Exploring Determinants of Parental Engagement in Online Privacy Protection:
A Qualitative Approach

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ABSTRACT

In response to the increasing concern surrounding the collection of children's data online, the research community has acknowledged the crucial need to protect children's privacy in the digital age. While existing research has primarily concentrated on educating children and teachers, there is only limited research on the role of parents in safeguarding their children's online privacy. This paper seeks to enhance our understanding of parental behaviour examining the various factors that impact parental engagement in online privacy protection. Through semi-structured interviews with eight media educators, we gained valuable insights into the complex decision-making processes of parents in this regard. By utilising an exploratory, qualitative approach, we were able to uncover subtle nuances and motivations that had not been previously addressed by existing theories. By shedding light on these aspects, we contribute to a more comprehensive understanding of how to effectively safeguard children's privacy online. This study not only adds to the existing body of knowledge but also offers practical implications for empowering parents to make informed privacy decisions.

CCS CONCEPTS

• **Security and privacy** → **Human and societal aspects of security and privacy**.

KEYWORDS

Privacy Literacy, Privacy Behaviour, Parents, Children

1 INTRODUCTION

In today's digital era, children spend more time online than ever before. It offers them opportunities of learning, inspiration, and a space to experiment the construction of their own identity [22]. In

doing so they often seek the privacy from their parents - while simultaneously disclosing personal information to friends and sometimes even strangers [22, 35]. At the same time, as technology advances, the significance of personal data increases, making it more attractive for various stakeholders to collect, use, and potentially manipulate this information to their advantage [32].

Children are particularly vulnerable when it comes to privacy violations online. Younger children, in particular, may struggle with understanding the potential consequences of their actions online [44], making them more susceptible to threats like cyberbullying, manipulation, identity theft, or online predators [9]. Despite the efforts of lawmakers to establish a secure digital environment for children, research has indicated that regulations and enforcement measures are often inadequate, resulting in frequent vulnerabilities in children's online data [13, 15, 26, 36]. While important efforts are being made to empower children to safeguard their online privacy [40], it is important to acknowledge that the burden cannot solely rest on children and educators who are already facing challenges with limited resources [24, 38]. Undeniably, a structural change is needed to mitigate power imbalances online, that often allow service providers and other entities to exert disproportionate control over individuals' personal information and online interactions [24]. In the meantime, it is crucial for parents to take on responsibility and play an active role in safeguarding their children's online privacy, as demonstrated by [15, 20, 33, 38]. Unfortunately, research indicates that a significant number of parents are unaware of the critical need to protect their children's online privacy. This becomes particularly apparent in the context of potential risks associated with the collection and sharing of personal information with third parties [7, 11, 42]. Whereas some parents may struggle to navigate the complexities of online privacy [11, 42], others may even put their children's privacy at risk by sharing personal information and photos on social media without considering the potential consequences [4, 20, 29].

Some research has studied parents' understanding and attitudes towards different online privacy threats [11, 20, 23, 42–44], however, there remains a gap in understanding the underlying motivations driving their behaviours. Nevertheless, in order to support parents in effectively managing online privacy risks, this understanding is essential. The present study therefore aims at identifying the factors that motivate or hinder parents in implementing privacy protection measures for their children. This understanding will facilitate the development of targeted educational resources and programmes tailored to the individual circumstances of parents. By addressing the identified determinants, there is promise that these

educational offerings may be more effective in engaging parents in actively protecting their children's online privacy. Additionally, gaining insight into the psychology behind parental privacy decisions can benefit service providers that target children and families. By understanding these influencing factors, service providers may be able to create more appealing parental environments that effectively attract parents to manage privacy settings and mitigate potential risks.

2 RELATED WORK

2.1 Parents and their Children's Online Privacy

With the increasing amount of children's data that is processed, the interest of the academic community has increasingly turned to how children and families deal with online privacy. While there is a strong focus on educating children and understanding their motives, some research has also investigated parents behaviour and perceptions of children's online privacy in different context. Previous research has shown that they are not only deeply invested in their children's online safety [7, 25] but that they also care about their children's online privacy. For instance, [11] conducted qualitative interviews with parents and children to investigate their perceptions of online commercial data practices. The study revealed that while many parents were not proactive in safeguarding their own data, they were particularly concerned about protecting their children's personal information. These parents expressed a desire to have control over their children's privacy by applying restrictive mediation strategies (e.g. prohibiting subscriptions or completing subscription forms on their children's behalf). However, when it came to implicitly collected data, parents had a limited understanding of how it was gathered and utilised, leading them to feel overwhelmed or powerless in protecting it. Similar findings were presented by [42]. She conducted interviews with families and validated her findings with a quantitative survey, revealing that parents express significant concerns about their children's privacy but have limited awareness of the risks associated with personal data collection by mobile apps. In another study, [43] found that while the majority of the parents in their study was concerned about the online privacy of their child related to their tablet use, they still let their child use apps with excessive access to personal information or inappropriate age rating. On a positive note, they found that three in five parents checked the settings of downloaded apps regularly. [7] found in a quantitative survey conducted in Portugal, that their study participants valued privacy and even indicated privacy protection as most important criterion in selecting an app. However, they were frequently unaware of potential risks, such as being redirected to other websites or companies collecting data to sell to third parties. Furthermore, [9] conducted a survey with parents in different countries, finding that parents in all countries preferred far less data mining of students' online activities than seems to be the current practice.

At the same time, research on the so called phenomenon of "sharenting" suggests, that parents frequently comprise the online privacy of their children themselves. [20] found in semi-structured interviews with mothers of babies that they shared baby photos on Facebook, receiving validation and positive feedback, while at the same time struggling in managing privacy and children's digital

footprints. In line with this, [29] applied an automated analysis of public Facebook pages to prove that many users share personal information of babies and young children that allows to infer not only the children's names and birthdays, but also their addresses, parents' birthdays and parents' political affiliation by linking the data to voter registration records. They further conducted a quantitative survey and found evidence that even more parents are compromising the privacy of their children among Facebook friends. [1] studied demographics, social media activity, parenting styles, children's social media engagement, and parental sharing attitudes and behaviours. They found that parents who are very active on social media and have larger social networks, do not seem to differentiate between pictures of themselves or their children with regards to privacy and post pictures of their children more frequently than others. Furthermore, they found that a more permissive and confident parenting style, usually leads to more sharing activity. Their work is the only work that we are aware of, that examines predictors of parental behaviour related to the online privacy of their children. Our research complements their work by specifically examining the factors that influence parents in safeguarding their children's online privacy. In doing so, we aim to get a better understanding on what differentiates parents who prioritise their children's online privacy from those who may not be as prudent. With this research, we seek to enhance our understanding of the underlying motives driving parental decisions, ultimately contributing to a more comprehensive understanding of parental privacy behaviour.

