2015** | **LV2** | **LV2b6** | **Low** | | **Latvian** | | **m** | **6** | **Kindergarten (no school experience)** | | |
| LV2015 | LV2 | LV2b2 | Low | | Latvian | | m | 2 | Attending kindergarten | | |
| LV2015 | LV3 | LV3m39 | Low | | Latvian | | f | 39 | Secondary (vacational) | | Manicure |
| **LV2015** | **LV3** | **LV3g7** | **Low** | | **Latvian** | | **f** | **7** | **1st Primary** | | |
| LV2015 | LV3 | LV3g20 | Low | | Latvian | | f | 20 | Secondary | | |
| LV2015 | LV3 | LV3gm65 | Low | | Latvian | | f | | | | Inspector of social department |
| LV2015 | LV4 | LV4m49 | Low | | Latvian | | f | 49 | Tertiary | | Specialist of client's service |
| LV2015 | LV4 | LV4f51 | Low | | Latvian | | m | 51 | Secondary (vacational) | | Carpenter |
| **LV2015** | **LV4** | **LV4g7** | **Low** | | **Latvian** | | **f** | **7** | **Kindergarten (no school experience)** | | |
| LV2015 | LV4 | LV4g9 | Low | | Latvian | | f | 9 | 2nd Primary | | |
| LV2015 | LV4 | LV4gm79 | Low | | Latvian | | f | | | | pensioner |
| LV2015 | LV5 | LV5m31 | Low | | Latvian | | f | 31 | Tertiary | | |
| LV2015 | LV5 | LV5f35 | Low | | Latvian | | m | 35 | Secondary | | |
| **LV2015** | **LV5** | **LV5g7** | **Low** | | **Latvian** | | **f** | **7** | **Kindergarten (no school experience)** | | |
| LV2015 | LV6 | LV6m31 | High | | Latvian | | f | 31 | Tertiary | | |
| LV2015 | LV6 | LV6f33 | High | | Latvian | | m | 33 | Tertiary | | Economics |
| **LV2015** | **LV6** | **LV6b6** | **High** | | **Latvian** | | **m** | **6** | **Kindergarten (no school experience)** | | |
| LV2015 | LV6 | LV6b2 | High | | Latvian | | m | 2 | Attending kindergarten | | |
| LV2015 | LV7 | LV7m46 | High | | Latvian | | f | 46 | Tertiary | | Law, Philology |
| LV2015 | LV7 | LV7f43 | High | | Latvian | | m | 43 | Latvian | | Economics |
| **LV2015** | **LV7** | **LV7g6** | **High** | | **Latvian** | | **f** | **6** | **Kindergarten (no school experience)** | | |
| LV2015 | LV7 | LV7b9 | High | | Latvian | | m | 9 | 3rd Primary | | |
| LV2015 | LV8 | LV8m32 | High | | Latvian | | f | 32 | Tertiary | | Pedagogy, stewardess |
| LV2015 | LV8 | LV8f34 | High | | Latvian | | m | 34 | Tertiary (vacational) | | Ingeneering |
| **LV2015** | **LV8** | **LV8b6** | **High** | | **Latvian** | | **m** | **6** | **Kindergarten (no school experience)** | | |
| LV2015 | LV9 | LV9m35 | High | | Latvian | | f | 35 | Secondary | | |
| LV2015 | LV9 | LV9f50 | High | | Latvian | | m | 50 | Tertiary | | Engineer |
| **LV2015** | **LV9** | **LV9g6** | **High** | | **Latvian** | | **f** | **6** | **Kindergarten (no school experience)** | | |
| LV2015 | LV9 | LV9b9 | High | | Latvian | | m | 9 | 3rd Primary | | |
| LV2015 | LV10 | LV10m39 | Low | | Latvian | | f | 39 | Tertiary | | Chef |
| LV2015 | LV10 | LV10f44 | Low | | Latvian | | m | 44 | Tertiary | | Insurance business |
| **LV2015** | **LV10** | **LV10g7** | **Low** | | **Latvian** | | **f** | **7** | **Kindergarten (no school experience)** | | |
| LV2015 | LV10 | LV10b10 | Low | | Latvian | | m | 10 | 4th Primary | | |
| LV2015 | LV10 | LV10g13 | Low | | Latvian | | f | 13 | 7th Primary | | |

# 0-8 All Sample Integrated 2014-2017 - MT Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MT2017 | MT01 | MT01f39/41 | Medium | | | | M | 41 | Tertiary | | Accountant |
| MT2017 | MT01 | MT01m39/4 | Medium | | | | F | 41 | Tertiary | | Primary school teacher |
| **MT2017** | **MT01** | **MT01g6/8** | **Medium** | | | | **F** | **8** | **Year 4** | | |
| MT2017 | MT01 | MT01g4/6 | Medium | | | | F | 6 | Year 2 | | |
| MT2017 | MT02 | MT02f41/43 | Medium | | | | M | 43 | Secondary | | IT employee |
| MT2017 | MT02 | MT02m38/4 | Medium | | | | F | 40 | Secondary | | Part-time employee |
| **MT2017** | **MT02** | **MT02g6/8** | **Medium** | | | | **F** | **8** | **Year 4** | | |
| MT2017 | MT02 | MT02g5/7 | Medium | | | | F | 7 | Year 2 | | |
| MT2017 | MT06 | MT06f39/41 | Medium | | | | M | 41 | Tertiary | | Bank clerk |
| MT2017 | MT06 | MT06m37/3 | Medium | | | | F | 39 | Tertiary | | Journalist |
| **MT2017** | **MT06** | **MT06b6/8** | **Medium** | | | | **M** | **8** | **Year 5** | | |
| MT2017 | MT08 | MT08f39/41 | Low | | | | M | 41 | Secondary | | Machine maker |
| MT2017 | MT08 | MT08m33/3 | Low | | | | F | 35 | Secondary | | University student |
| **MT2017** | **MT08** | **MT08g7/9** | **Low** | | | | **F** | **9** | **Year 5** | | |
| MT2017 | MT08 | MT08b4/6 | Low | | | | M | 6 | Year 2 | | |
| MT2017 | MT10 | MT10m?/39 | Low | | | | F | 39 | Secondary | | Childcare assistant |
| **MT2017** | **MT10** | **MT10b7/8** | **Low** | | | | **M** | **8** | **Year 5** | | |

