

Comfortably Numb: Danish Teens' Attitudes Towards Social Media Platforms

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ABSTRACT¹

How do teens deal with the complexities of the digital world? Although many scholars have asked this question, few have considered not only the interpersonal concerns that loom large in the lives of teens and young adults but also their relationship with the social media platforms which have become so central to their lives. In this paper we present a study of Danish teens' attitudes towards social media platforms they use most – Facebook and Snapchat. We find gender differences in attitudes toward each platform. We also illustrate the potential role of a digital education effort in changing teen attitudes.

CCS CONCEPTS

• Human-centered computing ~ Empirical studies in HCI

KEYWORDS

Teens, privacy, trust, social media, platforms, Snapchat, Facebook

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1 INTRODUCTION

There is a lot of concern about teens and their social media practices – as well as worry about their attitudes towards data disclosure and privacy [1, 8, 32]. However, most of the research has focused on interpersonal concerns in the use of social media [16, 22, 26, 29], considering teen strategies for information management and disclosure to their friends, parents, teachers or strangers [40, 41]. Yet interpersonal privacy is not the only aspect of online self-disclosure that must be addressed. After all, by engaging with online social media platforms, teens, along with everyone else, are expected to make decisions about what data they are disclosing [1]. Managing online privacy is more than taking care to ensure that parents, friends and strangers can only see the content teens want them to see [26, 27]. Online privacy also requires users to establish expectations of and comfort with how the platforms they use monetize data.

The vast majority of prior studies on teen use of social media have looked at Facebook as the primary platform. However, teens use many different media daily and Facebook's prominence has been previously questioned in favor of newer modes of communication such as Snapchat [28]. Although interpersonal concerns are important with respect to social media, understanding the attitudes of teens towards the platforms that disseminate their content is just as important. After all, disclosure behaviors are likely affected not only by interpersonal considerations but also by expectations towards how these platforms might use personal data for targeted advertising or sale to third parties [21].

These expectations are presumably based on what teens know – or think they know – about what data are collected and how data are going to be used by social media platforms. Moreover, a basic understanding of the use personal data by friends, contacts and platforms is key

to digital citizenship [15]. Although teens are often expected to be digital natives, scholars acknowledge the necessity of digital literacy and online privacy skills and that these skills need to be taught to adults and teens alike [7]. The Danish government has set out a requirement for digital education at the high school level [42]. In response, the IT University of Copenhagen (ITU) has developed one such educational program, *Digital Behaviour (Digital Adfærd)*, intended to teach high school students about the implications of their everyday media habits.

In this paper we report on a study of Danish high school students and their attitudes towards social media platforms Facebook and Snapchat. Approximately a quarter of our sample reports having participated in the *Digital Adfærd* program and we note a curious relationship between teen attitudes and digital education. Where digital education was associated with reductions in trust towards Snapchat's practices of monetizing user data, it had no effect on attitudes towards Facebook's commercial use thereof. We also observed differences in attitudes towards Facebook and Snapchat with women more comfortable with these platforms using their data for targeted advertising than men. We discuss the implications of these findings for understanding of teens and their use of social media platforms.

2 BACKGROUND

Research on teen use of social media is extensive, showing the importance of social media in their daily lives. This is not surprising given the importance of peer communication among western teens, amply documented by research well before the Internet [6]. From the early adoption of instant messaging and SMS, scholars have studied teen use of communication technologies [17, 33]. Teens are constantly refashioning their practices, routinely at the forefront of adapting emergent technologies often in a bid to manage various authority figures, such as parents and teachers in their lives [6, 26, 41]. With the advent of social network sites such as Facebook, teens shifted their use and scholars shifted their attention to these technologies as well [7, 12].

Apparent proclivity with new technologies has led some scholars to conclude that younger generations can be conceptualized as "digital natives" [4, 31]. This terminology assumed that the use of these technologies in turn meant an understanding as to how these technologies function. Later research has shown that not all teens share the same level of skill, pointing to a diversity of use practices and education [4, 12]. Boyd [7] notes that educators play an important role in helping youth

navigate networked publics and the information rich environments available via the Internet. The complexity of contemporary media environments remains a challenge and the term "digital natives" may lead to overlooking the needs of those that, despite apparent mastery, still require guidance in navigating the networked world.