2.2 Predicting Privacy Protective Behaviour

Research in the field of privacy attitudes, decisions, and behaviour is well-established, often targeted at explaining the phenomenon that people tend to value privacy more than they show in their actual behaviour, also called "privacy paradox" [5, 19]. This phenomenon has called interest in various fields, e.g. psychology, consumer marketing, behavioural economics and information systems. Work in this area differs in focus (investigating specific situations), methodology (quantitative models based on survey data, qualitative structured or unstructured interviews, mathematical evaluations of technical solutions), and underlying theoretical approaches, as can be seen in various systematic literature analyses [5, 14, 19, 37]. These underlying theoretical approaches play a crucial role in the selection of analysed determinants. One of the most well-known theories is the so called privacy calculus, which builds on the assumption that people take rational decisions, weighing the received benefits and potential negative consequences in sharing personal information [10, 21]. Various researchers have expanded on this approach by introducing human biases in the decision making process (e.g. heuristics, under-/overestimation of risks and benefits, (immediate) gratification, difference between judgements of risks ands benefits, habit [5]). Further research highlights the complex nature of making privacy decisions, introducing factors such as incomplete information (i.e. on possible costs and benefits of sharing personal information) and bounded rationality (people may lack the processing capacity for taking complex privacy decisions) [5, 14, 19, 37]. These can lead to the aforementioned biases and ultimately influence individuals to a seemingly paradox behaviour.
However, the existing approaches in explaining privacy decisions

cannot be easily transferred to the parental context. Taking privacy decisions in the realm of parenting is an even more complex process than it is for individuals. In the context of sharing baby pictures, [20] introduced the concept of privacy stewardship to describe parent's responsibility to decide "what is appropriate to share about their children online and ensuring that family and friends respect and maintain the integrity of those rules." However, not only matters of this interpersonal privacy [1] need to be taken into account, but also the deep underlying emotional factors accompanying parenthood. For instance, from a privacy calculus lens, a parent would not only need to consider possible benefits and risks for herself, but also possible benefits and risks for the child. Additionally, the parent would have to weigh potential benefits and risks of prioritising herself/the child and consider the consequences of potentially going against the will of the child. Due to this complex and multifaceted nature of parental privacy decision-making, we believe that applying existing theories to the parental context is challenging without additional research to support and contextualise them. Therefore, we decided to conduct qualitative research to get a deeper understanding of the factors that drive parental engagement in privacy protective behaviour. This allows us to gain insights into factors that may not be captured by existing theories, providing a more robust and comprehensive understanding of parental motives driving privacy protection. This foundation can then inform future research in generating new hypotheses for quantitative studies.

3 METHODOLOGY

3.1 Recruitment

To gain a better understanding of parental privacy behaviour, we decided on a two-fold exploratory, qualitative approach, interviewing both parents and professionals, i.e. media educators. In the context of Germany, media education is characterised by a dual focus on 1) instructing individuals to safely navigate the digital landscape and 2) integrating digital media into educational settings [39]. For the purposes of our study, only those media educators operating within the former domain were considered relevant. The recruitment criteria for this study included individuals who: 1.) were actively working as media educators, 2.) on the topic of online privacy (among others), 3.) with parents. The interviewed media educators were identified through a desk research, and recruited by email. Despite the absence of compensation, the response rate was significantly high, suggesting a strong motivation among media educators for cooperation. Nevertheless, only eight media educators could be recruited in the end. Although being close to the recommended sample size of 9-17 participants for homogeneous groups [16], this is a relatively low number. It can be attributed to the predominant focus of media educators on the education of children and teachers. Consequently, many media educators chose not to participate in the study, citing their limited experience in engaging with parents and their lack of expertise on the target group of parents. Though, this limits the validity of the findings it also emphasises the lack of work in this area. Taken together with the previously presented literature that shows that parents currently often cannot protect their children adequately, it highlights the need of further research and support initiatives. However, as we could already see signs of data saturation with regards to predictors

for privacy protective behaviour, we estimate the likelihood for further insights through additional interviews with media educators as limited. Therefore, we believe that our results are a valuable starting point for further research. Details about the participants and their work with parents are shown in table 1. It is important to note that all forms of interaction with parents occur within the broader context of safe media usage and are not limited to the topic of privacy.

Additionally, to the interviews with media educators, we interviewed 11 parents. These interviews covered family related technology use and privacy concerns revolving around the devices and services. In our sample, parents did not seem to possess a full comprehension of privacy threats. Therefore, in the context of this paper, we focus on the insights of professionals. As media educators have a more profound understanding of privacy threats and knowledge about countermeasures, we found that media educators were better able to analyse determinants of privacy protective behaviour within the parent context. Additionally, due to their work with many families with different geographical and social backgrounds, media educators were able to identify patterns and draw comparisons among the families they had worked with. However, as no single media educator can work with all parents, this represents a natural bias in our data. At the same time, media educators do not experience pressure to provide socially desirable answers as parents might would and therefore may be able to present a more neutral perspective. Nevertheless, it is evident that much more is to be learned about the motives of parents than this research can reveal, and that future studies are needed to validate and extend the findings in this paper.

3.2 Data Collection

Since all media educators' native language was German, the interviews were conducted in German by the same researcher. The interviews were structured into three main sections. The first section explored the role of online privacy issues in families in the daily practice of media educators. Subsequently, participants shared their views on working alongside parents, taking into account parental worries and potential willingness to gain knowledge about safeguarding privacy. The research also looked into obstacles and proposed approaches for engaging parents in privacy education. The final section represented an exploration of the requirements for both parents and professionals to enhance children's privacy protection online. The detailed interview questions can be found in the appendix A.1

The interviews took place between May and June 2023 and lasted between 50 and 70 minutes each. To ensure the comfort of the interviewees, the interviews were conducted online or in the respective media educators' workplaces. Prior to each interview, participants were informed about the purpose of the interviews. It was emphasised that participation was entirely voluntary, and participants retained the right to withdraw their consent at any time. It was further clarified that the interviews would be pseudonymised in order to safeguard their confidentiality and anonymity. As a consequence, all potentially identifiable information was removed during the transcription. Additionally, participants were informed that the interviews would be used exclusively for scientific purposes.