# 0-8 All Sample Integrated 2014-2017 - MT Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MT2016 | MT01 | MT01f39 | Medium | (**) | Maltese | (*) | M | 39 | Tertiary | (**) | Accountant |
| MT2016 | MT01 | MT01m39 | Medium | (**) | Maltese | (*) | F | 39 | Tertiary | (**) | Primary school teacher |
| **MT2016** | **MT01** | **MT01g6** | **Medium** | **(**)** | **Maltese** | **(*)** | **F** | **6** | **Year 2** | **(**)** | |
| MT2016 | MT01 | MT01g4 | Medium | (**) | Maltese | (*) | F | 4 | Kindergarten | (**) | |
| MT2016 | MT02 | MT02f41 | Medium | (**) | Maltese | (*) | M | 41 | Secondary | (**) | IT employee |
| MT2016 | MT02 | MT02m38 | Medium | (**) | Maltese | (*) | F | 38 | Secondary | (**) | Part-time employee |
| **MT2016** | **MT02** | **MT02g6** | **Medium** | **(**)** | **Maltese** | **(*)** | **F** | **6** | **Year 2** | **(**)** | |
| MT2016 | MT02 | MT02g5 | Medium | (**) | Maltese | (*) | F | 5 | Kindergarten | (**) | |
| MT2016 | MT03 | MT03f39 | High | (**) | Maltese | (*) | M | 39 | Tertiary | (**) | Lawyer |
| MT2016 | MT03 | MT03m38 | High | (**) | Maltese | (*) | F | 38 | Tertiary | (**) | Part-time employee |
| **MT2016** | **MT03** | **MT03b7** | **High** | **(**)** | **Maltese** | **(*)** | **F** | **7** | **Year 2** | **(**)** | |
| MT2016 | MT03 | MT03g4 | High | (**) | Maltese | (*) | F | 4 | Kindergarten | (**) | |
| MT2016 | MT04 | MT04f41 | Low | (**) | Maltese/Aust | (*) | M | 41 | Secondary | (**) | Carpenter |
| MT2016 | MT04 | MT04m40 | Low | (**) | Maltese | (*) | F | 40 | Secondary | (**) | Kindergarten assistant |
| MT2016 | MT04 | MT04g10 | Low | (**) | Maltese | (*) | F | 10 | Year 6 | (**) | |
| **MT2016** | **MT04** | **MT04b7** | **Low** | **(**)** | **Maltese** | **(*)** | **M** | **7** | **Year 4** | **(**)** | |
| MT2016 | MT05 | MT05f42 | Medium | (**) | Maltese | (*) | M | 42 | Tertiary | (**) | Secondary school teacher |
| MT2016 | MT05 | MT05m43 | Medium | (**) | Maltese | (*) | F | 43 | Tertiary | (**) | Secondary school teacher |
| **MT2016** | **MT05** | **MT05g6** | **Medium** | **(**)** | **Maltese (adc** | **(*)** | **F** | **6** | **Year 2** | **(**)** | |
| **MT2016** | **MT05** | **MT05b6** | **Medium** | **(**)** | **Maltese (adc** | **(*)** | **M** | **6** | **Year 2** | **(**)** | |
| MT2016 | MT06 | MT06f39 | Medium | (**) | Maltese | (*) | M | 39 | Tertiary | (**) | Bank clerk |
| MT2016 | MT06 | MT06m37 | Medium | (**) | Maltese | (*) | F | 37 | Tertiary | (**) | Journalist |
| **MT2016** | **MT06** | **MT06b6** | **Medium** | **(**)** | **Maltese** | **(*)** | **M** | **6** | **Year 3** | **(**)** | |
| MT2016 | MT07 | MT07f44 | Medium | (**) | Maltese | (*) | M | 44 | Tertiary | (*) | University Lecturer |
| MT2016 | MT07 | MT07m44 | Medium | (**) | Maltese | (*) | F | 44 | Tertiary | (*) | Language support assistant |
| MT2016 | MT07 | MT07g9 | Medium | (**) | Maltese | (*) | F | 9 | Year 5 | (*) | |
| **MT2016** | **MT07** | **MT07g7** | **Medium** | **(**)** | **Maltese** | **(*)** | **F** | **7** | **Year 3** | **(*)** | |
| MT2016 | MT07 | MT07b4 | Medium | (**) | Maltese | (*) | M | 4 | Kindergarten | (*) | |
| MT2016 | MT08 | MT08f39 | Low | (**) | Maltese | (*) | M | 39 | Secondary | (**) | Machine maker |
| MT2016 | MT08 | MT08m33 | Low | (**) | Maltese | (*) | F | 33 | Tertiary | (**) | University student |
| **MT2016** | **MT08** | **MT08g7** | **Low** | **(**)** | **Maltese** | **(*)** | **F** | **7** | **Year 3** | **(**)** | |
| MT2016 | MT08 | MT08b4 | Low | (**) | Maltese | (*) | M | 4 | Kindergarten | (**) | |
| MT2016 | MT09 | MT09f47 | High | (**) | Maltese | (*) | M | 47 | Tertiary | (**) | Medical professional |
| MT2016 | MT09 | MT09m37 | High | (**) | Maltese | (*) | F | 37 | Tertiary | (**) | Medical professional |
| **MT2016** | **MT09** | **MT09g7** | **High** | **(**)** | **Maltese** | **(*)** | **F** | **7** | **Year 3** | **(**)** | |
| MT2016 | MT09 | MT09g4 | High | (**) | Maltese | (*) | F | 4 | Kindergarten | (**) | |
| MT2016 | MT10 | MT10m? | Low | (**) | Maltese | (*) | F | t kno | Secondary | (**) | Childcare assistant |
| **MT2016** | **MT10** | **MT10b7** | **Low** | **(**)** | **Maltese (adc** | **(*)** | **M** | **7** | **Year 3** | **(**)** | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - NL Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NL2016 | NL1 | NL1f57 | Unknown | | Dutch | (*) | m | 57 | Secondary (senior general secondary ec | (*) | unemployed |
| NL2016 | NL1 | NL1m42 | Unknown | | Dutch | (*) | f | 42 | Secondary (senior general secondary ec | (*) | unemployed |
| **NL2016** | **NL1** | **NL1g8** | **Unknown** | | **Dutch** | **(*)** | **f** | **8** | **4th Primary** | **(*)** | |
| NL2016 | NL1 | NL1b6 | Unknown | | Dutch | (**) | m | 6 | 2nd Primary | (*) | |
| NL2016 | NL3 | NL3f47 | High | | Dutch | (*) | m | 47 | Tertiary (university) | (*) | self-employed |
| NL2016 | NL3 | NL3m36 | High | | Dutch | (*) | f | 36 | Tertiary (Higher professional education | (*) | account manager |
| **NL2016** | **NL3** | **NL3g8** | **High** | | **Dutch** | **(*)** | **f** | **8** | **3rd Primary** | **(*)** | |
| NL2016 | NL3 | NL3g6 | High | | Dutch | (**) | f | 6 | 3rd Primary | (*) | |
| NL2016 | NL5 | NL5f48 | Unknown | | Dutch | (*) | m | 48 | Tertiary (Higher professional education | (*) | employee technical university department |
| NL2016 | NL5 | NL5m49 | Unknown | | Dutch | (*) | f | 49 | Tertiary (university) | (*) | primary school teacher |
| **NL2016** | **NL5** | **NL5g8** | **Unknown** | | **Dutch** | **(*)** | **f** | **8** | **3rd Primary** | **(*)** | |
| NL2016 | NL6 | NL6f40 | Medium | | Dutch | (*) | m | 40 | Tertiary (secondary vocational educatio | (*) | unemployed |
| NL2016 | NL6 | NL6m38 | Medium | | Dutch | (*) | f | 38 | Tertiary (secondary vocational educatio | (*) | daycare worker |
| **NL2016** | **NL6** | **NL6g8** | **Medium** | | **Dutch** | **(*)** | **f** | **8** | **3rd Primary** | **(*)** | |
| NL2016 | NL6 | NL6g10 | Medium | | Dutch | (**) | f | 10 | 5th Primary | (**) | |
| NL2016 | NL8 | NL8f46 | Unknown | | Dutch | (*) | m | 46 | Tertiary (Higher professional education | (*) | employee bookstore |
| NL2016 | NL8 | NL8m43 | Unknown | | Singaporese | (*) | f | 43 | Secondary (senior general secondary ec | (*) | manager wholesale business |
| **NL2016** | **NL8** | **NL8g8** | **Unknown** | | **Dutch** | **(*)** | **f** | **8** | **3rd Primary** | **(*)** | |
| NL2016 | NL8 | NL8g3 | Unknown | | Dutch | (**) | f | 3 | Daycare | (**) | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - NL Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NL2015 | NL1 | NL1f42 | | | Dutch | (*) | m | 56 | Secondary (senior general secondary ec | (*) | unemployed |
| NL2015 | NL1 | NL1m38 | | | Dutch | (*) | f | 41 | Secondary (senior general secondary ec | (*) | administrative assistant |
| **NL2015** | **NL1** | **NL1g7** | | | **Dutch** | **(*)** | **f** | **7** | **3rd Primary** | **(*)** | |
| NL2015 | NL1 | NL1b3 | | | Dutch | (**) | m | 5 | 1st Primary | (*) | |
| NL2015 | NL2 | NL2f58 | | | Belgian | (*) | m | 58 | Tertiary (pre-university education) | (*) | secondary school teacher |
| NL2015 | NL2 | NL2m43 | | | Dutch | (*) | f | 43 | Tertiary (higher professional education) | (*) | self-employed in advertising |
| **NL2015** | **NL2** | **NL2b7** | | | **Dutch** | **(*)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL2 | NL2b5 | | | Dutch | (**) | m | 5 | Pre-school | (*) | |
| NL2015 | NL3 | NL3f46 | | | Dutch | (*) | m | 46 | Tertiary (university) | (*) | unemployed |
| NL2015 | NL3 | NL3m35 | | | Dutch | (*) | f | 35 | Tertiary (higher professional education) | (*) | account manager |
| **NL2015** | **NL3** | **NL3g7** | | | **Dutch** | **(*)** | **f** | **7** | **1st Primary** | **(*)** | |
| NL2015 | NL3 | NL3g5 | | | Dutch | (**) | f | 5 | 1st Primary | (*) | |
| NL2015 | NL4 | NL4f42 | | | Dutch | (*) | m | 42 | Secondary (senior general secondary ec | (*) | self-employed |
| NL2015 | NL4 | NL4m35 | | | Dutch Antille | (*) | f | 35 | Secondary (higher professional educati | (*) | counselor and coach |
| **NL2015** | **NL4** | **NL4g6** | | | **Dutch** | **(*)** | **f** | **6** | **2nd Primary** | **(*)** | |
| NL2015 | NL4 | NL4g4 | | | Dutch | (**) | f | 4 | Pre-school | (*) | |
| NL2015 | NL5 | NL5f47 | | | Dutch | (*) | m | 47 | Tertiary (higher professional education) | (*) | employee technical university department |
| NL2015 | NL5 | NL5m47 | | | Dutch | (*) | f | 47 | Tertiary (university) | (*) | primary school teacher |
| **NL2015** | **NL5** | **NL5g7** | | | **Dutch** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL6 | NL6f39 | | | Dutch | (*) | m | 39 | Tertiary (secondary vocational educatio | (*) | unemployed |
| NL2015 | NL6 | NL6m37 | | | Dutch | (*) | f | 37 | Tertiary (secondary vocational educatio | (*) | daycare worker |
| **NL2015** | **NL6** | **NL6g7** | | | **Dutch** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL6 | NL6g9 | | | Dutch | (**) | f | 9 | 4th Primary | (**) | |
| NL2015 | NL7 | NL7m28 | | | Dutch | (*) | f | 28 | Tertiary (higher professional education) | (*) | operating assistant |
| **NL2015** | **NL7** | **NL7g7** | | | **Dutch** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL8 | NL8f45 | | | Dutch | (*) | m | 45 | Tertiary (higher professional education) | (*) | employee bookstore |
| NL2015 | NL8 | NL8m42 | | | Singaporese | (*) | f | 42 | Secondary (senior general secondary ec | (*) | manager wholesale business |
| **NL2015** | **NL8** | **NL8g7** | | | **Dutch** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL8 | NL8g2 | | | Dutch | (**) | f | 2 | Daycare | (**) | |
| NL2015 | NL9 | NL9m39 | | | Turkish | (*) | f | 39 | Tertiary (secondary vocational educatio | (*) | employee municipality |
| **NL2015** | **NL9** | **NL9g7** | | | **Dutch** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NL2015 | NL10 | NL10m36 | | | Dutch | (*) | b | 36 | Secondary (prevocational secondary ed | (*) | unemployed |
| NL2015 | NL10 | NL10b11 | | | Dutch | (*) | b | 11 | 5th Primary | (*) | |
| **NL2015** | **NL10** | **NL10b7a** | | | **Dutch** | **(*)** | **b** | **7** | **2nd Primary** | **(*)** | |
| **NL2015** | **NL10** | **NL10b7b** | | | **Dutch** | **(**)** | **b** | **7** | **2nd Primary** | **(*)** | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - NO Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NO2016 | NO1 | NO1f37 | Medium | (**) | Norwegian | (**) | m | 37 | Secondary | (**) | Taxi driver |
| NO2016 | NO1 | NO1m35 | Medium | (**) | Norwegian | (**) | f | 35 | Secondary | (**) | Accounting |
| **NO2016** | **NO1** | **NO1b7** | **Medium** | **(**)** | **Norwegian** | **(**)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO1 | NO1g4 | Medium | (**) | Norwegian | (**) | f | 4 | Kindergarten | (*) | |
| NO2016 | NO2 | NO2m46 | Medium | (**) | Norwegian | (**) | f | 46 | Tertiary | (**) | |
| NO2016 | NO2 | NO2g10 | Medium | (**) | Norwegian | (**) | f | 10 | 5th Primary | (*) | |
| **NO2016** | **NO2** | **NO2g7** | **Medium** | **(**)** | **Norwegian** | **(**)** | **f** | **7** | **2nd primary** | **(*)** | |
| NO2016 | NO3 | NO3f45 | Medium | (**) | Norwegian | (**) | m | 45 | Tertiary | (**) | Maintenance engineer |
| NO2016 | NO3 | NO3m45 | Medium | (**) | Norwegian | (**) | f | 45 | Secondary | (**) | Accounting |
| NO2016 | NO3 | NO3g17 | Medium | (**) | Norwegian | (**) | f | 17 | Secondary | (**) | |
| NO2016 | NO3 | NO3b15 | Medium | (**) | Norwegian | (**) | m | 15 | Secondary | (**) | |
| **NO2016** | **NO3** | **NO3g7** | **Medium** | **(**)** | **Norwegian** | **(**)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO4 | NO4f35 | Medium | (**) | Norwegian | (**) | m | 40 | Secondary | (**) | Ambulance driver |
| NO2016 | NO4 | NO4m35 | Medium | (**) | Norwegian | (**) | f | 35 | Secondary | (**) | Smoke driver |
| **NO2016** | **NO4** | **NO4b7** | **Medium** | **(**)** | **Norwegian** | **(**)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO4 | NO4g4 | Medium | (**) | Norwegian | (**) | f | 4 | Kindergarten | (*) | |
| NO2016 | NO5 | NO5f40 | High | (**) | Norwegian | (**) | m | 40 | Tertiary | (*) | Psychologist |
| NO2016 | NO5 | NO5m39 | High | (**) | Norwegian | (**) | f | 39 | Tertiary | (*) | Assistant Professor |
| **NO2016** | **NO5** | **NO5b7** | **High** | **(**)** | **Norwegian** | **(**)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO5 | NO5g4 | High | (**) | Norwegian | (**) | f | 3 | Kindergarten | (*) | |
| NO2016 | NO6 | NO6f40 | High | (**) | Norwegian | (**) | m | 40 | Tertiary (PhD) | (*) | Scientist, geologist |
| NO2016 | NO6 | NO6m40 | High | (**) | Norwegian | (**) | f | 40 | Tertiary (PhD) | (*) | Scientist, geologist |
| **NO2016** | **NO6** | **NO6b7** | **High** | **(**)** | **Norwegian** | **(**)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO6 | NO6g4 | High | (**) | Norwegian | (**) | f | 4 | Kindergarten | (*) | |
| NO2016 | NO7 | NO7f40 | High | (**) | Norwegian | (**) | m | 40 | Tertiary | (**) | Economics |
| NO2016 | NO7 | NO7m35 | High | (**) | Norwegian | (**) | f | 35 | Tertiary | (**) | Economics |
| **NO2016** | **NO7** | **NO7g8a** | **High** | **(**)** | **Norwegian** | **(**)** | **f** | **7** | **2nd Primary** | **(*)** | |
| **NO2016** | **NO7** | **NO7g8b** | **High** | **(**)** | **Norwegian** | **(**)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO7 | NO7b5 | High | (**) | Norwegian | (**) | m | 5 | Pre-School | (**) | |
| NO2016 | NO7 | NO7b1 | High | (**) | Norwegian | (**) | m | 1 | Kindergarten | (**) | |
| NO2016 | NO8 | NO8f45 | High | (**) | Norwegian | (**) | m | 45 | ? | | Car Repairing ? |
| NO2016 | NO8 | NO8m45 | High | (**) | Norwegian | (**) | f | 45 | Tertiary | (**) | Stlying homes |
| **NO2016** | **NO8** | **NO8b7** | **High** | **(*)** | **Norwegian** | **(**)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO8 | NO8b5 | High | (*) | Norwegian | (**) | m | 5 | Pre-School | (*) | |
| NO2016 | NO8 | NO8g3 | High | (*) | Norwegian | (**) | f | 3 | Kindergarten | (*) | |
| NO2016 | NO9 | NO9f45 | Low | (**) | Norwegian | (*) | m | 45 | Secondary | (**) | Kindergarten assistant |
| NO2016 | NO9 | NO9m40 | Low | (**) | American | (*) | f | 40 | Secondary | (**) | Unemployed |
| **NO2016** | **NO9** | **NO9b7** | **Low** | **(**)** | **Norwegian** | **(*)** | **m** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO10 | NO10f40 | High | (**) | Norwegian | (*) | m | 40 | Tertiary (Master) | (*) | Computers |
| NO2016 | NO10 | NO10m36 | High | (**) | Lithuanian | (*) | f | 36 | Tertiary | (*) | Bank Customer Service |
| **NO2016** | **NO10** | **NO10g7** | **High** | **(**)** | **Norwegian** | **(*)** | **f** | **7** | **2nd Primary** | **(*)** | |
| NO2016 | NO10 | NO10b6 | High | (**) | Norwegian | (*) | m | 6 | Pre-School | (**) | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - PT Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PT2016 | PT1 | PT1m37 | Low | | Portuguese | | f | 37 | Ph.D. | | Pre-school teacher |
| **PT2016** | **PT1** | **PT1b7** | **Low** | | **Portuguese** | | **m** | **7** | **Primary** | | |
| PT2016 | PT2 | PT2f40 | Medium | | Portuguese | | m | 40 | B.A. | | Consultant |
| PT2016 | PT2 | PT2m40 | Medium | | Portuguese | | f | 40 | B.A. | | Consultant |
| **PT2016** | **PT2** | **PT2b9** | **Medium** | | **Portuguese** | | **m** | **8** | **Primary** | | |
| PT2016 | PT2 | PT2b4 | Medium | | Portuguese | | m | 4 | Pre-school* | | |
| PT2016 | PT3 | PT3f36* | Medium | | Portuguese | | m | 36 | B.A. | | Technology consultant |
| PT2016 | PT3 | PT3m40 | Medium | | Portuguese | | f | 40 | 9th Grade | | Product manager in telecommunications |
| **PT2016** | **PT3** | **PT3g8** | **Medium** | | **Portuguese** | | **f** | **8** | **Primary** | | |
| PT2016 | PT3 | PT3b1* | Medium | | Portuguese | | m | 1 | | | |
| PT2016 | PT4 | PT4sf39 | Low | | Portuguese | | m | 39 | High School | | Plummer and fire-fighter |
| PT2016 | PT4 | PT4m29 | Low | | Portuguese | | f | 29 | High School | | Unemployed |
| PT2016 | PT4 | PT4g10 | Low | | Portuguese | | f | 10 | Primary | | |
| **PT2016** | **PT4** | **PT4b8** | **Low** | | **Portuguese** | | **m** | **8** | **Primary** | | |
| PT2016 | PT4 | PT4b7 | Low | | Portuguese | | m | 7 | Primary | | |
| PT2016 | PT4 | PT4b3 | Low | | Portuguese | | m | 3 | Preschool | | |
| PT2016 | PT4 | PT4b1 | Low | | Portuguese | | m | 1 | None | | |
| PT2016 | PT4 | PT4g1 | Low | | Portuguese | | f | 1 | None | | |
| PT2016 | PT6 | PT6m42 | Low | | Portuguese | | f | 42 | 9th Grade | | Health assistant |
| **PT2016** | **PT6** | **PT6b8** | **Low** | | **Portuguese** | | **m** | **8** | **Primary** | | |
| PT2016 | PT7 | PT7f43 | Medium | | Portuguese | | m | 43 | B.A. | | Civil engineer |
| PT2016 | PT7 | PT7m39 | Medium | | Portuguese | | f | 39 | B.A. | | Civil engineer |
| **PT2016** | **PT7** | **PT7b7** | **Medium** | | **Portuguese** | | **m** | **7** | **Primary** | | |
| PT2016 | PT7 | PT7b2 | Medium | | Portuguese | | m | 2 | Pre-school | | |
| PT2016 | PT9 | PT9m36 | Medium | | Portuguese | | f | 36 | B.A. | | Pathological anatomy technician |
| **PT2016** | **PT9** | **PT9g8** | **Medium** | | **Portuguese** | | **f** | **8** | **Primary** | | |
| PT2016 | PT10 | PT10f60* | High | | Brazilian | | m | 60 | B.A. | | Dentist |
| PT2016 | PT10 | PT11m42 | High | | Portuguese | | f | 43 | B.A. | | Clinical psychologist |
| **PT2016** | **PT10** | **PT10g7** | **High** | | **Brazilian** | | **f** | **8** | **Primary** | | |