2.1 Teens privacy in the age of social media

Two topics of teen use of social media have garnered significant attention in particular: privacy practices and bullying [7,12]. While both topics are extremely important, in this paper we are concerned with teens' privacy, their attitudes towards their personal data and how they negotiate data disclosure on social media applications. Concerns with privacy practices and the question of whether teens care about privacy became acute about a decade ago as the popular social network site, Facebook, moved to make changes to its interface and privacy settings. At the time, scholars voiced concern that the attraction of social network sites nullified teen privacy concerns [8]. Later studies, however, showed that not only were teens and young adults concerned with inadvertent information disclosure online, part of the reason they did not appear to do anything about it was primarily because they did not realize how to or did not know the extent of the problem [8,35].

With the proliferation of social media affordances users have become not only content consumers, but also content creators and managers. Ensuring that produced content is appropriate for the right audience is important in general, but even more so for teens and young adults who develop their identities through communication [7,26]. The ability to manage personal data online is crucial and teens have to negotiate an increasingly complicated landscape as they adapt a range of communication technologies [12]. Data from the 2014 Oxford Internet Surveys showed that at least in the UK teens and young adults were more likely to change their privacy settings on social network sites than any other age group [5]. More recent research, however, suggests that similar to adults [34], many teens and young adults feel a kind of apathy when faced with having to manage their personal data online [21].

Teens are often first adopters of a range of technologies that help them manage their online exposure while maintaining their relationships. Despite Facebook's dominance, other applications such as Snapchat gained in popularity in part because they offered different affordances. Snapchat offers a level of ephemerality unavailable in Facebook, allowing more control over audience and the ability to be playful with potentially

fewer consequences [3,24]. The messages or Snaps sent on Snapchat typically disappear within a few minutes from both sender and receiver devices. However, it became known early on that this content remains on Snapchat servers despite its disappearance from user devices. Snapchat and Facebook offer radically different functionality both for audience control and interpersonal privacy settings [30,38]. At the same time both platforms offer very little clarity about what they actually do with user data and little control over it. Thus, while the two platforms may be difficult to compare from an interpersonal point of view, they are quite similar and comparable if we consider the relationship teens have with the platforms themselves.

Facebook, Snapchat and other social media are not neutral actors, but actively engage the data that their users produce daily. For teens, many privacy risks clearly stem from interpersonal issues such as parental oversight or untoward information leaking beyond the closest circle of friends. Algorithmic processing of user data for targeted advertisement, content personalization and content policing can also have potentially adverse impacts but these are less obvious to users [11,36]. Research has shown that social media users form expectations about how platforms might treat their data [13,37]. While many acknowledge the commercial nature of their relationship with social media platforms there remains an expectation that technology companies will act responsibly and keep user data secure [21]. Often users trust the companies to “do the right thing” [23] and give little thought to how their own data production might be used to gain information not only about them but also about their friends [2].

2.2 Educating for digital citizenship

As questions of privacy and information disclosure on social media prevail, many governments and educational institutions have moved to develop teaching modules on digital citizenship and internet use for high school and college students [12,15]. What this sort of module ought to include, however, is a matter of some debate.

Hargittai has long argued that there exists a skills divide in internet use that can be addressed through education and has recently developed a privacy specific internet skills measure [18–20]. Such skills discussions are often conflated with considerations of digital literacy. Where some scholars have posited that literacy concerns exclusively written work, others have noted that the visual nature of new media requires broader approaches and cultural learning [10]. As Buckingham [10]

presciently pointed out a decade ago: “The increasing convergence of contemporary media means that we need to be addressing the skills and competencies – the multiple literacies – that are required by the whole range of contemporary communication forms.”.

There have been many efforts to develop educational curricula to address digital literacy and digital skills. For example, Duran tested the effectiveness of a college course with a holistic approach to media literacy, showing that the education changed the opinions of students towards mass media [14]. Vanderhoven described a broader approach that went beyond mass media and included more social media topics [39]. Their study showed that the course offering managed to raise awareness but found no impact on attitudes towards risky behavior online. More recently Egelman and colleagues developed an online Teaching Privacy Curriculum that addressed a basic understanding of online privacy [15]. A small test of the curriculum on university students demonstrated that it was effective in changing students’ privacy attitudes. In most cases, curricula used broad examples or fictional content to produce an education that could be flexibly applied broadly. However, both Duran and Vanderhoven acknowledge the necessity of ensuring that the content of such education is directly relevant to the students for best effectiveness.