Table 1: Overview of Participating Media Educators

Media Educator	Gender	Form of Employment	Main Form of Interaction with Parents
ME1	m	Self-employed, affiliated with non-profit organisation	Parent-teacher conferences in the context of kindergardens, primary and secondary schools, sometimes workshops for families often a church context
ME2	m	Employed at non-profit organisation	Parent-teacher conferences in the context of primary and secondary schools
ME3	f	Employed at non-profit organisation	Parent-teacher conferences in the context of primary and secondary schools
ME4	m	Part-time secondary school teacher, part-time employed at ministry	Parent-teacher conferences in the context of primary and secondary schools
ME5	f	Part-time university teacher, part-time self-employed, affiliated with non-profit organisation	Data withheld
ME6	m	Employed at non-profit organisation, voluntary work with non-profit organisation	Parent-teacher conferences in the context of primary and secondary schools
ME7	m	Secondary school teacher, consultant, voluntary work with non-profit organisation	Parent-teacher conferences and workshops in the context of secondary schools and public library
ME8	f	Employed at non-profit organisation	Parent-teacher conferences and workshops organised by non-profit organisation

Finally, participants were asked for permission to record the interviews, to which all agreed. Closing the interviews, all participants were given the opportunity to provide any additional thoughts and were encouraged to contact the researchers if they had any further comments at a later time. Following our request to the IRB, we received the answer that, given the nature of the study, formal IRB approval was not considered necessary.

3.3 Data Analysis

The interviews were recorded, transcribed, and coded using the MAXQDA [1] software. The analysis followed the methodology presented by [27] and involved four key phases: data collection, data reduction, data display, and conclusion drawing. In the first cycle coding, we began with a master code [28], named PREDICTOR, to mark off segments that had potential to answer our research question on what influences parental privacy behaviour. This code was assigned generously, and then marked segments were revised closely for suitability [28]. The second iteration, consisted of inductive coding where the identified segments were assigned with descriptive codes [28], summarising the content of the segment. As recommended by [18], this coding process and excerpt assignment was repeated with a time lag of several weeks to ensure precise categorisation and allocation of all excerpts. The second cycle coding, then consisted of pattern coding [28], where first cycle codes were clustered into emerging themes. The resulting codebook can be found in the appendix A.2.

4 RESULTS

4.1 Demographic Factors

Many media educators referred to demographic factors to explain parental behaviour they had observed. These demographic factors are data describing parents, including characteristics such as social background, age, gender, and profession. Media educators presumed that these demographic characteristics can influence behaviours, attitudes and beliefs, particularly in relation to media education and technology usage.

4.1.1 Social Background. Media educators had different opinions on the effect of social background, i.e. geographical location, educational, and cultural background, on privacy protective behaviour. One media educator noted a difference in awareness for media education between rural and urban areas, with little awareness in rural communities. Similarly, he stated that depending on the social environments, data protection is not considered important, and children are active on social networks at an early age without their parents paying sufficient attention to the issue.

> But everyday life is often structured differently there. Children are often left to themselves and are on social networks at a very early age. And the parents set an example and often don't discuss the topic with their children. (ME1)

At the same, he claims that parents of higher educational level, implement protection mechanisms more frequently:

> It depends a bit on their level of education. (...) Then you hold a parents' evening at a daycare center or school, and the parents sitting there are often the ones who are thinking and reflective. They have an iPad at home and their child plays the cello in the afternoon.

> They are then clever and set up appropriate blocks for the children. (ME1)

This was to some degree contradicted by another media educator. He observed that while parents with academic background may enjoy discussing about global developments in data economy, this does not necessarily mean that their behaviour is adapted in everyday life.

> I'm deliberately exaggerating when I say that somehow an academic will probably take more time to talk to me about the global development of the data economy in AI over a glass of red wine. But that doesn't mean that they will then adapt their everyday behaviour accordingly. (ME2)

Two media educators also emphasised their observation that the cultural background and a possible migration history is not a predictor for more privacy awareness.

4.1.2 Parental Age. One common belief among media educators was that age plays a role in determining how parents engage in sharing information and media education. One media educator observed that younger parents who have grown up with smartphones tend to have fewer concerns about sharing personal information. Another media educator indicated that older parents often feel more uncertain, as they perceive the different media worlds as being far apart. Generational differences and the rapid development of technology can therefore lead to parents having different approaches when it comes to sharing personal information online. However, while younger parents might share more information online, they might also be able to better connect with their children on media topics, as their usage behaviour may not differ that much. One media educators confirms this by stating:

> The older the parents are and the younger the children are, the more insecure the parents are because the media worlds are so far apart. (ME5)

Hence, age might be a predictor for sharing children's data, but also for understanding children's activities online.

4.1.3 Gender. Media educators described how parents are influenced by gender when navigating technological issues. Despite growing efforts in empowering women in the STEM sector, several media educators observed a traditional division of roles in the families: Fathers often feel competent in technical matters and take responsibility for technical issues such as setting up devices, or ensuring safe internet access. On the other hand, it is usually mothers who deal with conflicts and educational topics.

> Generally speaking, it's still similar. Men look at how I can make the Fritzbox secure, how I can set up a preblock so that my child can't spend money. Mothers tend to ask when the first smartphone is allowed and my daughter no longer wants to eat much because she wants to become slimmer. (ME4)

Media educators also report that this gender divide is observable in the parent-teacher conferences, where mothers continue to dominate. As a consequence, gender might explain a preference in privacy protective behaviour, e.g. fathers setting up technical

solutions and mothers seeking the conversation with their children to explain privacy threats.

4.1.4 Profession. Media educators indicated that parents' occupational backgrounds can influence their level of involvement in privacy protection. Four media educators observed that parents who are knowledgeable about data privacy, often work with data protection in their professional environment. Thus, a driver for privacy protective behaviour among parents could be their profession:

> I always ask the classes: "What do you use?" There are always quite a few who use Signal or Threema. Then I ask: "Do you do that at home?" -"Yes, mom and dad do too." But then mom and dad are usually from the IT sector or somewhere in a data-sensitive area.(ME8)

While these parents may already possess a deep understanding of privacy issues and actively take steps to safeguard their children, media educators observed that they still like to attend at parent-teacher conferences suggesting a desire to further educate themselves on how to enhance their children's protection. It is worth noting, however, that expertise in the IT sector does not always equate to superior privacy knowledge. A media educator shared an anecdote about a high-ranking employee at a telecommunications company who, despite his professional background, discovered new information at a parent-teacher conference that he had previously never heard of.

4.2 Technology Related Factors

Media educators referred to various aspects of parents' own engagement with technology that impact their privacy protective behaviour. These encompass the extent of their engagement with social media platforms, proficiency in technical skills, and technical self-efficacy, which collectively fall under the category of "technology related factors".

4.2.1 Own Social Media Usage. Media educators described that parents' decisions to share personal information about their children online are influenced by their own relationship with social media. According to several media educators, there are two distinct positions: Some parents are cautious and sensitive about this issue, carefully considering what they post, while others do not perceive it as a significant concern. One media educator observed that the amount of information parents share about their children online often reflects their level of engagement with social media platforms. Parents who are actively involved in social media tend to share more about their children, whereas those who are less active are more reserved in their posting habits.

