Differences in IT Security Behavior and Knowledge of Private Users in Germany

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Abstract. The German Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik) offers advice and recommendations for private users on how to behave securely. Based on these recommendations we investigate the IT security knowledge and behavior of private users with a representative study of the German population (N = 1.219). Additionally, we analyze the role of socio-demographic factors (gender, age, education, political orientation) for security knowledge and behavior. Results show that German private users have only moderate IT security knowledge and behavior, with aspects as gender, age, education and political orientation partly having an influence. Men, higher educated and politically moderately oriented participants show higher security knowledge, whereas young people and those less knowledgeable about security behave less security-conscious. Additionally, security knowledge and behavior correlate moderately. Therefore, to increase private users' IT security we suggest to increase education and training especially for users being young, politically right-wing or female.

Keywords: IT security, security knowledge, online behavior, security behavior

1 Introduction

With the advancing digitalization more than 90% of Germans currently use the Internet and share an increasing amount of data – including sensitive data – which needs to be protected [1]. The importance of IT security[1] is illustrated, for example, by Deutsche Telekom (Europe's largest telecommunications company) reporting 46 million attacks on their honeypots in April 2019, an increase of 12 million and 4 million attacks respectively compared with the years 2018 and 2017 [2]. In 2017 the German Federal Criminal Police Office (Bundeskriminalamt) recorded around 86.000 incidents of cybercrime, 4% more than in 2016, and a total damage in excess of 71 million euros with an increase of 54% on mobile malware [3]. This shows the increasing threat to security.

[1] In this paper, the term security is always synonymous to IT security.

15th International Conference on Wirtschaftsinformatik,
March 08-11, 2020, Potsdam, Germany

https://doi.org/10.30844/wi_2020_v3-herbert

One reason for this is the disuse or improper use of security mechanisms and thus the need for an extended security knowledge and behavior for all users, including private users. In order to contribute to security in Germany, the Federal Office for Information Security (Bundesamt für Sicherheit in der Informationstechnik, BSI) offers advice for German citizens on how to secure their computer, smartphone and online generated data which we used as the basis for our questionnaire [4]. A representative study by the BSI in 2017 showed that 97% of German Internet users consider security to be very important but only a third of Germans specifically inform themselves about security [5]. Just 75% use anti-virus software, 45% of Germans care about the secure transfer of personal data and only 37% install updates right away [5]. Hence, similarly to the frequently studied privacy paradox (e.g. [6-8]), a security paradox seems to exist, as users claim to care about their security, but do not inform themselves about it and thus do not act accordingly. Therefore, security knowledge and behavior might not correlate, as security knowledge might not translate into behavior. Furthermore, the study by the BSI found that 59% of participants state to have never been victims of cybercrime and that only about 19% of those affected by cybercrime filed a police complaint [5]. According to the BSI, the actual number of cybercrimes is much higher than the reported numbers [5]. This underlines the ambivalent behavior of people concerning security and shows that not all attacks and crimes are recorded, especially when it comes to private users. Additionally, some studies have lately suggested that security behavior differs regarding demographic aspects such as age and gender [9-11] and call for more research on security behavior [12, 13].

In order to check if the described lack of IT security knowledge and behavior still exists and to identify which groups of people show how much security knowledge and behavior we aim to investigate the security knowledge and behavior of Germans in 2019 regarding the demographic factors age, gender, education and political orientation. We therefore raise the question: *How do different subgroups of private users (e.g. gender, age groups) differ in their security knowledge and behavior?*

To address this research question, we conducted an online study representative for the German population with 1.219 participants. In the following sections related works are presented, followed by the hypotheses and the used methods. After illustrating the results, we discuss our findings.