3 THE “DIGITAL BEHAVIOR” PROGRAM

The education program, “Digital Behaviour” (Digital Adfærd) was developed in response to the governmental requirement of digital education [42]. The curriculum is intended to demonstrate to high school students that their everyday media habits are a constant balancing of possibilities and compromises between privacy concerns and data disclosure. The curriculum has been evaluated together with high school teachers and students, who recommended inclusion of the students’ own social media profiles, familiar practices, and critical dialogue about personal information. As a result, the program prioritizes personalizing the exercises, thus ensuring higher engagement and relevance for the students. The core of the program focuses on user practices and data protection on contemporary social media platforms and instructs students in how to better manage their personal data. The workshops take place in high school classrooms and are conducted by a group of trained IT University of Copenhagen BSc and MSc students. The first author is one of the founders of the program and has been involved in conducting educational workshops since its inception.

The “Digital Behavior” program was developed for the Danish context and is specifically focused on data efficacy and social media use. The program demonstrates how the smartphones, computers and social media platforms the students use, track their activity and collect data about them and their surroundings. Students have the opportunity to reflect on how their personal data can be used by the platform for various commercial purposes. They are introduced to real clauses in the privacy policies of these platforms. They are then offered a chance to review permissions they themselves have granted to various applications on their mobile phones and to social media applications and instructed on how they might limit or revoke these permissions.

4 RESEARCH METHODS

Our research centered on high schools in the Copenhagen area that have had or plan to conduct “Digital Behavior” education in their classrooms. Studying privacy can be challenging given the complexity of the topic. As Braunstein et al. [9] argue, when assessing attitudes towards platforms direct questions about privacy are less likely to generate actionable insight than questions that engage with practical activities, willingness to share information and comfort with platform activities. Thus in order to conduct our study we chose to ask instead whether teens trust the platforms they use to behave in ways that respect their privacy settings and to keep their data safe. We also asked about participants’ level of comfort with known commercial activities these companies engage in.

We conducted three voluntary and completely anonymous surveys among high school students focused on their social media use practices and their attitudes (operationalized as trust and comfort) towards the three most popular social media platforms in Denmark – Facebook, Instagram and Snapchat. This allowed us to consider how high school students see these platforms in general and to informally assess whether teen attitudes towards social media can be successfully altered through such an educational effort.

The first two surveys were used to help develop the program and thus provide basic social media use statistics. The final survey was developed in order to assess student social media use practices and their attitudes towards the most popular social media platforms, Facebook and Snapchat. The authors also conducted a short observational study of the students during six “Digital Behaviour” sessions at two different high schools (three sessions each) and utilized the insights of the first author

from his many interactions with high school students through the program to help interpret quantitative results.

4.1 Data collection & analysis

4.1.1 Exploratory surveys. The first exploratory survey was designed to assess social media use practices of Danish high school students. The survey was completely anonymous, deployed via a Google survey tool in 13 high schools in the Copenhagen area in June 2016. A total of 315 students participated. We found that respondents mostly used Facebook, Instagram and Snapchat on a daily basis, while Twitter, Tinder and Whatsapp were almost never used. However, this first iteration constrained the choice of social media. To ensure that we were not missing a particular type of social media platform uniquely popular with Danish teens we constructed a second survey was deployed at one high school where we added all of the other social media platforms that came up in initial interactions with high school students via the educational program. Thus we added Jodel, Yellow, Youtube, Pinterest, Tumblr and Reddit to the original selection. A total of 72 students participated and our results were identical. Facebook, Instagram and Snapchat remained dominant. Only Youtube emerged as an additional popular platform. However, very few teens reported actually posting either videos or commentary on the platform.

4.1.2 Attitudes towards platforms survey. The findings from the exploratory surveys allowed us to focus on the main social media platforms for further investigation. We operationalized *attitudes towards social media platforms* as a series of questions about expectations of platform behavior. Here we were focused on whether participants trusted the platforms to behave in particular ways (respect privacy settings or sell information to third parties) as well as how comfortable they felt about commercial uses of their data for targeted advertising. We also asked whether students had previously participated in the “Digital Behavior” program, their basic demographics such as gender and age and how frequently they engaged with each platform. Our goal was to design a short and effective survey, thus instead of using a Facebook or other platform intensity scale we simply asked about frequency of the three most popular uses of social media platforms that had emerged in exploratory surveys. That is, we asked how frequently, on a 7-point Likert frequency scale, the respondents read content on platform; post content on a platform; or send direct messages via the platform.