# 0-8 All Sample Integrated 2014-2017 - PT Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PT2015 | PT1 | PT1m36 | Low | | Portuguese | | f | 36 | PhD | | Early childhood educator |
| **PT2015** | **PT1** | **PT1b6** | **Low** | | **Portuguese** | | **m** | **6** | **Primary** | | |
| PT2015 | PT2 | PT2f39 | Medium | | Portuguese | | m | 39 | University | | Consulting |
| PT2015 | PT2 | PT2m39 | Medium | | Portuguese | | f | 39 | University | | Consulting |
| **PT2015** | **PT2** | **PT2b7** | **Medium** | | **Portuguese** | | **m** | **7** | **Primary** | | |
| PT2015 | PT2 | PT2b3 | Medium | | Portuguese | | m | 3 | Kindergarten | | |
| PT2015 | PT3 | PT3m39 | Medium | | Portuguese | | f | 39 | Tertiary | | Product Manager in Telecommunications |
| PT2015 | PT3 | PT3f35* | Medium | | Portuguese | | m | 35 | University | | Consultant in ICT |
| **PT2015** | **PT3** | **PT3g7** | **Medium** | | **Portuguese** | | **f** | **7** | **Primary** | | |
| PT2015 | PT4 | PT4sf38 | Low | | Portuguese | | m | 38 | Secondary | | Plumber and Firefighter |
| PT2015 | PT4 | PT4m28 | Low | | Portuguese | | f | 28 | Secondary | | Unemployed |
| PT2015 | PT4 | PT4g9 | Low | | Portuguese | | f | 9 | Primary | | |
| **PT2015** | **PT4** | **PT4b7** | **Low** | | **Portuguese** | | **m** | **7** | **Primary** | | |
| **PT2015** | **PT4** | **PT4b6** | **Low** | | **Portuguese** | | **m** | **6** | **Primary** | | |
| PT2015 | PT4 | PT4b2 | Low | | Portuguese | | m | 2 | Kindergarten | | |
| PT2015 | PT5 | PT5f42 | Low | | Portuguese | | m | 42 | Secondary | | Unemployed |
| PT2015 | PT5 | PT5b11 | Low | | Spanish | | m | 11 | Primary | | |
| **PT2015** | **PT5** | **PT5b7** | **Low** | | **Spanish** | | **m** | **7** | **Primary** | | |
| **PT2015** | **PT5** | **PT5b6** | **Low** | | **Spanish** | | **m** | **6** | **Primary** | | |
| PT2015 | PT6 | PT6m41 | Low | | Portuguese | | f | 41 | Tertiary | | Health assistant |
| **PT2015** | **PT6** | **PT6b7** | **Low** | | **Portuguese** | | **m** | **7** | **Primary** | | |
| PT2015 | PT7 | PT7f42 | Medium | | Portuguese | | m | 42 | University | | Civil engineer |
| PT2015 | PT7 | PT7m38 | Medium | | Portuguese | | f | 38 | University | | Civil Engineer |
| **PT2015** | **PT7** | **PT7b6** | **Medium** | | **Portuguese** | | **m** | **6** | **Primary** | | |
| PT2015 | PT7 | PT7b1 | Medium | | Portuguese | | m | 1 | Kindergarten | | |
| PT2015 | PT8 | PT8m40 | Low | | Angolan | | f | 40 | Secondary | | Unemployed |
| PT2015 | PT8 | PT8f42* | Low | | Angolan | | m | 42 | Tertiary | | Electrician/Plumber |
| PT2015 | PT8 | PT8g15 | Low | | Angolan | | f | 15 | Secondary | | |
| **PT2015** | **PT8** | **PT8b6** | **Low** | | **Angolan** | | **m** | **6** | **Primary** | | |
| PT2015 | PT9 | PT9m35 | Medium | | Portuguese | | f | 35 | University | | Technician of Pathological Anatomy |
| **PT2015** | **PT9** | **PT9g7** | **Medium** | | **Portuguese** | | **f** | **7** | **Primary** | | |
| PT2015 | PT10 | PT10m42 | High | | Portuguese | | f | 42 | University | | Clinical Psychologist |
| PT2015 | PT10 | PT10f59* | High | | Brazilian | | m | 59 | University | | Dentist |
| **PT2015** | **PT10** | **PT10g6** | **High** | | **Brazilian** | | **f** | **7** | **Primary** | | |