> We also have these two camps when it comes to image rights. There is sensitivity to this, but definitely not among everyone. You can also see that this social media hook that parents are attached to has a significant influence on how much they share of their children. But there's also a large number of people who simply have the issue on their radar and say themselves: "No, we don't want that." (ME2)

This demonstrates the influence of parents' attachment to social media in shaping their decisions regarding sharing personal

information about their children online. Furthermore, these findings corroborate previous research by [1], highlighting the impact of parents' social media usage on their online practices relating to their children. This suggests that parents' behaviours on social media platforms not only reflect their personal preferences but also influence the level of information shared about their children online.

4.2.2 Technical Skills. Media educators described a lack of technical skills to implement privacy protective measures. With the digital landscape becoming increasingly complex, a solid understanding of technology and proficiency in navigating online platforms is necessary to safeguard personal information. However, several media educators observed a lack in basic understanding of technology and operating skills, hindering parents in taking actions to protect privacy. For instance, media educators observed that some parents struggle with tasks such as adjusting privacy settings on devices and online platforms, locating relevant information, or enhancing browser security with plugins.

> There is often a lack of basic technical understanding. The whole issue of privacy is also very much related to technology. Many people feel overcharged or are unable to install a plugin for a browser or Firefox. (ME7)

Consequently, the possession of technical skills is an important factor for privacy protective behaviour. Without these skills, it is challenging to comprehend the fundamental processes involved and effectively implement security measures. As a result, acquiring these skills can be considered as prerequisite for engaging in privacy protection. Therefore, media educators emphasised the importance of acquiring technical skills in order to safeguard both oneself and others.

> Then your own media competence must be present in some way. If I'm not media literate, I can't take care of others. Basic education is lacking in this area. (ME7)

4.2.3 Technical Self-Efficacy. Media educators stated that parents face psychological barriers that prevent them from educating themselves on how to safely navigate the digital world. One media educator established that the current generation of parents may not have received adequate education on these matters during their own schooling. He inferred that for effectively protecting one's privacy, it requires self-taught skills and the ability to research online in order to independently acquire the necessary knowledge. However, many media educators shared the perceptions that despite the abundance of materials in various formats on different platforms [2], many parents did not want to learn these skills, due to psychological barriers and a lack of contextual understanding. Several media educators mentioned that they experienced feelings of being overwhelmed by advancements in technology and the corresponding modern lifestyle preferences of their children. Many parents preferred not to delve into it as it is seen as something opaque. Furthermore, media educators described a feeling of not being in control, e.g. to effectively addressing the issue. Therefore,

two media educators pointed out a recurring wish by parents to outsource the topic, instead of taking action themselves:

> At the parents' evening, I tell them at the beginning that they can ask questions at any time. Almost nothing ever comes up. And in the end, there are always two or three questions and usually the first one: Will you come back to our school to explain this to the children? No, that's your job. (...) They have the idea that they get an expert, he explains it to the children once and that's it. That doesn't work, it's an ongoing task. Once I spent the whole parents' evening talking about how it's a parenting issue, how you can't hand it over and what points you have to keep an eye on, and then two mothers come up to me afterwards and ask me in all seriousness how much I cost when I come to their house. (ME3)

These observations can be related to the principle of self-efficacy, which describes an individual's belief in their ability to succeed and achieve desired outcomes [3]. This implies that parents who show more self-efficacy, believe in their ability to master the complex topic of privacy protection and thus are more confident in delving into a possibly uncomfortable topic they might know little about.

4.3 Privacy Related Factors

Apart from demographic factors and factors related to parent's technology use, media educators also described several aspects that directly drive parent's pre-disposition towards privacy or privacy openness, including negative privacy experiences, parents' understanding and awareness of privacy threats, their level of concern about these threats, and the perceived costs associated with implementing privacy protection measures.

4.3.1 Negative Privacy Experience. Several media educators described negative privacy experiences by children as a predictor for privacy protective behaviour among parents. One media educator explained that few parents sit down to read through terms and conditions or privacy policies of various apps and platforms they use on a daily basis. She explained that it often takes a specific incident or event that serve as wake-up call for parents and prompt action.

> This also arises in families through pressure to act or a current event. My child is being bullied in the class chat and has sent something around and it's now out of hand: how do we get it back? Or my daughter's Instagram profile has been hacked and pornographic content is now being sent there. What can we do? (ME5)

Events like these have the ability to awaken parents to the critical need for safeguarding their child's online privacy. In some cases, these incidents prompt parents to take immediate action and implement measures to regain control over their child's online presence. Thus, when children's privacy and safety are at stake, parents tend to become more proactive in understanding and implementing privacy measures. As a consequence, negative experiences with privacy can drive parents to take a more vigilant approach to safeguarding their children's online privacy in the future.

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[2]There are a number of non-profit organisations in Germany that offer a wide range of educational material for children, teachers, and parents. Some frequently mentioned resources were klicksafe.de, schau-hin.de, and handysektor.de.

4.3.2 Privacy Awareness. Media educators described the importance of awareness in recognising and understanding potential risks to their children's privacy. Five media educators highlighted a lack of such awareness among parents. They pointed out that many parents have incomplete knowledge about online threats and are often unaware of the dangers that exist online, including the presence of predators who target children through chat zones in games and social media, or content that their children may be exposed to online, such as pornography, extremism, violence, and dangerous challenges that can have serious consequences.

> And then I ask: And how many of you have explained to your child how to protect themselves against pedophiles on the Internet? Almost no one. And they don't realise that this can happen in any game and on any social media, i.e. anywhere you have chat zones. And if children are recognisable as children, it's a matter of days before they are contacted. (...) They don't have any of that on their radar. Some of them don't even know which apps their children are using. (ME3)

Many media educators noted that numerous parents attend parent-teacher conferences without a clear understanding of what to expect. They reported that some parents were shocked by the information shared during the conference and expressed a need to further educate themselves on the topic. In fact, without proper awareness and understanding of what their children are doing online, parents are unable to effectively protect them from these harmful influences. Unsurprisingly, many educators therefore call for more privacy education for parents. As a consequence, privacy awareness can be seen as an important determinant to privacy protective behaviour among parents.

