

# **To what extent do millennials and non-millennials differ in security and privacy perceptions on Facebook?**

Author: Stefan Cottart  
University of Twente  
P.O. Box 217, 7500AE Enschede  
The Netherlands

**Social Networking Sites (SNS) are used for communicating interests, daily information, and sharing photos with friends, family, and colleagues. When being online, SNS users tend to forget about privacy concerns and communicate private information with other users. This study examines the effect of perceived privacy and security towards social media behavior (trust, attitude, and self-disclosure) on Facebook. Age is used to search for differences between the perceptions of millennials and non-millennials. With an online survey data was gathered, and analyzed through different statistical models. The theoretical models suggest that perceived privacy and security affects Social Media Behavior, and that age affects perceived privacy and security. I reject the theoretical models since no statistical significant evidence was found in the results of the analyzed data.**

## **Supervisors:**

First Supervisor I. Singaram, MSc (Raja)  
Second Supervisor Dr A.H. (Rik) van Reekum

## **Keywords**

Facebook; Perceived Privacy; Perceived Security; Millennials; Social Media Behavior; Trust; Attitude; Self-disclosure

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

*7<sup>th</sup> IBA Bachelor Thesis Conference*, July 1st, 2016, Enschede, The Netherlands.  
Copyright 2016, University of Twente, The Faculty of Behavioural, Management and Social sciences.

# 1. INTRODUCTION

Society has shifted from an industrial society, in which information was used to support production in industrial capitalism, to an information society in which information is the industry itself (Büyükbaykal, 2015). In today's society we are more and more online, Social Networking Sites (SNS) like Facebook, Instagram and Twitter have become a part of our lives. Being able to visit them on your phone, tablet, or via computer. Almost everyone has at least one social networking account (Talib et al., 2014), which they use for communicating interests, daily information, and sharing photos with friends, family, and colleagues (Shin, 2010). Every second content (information) is created by SNS users (Akiyoshi, 2008). When being online, SNS users tend to forget about privacy concerns and communicate private information with other users (Berendt, Günther, & Spiekermann, 2005). Especially students lack knowledge about their personal privacy and security on SNS (Lawler & Molluzzo, 2010; Wilson, 2008). Data shows that users do have concerns about the privacy and security they perceive online (Shin, 2010). Most studies have focused on younger adults/teens and not a lot of research about SNS and adults has been done. When there has been looked at older adults and SNS use, there was no connection between *perceived privacy* and *security* in their study (Coelho & Duarte, 2016).

In the following parts we are going to talk about theory, methods, analyzing of the results, discussing the results and how to interpret them in a theoretical and practical way.

We'll conduct a survey among Millennials and Non-Millennials and analyze the data, in which we found that *perceived security* and *privacy* influence each other in a positive way. Having a better understanding of different age groups and their social media behavior on Facebook can help us better facilitate their usage of Facebook.

## 1.1 Theory

Facebook is an SNS, which has grown exponentially in the last few years from 5,5 million active users in 2005 to 500 million active users in 2011. The platform allows you to post personal information about yourself on your profile, from photos and videos, to your political view and favorite movies and musicians. These will be shared with your Facebook friends (Hughes, Rowe, Batey, & Lee, 2012), and if the profile is an open profile then every Facebook user is able to see the self-disclosed content on your profile page.

*Privacy* is the right to determine what information about him- or her self should be known to others (Westin, 1967). But we are interested in *perceived privacy* "the subjective probability with which consumers believe that the collection and subsequent access, use, and disclosure of their private and personal information is consistent with their expectations" (Chellappa, 2008).

To understand how users perceive their security online we use *Perceived security* defined as: "the subjective probability with which consumers believe that their personal information [...] will not be viewed, stored, and manipulated during transit and storage by inappropriate parties in a manner consistent with their confident expectations (Chellappa, 2008).

The way in which SNS are used might differ by age group, that's why we make a distinction between millennials (those in college from the early 2000s to late 2010s)(Bergman, Fearington, Davenport, & Bergman, 2011), and non-millennials (those who have been to college before 2000). For

the purpose of my research, I have chosen to specify the age group of the millennials as those born between 1980-2015, and those born before 1980 are categorized as non-millennials.

Millennials might not be fully knowledgeable of *privacy* and *security* on social networking sites (Lawler & Molluzzo, 2010). Another study agrees with that statement, saying that especially students lack knowledge about their personal privacy and security on SNS (Wilson, 2008). While others research says that millennials do care about privacy; their concerns about privacy are more similar to non-millennials than they are different. Millennials do sometimes release personal data in order to enjoy social inclusion, even though normally in their most rational moments they wouldn't share such data (Hoofnagle, 2010). The social pressure to belong to a group might affect millennials social media behavior.