2 Related Work

The field of usable security is gaining more and more importance and attention and takes in addition to technical solutions and developers also the human users, their requirements and trust into account [24], [27]. However, there seems to be a lack of research on the security knowledge and behavior of the German population regarding differences in demographic factors, such as age or gender. In the following, the current research on (differences of) security knowledge and behavior with regard to demographics is presented. Research so far especially focused on employees: Buck, Kessler and Eymann conducted a literature overview on users' security behavior and showed that most research is related to organizations and only addresses researchers,

https://doi.org/10.30844/wi_2020_v3-herbert

but not practitioners or users [12]. Additionally, Li and Siponen called for more research on private users' security behavior, as the devices of private users should be secured and are a potential breeding ground for attacks on companies and the distribution of illegal material [13].

Concerning the aspect of age, gender and experience with IT some research has been conducted on differences concerning IT knowledge, use of IT and security behavior (e.g: [9], [12], [16- 18]). Women were found to have on average less IT knowledge and experience and to be more anxious to use these technologies than men [19-22]. These findings are to some extent in line with Anwar et al. [9], who studied gender differences in security behavior of employees in the USA and found that gender had only a small effect on self-reported security behavior, but some effect on prior experience, with men having more prior experience with computers. Additionally, McGill and Thompson [11] found that women had a significantly lower level of security behavior and Gratian et al. [10] found gender to be a predictor for good security behavior and age to also play a role, as people between 18-25 reported weaker password generation and women reported weaker updating behavior than men. On the other hand, studies have also found women to have more security concerns than men [23, 24]. Other studies already highlighted differences in demographics concerning phishing attacks [20], [22], [25, 26] in particular that women and young people between 18-25 were more receptive to phishing attacks and that young people were more likely to share their passwords. Furthermore, people who shared their passwords had less security knowledge than those who did not share their password. Other studies have already shed light on differences of women, men and age groups with regard to their IT use and (aspects of their) security behavior [9], [11–14], [19, 20], [22], [25]. Furnell, Bryant and Phippen found in their study with over 400 participants in the UK that, although the participants used many of the relevant safeguards (e.g. firewall, anti-virus software, anti-spyware), especially novice IT private users mentioned a lack of knowledge and confidence to protect themselves from cyber-attacks [18]. They also found that many advanced users do not demonstrate effective security practices, for example by not performing regular updates [18]. This is in line with the findings of Schmidbauer-Wolf, Herbert and Reuter, who suggest that people with high security knowledge do not necessarily show better security behavior [27].

Summarizing these findings, the mentioned studies imply that even people with security knowledge do not show high security behavior and that women show less security knowledge, experience and behavior than men do, but have more security concerns. Besides, young people seem to show less security behavior than old people and those with security knowledge do not necessarily show high security behavior. As the mentioned studies were mostly conducted in English-speaking countries and differences in e.g. the privacy behavior of people form the USA and Germany have been revealed [28], this study focuses on the German population. Furthermore, as aspects such as education and political orientation have not yet been studied with regards to their impact on security knowledge and behavior, we include these as demographic factors.

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3 Hypotheses

In order to fill the mentioned gap, this study investigates the security knowledge and behavior of private users in Germany in consideration of the demographic factors gender, age, education and political orientation. In this study we define *private users* as people who use information and communication technology, like computers and the Internet for their personal use. In addition to the already investigated demographics as age and gender, the present study also takes education and political orientation into account. We added these variables to get a better understanding in which groups security knowledge and behavior differs and because these aspects were not considered previously. Education seems to be a suitable variable, as security trainings could be conducted for different school forms and should take possible differences in education into account. Political orientation as a potential influence on security knowledge and behavior seems to be interesting, because different ideologies might lead to a different perceived vulnerability in regard to security. Furthermore, most of the studies mentioned above were conducted in the USA or the UK and not all of them are representative and/or quantitative, which implies the need for a representative quantitative study in Germany. Therefore, we investigate differences in security knowledge for gender, age, education and political orientation as well as differences in security behavior for gender, age, political orientation and security knowledge. Additionally, we want to assess whether security knowledge and security behavior correlate in order to further investigate the security-paradox explained above. We thus postulate the following hypotheses:

H1: There are differences in security knowledge between the different categories of gender, age, education and political orientation**.**

There are differences in security knowledge between…

H1.1: … men and women.