To assess attitudes towards the platforms we asked four questions on a 4-point Likert scale. Trusting the

platform to behave in user’s best interests was assessed via two questions. The first, *I trust the <platform> to respect my privacy settings*, measures the perceived ability to be in control of the actual audience of the content that is produced in social media. Here what gets measured is the trust toward the platform to act according to the wished specified by the user through the privacy settings. The second, *I trust <platform> will not sell my data to third parties*, assessed the expectation that the data disclosure on a social media platform is between the user and the platform and is not distributed by the platform. Given that mass media reporting rarely covers this aspect of platform behavior, we observed many assumptions among high school students on the right expectations to have. This question addressed a sense of intimacy where expectations that the data may be sold to third parties would potentially indicate less reliance on the platforms to safeguard personal data.

Mass media regularly covers the use of social media for targeted advertisement thus we were interested in how high school students relate to this underlying deal they make with the platforms. We asked two questions assessing comfort with the well-known advertising business model that powers social media. We asked: *I am comfortable with <platform> using my data to target me with ads* and *I am comfortable with <platform> using my data to target my friends with ads*. The two questions were similar but changed who was affected through the use of personal data for advertisement – the users themselves or their friends. In this way we could disambiguate comfort with the business model where the engagement with the platform stays within the relationship between the user and the platform and comfort with having personal data disclosures affect others.

We created three separate surveys for Facebook, Instagram and Snapchat with questions that were as similar as possible but adjusted to fit each platform. For example “sending a message” on Facebook was transformed into “sending a Snap” on Snapchat. Each participant received an initial question asking for their frequency of use of the three platforms. An algorithm would then select which survey the participant would have received based on their answers (we were looking for high frequency users for each platform) with a goal of ensuring a similar sample size across all platforms. The survey was distributed in March 2017, by sending it to the contact persons at the 13 High Schools that are part of the

“Digital Behavior” program, who then forwarded the survey request to the students. We ensured that our request clearly articulated the voluntary nature of the survey and our commitment to anonymity. For sample demographics please see Table 1. Overall, 1106 students responded to the survey. Of these 406 answered the Facebook survey, 508 – Snapchat and 192 – Instagram. Given the low sample size for Instagram, in the rest of the paper we only present data from the Facebook and Snapchat surveys.

Table 1: Sample demographics

Variable	Facebook	Snapchat
N	406	508
Men	180	164
Women	226	344
Avg. Age	17	17.4
Freq of posting	1.67 (sd. 0.78)	2.89 (sd. 1.19)
Freq of reading	5.97 (sd. 0.97)	5.78 (sd. 0.91)
Freq of messaging	5.24 (sd. 0.71)	5.18 (sd. 0.90)
% had education	18%	19%

4.1.3 Qualitative data collection and analysis. We conducted observations of six classes in two high schools, split over two days of educating three classes on each day. Observations were conducted in Feb and March 2017. In total about 150 students were observed during the six classes. We took extensive field notes throughout the observations taking care to ensure that no identifying information was recorded, especially names and locations. All students were notified that the education sessions were observed and given an option to leave with no penalty. We wrote down extensive reflections immediately after each observation session and conducted a basic descriptive coding immediately following. The initial coding informed our subsequent observations [25]. The first author also collected his own reflections from prior and subsequent teaching sessions. Upon completion of all observation activities we conducted several rounds of coding to elicit dominant themes. These codes and themes then informed our survey design.

4.1.4 *Quantitative data analysis.* The models presented in this paper are based on four questions measuring attitudes towards specific social media platforms by investigating how much they trust the platforms to behave in a certain way and how much they feel comfortable with the platforms targeting them or their friends for commercial purposes. The questions were asked using a 4-point Likert scale (Strongly agree, Agree, Disagree, Strongly disagree). Responses were then converted into binary variables of trust and comfort and used as dependent variables for logistic regression models. As predictors in the models we considered gender, frequency of use of the specific platform (three variables each one measuring a different aspect – posting, messaging, reading – on a 7 point Likert scale treated as continuous data), and having participated in the education program.

4.2 Ethical concerns

Throughout our research we made efforts to ensure that our research does not interfere with the education process and that all data are treated ethically. We were deeply aware that any interactions between teens and adults are rife with power dynamics and thus all of our data collection was conducted absolutely anonymously. While we collected data from high schools, we separated respondent data from their indication of their high school. Further, we collected an absolute minimum of demographic information. All of our qualitative data was collected without any student identifying information and we made sure that all reflection notes did not identify the high schools either. The final datasets we used made it impossible even for us to identify any of the respondents or their high schools.