*Perceived privacy* and *security* affect SNS users intention to use SNS. If SNS users don't feel like their *privacy* can be guaranteed then their usage of SNS might decrease. "To what extent are users concerned about privacy and security?" in a SNS context (Shin, 2010).

Users of social media platforms do have concerns about their online *privacy*, and the security they perceive online (Shin, 2010). But the previous studies were done only with young adults as subjects of study, which doesn't give a good representation of the overall user perspective on the subject as not only young adults use SNS. Neither was there looked at a difference between various age groups. This leaves room for further research in this area.

But is there a difference in social media behavior between older- and younger adults on SNS? To accomplish this we ask: "What is the effect of age on privacy and security perceptions in Facebook and how does this affect social media behavior on Facebook?" This study tries to improve current knowledge about the social media behavior of different age groups.

## 1.2 Theoretical Framework

Here we developed our theoretical model, mostly based on the research model from Shin (2010). We are going to use this model because it summarizes various models that are widely used in previous research. We adapted it to our specific purpose in order to conduct our research and match our research question.

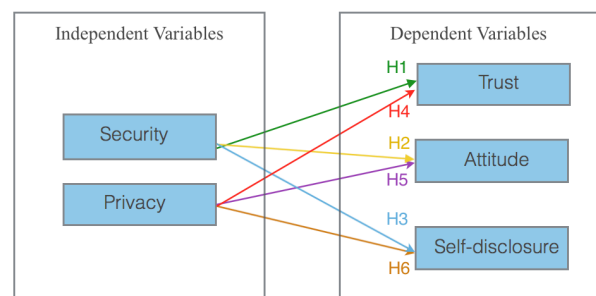


Figure 1 Theoretical model

In figure 1 you will find our theoretical model. In the left box you can see the independent variables: "perceived security, perceived privacy". In the right box you will find our dependent variables "trust; attitude; self-disclosure" which

make up “Social Media Behavior”. We assume that our independent variables affect our dependent variables.

### 1.2.1 Perceived security

To address the elements of *perceived security*, we used Yenisey et al. (2005) measures in the survey question. In SNS, *security* refers to users perception on *security*, that is *perceived security*, which is defined as the extent to which a user believes that using a SNS application will be risk-free (Shin, 2010). SNS users tend to be more online if they trust the security of the sites (Yenisey et al., 2005). Previous studies have shown that *attitude* toward SNS has a positive effect on the intention to use SNS (Shin, 2010). The more secure users feel on online sites the less they might *self-disclose*. Therefore we hypothesize:

- H1. Perceived security positively affects trust
- H2. Perceived security positively affects attitude
- H3. Perceived security positively affects self-disclosure score

### 1.2.2 Perceived privacy

*Perceived privacy* will be measured with items from Buchanan, Paine, Joinson, and Reips (2007) and Metzger (2004). In SNS, *privacy* refers to the control one has over the flow of one’s personal information, including the transfer and exchange of that information (Shin, 2010). Previous research has found that individuals concern for privacy increases, when registering for Web sites users tend to provide incomplete information, mostly because they don’t trust the Web site. The risks of disclosing personal information are weighed against the benefits when deciding to provide information to a Web site (Metzger, 2004). Therefore we hypothesize:

- H4. Perceived privacy positively affects trust
- H5. Perceived privacy positively affects attitude
- H6. Perceived privacy positively affects self-disclosure score

### 1.2.3 Social Media Behavior

A person’s performance of a specified behavior is determined by his or her behavioral intention to perform the behavior, and behavioral intention is jointly determined by the person’s attitudes and subjective norms (Ajzen & Fishbein, 1980). To be able to get a better understanding of Social Media Behavior, we’re using *trust*, *attitude*, and *Self-disclosure* to define Social Media behavior.

#### 1.2.3.1 Trust

*Trust* in SNS is defined as the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the *trust* or, irrespective of the ability to monitor or control that other party (Shin, 2010).

#### 1.2.3.2 Attitude

An individual’s positive or negative feeling about performing the target behavior, while subjective norm refers to a person’s perception that most people who are important to him or her think he or she should or should not perform the behavior in question (Shin, 2010).

#### 1.2.3.3 Self disclosure

When deciding whether or not to disclose information, individuals are weighing whether the benefits counterbalance the risks of their disclosure action. The degree of an individual’s perception of privacy risks, trusting beliefs and benefits from revelation influences the degree of self-disclosure (Krasnova, 2009)

#### 1.2.4 Age groups

We assume that millennials have different concerns for *security* and *privacy* than non-millennials, therefore the effect that *security* and *privacy* has on e.g. *trust* (dependent variable) will differ from non-millennials. Thus we add another variable to our framework “age”, the moderator variable, which affects the relationship of the independent variable on the dependent variable as can be seen in Figure 2.