H1.2: … old and young people.

H1.3: … people with different education.

H1.4: … people with different political orientation.

H2: There are differences in security behavior between the different categories of gender, age, education, political orientation and security knowledge.

There are differences in security behavior between…

H2.1: … men and women.

H2.2: … old and young people.

H2.3: … people with different education.

H2.4: … people with different political orientation.

H2.5: … people with different security knowledge

H3: Knowledge of security and security behavior correlate.

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4 Method

4.1 Study Design and Participants

To assess the security knowledge and behavior of the German population, a representative online survey was conducted in May 2019, using LimeSurvey and the ISO-certified panel provider GapFish (Berlin). Our overall survey included 5 questions related to security behavior and knowledge (questions 8-11 and 14 in the overall survey). The sample (N = 1.219) was adapted to the distribution of age, region and education according to the general German population [29-31] and participants were exclusively recruited in Germany based on the mentioned criteria. Therefore, we assume that the sample consisted of only Germans. The sample covers an age-range from 14 to 87 years, of which 52% are women and 48% are men.

The BSI advises users, among other things, to use virtual private networks (VPNs), as well as to install updates for the operating system right away, to use an anti-virus software, to use different passwords for different services, to be cautious with attachments of emails, and to use end-to-end encrypted communication [4],[32]. Therefore, we developed the survey questions according to these recommendations. Participants had to answer questions concerning their knowledge and use of different security enhancing mechanisms such as anti-virus software and VPNs. The questions were grouped to form three categories: *security knowledge* (1), *dichotomous security behavior* (2) and *security behavior* (3). For security knowledge participants had to indicate their familiarity with data exploitation, phishing, email encryption and different operating systems. We asked for familiarity with these security threats and actions as they were heavily discussed in the media and are part of security reports and how-to instructions of German federal institutions [3], [5]. This category was measured on a 5-point rating scale by Rohrmann, ranging from *1 – I disagree* to *5 – I strongly agree* [33]. For the measurement of security behavior, we conducted two different scales. The first scale (*dichotomous security behavior)* was meant to function as an icebreaker and was therefore measured on a dichotomous scale (*yes, no*) to provide participants a low-threshold introduction to the topic and is thus only analyzed descriptively with frequencies. In psychological questionnaire design, it is often suggested to use icebreaker items to ease participants into a questionnaire [34]. This scale (2) covers, among other things, end-to-end encryption of email and anti-virus software. The second security behavior scale (3) comprises topics like using different browsers, email addresses and passwords for different online services, installing updates directly as well as changing the default settings of apps. It was measured on a 5-point rating scale by Rohrmann, ranging from *1 – I disagree* to *5 – I strongly agree* [33]. Like the other security behavior questions, these are also conducted accordin to security actions recommended for private users by the German state [4]. To get more reliable answers, the option *no response* was provided for all questions of all categories for participants who may be unable or unwilling to answer the questions. The questions were posed in German to avoid distortions due to misunderstanding.

The aim of this study is to evaluate differences in security knowledge and behavior of the German population with regard to demographics like age and gender. Hence,

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questions about gender, age, education and political orientation are also included in the survey. To avoid missing values for the latter, we do not ask for involvement in a political party, but for the political orientation on a left to right spectrum (*left-wing, fairly left-wing, in between, fairly right-wing, right-wing*).