# 0-8 All Sample Integrated 2014-2017 - RO Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RO2015 | RO01 | RO1g6 | Medium | (**) | Romanian | | F | 6 | 1st Primary | | |
| RO2015 | RO01 | RO1m45 | Medium | (**) | Romanian | | F | 45 | Tertiary | | Philologist |
| RO2015 | RO01 | RO1f46 | Medium | (**) | Romanian | | M | 46 | Tertiary | | Self employed (Engineer) |
| RO2015 | **RO02** | **RO02g7** | **Low** | **(**)** | **Romanian** | | **F** | **7** | **2nd Primary** | | |
| RO2015 | RO02 | RO02m27 | Low | (**) | Romanian | | F | 27 | Upper secondary | | Factory worker |
| RO2015 | RO02 | RO02GM67 | Low | (**) | Romanian | | F | 67 | Upper secondary | | Retired |
| RO2015 | **RO03** | **RO03g7** | **Medium** | **(**)** | **Romanian** | | **F** | **7** | **2nd Primary** | | |
| RO2015 | RO03 | RO03m41 | Medium | (**) | Romanian | | F | 41 | Upper secondary | | Saleswoman |
| RO2015 | RO03 | RO03f41 | Medium | (**) | Romanian | | M | 41 | Upper secondary | | Salesman |
| RO2015 | RO03 | RO03gm | - | | Romanian | | F | - | - | | Retired |
| RO2015 | **RO04** | **RO04g6** | **Low** | **(*)** | **Romanian** | | **F** | **6** | **Kindergarten** | | |
| RO2015 | RO04 | RO04b10 | Low | (*) | Romanian | | M | 10 | 4th primary | | |
| RO2015 | RO04 | RO04m28 | Low | (*) | Romanian | | F | 28 | Lower Secondary | | Seasonal work in agriculture |
| RO2015 | RO04 | RO04f30 | Low | (*) | Romanian | | M | 30 | Lower Secondary | | Tractor-driver |
| RO2015 | RO04 | RO04gm | Low | (*) | Romanian | | F | - | - | | Retired |
| RO2015 | RO05 | RO05b3 | High | (*) | Romanian | | M | 3 | Kindergarten | | |
| RO2015 | **RO05** | **RO05b7** | **High** | **(*)** | **Romanian** | | **M** | **7** | **1st primary** | | |
| RO2015 | RO05 | RO05m35 | High | (*) | Romanian | | F | 35 | Tertiary | | Lawyer |
| RO2015 | RO05 | RO05f35 | High | (*) | Romanian | | M | 35 | Tertiary | | Manager |
| RO2015 | **RO06** | **RO06b8** | **Medium** | **(*)** | **Romanian** | | **M** | **8** | **2nd primary** | | |
| RO2015 | RO06 | RO06m37 | Medium | (*) | Romanian | | F | 37 | Tertiary | | Housewife |
| RO2015 | RO06 | RO06f47 | Medium | (*) | Romanian | | M | 47 | Tertiary | | Self employed (ex-journalist) |
| RO2015 | RO07 | RO07g0 | Medium | (*) | Romanian | | F | 0 | None | | |
| RO2015 | RO07 | RO07b4 | Medium | (*) | Romanian | | M | 4 | 2nd kindergarten | | |
| RO2015 | **RO07** | **RO07b6** | **Medium** | **(*)** | **Romanian** | | **M** | **6** | **Kindergarten** | | |
| RO2015 | RO07 | RO07m38 | Medium | (*) | Lipoven | | F | 38 | Tertiary | | PR officer |
| RO2015 | RO07 | RO07f38 | Medium | (*) | Romanian | | M | 38 | Tertiary | | University lecturer |
| RO2015 | RO07 | RO07gm67 | - | | Lipoven | | F | 67 | - | | Retired |
| RO2015 | RO07 | RO07gf69 | - | | Lipoven | | M | 69 | - | | Retired |
| RO2015 | **RO08** | **RO08g6** | **Low/Med*/**** | | **Romanian** | | **F** | **6** | **Kindergarten** | | |
| RO2015 | RO08 | RO08m26 | Low/Med*/** | | Romanian | | F | 26 | Upper secondary | | Housewife |
| RO2015 | RO08 | RO08f26 | Low/Med*/** | | Romanian | | M | 26 | Upper secondary | | Electrician |
| RO2015 | RO08 | RO08gm43 | - | | Romanian | | F | 43 | - | | - |
| RO2015 | RO08 | RO08gf44 | - | | Romanian | | M | 44 | - | | - |
| RO2015 | RO09 | RO09g1 | Low/Med*/** | | Romanian | | F | 1 | None | | |
| RO2015 | **RO09** | **RO09b6** | **Low/Med*/**** | | **Romanian** | | **M** | **6** | **None** | | |
| RO2015 | RO09 | RO09f27 | Low/Med*/** | | Romanian | | M | 27 | Upper secondary | | Electrician |
| RO2015 | RO09 | RO09m29 | Low/Med*/** | | Romanian | | F | 29 | Upper secondary | | Chamber maid |
| RO2015 | RO10 | RO10b5 | Low | (*) | Romanian | | M | 5 | Kindergarten | | |
| RO2015 | **RO10** | **RO10b6** | **Low** | **(*)** | **Romanian** | | **M** | **6** | **1st primary** | | |
| RO2015 | RO10 | RO10m39 | Low | (*) | Romanian | | F | 39 | Upper secondary | | Administrator |
| RO2015 | RO10 | RO10gm | - | | Romanian | | F | - | - | | Retired |
| RO2015 | RO10 | RO10gf | - | | Romanian | | M | - | - | | Retired |
| RO2015 | **RO11** | **RO11g6** | **Low** | **(*)** | **Romanian** | | **F** | **6** | **Kindergarten** | | |
| RO2015 | RO11 | RO11g11 | Low | (*) | Romanian | | F | 11 | 4th primary | | |
| RO2015 | RO11 | RO11m37 | Low | (*) | Romanian | | F | 37 | Upper secondary | | Housekeeper |
| RO2015 | RO11 | RO11f41 | Low | (*) | Romanian | | M | 41 | Upper secondary | | Electrician |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - RU Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RU2016 | RU02 | RU02f35 | Medium | (**) | Russian | (**) | m | 35 | Tertiary | (*) | Entrepreneur |
| RU2016 | RU02 | RU02m31 | Medium | (**) | Russian | (**) | f | 31 | Tertiary | (*) | Psychologist |
| **RU2016** | **RU02** | **RU02g8** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **8** | **2nd Primary** | **(*)** | |
| RU2016 | RU03 | RU03f50 | Medium | (**) | Russian | (**) | m | 50 | Tertiary | (*) | Entrepreneur |
| RU2016 | RU03 | RU03m48 | Medium | (**) | Russian | (**) | f | 48 | Tertiary | (*) | Accountant, currently housewife |
| **RU2016** | **RU03** | **RU03b6** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **6** | **Kindergarten** | **(*)** | |
| RU2016 | RU08 | RU08f29 | Medium | (**) | Russian | (**) | m | 29 | Tertiary | (*) | Entrepreneur |
| RU2016 | RU08 | RU08m29 | Medium | (**) | Russian | (**) | f | 29 | Tertiary | (*) | Teacher |
| **RU2016** | **RU08** | **RU08b8** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **8** | **2nd Primary** | **(*)** | |
| RU2016 | RU10 | RU10f45 | Medium | (**) | Russian | (**) | m | 45 | Tertiary | (*) | Policeman |
| RU2016 | RU10 | RU10m30 | Medium | (**) | Russian | (**) | f | 30 | Tertiary | (*) | Medic, currently a housewife |
| **RU2016** | **RU10** | **RU10b8** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **8** | **2nd Primary** | **(*)** | |
| RU2016 | RU12 | RU12f41 | Medium | (**) | Russian | (**) | m | 41 | Tertiary | (*) | Entrepreneur |
| RU2016 | RU12 | RU12m40 | Medium | (**) | Russian | (**) | f | 40 | Tertiary | (*) | Teacher, currently in maternity leave |
| **RU2016** | **RU12** | **RU12g8** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **8** | **2nd Primary** | **(*)** | |
| RU2016 | RU12 | RU12g1 | Medium | (**) | Russian | (**) | f | 1 | | (*) | |