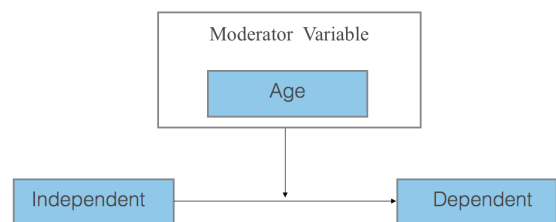


Figure 2 Research model

Millennials are not fully aware of *security* and *privacy perceptions* (or the effects don’t concern them if it offers them inclusion to a group), and the lack knowledge about the effect of their *online behavior* (Lawler & Molluzzo, 2010; Wilson, 2008; Hoofnagle, 2010). Millennials are also more open and confident on social media compared to non-millennials, which is the reason they reveal more information about themselves. (Malikhao & Servaes, 2011) Thus we hypothesize:

- H7. Age negatively affects the relationship between the independent and dependent variables.

## 2. RESEARCH METHODOLOGY

An online survey in the format of a questionnaire was conducted. The survey is constructed using the operationalization of *perceived security & -privacy*, and Social Media Behavior. The survey was divided into eight parts. The first part of the survey covered general demographics about the respondents. The other parts focused each on a different variable of our research; *Usage*, *self-disclosure*, *trust*, *attitude*, *motivation*, *privacy*, and *security*.

Furthermore construct statement were done using interval level measurements. We applied a 7-point Likert scale, ranging from 1”Strongly disagree” to 7 “strongly agree”, which allows the respondents of the survey to answer the questions more precisely according to their opinion. We used two age groups in this paper, Millennials (age 25-35) and Non Millennials (age 36-50). The minimum amount of respondents was set at N=50 per age group.

The data was collected during a period of 2 weeks. After which the survey was closed and the data was checked for biases and then analyzed.

The survey was posted on Facebook and then shared by 16 Facebook profiles. Those 16 profiles had a total of approx. 6400 friends. The second time the survey was shared by 6

Facebook profiles, which had approx. 5900 friends. We assume that not all of the approx. 12300 Facebook friends have seen our post and that some of the friends might have been counted double in different Facebook profiles. Therefore we estimate that approx. 6000 people saw our post. Of which 448 filled in the survey, giving us a response rate of 7.47%.

## 2.1 Participants

The survey received 448 respondents of which 349 were fully completed. From the 349, 12 responses have been taken out because of invalid answers. That makes the total of valid completed responses 337. The respondents were subdivided into 4 age groups: 18-24 y/o (165), 25-35 y/o (52), 36-50 y/o (51), and 50+ y/o (69). Since we are only interested in 25-35 and 36-50 y/o we have 52+51= 103 filled in surveys, which fit our requirements.

## 2.2 Data measurements

To test our models we will first analyze the data through descriptive statistics, summarizing data and searching for a pattern in the data. To see if there is a statistical significant difference between our control -, independent variables and age, we use an ANOVA analysis to test our null hypothesis (H0) and alternative hypothesis (Ha).

H0= There is no difference between age groups when compared to variables

Ha= There is some difference between age groups when compared to variables

To see if there is any correlation between the variables we divided them into continuous and ordinal variables. For the continuous variables we used *Pearson's correlation*, for the ordinal variables we used *Spearman's Rho*.

The Univariate analysis shows if there is any significant difference between the age groups of the dependent variables compared to the independent and control variables. To see if there is a significant difference we test our H0 and Ha for *Attitude, trust and self-disclosure*.

H0= There is no difference between *attitude/trust/self-disclosure* when compared to variables.

Ha= There is some difference between *attitude/trust/self-disclosure* when compared to variables.

To categorize the mean score of the variables we are using table 1.

	Low	Medium	High
Perceived privacy and security (7-scale)	1-3	3.1-5	5.1-7
Trust, Attitude (7-scale)	1-3	3.1-5	5.1-7
Self-disclosure (11-items)	1-4	4.1-7	7.1-11

**Table 1 Mean Category**

## 2.3 Reliability test

To test if our data, which is based on the Likert scale, is reliable, we use Cronbach's alpha to measure the internal consistency of the data. The reliability coefficient needs to be higher than 0.70 to be considered acceptable (Tavakol & Dennick, 2011). As shown in table 2, none of the reliability coefficients are higher than 0.70 meaning that the data we have gathered can't be considered reliable. Out of the 17 items

(questions) in table 2, 12 items (*Security 3/5, privacy 4/4, attitude 2/4, trust 3/4*) were derived out of established published research, in which the items did prove to be reliable (Cronbach's alpha >0.70). The other 5 items were added with the assumption that they would add value to the questionnaire. Removing questions didn't help to bring the Cronbach's alpha above the 0.70 mark, therefore we left them in.