4.2 Analysis

The software tools Microsoft Excel and RStudio Version 3.5.3 were used for the analysis. Answers with the rating *no response* were removed from the data and excluded from the analysis as missing values. Initially, we conducted a descriptive analysis for the categories. For categories 1 and 3, security knowledge and security behavior, a score per person was calculated, they were considered as scales and their reliability was investigated by the internal consistency (Cronbach's Alpha). We grouped participants into age categories, according to the representative quotas provided by GapFish: < 29, 30-39, 40-49, 50-59, > 60. Similarly, we proceeded with education, which we grouped into three categories: *low* (no degree and German Hauptschul-degree), *medium* (German Realschul-degree) and *high* (Highschool & University degree). All 5-point scaled questions are viewed as interval-scaled. As the sample consisted of more than 30 participants, an approximate normal distribution of the data can be assumed and statistical procedures that require normal distribution can be performed [35]. To test hypotheses one and two, t-Tests for gender and ANOVAS – or in case of heterogeneous variances Welch-Tests – in combination with post-hoc tests (Tukey's HSD-Test with Bonferroni correction) were conducted for age, education, political orientation and security knowledge (the latter only for H2). Hypothesis H3 was tested with the Pearson product-moment correlation. Since all tests were performed with the same sample, the 5% - alpha level was corrected via the Bonferroni-Holm method for all tests [36].

5 Results

5.1 Descriptive Analysis

First, the internal consistency of Cronbach's Alpha was analyzed for the scales security knowledge and security behavior and showed only moderate values of $r = .65$ and $r = .60$. Usually, the internal consistency can be considered as acceptable from around $r = .70$ [37]. The lower internal consistency could result from too few and heterogeneous questions but is not considered as problematic for this study since the mean values of groups (e.g. women and men) are taken into account and are not strongly affected by measurement errors affiliated with individual score [37].

Before assessing the results of the hypothesis testing and providing an overview of the amount of knowledge as well as the use of security, we start by analyzing the frequencies of the answers of each of the three categories. All results are based on self-reports by participants. Figure 1 shows the percentage frequencies for the *security knowledge* questions. Most participants are unfamiliar with data exploitation, 25% are

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completely unfamiliar with phishing and 17% do not at all think that the choice of an operating system influences their data security. However, many participants know that mechanisms for encrypting emails do exist.

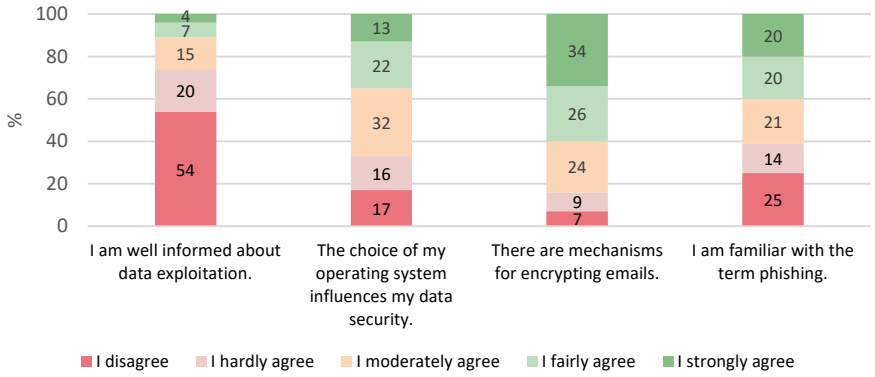

Figure 1. Percentage frequencies for the questions of the *security knowledge* category, N = 1.219.

Figure 2 shows the participants expressions of what we call *dichotomous security behavior*. Most people use an anti-virus software, followed by a protected e-mail provider and an end-to-end encryption of e-mails. The least popular security behavior with only 20% of the asked people using it for their personal computer. is the VPN client. 30% of the participants did not know what a VPN client is.

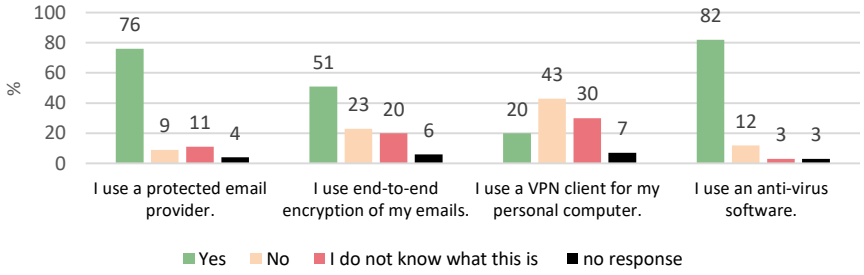

Figure 2. Percentage frequencies for the questions of the *dichotomous security behavior* category, N = 1.219.