# 0-8 All Sample Integrated 2014-2017 - RU Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RU2015 | RU1 | RU01m40 | High | (**) | Russian | (**) | m | 40 | Tertiary | (*) | Businessman |
| RU2015 | RU1 | RU01f33 | High | (**) | Russian | (**) | f | 33 | Tertiary | (*) | Psychologist |
| **RU2015** | **RU1** | **RU01g4** | **High** | **(**)** | **Russian** | **(**)** | **f** | **4** | **Kindergarten** | **(*)** | |
| RU2015 | RU2 | RU02m34 | Medium | (**) | Russian | (**) | m | 34 | Tertiary | (*) | Businessman |
| RU2015 | RU2 | RU02f30 | Medium | (**) | Russian | (**) | f | 30 | Tertiary | (*) | Psychologist |
| **RU2015** | **RU2** | **RU02g7** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU3 | RU03m49 | Medium | (**) | Russian | (**) | m | 49 | Tertiary | (*) | Businessman |
| RU2015 | RU3 | RU03f47 | Medium | (**) | Russian | (**) | f | 47 | Tertiary | (*) | Accountant |
| **RU2015** | **RU3** | **RU03b5** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **5** | **Kindergarten** | **(*)** | |
| RU2015 | RU4 | RU04m38 | High | (**) | Russian | (**) | m | 38 | Tertiary | (*) | Jurist |
| RU2015 | RU4 | RU04f28 | High | (**) | Russian | (**) | f | 28 | Tertiary | (*) | Teacher |
| **RU2015** | **RU4** | **RU04g4** | **High** | **(**)** | **Russian** | **(**)** | **f** | **4** | **Kindergarten** | **(*)** | |
| RU2015 | RU4 | RU04g2 | High | (**) | Russian | (**) | f | 2 | | | |
| RU2015 | RU5 | RU05m29 | Medium | (**) | Russian | (**) | m | 29 | Tertiary | (*) | Manager |
| RU2015 | RU5 | RU05f28 | Medium | (**) | Russian | (**) | f | 28 | Tertiary | (*) | Psychologist |
| **RU2015** | **RU5** | **RU05g5** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **5** | **Kindergarten** | **(*)** | |
| RU2015 | RU5 | RU05g2 | Medium | (**) | Russian | (**) | f | 2 | | | |
| RU2015 | RU6 | RU06m42 | Medium | (**) | Russian | (**) | m | 42 | Tertiary | (*) | Policeman |
| RU2015 | RU6 | RU06f40 | Medium | (**) | Russian | (**) | f | 40 | Tertiary | (*) | Nurse |
| **RU2015** | **RU6** | **RU06g5** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **5** | **Kindergarten** | **(*)** | |
| RU2015 | RU7 | RU07m40 | Medium | (**) | Russian | (**) | m | 40 | Tertiary | (*) | Driver |
| RU2015 | RU7 | RU07f38 | Medium | (**) | Russian | (**) | f | 38 | Tertiary | (*) | Insurance Agent |
| **RU2015** | **RU7** | **RU07g7** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU7 | RU07g2 | Medium | (**) | Russian | (**) | f | 2 | | | |
| RU2015 | RU8 | RU08m28 | Medium | (**) | Russian | (**) | m | 28 | Tertiary | (*) | Businessman |
| RU2015 | RU8 | RU08f28 | Medium | (**) | Russian | (**) | f | 28 | Tertiary | (*) | Teacher |
| RU2015 | RU8 | RU08b7 | Medium | (**) | Russian | (**) | m | 7 | 1st Primary | (*) | |
| RU2015 | RU9 | RU09m29 | Medium | (**) | Russian | (**) | m | 29 | Tertiary | (*) | Driver |
| RU2015 | RU9 | RU09f30 | Medium | (**) | Russian | (**) | f | 30 | Tertiary | (*) | Librarian |
| RU2015 | RU9 | RU09b3 | Medium | (**) | Russian | (**) | m | 3 | Kindergarten | (*) | |
| RU2015 | RU10 | RU10m44 | Medium | (**) | Russian | (**) | m | 44 | Tertiary | (*) | Policeman |
| RU2015 | RU10 | RU10f29 | Medium | (**) | Russian | (**) | f | 29 | Tertiary | (*) | - |
| **RU2015** | **RU10** | **RU10b7** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU11 | RU11m35 | Medium | (**) | Russian | (**) | m | 35 | Tertiary | (*) | Businessman |
| RU2015 | RU11 | RU11f34 | Medium | (**) | Russian | (**) | f | 34 | Tertiary | (*) | Nurse |
| **RU2015** | **RU11** | **RU11b7** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU12 | RU12m40 | Medium | (**) | Russian | (**) | m | 40 | Tertiary | (*) | Businessman |
| RU2015 | RU12 | RU12f39 | Medium | (**) | Russian | (**) | f | 39 | Tertiary | (*) | Accountant |
| **RU2015** | **RU12** | **RU12g7** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU13 | RU13m45 | Medium | (**) | Russian | (**) | m | 45 | Tertiary | (*) | Manager |
| RU2015 | RU13 | RU13f44 | Medium | (**) | Russian | (**) | f | 44 | Tertiary | (*) | Teacher |
| **RU2015** | **RU13** | **RU13b7** | **Medium** | **(**)** | **Russian** | **(**)** | **m** | **7** | **1st Primary** | **(*)** | |
| RU2015 | RU14 | RU14f45 | Medium | (**) | Russian | (**) | f | 45 | Tertiary | (*) | Teacher |
| **RU2015** | **RU14** | **RU14g7** | **Medium** | **(**)** | **Russian** | **(**)** | **f** | **7** | **1st Primary** | **(*)** | |