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Security	,118	,108	5
Privacy	,255	,298	4
Attitude	,430	,484	4
Trust	,539	,583	4

**Table 2 Reliability Statistics**

## 3. RESULTS

### 3.1 Descriptive statistics of the variables

In Graph 1 and Table 3 the descriptive statistics of the independent variables (*perceived security and perceived privacy*) and the dependent variables (*attitude, trust, and self-disclosure score*) can be found.

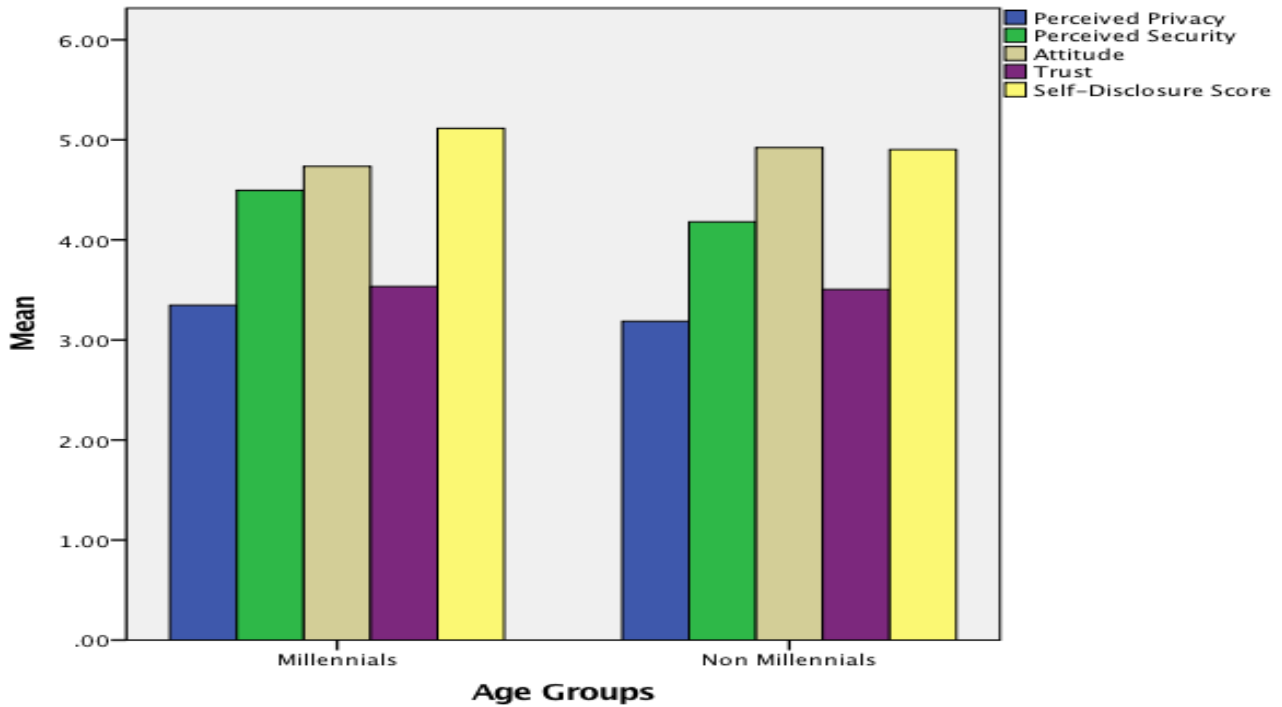
The independent variables, *perceived security* and *perceived privacy* show no significant difference between the mean of the Millennials and Non Millennials. Both variables have a medium mean score (see table 1) ( $3 > - \leq 5$ ). *Perceived security* has in both age groups a rather clustered normal distribution (Std. Deviation= .86, .87). For *perceived privacy*, the Millennials show a higher (Std. Deviation=1.13), which gives them a more dispersed normal distribution than the Non Millennials (Std. Deviation=.96). Thus, Non Millennials have answered more a like regarding *perceived privacy* questions.

		N	Mean	Std. Deviation
Perceived Privacy	Millennials	52	3.3462	1.13019
	Non Millennials	51	3.1863	.96416
	Total	103	3.2670	1.04920
Perceived Security	Millennials	52	4.4962	.86364
	Non Millennials	51	4.1804	.87018
	Total	103	4.3398	.87709
Attitude	Millennials	52	4.7356	1.05302
	Non Millennials	51	4.9216	1.17313
	Total	103	4.8277	1.11256
Trust	Millennials	52	3.5337	.89392
	Non Millennials	51	3.5049	1.15919
	Total	103	3.5194	1.02881
Self-Disclosure Score	Millennials	52	5.1154	2.36522
	Non Millennials	51	4.9020	1.93137
	Total	103	5.0097	2.15341

**Table 3 Descriptive statistics**

The dependent variables, *attitude* and *trust* also show no significant difference between the mean of the Millennials and Non Millennials. Both variables have a medium mean score ( $3 > \leq 5$ ). *Attitude* has in both age groups a rather normal distribution (Std. Deviation=1.05, 1.17). For *trust*, Non-Millennials show a higher (Std. Deviation=1.16), which gives them a more dispersed normal distribution than the Millennials (Std. Deviation=. 89). Meaning that Millennials have answered more similar regarding the *trust* questions.