4.3.3 Privacy Concern. Next to privacy awareness, media educators believed that privacy concern is a crucial determinant for privacy-protective behaviour among parents. Privacy awareness refers to understanding and knowing about privacy threats, while privacy concern is the level of worry or fear an individual feels about these threats. These two factors are closely intertwined, as limited awareness typically leads to minimal concern. If one is not aware of potential risks, one does not have a reason to worry. In our study, several media educators observed that parents often have the mindset that they have nothing to hide, and instead find it beneficial when it is used for personalised advertising. Two media educators also experienced a resignation among parents, stating that there is nothing they can do about it. One media educator had encountered the misconception that because the children are already sharing so much information online, parents' own privacy practices do not matter. Another media educator observed that there is a tendency for parents to underestimate the potential dangers that their own children may face online. Despite statistics showing that a significant number of children have had negative experiences online, many parents believed that their own children are safe because they are not actively communicating with their parents about it. Another media educator tried to explain this lack of concern by the abstract nature of privacy threats:

> It's super abstract. We don't realise it. (...) I would bluntly say that our evolutionary mechanisms fail,

because if someone looked through the window or tore open our letters, we would act. But we simply don't realise that. (ME5)

4.3.4 Perceived Cost of Privacy Protection. Seven out of eight media educators, mentioned the perceived cost of privacy protection as a determinant for privacy protective behaviour. These costs comprise the expected negative consequences resulting from the adoption of privacy-protective behaviour, e.g. feelings of exclusion, the effort to familiarise oneself with secure platforms, or the commitment to maintaining one's privacy. Several media educators emphasise that the idea of privacy can come across as bureaucratic and restrictive, while the benefits of convenience and access to technology seem more appealing. The term may bring to mind images of strict regulations and limitations, which can be off-putting to those who value convenience and connectedness. Thus, in a world that values consumption and participation, privacy can feel like a hindrance rather than a necessity. One media educator emphasises that the benefits gained from a trade-off for privacy are not immediately obvious or tangible, making it challenging for parents to prioritise it in their daily lives.

> I think it's because data protection is simply not sexy. It always sounds like bureaucracy and prohibition. On the other hand, there's fun and action and participation in lots of things. And if I have to pay a price for it that I don't even see, then the decision is relatively easy for me. (ME1)

This suggests that parents' perceptions of how much they must give up to attain good privacy protection and the perceived severity of loosing it, will impact whether they choose to engage in privacy-protective behaviours. Similarly, several media educators indicated that parents often perceive the effort of changing their behaviour and maintaining privacy protection as a daunting task. One media educator stated that many parents are aware of the risks and potential consequences of not safeguarding their personal information, yet they choose to ignore it due to the inconvenience and complexity involved. The convenience factor offered by products that require the use of data often outweighs their concerns about privacy. Another media educator emphasised that it requires a great deal of discipline to consistently prioritise privacy protection amidst the temptations of modern technology. Therefore, the idea of making significant changes or adhering to new rules in order to protect privacy can be overwhelming for parents.

4.4 Parent Specific Factors

While the previous main themes could be relevant to a broad adult audience, the aspects presented in the category of parent-specific factors are particularly distinctive to the individual characteristics and circumstances that parents bring to the privacy decision-making process. These aspects include parenting style, external influences, and resource limitations.

4.4.1 Parenting Style. Media educators described that the parenting style will impact their privacy choices. This includes how parents prioritise safety, navigate the balance between restriction and freedom, and handle conflicts with their children. Media educators perceive that the natural instinct of parents is to protect their

children. As two media educator pointed out, this can sometimes even lead them to constantly monitor their activities, online conversations, and whereabouts - sometimes against the will of their children. Several media educators indicated, that they can leverage on this protective nature to explain why data privacy is crucial to protect the children. In this context, media educators observed that parents often prioritise social risks such as cyberbullying, online grooming, and exposure to inappropriate content, while the issue of data privacy is often overlooked or deemed secondary. One media educator highlighted that many parents fail to consider the long-term implications of sharing personal information online and the potential consequences of data breaches. Furthermore, a recurring theme throughout the interviews is the decision-making power that parents have over their children's online behaviour. One media educators summarises this by stating:

> Parents decide for their children until they are 18. That is parental law. When I talk to parents in general, they have this idea of protecting their child. It's not much about autonomy. There are also parents who think differently. But the majority of parents tend to think that they have to protect their child and decide for the child. (ME7)

In this context, two media educators mention that parent's fear of fighting with their children over media issues heavily influences parents' decisions to protect their child's privacy online. One media educator perceives the usage of social media platforms as a particular exhausting topic of dispute, highlighting that children are sometimes desperate to be part of a social media platform because their peers are also using it. As parents may find it difficult to prevent them from joining, this can lead to conflicts and disagreements within the family. Thus, parents will also have to consider the perceived costs and benefits of the child. Another media educator, who also works as teacher, found that parents often feel relieved when they can use external factors, such as school policies, to justify their decision to limit their child's access to social media or technology. Ultimately, the goal is to strike a balance between allowing children the freedom to explore and socialise online while also protecting their privacy and well-being.

> You have to find the best possible balance between forbidding and allowing everything. (...) There are certainly parents who, out of good motivation, fear and concern, try to control and forbid everything and keep their children as safe as possible. Then there are those who negotiate, discuss things with their children as equals and go round in circles. And then there are parents who are clueless and think that the children will somehow do it. (...) It is difficult to manage this balancing act as guardian. (ME4)

In summary, parenting style and how parents handle conflicts with their children influences how parents handle privacy protection within the family. Furthermore, parents' level of worry or trust regarding their child's safety, can also be a determinant for parental engagement in privacy protective behaviour.

4.4.2 Limited Resources. A recurring theme during the interviews were the scarce resources of parents limiting them in privacy protective behaviour. Media educators described the overwhelming demands and responsibilities faced by parents in their daily lives, juggling multiple tasks and obligations while struggling to find time for themselves. It was noted by several educators that while privacy is a pressing issue, there are also other important topics within the realm of media. Furthermore, one media educator highlighted that in addition to media education, parents are faced with numerous other concerns that require their attention (e.g. school grades, sex education, etc.), that further limits their time, attention span, and resources.

> It's always a perceived time commitment. Everyone has stress and little time, and I think anyone who has children does anyway. Nobody gets blamed either. That's not the point. But convenience and security are to some extent mutually exclusive. For more data protection, you first have to spend more time. (ME6)
>
> Parents have other worries... The children are screaming. Then I realise that people don't read through this [privacy policy] (ME7)

Additionally, media educators perceived that parents tend to allow their children to use digital media more frequently to compensate for their lack of time. Digital media is often used to keep children busy or quiet, even in early childhood. One media educator observed this particularly with single parents:

> We have seen that single parents are yet another group that is slipping massively into this area of tension. This is because digital is often used to bridge time when parents don't have time. In other words, when parents work during the day or, especially in the case of single parents, when the parent is not there, I would assume that parents tend to allow more media use because it is then a time that the child feels is well spent. (ME8)

Media educators therefore emphasised the importance of showing parents that it is possible to take small steps in everyday life instead of having to be perfect.

4.4.3 External Pressure. Five media educators described external pressure on parents that hinders them in implementing privacy protective behaviour. This may be caused by schools, associations, other parents, family members, and the children themselves. One media educator described parents as "herd animals", who tend to follow the majority and stick with popular platforms such as WhatsApp, even if they have concerns. Several media educators highlighted that this pressure is exacerbated by the fact that not using these services can lead to social exclusion, especially in contexts where important communication within schools or organisations is conducted through the app. Parents who choose to use alternative platforms may find themselves isolated and ostracised, facing criticism and judgment. This can create a situation where individuals feel compelled to conform to the majority, even if it goes against their privacy concerns.