Figure 3 shows the percentage frequencies for *security behavior*. More than half of the participants (54% and 61%) fairly or strongly agree to use different passwords for each online service and install updates for their operating system as soon as possible. Only 13% of the asked participants fairly or strongly agree to use different email addresses for different online services, while 70% do not or hardly agree to do so, making this the least used security behavior. The second least applied behavior is using different browsers for online banking and other online services (with 61% participants not or hardly agreeing to this statement).

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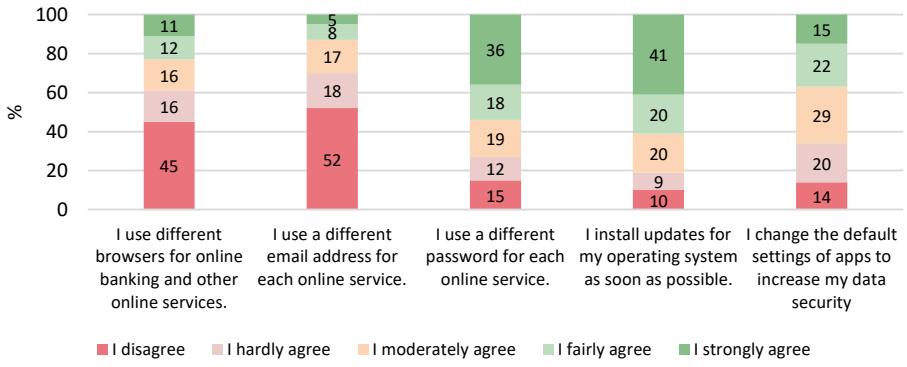

Figure 3. Percentage frequencies for the questions of the *security behavior* category, N = 1.219.

We did also investigate how many people have high (score value > 3.5), moderate (score value between 2.5 and 3.5) and low (score value < 2.5) security knowledge and behavior. The moderate category contains the most participants, which can be viewed in Figure 4. The least participants indicated high security knowledge and behavior.

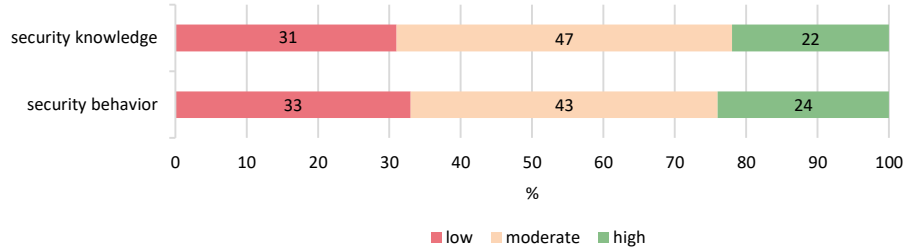

Figure 4. Percentage frequencies for high, low and moderate security knowledge and behavior.

Subsequently, the results for the different tests per hypothesis are presented for the significant variables. The results for all tested variables can be found in Appendix-Table 1 Overall, the scores for the categories security knowledge (M = 2.84, SD = .98) and security behavior (M = 2.91, SD = .87) are only moderate (see Appendix-Table 2).