The age groups of the dependent variable *self-disclosure score* have a quite similar mean score, which is a medium mean score ( $4 > \leq 7$ ). *Self-disclosure score* has a high and dispersed normal distribution in both age groups; of the two age groups Millennials have a much higher standard deviation than the Non Millennials (std. deviation=2.36, 1.93). Thus both groups have high outliers.



Graph 1

### 3.2 ANOVA

In table 4, Control, Independent, and Dependent variables are compared to age.

For the Control variable *gender*, and *education* there was a statistically significant difference between age groups as determined by one-way ANOVA,  $F=7.867$   $p=0.006$ ;  $F=8.364$   $p=0.005$ . Because  $F$  is higher than 1, I reject the null hypothesis ( $H_0$ = There is no difference between age groups when compared to variables), and accept the alternative hypothesis ( $H_a$ = There is some difference between age groups when compared to variables). Although more differences between variables and groups were expected, no statistically significance was found.

### 3.3 Correlations

In table 5.1 the Continues variables (*perceived security*, *perceived privacy*, *trust*, *attitude*, *self-disclosure score*, *age*, and *education*) are correlated by means of the *Pearson correlation formula*.

We can conclude from table 5.1 that there is a significant positive relationship between *perceived security* and *perceived privacy*,  $r(101)=.367$ ,  $p=.000$ . Therefore, if there is a high-*perceived security* given by users then their *perceived privacy* can also be assumed to be high.

There is also a significant positive relationship between *attitude* and *trust*,  $r(101)=.419$   $p=0.000$ . Meaning that if a respondent trusts Facebook then their *attitude* concerning

Facebook was also positive. A significant negative relationship between *age* and *education*,  $r(101)=-.297$ ,  $p=.002$ , was also found. According to these findings, the older a person is the lower their education is.

ANOVA	Model 1		Model 2	
	F	Sig.	F	Sig.
<b>Control Variables</b>				
Nationality	.685	.410	.685	.410
Gender	7.867	.006	7.867	.006
Education	8.364	.005	8.364	.005
<b>Independent Variables</b>				
Perceived Privacy			.596	.442
Perceived Security			3.416	.067

Table 4 Control and Independent variables to age

For the ordinal variables we used *Spearman's Rho* to correlate them. In table 5.2 the ordinal variables *nationality*, and *gender* can be found, as shown in table 5.2 their Sig (P-value) are not lower than the alpha of 0.05 ( $p < \alpha$ ). Therefore they're both not significant.

### 3.4 Univariate

In table 6.1, the control and independent variables are compared to *attitude*. For the Control variable *education*, and *age* there was a statistically significant difference towards *attitude* as determined by the univariate analyses,  $F = 4.320$   $p = 0.041$ ,  $F_{1,697} = 0.046$ . Because  $F$  is higher than 1, I reject the null hypothesis ( $H_0 =$  There is no difference between *attitude* when compared to variables), and accept the alternative hypothesis ( $H_a =$  There is some difference between *attitude* when compared to variables).

In table 6.2, the control and independent variables are compared to *trust*. For the Control variable *Nationality* there was a statistically significant difference towards *trust* as determined by the univariate analyses,  $F = 8.556$   $p = 0.005$ . Because  $F$  is higher than 1, I reject the null hypothesis ( $H_0 =$  There is no difference between *trust* when compared to variables), and accept the alternative hypothesis ( $H_a =$  There is some difference between *trust* when compared to variables).

In table 6.3, the control and independent variables are compared to self-disclosure. For the Control variable *Gender*, there was a statistically significant difference towards self-disclosure as determined by the univariate analyses,  $F = 5.917$   $p = 0.017$ . Because  $F$  is higher than 1, I reject the null hypothesis ( $H_0 =$  There is no difference between self-disclosure when compared to variables), and accept the alternative hypothesis ( $H_a =$  There is some difference between self-disclosure when compared to variables).