> But parents who are aware of this often say, "We don't have WhatsApp." They are the only ones sitting at the

parents' evening without WhatsApp and are treated with hostility as if they were from Mars. They don't notice anything because the other parents refuse to set up a group on Threema or Signal or at least always send important information from the group to one mother by text message. (ME3)

One media educator pointed out that it is often grandparents who share personal information of the children. Therefore, parents may encounter conflicts with with family members as well. As a consequence, the way parents handle this external pressure will impact their receptiveness to implementing privacy-protective behaviours.

5 DISCUSSION

5.1 Contextualising Determinants

In the interviews we asked media educators general questions about parental privacy protection. However, it is important to note that the answers indicated determinants that take effect on different levels, i.e. determinants that impact how parents share children's data, how they react to privacy threats, how easily they can implement privacy protection, and how they engage with media education. Furthermore, while presented separately, the determinants are most likely not independent from one another. For instance, the data suggests that age impacts parents' technical skills. For example, the younger the parents ar,e the more they grew up with technology themselves and might have less fear of contact with new services. Similarly, technical skills are likely to impact technical self-efficacy. For instance, Parents who are more comfortable using technology, might be more confident in trying to implement technical solutions like downloading a browser plugin, themselves. At the same time, having proficient technical skills can decrease the perceived cost of implementing privacy measures, as the effort required may seem less daunting compared to those who lack technical know-how. Furthermore, concepts that are closely linked are privacy concern and privacy awareness as well as negative privacy experience and privacy concern. It is likely that even more interrelations exist, that could be examined and quantified in a future study.

Placing the findings in a larger context, our interviews with parents highlighted the factors privacy awareness, privacy concerns, technical skills, and limited resources. Parents often demonstrated limited awareness regarding the collection of their personal data and its potential uses, findings that are supported by [7, 11, 42]. Additionally, there was a lack of concern about their online privacy, with some parents believing that they had nothing to hide or assuming that service providers already had access to their data. Interestingly, this is not consistent with [7, 42, 43], who found that parents highly value privacy. This could be explained by the different emphases and methodologies of the studies. For instance, in the study by [42] parents accompanied their children to interviews that focused on how children felt about three scenarios of personal data collection by apps. Only at the end parents were asked to comment about the interviews. Consequently, the parents had been confronted with explicit examples of data collection and had witnessed the reactions of their children to them. With regards to technical skills, the majority of parents in our study struggled to identify effective strategies for mitigating online privacy risks,

aside from refraining from sharing photos. A lack of technical skills was also reported in [43], who found that parents have difficulties in understanding different privacy configurations. Concerning lack of resources, many parents expressed the wish for time-efficient media education. The problems around time limitation were also raised by [42] who reported on the challenge of "communicating privacy risks — especially those without immediate impacts — to busy parents" [42].

Furthermore, many determinants align with the results of other studies. For age, [2] found that younger parents are more accepting of data collection by smart toys. [23] found that younger parents and parents from a high socio-economic background shared more frequently information of their children online. Additionally, they also found that technical skills were influenced by age and socio-economic background. The same study also revealed differences between fathers and mothers. Interestingly, mothers in their sample reported better privacy skills (i.e. managing settings, deciding what to share, managing contacts). In line with our findings, [34] discovered in their study a difference between gender with regards to mediation strategies. While mothers were more likely to check on their children's mobile phones, fathers were responsible for more technical issues, such as setting parental control tools or controlling downloads. Furthermore, [42] observed a lack of self-efficacy. Parents in their study expressed difficulties in keeping up with developing technologies and tools and relied on other people to safeguard their children. Similarly, parents in a study by [11] described feelings of being out of their control. Findings of both studies are consistent with the findings in our study. Finally, similar observations about the role of external stakeholders were reported by [43] who found that parents struggle to manage conflicts about the use of privacy-invasive apps.

5.2 Managing Children's Online Privacy

In this paper, we have analysed interview data with media educators to learn what influences parents in choosing privacy protective behaviour. What becomes apparent is that the parental task of managing children's privacy has multiple dimensions. In the following we are going to discuss these dimensions and present resulting considerations that are linked to the identified determinants. Many of the mechanisms described can be viewed as analogous to privacy decisions made by adults without children. The main difference is that adults without children make decisions about their own privacy, while parents make decisions regarding both their own privacy and that of their children.

The first task that parents will have in managing their children's online privacy, is to monitor their **own actions**. This includes being cautious about sharing their children's personal information, as well as ensuring the use of privacy-respecting services and connected devices in the home. The challenge in being cautious about sharing children's personal information lies in the fact that parents may not always recognise the potential negative consequences of sharing such information, even though the positive effects may be immediately apparent (such as receiving validation from others [20]). Therefore, as a proud parent sharing children's information might be tempting, especially if one never had any negative privacy experiences. Additionally, our study confirms that parents

often perceive their children as extensions of themselves, rather than as autonomous individuals with their own right to privacy. This mindset may be why some parents who are highly active on social media tend to share a more information about their children, as they see no distinction between themselves and their child [1]. With regards to privacy-respecting services and connected devices, a challenge may arise from the lack of awareness among parents regarding potential privacy threats. Even when they are aware of such threats, they may hesitate to educate themselves on proper privacy protection due to their limited time and technical complexities that they are not familiar with. A sense of overwhelm and perceived lack of control can further hinder their efforts, compounded by the time constraints and the immediate gratification that comes with using readily accessible devices. Additionally, peer pressure and a feeling of obligation towards their children may prevent parents to stop using certain services, e.g if the school class' parents group is organised on a certain platform.

The second dimension of parents managing their children's privacy involves parents **overseeing their children's actions**, particularly when children are too young to bear responsibility themselves. This includes activities such as downloading apps with care, adjusting settings of devices and services, and setting boundaries on certain activities. All factors mentioned above also hold for this dimensions. Additionally, this task may further require parents to engage in difficult conversations with their children. As our study showed, parents might be afraid of getting into a fight with their children over media issues, particularly if their children are feeling peer pressure to use certain services. Additionally, due to their limited time available, parents might feel tempted to allow their children certain media activities to maintain harmony within the family and possibly have some time for themselves. Another challenge associated to this dimension, seems to be that many parents, in especially older parents, seem to be disconnected from the media reality of their children, sometimes even not knowing which apps they use.

The third aspect involves parents **taking responsibility for the actions of other stakeholders**, such as family and friends, who may interact with their children. This concept of extended privacy responsibility was described by [20] as "privacy stewardship". In fact, in our study, it was common for parents to encounter disputes with their own parents and in-laws who were enthusiastic about sharing personal information, i.e. photographs, of their grandchildren with others. Additionally, some parents were placed in uncomfortable positions when other parents posted images of their children together on social media. This highlights the complex task parents face in safeguarding their children's online privacy, which extends beyond monitoring their own and their children's activities to also managing the actions of others. This may involve establishing boundaries and guidelines for these individuals, which could lead to uncomfortable confrontations and the need to set restrictions.