(*) data provided by the family
(**) researcher evaluation
(***) family self-evaluation

# 0-8 All Sample Integrated 2014-2017 - RU Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RU2014 | RU01 | RU01m26 | Medium | | Russia | | F | 26 | Higher education | | |
| **RU2014** | **RU01** | **RU01b6** | **Medium** | | **Russia** | | **M** | **6** | **Nursery school** | | |
| RU2014 | RU01 | RU01f31 | Medium | | Russia | | M | 31 | Higher education | | |
| RU2014 | RU02 | RU02m31 | Medium | | Russia | | F | 31 | Higher education | | |
| **RU2014** | **RU02** | **RU02b7** | **Medium** | | **Russia** | | **M** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU02 | RU02b4 | Medium | | Russia | | M | 4 | Nursery school | | |
| RU2014 | RU03 | RU03f34 | High | | Russia | | M | 34 | Higher | | |
| RU2014 | RU03 | RU03m34 | High | | Russia | | F | 30 | Higher | | |
| **RU2014** | **RU03** | **RU03b4** | **High** | | **Russia** | | **M** | **4** | **Nursery school** | | |
| RU2014 | RU04 | RU04f42 | Medium | | Russia | | M | 42 | Higher | | |
| RU2014 | RU04 | RU04m36 | Medium | | Russia | | F | 36 | Higher | | |
| RU2014 | RU04 | RU04g10 | Medium | | Russia | | F | 10 | 5-th year (secondary school) | | |
| **RU2014** | **RU04** | **RU04b7** | **Medium** | | **Russia** | | **F** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU05 | RU05f25 | Medium | | Russia | | M | 25 | Higher | | |
| RU2014 | RU05 | RU05m28 | Medium | | Russia | | F | 28 | College | | |
| **RU2014** | **RU05** | **RU05g4** | **Medium** | | **Russia** | | **F** | **4** | **Nursery school** | | |
| RU2014 | RU06 | RU06f37 | Medium | | Russia | | M | 37 | Higher | | |
| RU2014 | RU06 | RU06m35 | Medium | | Russia | | F | 35 | Higher | | |
| RU2014 | RU06 | RU06b8 | Medium | | Russia | | M | 8 | 2-nd year (primary school) | | |
| **RU2014** | **RU06** | **RU06g7** | **Medium** | | **Russia** | | **F** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU07 | RU07f38 | Medium | | Russia | | M | 38 | College | | |
| RU2014 | RU07 | RU07m38 | Medium | | Russia | | F | 38 | Higher | | |
| **RU2014** | **RU07** | **RU07b7** | **Medium** | | **Russia** | | **M** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU08 | RU08f31 | Medium | | Russia | | M | 31 | College | | |
| RU2014 | RU08 | RU08m39 | Medium | | Russia | | F | 39 | Higher | | |
| RU2014 | RU08 | RU08b14 | Medium | | Russia | | M | 14 | 8-th year (secondary school) | | |
| **RU2014** | **RU08** | **RU08b7** | **Medium** | | **Russia** | | **M** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU09 | RU09f42 | Medium | | Russia | | M | 42 | Higher | | |
| RU2014 | RU09 | RU09m43 | Medium | | Russia | | F | 43 | College | | |
| RU2014 | RU09 | RU09g23 | Medium | | Russia | | F | 23 | Higher, Post-graduate student | | |
| **RU2014** | **RU09** | **RU09b7** | **Medium** | | **Russia** | | **M** | **7** | **1-st year (primary school)** | | |
| RU2014 | RU10 | RU10f47 | Medium | | Russia | | M | 47 | College | | |
| RU2014 | RU10 | RU10m43 | Medium | | Russia | | F | 43 | College | | |
| **RU2014** | **RU10** | **RU10b6** | **Medium** | | **Russia** | | **M** | **6** | **1-st year (primary school)** | | |

## 0-8 All Sample Integrated 2014-2017 - SL Adv

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SI2016 | SI01 | SI01f41 | Medium | | Slovene | | f | 41 | Tertiary | | Senior administrative officer |
| SI2016 | SI01 | SI01m339 | Medium | | Slovene | | m | 39 | Tertiary | | Senior manager |
| **SI2016** | **SI01** | **SI01b7** | **Medium** | | **Slovene** | | **b** | **7** | **2st Primary** | | |
| SI2016 | SI01 | SI01b4 | Medium | | Slovene | | b | 4 | Kindergarten | | |
| SI2016 | SI02 | SI02f36 | Medium/High | | Slovene | | f | 36 | Tertiary (Ma) | | Researcher |
| SI2016 | SI02 | SI02m37 | Medium/High | | Slovene | | m | 37 | Tertiary (PhD) | | University professor |
| **SI2016** | **SI02** | **SI02g7** | **Medium/High** | | **Slovene** | | **g** | **7** | **1st Primary** | | |
| SI2016 | SI02 | SI02g4 | Medium/High | | Slovene | | g | 4 | Kindergarten | | |
| SI2016 | SI02 | SI02g1 | Medium/High | | Slovene | | g | 1 | Kindergarten | | |
| SI2016 | SI03 | SI03f36 | High | | Slovene | | f | 36 | Tertiary | | Landscape architect |
| SI2016 | SI03 | SI03m37 | High | | Slovene | | m | 37 | Tertiary | | Computer programmer |
| **SI2016** | **SI03** | **SI03g7** | **High** | | **Slovene** | | **g** | **7** | **2nd Primary** | | |
| SI2016 | SI03 | SI03b5 | High | | Slovene | | b | 5 | Kindergarten | | |
| SI2016 | SI05 | SI05f38 | Medium | | Slovene | | f | 38 | Tertiary | | High school teacher |
| SI2016 | SI05 | SI05m43 | High | | Slovene | | m | 43 | Secondary | | CEO |
| **SI2016** | **SI05** | **SI05g6** | **High** | | **Slovene** | | **g** | **6** | **1st Primary** | | |
| SI2016 | SI07 | SI07f31 | Medium | | Slovene | | f | 31 | Tertiary | | Sales assistant |
| SI2016 | SI07 | SI07m33 | Medium | | Slovene | | m | 33 | Tertiary | | Telecommunication engineer |
| **SI2016** | **SI07** | **SI07b7** | **Medium** | | **Slovene** | | **b** | **7** | **1st Primary** | | |
| SI2016 | SI07 | SI07g4 | Medium | | Slovene | | g | 4 | Kindergarten | | |
| SI2016 | SI09 | SI09f34 | Low/ Medium | | Slovene | | f | 34 | Tertiary | | Online journalist |
| SI2016 | SI09 | SI09m30 | Low/ Medium | | Slovene | | m | 30 | Tertiary | | Web designer |
| **SI2016** | **SI09** | **SI09g7** | **Low/ Medium** | | **Slovene** | | **g** | **7** | **2st Primary** | | |
| SI2016 | SI09 | SI09g4 | Low/ Medium | | Slovene | | g | 4 | Kindergarten | | |
| SI2016 | SI10 | SI10f33 | Low | | Slovene | | f | 33 | Secondary | | Housewife |
| SI2016 | SI10 | SI10m46 | Low | | Slovene | | m | 46 | Tertiary | | Computer programmer |
| **SI2016** | **SI10** | **SI10b7** | **Low** | | **Slovene** | | **b** | **7** | **1st Primary** | | |
| SI2016 | SI10 | SI10b1 | Low | | Slovene | | b | 1 | Home | | |