## 4. DISCUSSION

The goal of our study was to develop models, which show the connection between *perceived privacy and security, and social media behavior (trust, attitude, and self-disclosure)*. We assumed that millennials had different concerns for *security and privacy* than non-millennials; therefore the effect that *security and privacy* had on e.g. *trust* (dependent variables) would differ from non-millennials. Therefore we developed a theoretical framework based on previous research, and tested the models on Facebook users, by collecting data through an online survey. To answer our research question: "*What is the effect of age on privacy and security perceptions in Facebook and how does this affect social media behavior on Facebook?*"

### 4.1 Theoretical implication

Out of the analyzed data a positive relationship between *perceived privacy and security* was found. This suggests that a Facebook user whose *perceived security* is high also has a high-*perceived privacy*. A significant effect of *perceived privacy* on *perceived security* was also found in a previous study (Shin, 2010).

*Perceived security* has shown to have no significant relationship with *trust, attitude and self-disclosure score, this rejects H1-H3*. Nor has *perceived privacy* shown any significant relationship with *trust, attitude or self-disclosure*

*score, which rejects H4-H6*. This is the opposite of what previous research has found. *Perceived privacy and security* affect *trust and attitude* (Shin, 2010)

*Attitude and trust* do seem to have a positive effect on each other. This partly supports previous research, in which *trust* has an effect on *attitude* but *attitude* doesn't affect *trust* (Shin, 2010).

*Age* suggests having no significant effect *perceived privacy or security*. Thus rejecting  $H_7$  "Age negatively affects the relationship between the independent and dependent variables".

Here for I reject our theoretical models, as there has not been found any statistical evidence that supports our assumption that "the independent variables affects the dependent variables", and also no significant affect between *age* and the independent variables has been found. However, previous research suggests that *perceived privacy and perceived security* do affect *trust and attitude* (Shin, 2010).

### 4.2 Practical implication

The results indicate several connections, which might be used by Facebook to create new models and strategies to improve security measures and give users of Facebook more user-friendly experience. For the theoretical field this study adds to improve the knowledge about the connection between; *perceived privacy, security, trust, attitude, self-disclosure and social media behavior*. Researchers could use this study as a basis for their own research to elaborate further on this topic.

Parents could use this study to better understand how their teens think about Facebook and the risks that go with it.

## 5. LIMITATION

Firstly there are several limitations with regard to taking a random sample from the population. Despite having a very large amount of Facebook users, we are mostly limited to gathering data primarily from Dutch/Germans users.

In addition to this, the way we gather our responses may result in us over and under representing certain demographics of users. This results from the fact that a significant portion of our responses came from people within our social environment. The study for example suggests that *age* has a significant negative affect on *education*; the older the Facebook user the lower their level of education is. Which might come from the fact that most of our friends (millennials) study at the University while their parents or other older respondents don't or haven't studied at the University. The study cannot be generalized amongst all social media platforms as it concentrates solely on Facebook. The amount of respondent's used in this study barely reached the minimum number of respondents needed ( $N = 50$ ), while a larger amount might have created more significant results between the variables. The millennials (25-35) and non-millennials (36-50) age group I've chosen might have been too closely related to each other. Thus having no immediate differences between them. The low Cronbach's alpha we got from the data, suggests that our data needs improvement and therefore new data would be needed to properly conduct a reliable study. We hope that our work can help to integrate the current body of research in order to arrive at a more general understanding of the phenomenon.

## 6. ACKNOWLEDGMENTS

I would like to thank the respondents, for filling in the survey and giving us an insight into their social media behavior.