5.2 Hypothesis Testing

H1: There are differences in security knowledge between the different categories of gender, age, education and political orientation. Starting with H1.1 we found a slight difference between women and men in their security knowledge value. Participants of both genders showed only moderate security knowledge, with men (M = 3.05, SD = .93) having a higher value than women (M = 2.64, SD = .98). The con-

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ducted t-Test showed that this difference is significant (t (1179) = 7.23, $p < .001$, $\alpha = .0063$). However, no significant differences were found between younger and older people (H1.2). For H1.3 we found differences in the security knowledge score for people with different education levels and different political orientation. Participants with high education (M = 3.12, SD = .91) showed the highest security knowledge score, followed by participant with medium education (M = 2.85, SD = .94) and low education (M = 2.67, SD = 1.01). The conducted ANOVA showed that these differences are statistically significant (F (2, 40.6) = 21.82, $p < .001$, $\alpha = .0071$). The post-hoc test showed significance for all comparisons: High-low ($p < .001$), high-medium ($p < .001$) and medium-low ($p < .05$). The differences in the security knowledge score for people with different political orientation can be found in Table 1, with the highest values for participants, who considered themselves fairly left-wing or fairly right-wing (H1.4). The ANOVA showed a significant result (F (4, 856) = 3.47, $p = .0083$, $\alpha = .01$).

Table 1. Table for mean values and standard deviation of the security knowledge score per political orientation.

Political Orientation	Mean value (M)	Standard deviation (SD)
Left-wing	2.91	1.09
Fairly left-wing	3.02	.88
In the middle	2.82	.92
Fairly right-wing	3.05	.90
Right-wing	2.58	.99

H2: There are differences in security behavior between the different categories of gender, age, education, political orientation and security knowledge. For hypothesis 2 differences in security behavior were investigated with regard to gender, age, education, political orientation and security knowledge. No significant differences in security behavior were found between men and women as well as between people with different education levels and different political orientation (H2.1, H2.3, H2.4). However, we found differences in security behavior between age groups, which can be found in Table 2 (H2.2). The lowest mean value (M = 2.74) was found for participants younger than 29 and the highest mean value (M = 3.01) for participants between 50 and 59 years. All security behavior values are only moderate, as the scale ranged between 1 (no security behavior) and 5 (strong security behavior). The ANOVA showed a significant result (F (4, 1197) = 3.49, $p = .0071$, $\alpha = .0083$). In line with the mean values, the subsequent post-hoc test showed significant differences in security behavior between participants younger than 29 and those being between 50-59 years old ($p = .003$).

Differences in security behavior were also found between participants with different levels of security knowledge (H2.5). Following our assumption, people with high security knowledge showed the highest value of security behavior (M = 3.39, SD = 0.80), followed by people with moderate security knowledge (M = 2.96, SD = 0.76) and those with little security knowledge (M = 2.50, SD = 0.79). The conducted

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Welch-Test (F (2, 600.16) = 85.30, $p < .001$, $\alpha = .005$) and the post-hoc test showed, in line with the mean values, that all group differences, high-moderate, high-little, moderate-little, are significant ($p < .001$).

Table 2. Table for mean values and standard deviation of the *implicit security behavior* score per age category

	security behavior score	
Age (in years)	**mean value (*M*)**	**standard deviation (*SD*)**
< 29	2.74	.80
30 - 39	2.96	.88
40 - 49	2.91	.87
50 – 59	3.01	.88
> 60	2.90	.91

H3: Knowledge of security and security behavior correlate. To test H3 a Pearson product-moment correlation was calculated with the values of security knowledge and security behavior. The correlation was moderate and positive with $r = .40$ as well as significant ($p < .001$). Figure 5 shows the scatter plot with a lowess curve for the correlation.