5 RESULTS

5.1 Trust in platforms

We explored trust toward the platforms with two questions that deal with particular concerns that have often been highlighted in the relation between users and social media platforms. The first question “I trust <platform> to respect my privacy settings” addresses expectations that the platform will not mislead the user. It is interesting to observe that both Facebook and Snapchat score very similarly (Figure1) and there is no significant difference between them ($t=0.09, p=0.93$).

This similarity disappears when the students are asked about how the platform might use their data. Figure 2 shows how the general trust that the platform will not sell

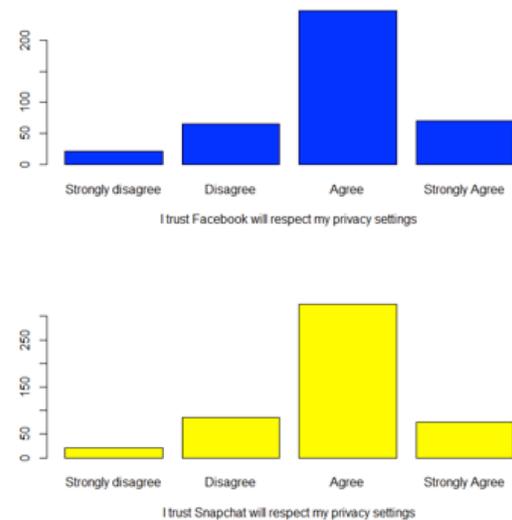


Figure 1: Trust in platform respecting privacy settings

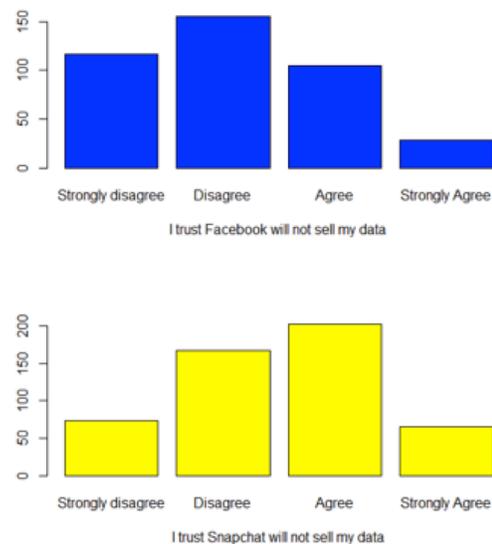


Figure 2: Trust in platform not selling data to third parties

users’ data to third parties is significantly higher for Snapchat than it is for Facebook ($t=-6.58, p<0.001$). This initial comparison suggests that there is a difference in how the two platforms are evaluated by the teens, with Facebook being perceived as potentially more involved in commercial activities with third parties.

In order to investigate whether frequency of use or having digital education might have an impact on attitudes towards platforms we conducted a logistic regression. The logistic regression models used frequency of three different behaviors (posting, messaging and reading), experience with digital education and gender as

predictors. Table 2 shows results from the model predicting trust towards platforms not to sell data to third parties and reveals interesting dynamics.

Table 2: I trust <platform> to not sell my data.
 Signif. codes: ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘T’ 1

	Facebook		Snapchat		
	β	p	β	p	
Intercept	-0.101	0.606	0.052	0.755	
Freq. of Posting	0.051	0.148	0.008	0.758	
Freq. of Messaging	-0.031	0.304	0.001	0.955	
Freq. of Reading	0.046	0.071	.	0.031	0.250
Digital Education (yes)	0.049	0.421	-0.311	0.000	***
Gender (Male)	-0.156	0.001	***	-0.008	0.863

In the Facebook model we see only a gender difference with male students more likely to be suspicious of the platform. Here the digital education does not seem to have an effect on the perception of the platform. In contrast, when we look at Snapchat (Table 2) we find no traces of a gender difference: both males and females seem to trust Snapchat to not sell their data (52% of females and 51% of males) while the real difference is having participated in the “Digital Behaviour” program, with those teens who did not participate more likely to trust Snapchat.