## 7. REFERENCES

- Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour.
- Akiyoshi, M. (2008). Knowledge sharing over the network. *Thin Solid Films*, 517(4), 1512-1514. doi:<http://dx.doi.org/10.1016/j.tsf.2008.09.042>
- Berendt, B., Günther, O., & Spiekermann, S. (2005). Privacy in e-commerce: stated preferences vs. actual behavior. *Communications of the ACM*, 48(4), 101-106.
- Bergman, S. M., Ferrington, M. E., Davenport, S. W., & Bergman, J. Z. (2011). Millennials, narcissism, and social networking: What narcissists do on social networking sites and why. *Personality and Individual Differences*, 50(5), 706-711. doi:<http://dx.doi.org/10.1016/j.paid.2010.12.022>
- Buchanan, T., Paine, C., Joinson, A. N., & Reips, U. D. (2007). Development of measures of online privacy concern and protection for use on the Internet. *Journal of the American Society for Information Science and Technology*, 58(2), 157-165.
- Büyükbaykal, C. I. (2015). Communication Technologies and Education in the Information Age. *Procedia - Social and Behavioral Sciences*, 174, 636-640. doi:<http://dx.doi.org/10.1016/j.sbspro.2015.01.594>
- Chellappa, R. K. Consumers' Trust in Electronic Commerce Transactions: The Role of Perceived Privacy and Perceived Security.
- Coelho, J., & Duarte, C. (2016). A literature survey on older adults' use of social network services and social applications. *Computers in Human Behavior*, 58, 187-205.
- Hoofnagle, C. J., King, J., Li, S., & Turow, J. (2010). How different are young adults from older adults when it comes to information privacy attitudes and policies? *SSRN 1589864*.
- Hughes, D. J., Rowe, M., Batey, M., & Lee, A. (2012). A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior*, 28(2), 561-569. doi:<http://dx.doi.org/10.1016/j.chb.2011.11.001>
- Krasnova, H., Kolesnikova, E., & Guenther, O. (2009). "It Won't Happen To Me!": Self-Disclosure in Online Social Networks. *Amcis 2009 Proceedings*, 343.
- Lawler, J. P., & Molluzzo, J. C. (2010). A study of the perceptions of students on privacy and security on social networking sites (SNS) on the internet. *Journal of Information Systems Applied Research*, 3(12), 3-18.
- Metzger, M. J. (2004). Privacy, trust, and disclosure: Exploring barriers to electronic commerce. *Journal of Computer - Mediated Communication*, 9(4), 00-00.
- Malikhao, Patchanee, & Servaes, Jan. (2011). The media use of American youngsters in the age of narcissism: Surviving in a 24/7 media shock and awe – distracted by everything. *Telematics and Informatics*, 28(2), 66-76. doi: <http://dx.doi.org/10.1016/j.tele.2010.09.005>
- Shin, D.-H. (2010). The effects of trust, security and privacy in social networking: A security-based approach to understand the pattern of adoption. *Interacting with Computers*, 22(5), 428-438. doi:<http://dx.doi.org/10.1016/j.intcom.2010.05.01>
- Talib, S., Razak, A., Munirah, S., Olowolayemo, A., Salependi, M., Ahmad, N. F., . . . Bani, S. K. (2014). *Perception analysis of social networks' privacy policy: Instagram as a case study*. Paper presented at the Information and Communication Technology for The Muslim World (ICT4M), 2014 The 5th International Conference on.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53.
- Westin, A. F. (1967). *Privacy and Freedom*, Atheneum. New York, 7.
- Wilson, T. (2008). Your biggest threat: Gen Y. *Information Week, December*, 1, 20.
- Yenisey, M. M., Ozok, A. A., & Salvendy, G. (2005). Perceived security determinants in e-commerce among Turkish university students. *Behaviour & Information Technology*, 24(4), 259-274.

## 8. APPENDIX

### 8.1 Survey questions - M&S 3 - Social media group

#### Demographics

NAT: What's your nationality?

- Dutch
- German
- Other:

AGE: What's your age?

GEN: What's your gender?

- Male
- Female

EDU: What's your highest level of completed education:

- Did Not Complete High School
- High School
- Trade/technical/ vocational training
- Some College
- Bachelor's Degree
- Master's Degree
- Advanced Graduate work or Ph.D.

#### Perceived privacy

PP1: I am confident that I know all the parties who collect the information I provide during the use of Facebook

PP2: I am aware of the exact nature of information that will be collected during the use of Facebook

PP3: I am not concerned that the information I submitted on Facebook could be misused

PP4: I believe there is an effective mechanism to address any violation of the information I provide to Facebook

#### Perceived security

PS1: I believe the information I provide with Facebook will not be manipulated by inappropriate parties

PS2: I am confident that the private information I provide with Facebook will be secured. (Yenisey et al. (2005))

PS3: I believe inappropriate parties may deliberately view the information I provide with Facebook (Yenisey et al. (2005))

PS4: I adjust my privacy settings on Facebook in order to make my posts visible to a specific group of people.

PS5: I make use of the private groups feature of Facebook

#### Usage

USE: How often do you come into contact with Facebook?

- Less than once a week (1)
- Once a week (2)
- At least once a day (3)
- 11-20 times a day (4)
- More than 20 times a day (5)

TIM: About how much time do you spend on Facebook a week?

- 0-5 hours (1)
- 5-10 hours (2)
- 10-15 hours (3)
- 15-20 hours (4)
- 20+ hours (5)

DEV: On which devices do you use Facebook? You can give multiple answers.

- Desktop computer
- Laptop
- Smartphone
- Tablet
- Other



**Self-disclosure**

ADD: Please indicate what information you include on your Facebook profile (also when it is not shown to other users). You can give multiple answers. (Dwyer, 2007)

- Photograph of yourself (
- Real name (
- Hometown (
- Email address (
- Cell phone number (
- Relationship status (
- Sexual orientation (
- Work (
- Religion (
- Political preference (
- Education (

**Trust**

TR1: Facebook is a trustworthy social network

TR2: I can count on Facebook to protect my privacy

TR3: Facebook can be relied on to keep its promises

TR4: I never read privacy policies on Facebook

Maximum score = 28

How higher they score, the more they trust Facebook.