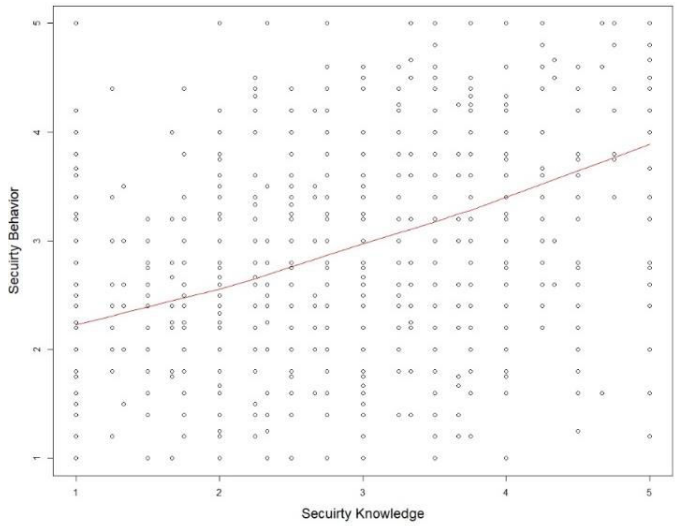

Figure 5. Scatterplot with lowess curve for the correlation of security knowledge and security behavior.

6 Discussion

Overall Security Knowledge and Behavior The results show that people in Germany indicate to have moderate security knowledge and behavior which supports the

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findings of the BSI [5]. Most people in Germany do not seem to follow the recommendations by the BSI [4], as only 40% are (fairly or strongly) familiar with the term phishing, only 20% use VPNs, only 37% fairly or strongly agree to changing the default settings of apps and only around 54% fairly or strongly agree to use different passwords for different online services or run updates for their operating system right away. As suggested earlier, there is still a great need and ample scope for security training of private users. Therefore, the online instructions by the BSI do not seem to help people to behave secure, actual hands on trainings (e.g. in school or adult education) are needed. Additionally, most people (47%, and 43%) stated to have moderate security knowledge and behavior and these two scales correlate moderately. Therefore, our considerations concerning a security-paradox, similar to the privacy-paradox were not confirmed. In our case, users with a higher security knowledge do also behave more secure than those with less knowledge (H2). However, there is a gap between the users perceived need for security, which other studies found to be high [5] and the self-assed security knowledge and behavior, which is overall only moderate. Additionally, it is nor clear if the self-reported and the actual security knowledge and behavior correspond.

Security Knowledge. Our results are in line with previous studies, showing that women have less security knowledge than men [10,11], [21]. Additionally, we found people with a higher education to have slightly but significantly more security knowledge than people with a lower education. Political orientation also has an influence on the security knowledge of German private users. We can state that those who considered themselves fairly left-wing and fairly right-wing show the highest scores of security knowledge. Therefore, people having a moderate right- or left-wing political orientation seem to have higher security knowledge, which needs to be investigated further. The aspect age does not have an influence on the security knowledge of German private users. Overall, 47% of participants indicated to have moderate security knowledge. This might partly be due to social desirability to be informed about security. However, 22% indicated to have high security knowledge and 31% stated to have low security knowledge. Further investigation concerning these groups needs to be carried out with regard to questions such as why they have high, moderate and low knowledge and how high knowledge can be achieved.

Security Behavior. Our findings for security behavior are somewhat in line with previous studies, as we also found young people (<29) to show little but significant less security behavior than older people (50-59) [10], [22], [25]. We found that people with a higher level of security knowledge show significantly, albeit only slightly more security behavior than people with moderate and little security knowledge. We also found people with moderate security knowledge to show significantly, albeit only slightly more security behavior than people with little security knowledge. Additionally, we found security knowledge and security behavior to correlate positively moderate and significant, which somehow contradicts the findings of Schmidbauer-Wolf et al. [27], as this means more security knowledge is associated with more security behavior. The aspects gender, education and political orientation do not have a significant influence on the security behavior of German private users. Overall, 43% of participants reported to show moderate security behavior, 32% stated to show low

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security behavior and 24% indicated to show high security behavior. Further investigation is needed on how these 24% achieved high security behavior and if those who show little security behavior can be assisted to act in a more secure way.