The fourth dimension of managing children's privacy, involves parents **educating their children** about online privacy threats and teaching them how to make informed decisions about their privacy. The primary obstacle to this task is undoubtedly the necessity for parents to be literate in online privacy protection, which does not always seem to be the case. Apart from that, educating children on a complex topic like privacy protection might require pedagogical skills and expertise beyond what can be expected from parents. Unfortunately, many resources that have been developed for educating children on the topic seem inadequate for a family setting, either due to their formal nature or the fact that they require school class discussions, which may not be feasible at home. Furthermore, while there are numerous educational games available on the topic [40], some parents may be hesitant to encourage their children to play a game that they might perceive as uninteresting or unappealing.

Finally, protecting children's privacy also requires that parents **respect their children's desire for privacy** and independence as they mature. This may be particularly difficult for parents who have a strong instinct to protect their children and may wish to monitor their children's location and online communication. However, [41] found that privacy invasions are much more likely to happen from internal family members than from external parties. While some parents might feel reluctant to let go and allow their children to make their own privacy decisions, it is a necessary step to form a trusting relationship, in which children can turn to their parents when facing difficulties online.

5.3 Practical Implications

This works sheds light on the underlying motives driving parental decisions on privacy matters. By conducting qualitative interviews with media educators we were able to identify a number of predictors for privacy protective behaviour of parents. The implications of these findings for various stakeholders will be discussed below.

Firstly, in terms of **implications for policymakers**, there is a crucial need for public awareness that emphasises every child's right to privacy, regardless of age. This includes educating parents about the significance of protecting their children's privacy, particularly for young children who may not have the ability to voice their concerns or grasp the potential consequences fully. Thus, by raising awareness and promoting responsible parenting practices, policymakers can help establishing a safer online environment for children.

Secondly, for **technology providers**, the study underscores the pressing need for reliable European privacy protective options that are as attractive as existing platforms. This call to guarantee the EU's autonomy is not a recent development, evident through initiatives like the European Commission's annual Strategic Foresight Report released in 2021. This report outlines key strategies aimed at enhancing digital sovereignty within the EU, with the ultimate goal of achieving "Strategic Autonomy by 2040 and beyond" [12]. However, given the sensitivity surrounding children's personal data, the significance of this call carries particular importance. Our study results also suggest that service providers who want to promote children's online privacy, need to consider that the likelihood of special parents' areas being accessed and used is limited. This can be attributed to a lack of awareness, as well as psychological and time impediments that parents often encounter. It is suggested that incorporating privacy by design and default measures in services, as propagated in the GDPR may be more effective. Additionally, the exploration of privacy nudges within the services, rather than requiring specific parent areas to be actively accessed, shows great potential.

Thirdly, regarding **privacy literacy programs**, our findings show that the focus should not only be on raising awareness about privacy threats but also on imparting technical skills and self-efficacy to parents in order to overcome psychological barriers. Furthermore, future literacy programmes need to support parents in their specific role as guardian. This includes equipping them with arguments and strategies to effectively implement measures that may be unpopular with their children. Additionally, developing educational materials for in-home usage may facilitate meaningful discussions among parents and children and strengthen their bonds. Our findings further suggest, that literacy programmes may be more effective if they tailor their messaging to align with the determinants found in this study. For instance, while it is not desirable that parents make negative privacy experiences, providing them with tangible, relatable examples of privacy breaches can help raise awareness and prompt action. Lastly, the study underscores the importance of tailoring privacy interventions to suit the specific needs of different groups of parents. For instance, women may require a different approach compared to men, as they tend to prioritise the pedagogical aspects over technical measures, and vice versa. Similarly, considering the diverse parenting styles, some parents may prioritise safety while others may emphasise raising responsible individuals. By understanding and catering to these differences, targeted strategies can be developed to effectively address the privacy concerns of various parent groups.

Finally, for **parents** themselves, our study highlights, that it is essential for them to recognise their role in protecting their children's privacy and understand that this responsibility cannot be delegated to others. Parents need to understand the significance of their task and that they are capable of mastering it. Furthermore, our findings suggest that community-based approaches may be more effective in promoting privacy protection, as individuals may face social norms and peer pressure that deter them from taking action. By implementing interventions that involve the wider community, parents may feel more supported in their efforts to safeguard their children's privacy.

5.4 Future Work and Limitations

This study represents an initial exploration of the factors that drive privacy protective behaviour among parents. While the insights generated are valuable, it is important to acknowledge the limitations of the research. The data collection was restricted to a small number of interviews with German media educators, which may limit the generalisability of the findings to other cultures and needs further validation. Additionally, as with any qualitative study, the personal experiences of the media educators may introduce bias. However, it is worth noting that the media educators, in their professional capacity, are not subject to the same pressure to provide socially desirable answers as parents. This allows them to offer a more objective and unbiased viewpoint on the subject. Nevertheless, it is crucial to recognise that the findings of this study require additional empirical validation. Future research should focus on investigating the validity of the identified factors. A quantitative study could be conducted to examine the relationships between these factors. For example, from the current data, it can be hypothesised that factors such as gender, age, technical skills, and

self-efficacy may be interconnected. Additionally, factors identified in previous research could be included to investigate the predictive behaviour in the parent context. The results of such a quantitative study could provide valuable insights into which determinants are most significant, highlighting key areas for future literacy programs to target. Future research could also explore how the factors impacting privacy protective behaviour vary across diverse lifestyles. For example, a study conducted by [6] investigated how LGBT parents navigate privacy concerns on social media platforms, while another study by [17] analysed how family influencers balanced privacy and intimacy in their online interactions. Comparing the determinants for subsets of parents that deal with privacy in different ways might uncover valuable insights into the complexities of privacy management in different family dynamics. Moreover, we see great potential in developing questionnaires for parents based on the research findings. These questionnaires could help in assessing individual attitudes and needs to tailor personalised support accordingly, possibly in a digital learning environment.

6 CONCLUSION

The findings presented in this paper offer valuable insights into the factors that influence parental engagement in protecting their children's online privacy. Existing psychology research highlights the significance of analysing trainee characteristics to enhance training effectiveness [8, 30, 31]. Through the use of a qualitative study design, this research contributes to a deeper understanding of the drivers behind privacy protective behaviour among parents. Given the heterogeneous nature of parents, these findings can inform the development of targeted educational programs aimed at empowering parents to address online privacy risks more effectively. Furthermore, insights into the psychology of parental privacy decision-making can assist online platforms in creating more privacy-conscious services for children and families. Future research should continue to build upon these findings and raise awareness among parents about the importance of safeguarding their children online.