The comparison of the two models suggests that digital education initiatives may in fact be successful in changing pre-existing perceptions of some of the platforms, of their business models, and of the risk related to personal data shared on these platforms. Consider the following from teaching reflections: “We start the Snapchat exercise, where we go through excerpts of the end user license agreement, explaining how much power the platform has to use their data. There is silence in the classroom – they seem to be in shock. Then one student pipes up: I knew it wasn’t great, but this?! Another echoes: I almost do not want to use Snapchat anymore!” Although not every teaching session features shocked silence the reactions in general are very similar. Yet even here, note the “almost” in the statement about using the platform. Evidently, the students that participate in the program learn to feel more uncomfortable and less trusting towards the platform although it is unlikely that their use of Snapchat significantly changes. This is similar to Egelman et al., but here we note that only attitudes towards Snapchat are affected, suggesting a possible

explanation for why Hargittai and Marwick [21] did not see any effect of digital education in their study.

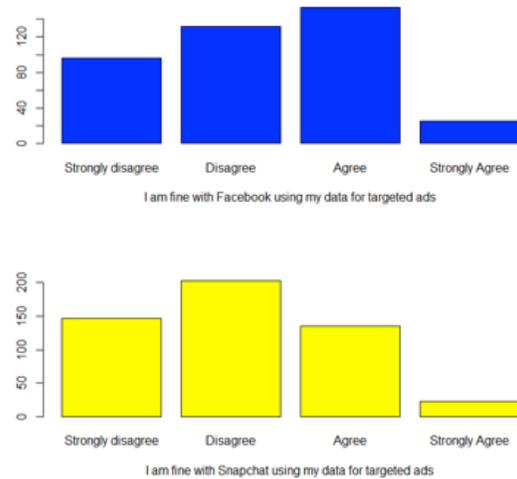


Figure 3: Comfort with platform using own data to target ads at self

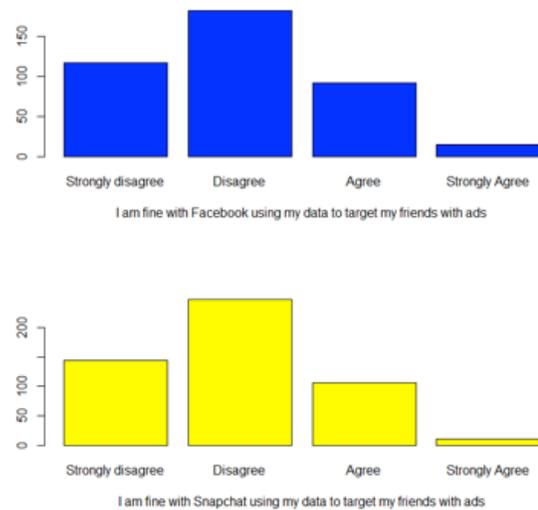


Figure 4: Comfort with platform using own data to target ads at friends

4.2 Targeted advertising – self vs. friends

As has been previously observed [1,21] social media platform users tend to show a general acceptance of the commercial nature of social media platforms. While they might not like it they accept a certain level of personal data trade as a *price to be paid* to use these services. Within this perspective we explore the boundaries of what

is perceived to be acceptable commercialization of personal data. Figures 3 and 4 show the level of comfort participants report with the idea of being targeted by personalized advertisement themselves (Figure 3) and having their data used to target their friends (Figure 4). Figure 3 shows how personalized advertisement is generally more accepted on Facebook than it is on Snapchat ($t=3.39, p<0.001$). This difference, together with results displayed in Figure 2 indicate a general perception (and acceptance) of Facebook as a highly commercialized platform where personal data are routinely traded. The idea of Snapchat data used for personalized advertisement produced, in contrast, a higher level of resistance among the respondents.

We find that the difference between Facebook and Snapchat disappears when the participants are asked about the possibility of using their personal data to target their friends with advertising ($t=0.83, p=0.41$). Here participants display a remarkable resistance towards the idea on both platforms. Table 3 shows the logistic regression models that explore the acceptance of Facebook and Snapchat using personal data to target participants' friends.