# 0-8 All Sample Integrated 2014-2017 - SL Enlgt

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SI2015 | SI01 | SI01f40 | Medium | | Slovene | | f | 40 | Tertiary | | Senior administrative officer |
| SI2015 | SI01 | SI01m38 | Medium | | Slovene | | m | 38 | Tertiary | | Senior manager |
| **SI2015** | **SI01** | **SI01b6** | **Medium** | | **Slovene** | | **b** | **6** | **1st Primary** | | |
| SI2015 | SI01 | SI01b3 | Medium | | Slovene | | b | 3 | Kindergarten | | |
| SI2015 | SI02 | SI02f35 | Medium/High | | Slovene | | f | 35 | Tertiary (Ma) | | Researcher |
| SI2015 | SI02 | SI02m36 | Medium/High | | Slovene | | m | 36 | Tertiary (PhD) | | University professor |
| **SI2015** | **SI02** | **SI02g6** | **Medium/High** | | **Slovene** | | **g** | **6** | **Kindergarten** | | |
| SI2015 | SI02 | SI02g3 | Medium/High | | Slovene | | g | 3 | Kindergarten | | |
| SI2015 | SI03 | SI03f35 | High | | Slovene | | f | 35 | Tertiary | | Landscape architect |
| SI2015 | SI03 | SI03m36 | High | | Slovene | | m | 36 | Tertiary | | Computer programmer |
| **SI2015** | **SI03** | **SI03g6** | **High** | | **Slovene** | | **g** | **6** | **1nd Primary** | | |
| SI2015 | SI03 | SI03b4 | High | | Slovene | | b | 4 | Kindergarten | | |
| SI2015 | SI04 | SI04f34 | Medium | | Slovene | | f | 34 | Tertiary | | Pediatrician |
| SI2015 | SI04 | SI04m38 | Medium | | Slovene | | m | 38 | Tertiary | | Biologist |
| **SI2015** | **SI04** | **SI04g5** | **Medium** | | **Slovene** | | **g** | **5** | **Kindergarten** | | |
| SI2015 | SI04 | SI04b2 | Medium | | Slovene | | b | 2 | Kindergarten | | |
| SI2015 | SI05 | SI05f37 | Medium | | Slovene | | f | 37 | Tertiary | | High school teacher |
| SI2015 | SI05 | SI05m42 | High | | Slovene | | m | 42 | Secondary | | CEO |
| **SI2015** | **SI05** | **SI05g5** | **High** | | **Slovene** | | **g** | **5** | **Kindergarten** | | |
| SI2015 | SI06 | SI06f31 | Low/ Medium | | Slovene | | f | 31 | Secondary | | Housewife |
| SI2015 | SI06 | SI06m29 | Low/ Medium | | Slovene | | m | 29 | Secondary | | Auto mechanic |
| **SI2015** | **SI06** | **SI06b7** | **Low/ Medium** | | **Slovene** | | **b** | **7** | **2nd Primary** | | |
| SI2015 | SI06 | SI06b3 | Low/ Medium | | Slovene | | b | 3 | Kindergarten | | |
| SI2015 | SI06 | SI06g1 | Low/ Medium | | Slovene | | g | 1 | Home | | |
| SI2015 | SI07 | SI07f30 | Medium | | Slovene | | f | 30 | Tertiary | | Sales assistant |
| SI2015 | SI07 | SI07m32 | Medium | | Slovene | | m | 32 | Tertiary | | Telecommunication engineer |
| **SI2015** | **SI07** | **SI07b6** | **Medium** | | **Slovene** | | **b** | **6** | **Kindergarten** | | |
| SI2015 | SI07 | SI07g3 | Medium | | Slovene | | g | 3 | Kindergarten | | |
| SI2015 | SI08 | SI08f40 | Medium | | Slovene | | f | 40 | Tertiary | | Media planner |
| SI2015 | SI08 | SI08m38 | Medium | | Slovene | | m | 38 | Tertiary | | Quality manager |
| **SI2015** | **SI08** | **SI08g7** | **Medium** | | **Slovene** | | **g** | **7** | **2nd Primary** | | |
| SI2015 | SI08 | SI08b16 | Medium | | Slovene | | b | 16 | 2nd Secondary | | |
| SI2015 | SI08 | SI08b4 | Medium | | Slovene | | b | 4 | Kindergarten | | |
| SI2015 | SI09 | SI09f33 | Low/ Medium | | Slovene | | f | 33 | Tertiary | | Online journalist |
| SI2015 | SI09 | SI09m29 | Low/ Medium | | Slovene | | m | 29 | Tertiary | | Web designer |
| **SI2015** | **SI09** | **SI09g6** | **Low/ Medium** | | **Slovene** | | **g** | **6** | **1st Primary** | | |
| SI2015 | SI09 | SI09g3 | Low/ Medium | | Slovene | | g | 3 | Kindergarten | | |
| SI2015 | SI10 | SI10f32 | Low | | Slovene | | f | 32 | Secondary | | Housewife |
| SI2015 | SI10 | SI10m45 | Low | | Slovene | | m | 45 | Tertiary | | Computer programmer |
| **SI2015** | **SI10** | **SI10b6** | **Low** | | **Slovene** | | **b** | **6** | **Kindergarten** | | |
| SI2015 | SI10 | SI10b0 | Low | | Slovene | | b | 0 | Home | | |

# 0-8 All Sample Integrated 2014-2017 - UK Pilot

| Fieldwork | Family code | Member Code | Family income | e | Ethnicity | e | Sex | Age | max level of education | e | Profession parents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| UK2014 | UK1 | UK1m | Medium | | White British | | F | 41 | Completed college | | |
| UK2014 | UK1 | UK1f | Medium | | Other mixed back | | M | 51 | Completed college | | |
| UK2014 | UK1 | UK1b3 | Medium | | Other mixed back | | M | 3 | Kindergarten | | |
| **UK2014** | **UK1** | **UK1b6** | **Medium** | | **Other mixed back** | | **M** | **6** | **Year 2** | | |
| UK2014 | UK1 | UK1b8 | Medium | | Other mixed back | | M | 8 | Year 4 | | |
| UK2014 | UK2 | UK2m | High | | White and Asian | | F | 39 | Completed college | | |
| UK2014 | UK2 | UK2f | High | | Other White Euro | | M | 40 | Completed college | | |
| UK2014 | UK2 | UK2b5 | High | | Other mixed back | | M | 5 | Year 1 | | |
| **UK2014** | **UK2** | **UK2g6** | **High** | | **Other mixed back** | | **F** | **6** | **Year 2** | | |
| UK2014 | UK3 | UK3m | High | | White British | | F | 47 | Completed college | | |
| UK2014 | UK3 | UK3f | High | | White British | | M | 51 | Completed college | | |
| **UK2014** | **UK3** | **UK3g6** | **High** | | **White British** | | **F** | **6** | **Year 2** | | |
| UK2014 | UK3 | UK3b13 | High | | White British | | M | 13 | Year 9 | | |
| UK2014 | UK3 | UK3b16 | High | | White British | | M | 16 | Year 12 | | |
| UK2014 | UK4 | UK4m | High (but clear | | Latina | | F | 40s | Completed college | | |
| UK2014 | UK4 | UK4f | High (but clear | | Other White Euro | | M | 40s | Completed college | | |
| **UK2014** | **UK4** | **UK4b6** | **High (but clea** | | **Other mixed back** | | **M** | **6** | **Year 2** | | |
| UK2014 | UK5 | UK5m | Medium | | White British | | F | 40s | Completed college | | |
| UK2014 | UK5 | UK5b12 | Medium | | White British | | M | 12 | Y12 | | |
| UK2014 | UK5 | UK5g10 | Medium | | White British | | F | 10 | Y11 | | |
| **UK2014** | **UK5** | **UK5gi6** | **Medium** | | **White British** | | **F** | **6** | **Y2** | | |
| **UK2014** | **UK5** | **UK5gii6** | **Medium** | | **White British** | | **F** | **6** | **Y2** | | |
| UK2014 | UK6 | UK6m | Medium | | Black British | | F | 30s | Completed college | | |
| UK2014 | UK6 | UK6f | Medium | | Black British | | M | 40s | Completed college | | |
| UK2014 | UK6 | UK6b16 | Medium | | Black British | | M | 16 | Completed secondary | | |
| **UK2014** | **UK6** | **UK6g6** | **Medium** | | **Black British** | | **F** | **6** | **Y2** | | |
| UK2014 | UK6 | UK6g5 | Medium | | Black British | | F | 5 | Y2 | | |
| UK2014 | UK7 | UK7m | Medium | | White British | | F | 40s | Completed college | | |
| UK2014 | UK7 | UK7f | Medium | | White British | | M | 40s | Completed college | | |
| **UK2014** | **UK7** | **UK7g7** | **Medium** | | **White British** | | **F** | **7** | **Y2** | | |
| UK2014 | UK7 | UK7g5 | Medium | | White British | | F | 5 | Y2 | | |
| UK2014 | UK8 | UK8m | Medium | | White British | | F | 40 | Completed college | | |
| UK2014 | UK8 | UK8f | Medium | | White British | | M | 40 | Completed college | | |
| **UK2014** | **UK8** | **UK8g7** | **Medium** | | **White British** | | **F** | **7** | **P3 (Eng Y2)** | | |
| UK2014 | UK8 | UK8b4 | Medium | | White British | | M | 4 | Kindergarten | | |
| UK2014 | UK9 | UK9m | High | | White British | | F | 46 | Completed secondary | | |
| UK2014 | UK10 | UK9f | High | | White British | | M | 51 | Attended college | | |
| **UK2014** | **UK10** | **UK9g6** | **High** | | **White British** | | **F** | **6** | **P3 (Eng Y2)** | | |
| UK2014 | UK10 | UK10m | High | | White British | | F | 49 | Completed college | | |
| UK2014 | UK10 | UK10f | High | | White British | | M | 50 | Completed college | | |
| UK2014 | UK10 | UK10b9 | High | | White British | | M | 9 | P5 (Eng Y4) | | |
| **UK2014** | **UK10** | **UK10b7** | **High** | | **White British** | | **M** | **7** | **P3 (Eng Y2)** | | |