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A APPENDICES

A.1 Interview Questions

#	Title	Question
A	**Introduction**	
A1	Work Overview	Please start by giving an overview of your background and your work.
A2	Work with Privacy	To what extent do the topics of privacy, big data and data protection come up in your day-to-day work?
B	**Cooperation with Parents**	
B1	Interest in Privacy	What is the response and interest of parents in the topic of online privacy?
B2	Knowledge & Experience	How would you assess their knowledge and experience?
B3	Obstacles	What obstacles do parents encounter in addressing online privacy protection?
B4	Motivational Strategies	Do you yourself have strategies to motivate parents to engage with the topic?
C	**Needs**	
C1	Parents' Needs	From your point of view, what do parents need to protect their children's privacy online?
C2	Media Educators' Needs	What would you need as a media educator or how could you be supported in your work?

A.2 Code Book

Themes	Definition	Subthemes	Definition	Examples from Transcripts
Demographic Factors	Demographic factors refer to categorical data that describe characteristics such as social background, age, gender, and profession of parents, that influence their behaviour and attitudes with regards to media education and technology usage.	Social Background	Media educator thinks that social background/class has (not) an influence on parental engagement with media education.	"Then you hold a parents-teacher conference at the daycare center or school, and the parents sitting there are often the ones who are thoughtful and reflective. They have an iPad at home and their child plays the cello in the afternoon. They are then clever and set up appropriate blocks for the children." (ME1)
		Parental Age	Media educator thinks that age influences how parents engage in sharing information and media education.	"The older the parents are and the younger the children are, the more insecure the parents are because the media worlds are so far apart." (ME5)
		Gender	Media educator thinks that mothers and fathers play different roles with regards to technology/media education in the family.	"Fathers see themselves as more competent when it comes to technology and are responsible for installing, downloading and setting up things, setting up Fritzbox, setting screen time. Mothers are more likely to be responsible for negotiating conflicts, discussing and teaching. That's always been the case. (...). Men look at how I can make the Fritz!box [router] secure, how I can set up a pre-block so that my child can't spend any money. Mothers tend to ask when the first smartphone is allowed and my daughter no longer wants to eat much because she wants to become slimmer. My son always wants to play Fortnite, are there weapons and violence and is it dangerous?" (ME5)
		Profession	Media educator thinks that the professional background of a parent influences their behaviour/knowledge about privacy protection.	"I always ask the classes: "What do you use?" There are always quite a few who use Signal or Threema. Then I ask: "Do you do that at home?" -"Yes, mom and dad do too." But then mom and dad are usually from the IT sector or somewhere in a data-sensitive area." (ME3)

Themes	Definition	Subthemes	Definition	Examples from Transcripts
Technology Related Factors	Technology related factors refer to parents' own engagement with technology in determining their privacy protective behaviour. These encompass the extent of their engagement with social media platforms, proficiency in technical skills, and technical self-efficacy.	Own Social Media Activity	Media educator thinks that parent's own activity on social media influences their sharing behaviour.	"We also have these two camps when it comes to image rights. There is sensitivity to this, but definitely not among everyone. You can also see that this social media hook that parents are attached to has a significant influence on how much they share of their children. But there's also a large number of people who simply have the issue on their radar and say themselves: 'No, we don't want that.' " (ME2)
		Technical Skills	Media educators thinks that parents lack technical skills for implementing privacy protection.	"It was often the case that they didn't know how to do it, that you can google it and then do it. Or that you click once at the top of the settings and see what's there. There are certainly still quite a few hurdles at this level." (ME7)
		Technical Self-Efficacy	Media educator thinks that parents have a psychological barrier that hinders them from empowering themselves on how to safely navigating the digital world.	"Data protection and data security is something opaque and unattractive for them, as it is for all of us. It's something that people don't like to deal with because it's very complex and they have the feeling that there's little they can do themselves." (ME8)

Themes	Definition	Subthemes	Definition	Examples from Transcripts
Privacy Related Factors	Privacy related factors describe aspects that directly drive parent's pre-disposition towards privacy or privacy openness, including negative privacy experiences, parents' understanding and awareness of privacy threats, their level of concern about these threats, and the perceived costs associated with implementing privacy protection measures.	Negative Privacy Experience	Media educator thinks that parents get active if they had a negative privacy experience, where there own, their child's or somebody close's privacy was violated.	"I believe that few parents actually sit down and read through the terms and conditions or privacy policies of all the apps or applications they use. Nobody does that. Families also do this due to pressure to act or a current event. My child is being bullied in class chat and has sent something around and it's now out of hand: how do we get it back? Or my daughter's Instagram profile has been hacked and pornographic content is now being sent there. What can we do? We receive questions like this, and always for a topical reason." (ME5)
		Perceived Cost of Privacy Protection	Media educator thinks that parents perceive privacy protection as an obstacle to their everyday life.	"But I think the crux of the matter is simply the bad image and the fact that it simply disturbs my everyday digital life. Going without is not particularly interesting anyway. Consumption and participation are more exciting, and these things are invisible and don't take place obviously." (ME1)
		Awareness for Privacy Threats	Media educator thinks that parents do not know about many/certain privacy threats.	"But most parents give their children a discarded iPhone or something similar and don't restrict it at all. You could also say that you can use it to only make phone calls and send text messages. They are completely unaware of what is happening. They're also not aware of what happens in the groups on WhatsApp." (ME4)
		Concerns for Privacy Threats	Media educator thinks that parents are not concerned about many/certain privacy threats.	"But then the parents often say: 'It doesn't matter. I have nothing to hide! It's actually quite nice that I receive personalised advertising and that my feed is correct and I don't see anything else. That's fine!' " (ME1)

Themes	Definition	Subthemes	Definition	Examples from Transcripts
Parent Specific Factors	Parent specific factors refer to the unique characteristics and circumstances that parents bring to the decision-making process when it comes to online privacy protection for their children. This main theme encompasses subthemes such as parenting style, external stakeholder pressure, and limited resources.	Parenting Style	Media educators thinks that parents' general attitude towards their child and how they treat them will impact their privacy choices.	"There are certainly parents who, out of good motivation, fear and concern, try to control and forbid everything and keep their children as safe as possible. Then there are those who negotiate, discuss things with their children as equals and go round in circles. And then there are also parents who are clueless and think the children will somehow do it." (ME5)
		Limited Ressources	Media educator thinks that parents' attention for privacy matters is limited due to other parental obligations and time constraints.	"The media issue is not the only one. It's also about education and sex education, where parents' attention spans and resources are logically limited." (ME5)
		External Pressure	Media educator thinks that stakeholders such as schools, association, other parents, other family members, and the children themselves put pressure on parents that impact parents' privacy choices.	"If a school, a class or perhaps a club suddenly says: 'We're going to organise ourselves via WhatsApp,' and I'm the one who says: "I don't want to do that for certain reasons and you can't force me to do it either,' then of course I always have the problem that I'm the one who throws a spanner in the works at that moment. So he's the bogeyman." (ME2)