Table 1: I am comfortable with Facebook targeting my friends.
 Signif. codes: '****' 0.001 '***' 0.01 '**' 0.05 '.' 0.1 'T' 1

	Facebook		Snapchat	
	β	p	β	p
Intercept	-0.160	0.39	-0.102	0.472
Freq. of Posting	0.031	0.352	0.013	0.563
Freq. of Messaging	0.015	0.583	0.031	0.061
Freq. of Reading	0.019	0.444	0.018	0.431
Digital Education (yes)	-0.099	0.087	-0.009	0.430
Gender (Male)	0.098	0.027 *	0.203	0.000 ***

In both cases digital education seems to play no effect although there is a slightly suggestive trend in the Facebook model where having digital education is associated with less comfort. Gender remains a strong predictor of the general attitude towards the subject with male respondents more inclined to accept the practice of targeting their friends. Throughout digital education sessions we have repeatedly heard students argue against this practice. Often they wonder whether targeting their friends is legal, but mostly they just feel it is "not ok". As

one student put it: *"I can't say OK to this on their behalf, that is just weird! It is not cool to expose your friends!"* Whether or not they had discussions of the mechanics of this phenomenon as part of the education, it seems that teens inherently resent being put in a situation where their actions might adversely affect their friends. Although they accept that their use of platforms is an economic transaction conducted with their data, being forced to disclose friends' data is a bridge too far.

5 DISCUSSION & CONCLUSIONS

In this study we explore teens' attitudes towards social media platforms. Our data suggest that the expectations toward privacy related issues are highly dependent on the social media platform the users are referring to. Prior research [1] has demonstrated that users try to make sense of the explicit and implicit rules on each specific social media platform. This generates expectations towards the platform itself that are often only marginally based on factual knowledge. Users' expectations towards Snapchat seem to be rather different from what they expect from Facebook. Interestingly expectation seem to be based on what the users think they know about a specific platform, its business model and its approach to personal data. This suggests that, although prior research has indicated that digital education does not seem to correlate with privacy skills [21], it is possible to change user expectations towards a specific platform making them more aware of the risks. While the actual change in privacy related practices may or may not occur from experience with basic digital education programs, their effect in producing privacy awareness is directly connected with the pre-existing knowledge that teens have about the specific platform. This prior knowledge is largely formed through heterogeneous sources (e.g. media, friends, close adults) and might or might not be accurate [12,40]. Nevertheless it constitutes the field of expectations that digital education programs need to challenge if they want to have an impact on teens' attitudes toward data privacy.

Another outcome of this study is a look at a complex relation that exists between the social media platforms, the teens and their friends or connections. While users seem to accept the use of their personal data for commercial purposes as a necessary price to be paid (again with significant differences between platforms) this is strictly a personal (unwritten) agreement between them and the platform. The teens in our study seem to feel immediately uncomfortable the moment it is suggested that the platform could target their friends with

commercial offers because of the data they themselves have disclosed.

On the one hand this shows a protective dynamic between social media users and their contacts (who presumably are also online and they will also be independently targeted with ad-hoc advertising) and stresses the networked nature of social media privacy. Friendships, just like any other relationship, come with obligations and expectations of behavior. For these teens, the experience of having their friends affected through their own data seems to be akin to telling secrets they should not be telling. The emotional reactions we observed were akin to worry about betrayal. On the other hand, this attitude immediately challenges the expectations of individual responsibility for personal data disclosure that end-user license agreements and terms of service rely upon. How can users be expected to behave responsibly when their disclosures affect others as much as they affected themselves? The teens in our study clearly understood the commercial nature of their relationship with the platforms that offered ostensibly free services and they agreed to being a product themselves, but selling their friends became problematic.

The gender differences we observed have interesting implications. While on average females seem to trust social media platforms (especially Facebook) more to not sell their data to third parties they are less open toward the possibility of receiving targeted advertising either directed towards themselves or their friends. This high level of trust towards the social media platforms is not present among the males who seem more prone to accept what they may be interpreting as the unavoidable consequences of the deal made with the platforms. Such passive acceptance of personal data trade and expectations of targeted advertisement both for them and their friends, suggest a similar acquiescence to the realities of the digital society previously observed by many scholars [21,34]. These teens are just as comfortably numb in the situation.

6 LIMITATIONS

Despite extensive data collection, this study presents a limited look at the attitudes of Danish teens towards two particular social media platforms Facebook and Snapchat. It is likely that national and cultural differences as well as regional concerns may change these dynamics to some extent. Further, engagements with other technologies may also produce outcomes in terms of attitudes towards data collection and use that are significantly different. Finally, the sample used in this study is neither randomly selected nor representative of Denmark as a whole. High schools

that have agreed to participate in the ITU digital education program may be systematically different from others. None of the high schools made filling out our surveys a requirement, thus only the students that potentially felt more strongly about the subject responded. As such, our findings must be taken with caution and not used as generalized statements of teen relationships with social media platforms.

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