Overall, the results suggest that women know less about security, but do not significantly show less security behavior than men and therefore somehow compensate knowing less. This finding is partly in line with those of related research mentioned before ([10, 11], [23, 24]). Furthermore, age does not play a role for security knowledge but young people (<29) show less security behavior than older people (50-59), which means the security knowledge of young people is not well transferred into behavior. Consequently, research on how knowledge transfers into security behavior is needed. As we found in addition, security knowledge and behavior to correlate only moderately, other factors than knowledge seem to influence security behavior. The effort or the degree of usability of the security mechanism could be such factors [38]. Further research should investigate other factors for increased security knowledge and behavior.

Limitations. The survey questions to measure the four dimensions are based on the recommendations of the BSI [4] but were developed by ourselves and showed only less than acceptable reliability. Therefore, the questions should be reviewed. In addition, the survey only covers self-disclosure of the participants which may not represent the full truth. The fit of self-reported security behavior to actual security behavior should be studied. Our research also lacks qualitative information, about why people show only moderate security knowledge and behavior.

7 Conclusion

We conducted a representative (N=1.219) and quantitative survey with German citizens about their security knowledge and behavior based on recommendations for IT security for private users by the BSI. This study shows that German private users state to have only moderate security knowledge and security behavior, with women having less security knowledge than men and highly educated people having more security knowledge than those with a lower education. German private users younger than 29 show less security behavior than those between 50 and 59 years and people with higher security knowledge state more security behavior than people with less security knowledge. Therefore, the security knowledge of German private users should be enhanced in order to increase security. Since the overall scores for security knowledge and security behavior are only moderate and security knowledge is correlated with security behavior, it does seem helpful to educate people in regard to security, for them to secure their data better. These education and training programs should fit the target group. Our study shows that especially, women and lower educated people are target groups for security knowledge education. Younger people form the target group for trainings that help to transfer security knowledge into behavior. Exploring why fairly left- and right-wing oriented people have a higher security knowledge could also help in identifying more concise target groups and contents.

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Despite these insights, the reasons for the lack of security knowledge and behavior are unclear and should be investigated in further studies. Additionally, a focus should be on how to educate and train private users for an increased security knowledge and resulting behavior, as well as on how security knowledge best transfers into secure behavior. This research should also take the differences found in this study into account and focus on customizing the education to the target group. Further research should also inspect the actual not self-reported security behavior of Germans and the questions used here should be analyzed with regard to their reliability and validity.

Acknowledgements: This research was funded by the German Federal Ministry of Education and Research (BMBF) and by the Hessen State Ministry for Higher Education (HMWK) within the National Research Center for Applied Cybersecurity ATHENE and by the Deutsche Forschungsgemeinschaft (DFG) – SFB 1119 (CROSSING) – 236615297 as well as GRK 2050 (Privacy & Trust) – 251805230.

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Appendix

Appendix-Table 1. P values and Bonferroni-Holm corrected α for all Hypothesis.

Hypothesis - dependent variable	**Category**	***p* value**	**α Bonferroni- Holm corrected**	**Hypothesis confirmed?**
H1 - security knowledge	gender	0.0000000000008759	0.00625	Yes
H1 - security knowledge	age	0.0185	0.016666667	No
H1 - security knowledge	education	0.000000000502	0.007142857	Yes
H1 - security knowledge	political orientation	0.00803	0.01	Yes
H2 - security behavior	gender	0.036	0.025	No
H2 - security behavior	age	0.0024	0.008333333	Yes
H2 - security behavior	education	0.0696	0.05	No
H2 - security behavior	political orientation	0.079	0.0125	No
H2 -security behavior	security knowledge	0.00000000000000022000	0.005	Yes
H3	correlation of security knowledge and behavior	0.00000000000000022000	0.005555556	Yes

https://doi.org/10.30844/wi_2020_v3-herbert

Appendix-Table 2. Table for mean values and standard deviation of the security knowledge and security behavior.

Dimension	Overall	Females	Male
	Mean (SD)	Mean (SD)	Mean (SD)
Security knowledge	2.84 (.98)	2.64 (.98)	3.05 (.93)
Security behavior	2.91 (.87)	2.86 (.88)	2.96 (.86)

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