# Annex 5

## Partnership

**Research teams participant in the pilot phase carried over 2014-2015**

| Country | Research Institute | Team members |
|---|---|---|
| Belgium | Catholic University of Leuven | Verónica Donoso, Wannes Ribbens |
| Czech Republic | Masaryck University Brno | David Smahel, Martina Černíková, Věra Kontríková |
| Finland | University of Oulu | Riitta-Liisa Korkeamäki, Tuula Myllylä-Nygård, Marja Niska, Anni-Sofia Heikkilä |
| Germany | Outpatient Clinic for Behavioral Addictions, UMC-Mainz | Michael Dreier, Manfred Beutel, Schaack, C., Kai Müller, Klaus Wölfling |
| Italy | Catholic University of Milan | Giovanna Mascheroni, Marina Micheli, Daniele Milesi |
| United Kingdom | London School of Economics<br><br>University of Sheffield<br>University of Edinburgh | Sonia Livingstone,<br>Svenja Ottovordemgentschenfelde,<br>Jackie Marsh,<br>Lydia Plowman, Ben Fletcher-Watson |
| Russia | Lomonosov State University | Galina Soldatova, Vladimir Shlyapnikov, Oxana Olkina-Teslavskaia |

**Research teams participant in the enlargement enlargement with data collection in 2015-2017**

| | | |
|---|---|---|
| Belgium | iMinds & Mediawijs - Knowledge Centre for Media Literacy Flanders<br>International Association of Internet Hotlines<br>Erasmus University Rotterdam | Hadewijch Vanwynsberghe, Céline De Clercq, Charlotte Catteeuw, Miguel Devriese, Veronica Donoso, Wannes Ribbens |
| Bulgaria | Bulgarian Safer Internet Center<br>Applied Research and Communications Fund<br>Association Roditeli | Luiza Shahbazyan,<br>Marko Hajdinjak,<br>Antoaneta Kumanova |
| Croatia | Institute of Social Sciences Ivo Pilar<br>Clinical Hospital Centre Osijek | Marina Kotrla Topić,<br>Marina Perković Kovačević |
| Cyprus | Cyprus Neuroscience & Technology Institute | Anna Pavlina Charalambous, Elena Aristodemou, Andreas Andreou |
| Denmark | Aarhus University<br>Aalborg University<br>The Danish Film Institute<br>Media Council for Children & Young People | Stine Liv Johansen, Marie Junge Ernst,<br>Malene Charlotte Larsen,<br>Lone Hejlskov Munkeberg |
| Latvia | University of Latvia | Linda Daniela, Zanda Rubene, Baiba Āriņa, Raimonds Strods, Ilze Dinka, Ieva Valpētere, Kristīne Kriņģele, Daiga Kalnina, Nora Jansone-Ratinika |
| Lithuania | Kaunas University of Technology | Vilmantė Liubinienė, Ramunė Kasperavičienė, Jolita Horbačauskienė, Audronė Poškienė |
| Malta | University of Malta | Charles L. Mifsud, Rositsa Petrova |
| Norway | Queen Maud University College of Early Childhood Education<br>Norwegian Media Authority | Mari-Ann Letnes,<br>Svein Sando,<br>Barbro Hardesen |
| Portugal | Universidade Católica Portuguesa<br>Instituto de Educação, Universidade de Lisboa | Patrícia Dias,<br>Rita Brito |
| Romania | Institute of Sociology, Romanian Academy<br>Christian University 'Dimitrie Cantemir' | Anca Velicu,<br>Monica Mitarcă |
| Russia | Lomonosov State University | Galina Soldatova, Oxana Olkina-Teslavskaia |
| Slovenia | University of Ljubljana | Bojana Lobe |
| Spain | Universidad Autónoma de Madrid<br><br>Universitat Autòma de Barcelona | David Poveda, Mitsuko Matsumoto,<br>Marta Morgade, Nieves Galera, Cristina Roncero<br>Cristina Aliagas, Cristina Correro |
| The Netherlands | Vrije Universiteit Amsterdam<br>Erasmus Universiteit Rotterdam | Claudia Van Kruistrum,<br>Roel van Steensel |
| Switzerland | Zurich University of Applied Sciences | Könitzer Bianca, Jeker Franziska, Waller Gregor |

**Research teams participant in the advanced phase with data collection in 2016-2017**

| Country | Research Institute | Team members |
|---|---|---|
| Belgium | iMinds & Mediawijs - Knowledge Centre for Media Literacy Flanders | Hadewijch Vanwynsberghe, Debbie Vaes |
| Bulgaria | Research and Communications Fund Association Roditeli<br>Bulgarian Safer Internet Center Applied | Marko Hajdinjak,<br>Boyko Tsenkov |
| Croatia | Institute of Social Sciences Ivo Pilar<br>Clinical Hospital Centre Osijek<br>J. J. Strossmayer University | Marina Kotrla Topić,<br>Marina Perković Kovačević,<br>Daniela Šincek, Ivana Duvnjak |
| Malta | University of Malta | Charles L. Mifsud, Rositsa Petrova |
| Portugal | Universidade Católica Portuguesa<br>Instituto de Educação, Universidade de Lisboa | Patrícia Dias,<br>Rita Brito |
| Russia | Lomonosov State University | Galina Soldatova, Oxana Teslavskaia |
| Slovenia | University of Ljubljana | Bojana Lobe |
| Spain | Universidad Autónoma de Madrid<br><br>Universitat Pompeu Fabra<br>Universitat Autòma de Barcelona | David Poveda, Mitsuko Matsumoto,<br>Marta Morgade, Nieves Galera, Cristina Roncero<br>Cristina Aliagas,<br>Cristina Correro |
| The Netherlands | Vrije Universiteit Amsterdam | Claudia Van Kruistrum |
| Switzerland | Zurich University of Applied Sciences | Könitzer Bianca, Jeker Franziska, Waller Gregor |

# Annex 6

## National reports

National pilot study reports 2014-2015

| Country | Research Institute |
|---|---|
| Belgium | (EN) http://publications.jrc.ec.europa.eu/repository/handle/JRC93239 |
| Czech Republic | |
| Finland | |
| Germany | |
| Italy | |
| United Kingdom | |
| Russia | |

National study reports 2015-2016 and 2016-2017

| | |
|---|---|
| Belgium | **First report 2015-2016 and second report 2016-2017**<br>(EN) www.mediawijs.be |
| Bulgaria | First report 2015-2016<br>(EN) https://www.safenet.bg/images/sampledata/files/National_report-JRC_BG_EN.pdf<br>(BG) https://www.safenet.bg/images/sampledata/files/0-8_National_report_Bulgaria_BG_final.pdf<br>Second report 2016-2017<br>(EN) https://www.safenet.bg/images/sampledata/files/0-8_Bulgaria_National_report_1year_later.pdf<br>(BG) https://www.safenet.bg/images/sampledata/files/0-8_Bulgaria_National_report_1year_later_BG.pdf |
| Croatia | Report 2015-2016 and second report 2016-2017 to be published<br>(EN) https://bib.irb.hr/datoteka/854042.Young_children_and_digital_technology_CROATIA.pdf |
| Cyprus | Report 2015-2016<br>(EN) http://www.cyberethics.info/SID2016/Young_Children_and_Digital_Technology_Cyprus.pdf |
| Denmark | Report 2015-2016<br>(EN) http://www.aau.dk/digitalAssets/201/201213_national-report_2015_denmark_proofread-2-.pdf |
| Latvia | Report 2015-2016<br>(EN)https://www.pzi.lu.lv/fileadmin/user_upload/lu_portal/projekti/pzi/0-8__National_report_LV_ENG_with_annexes.pdf |
| Portugal | First report 2015-2016<br>(PT) http://cecc.fch.lisboa.ucp.pt/en/publications/veritati-cecc-repository.html<br>Second report 2016-2017<br>(PT) http://cecc.fch.lisboa.ucp.pt/en/publications/veritati-cecc-repository.html |
| Romania | Report 2015-2016<br>(EN) www.insoc.ro/institut/RaportCopiiiSiTehnologiileDigitale.pdf<br>(RO) http://www.insoc.ro/institut/RaportYoungChildrenAndDigitalTechnologiesRO.pdf |
| Slovenia | Report 2015-2016 and second report 2016-2017 to be published<br>(EN) https://ecpr.eu/Events/PanelDetails.aspx?PanelID=3920&EventID=99 |
| Spain | First report 2015-2016<br>(EN)<br>https://ddd.uab.cat/pub/estudis/2016/145656/Aliagas_Poveda_08SpanishReport_Finalv3_Feb2016.pdf<br>Second report 2016-2017<br>(EN) https://repositorio.uam.es/xmlui/handle/10486/669336 |
| The Netherlands | Report 2015-2016 and second report 2016-2017 to be published<br>(EN)https://research.vu.nl/en/publications/young-children-0-8-and-digital-technology-dutch-national-report |
| Malta | First report 2015-2016 and second report 2016-2017 to be published<br>(EN) https://www.um.edu.mt/__data/assets/pdf_file/0012/314400/YoungChildrenandDigitalTechnology-TheNationalReportforMalta.pdf |
| Norway | Report 2015-2016<br>(EN) https://www.medietilsynet.no/globalassets/engelsk/young-children-0-8-and-digital-technology-2016.pdf |
| Switzerland | First report 2015-2016<br>(EN)<br>https://ddd.uab.cat/pub/estudis/2016/145656/Aliagas_Poveda_08SpanishReport_Finalv3_Feb2016.pdf<br>Second report 2016-2017<br>(EN) https://www.zhaw.ch/de/psychologie/forschung/medienpsychologie/mediennutzung/young-children-and-digital-technology/ |

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*Serving society*
*Stimulating innovation*
*Supporting legislation*

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