**Attitude**

AT1: I would have positive feelings towards Facebook in general

AT2: The thought of using Facebook is appealing to me

AT3: Facebook has become part of my daily routine.

AT4: The fact that my posts on social media may be viewed by other individuals in my social environment influences my social media behavior

**Motivation**

MV1: I use Facebook to get peer support from others.

MV2: I use Facebook to meet interesting people.

MV3: I use Facebook to feel like I belong to a community.

MV4: I use Facebook for instant messaging.

MV5: I use Facebook to stay in touch with people I know.

MV6: I use Facebook because it is entertaining and helps me relax.

MV7: I use Facebook because it helps me pass the time.

MV8: I use Facebook because I feel peer pressure to participate.

MV9: I use Facebook to get useful information about news/events.

MV10: I use Facebook to get useful information about product/services.

## 8.2 Correlations

### 8.2.1 Continuous variables (Pearson's correlation)

Correlations Table – continuous variables (Pearson's correlation)

		Perceived Privacy	Perceived Security	Attitude	Trust	Self- Disclosure Score	Age	Education
Perceived Privacy	Pearson Correlation	1	.367**	.140	.182	.115	-.084	-.098
	Sig. (2-tailed)		.000	.158	.066	.248	.397	.324
	N	103	103	103	103	103	103	103
Perceived Security	Pearson Correlation	.367**	1	.177	.171	-.002	-.126	-.041
	Sig. (2-tailed)	.000		.073	.085	.986	.203	.682
	N	103	103	103	103	103	103	103
Attitude	Pearson Correlation	.140	.177	1	.419**	.113	.174	.140
	Sig. (2-tailed)	.158	.073		.000	.255	.079	.157
	N	103	103	103	103	103	103	103
Trust	Pearson Correlation	.182	.171	.419**	1	.074	.011	-.073
	Sig. (2-tailed)	.066	.085	.000		.457	.911	.461
	N	103	103	103	103	103	103	103
Self- Disclosure Score	Pearson Correlation	.115	-.002	.113	.074	1	-.054	-.027
	Sig. (2-tailed)	.248	.986	.255	.457		.589	.788
	N	103	103	103	103	103	103	103
Age	Pearson Correlation	-.084	-.126	.174	.011	-.054	1	-.297**
	Sig. (2-tailed)	.397	.203	.079	.911	.589		.002
	N	103	103	103	103	103	103	103
Education	Pearson Correlation	-.098	-.041	.140	-.073	-.027	-.297**	1
	Sig. (2-tailed)	.324	.682	.157	.461	.788	.002	
	N	103	103	103	103	103	103	103

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 5.1 Correlations of Continuous variables**

### 8.2.2 Ordinal variables (Spearman's Rho)

Correlations – ordinal variables (Spearman's Rho)

			Nationality	Gender
Spearman's rho	Nationality	Correlation Coefficient	1.000	.127
		Sig. (2-tailed)	.	.200
		N	103	103
	Gender	Correlation Coefficient	.127	1.000
		Sig. (2-tailed)	.200	.

**Table 5.2 Correlations of Ordinal variables**

## 8.3 Univariate Analysis

### 8.3.1 Control and Independent variables vs. Attitude

Dependent Variable: Attitude

Source	Type III Sum of			F	Sig.
	Squares	df	Mean Square		
Corrected Model	56.010 <sup>a</sup>	28	2.000	2.107	.006
Intercept	6.507	1	6.507	6.855	.011
PP	1.094	1	1.094	1.152	.287
PS	1.592	1	1.592	1.677	.199
NAT	.002	1	.002	.002	.965
GEN	2.916	1	2.916	3.072	.084
EDU	4.101	1	4.101	4.320	.041
AGE	37.043	23	1.611	1.697	.046
Error	70.244	74	.949		
Total	2526.813	103			
Corrected Total	126.254	102			

a. R Squared = .444 (Adjusted R Squared = .233)

**Table 6.1 Univariate analysis of attitude**

### 8.3.2 Control and Independent variables vs. Trust

Dependent Variable: Trust

Source	Type III Sum of			F	Sig.
	Squares	df	Mean Square		
Corrected Model	39.800 <sup>a</sup>	28	1.421	1.543	.072
Intercept	19.835	1	19.835	21.534	.000
PP	.219	1	.219	.238	.627
PS	1.978	1	1.978	2.147	.147
NAT	7.881	1	7.881	8.556	.005
GEN	2.391	1	2.391	2.596	.111
EDU	.255	1	.255	.277	.600
AGE	27.033	23	1.175	1.276	.214
Error	68.161	74	.921		
Total	1383.750	103			
Corrected Total	107.961	102			

a. R Squared = .369 (Adjusted R Squared = .130)

**Table 6.2 Univariate analysis of trust**

### 8.3.3 Control and Independent variables vs. Self-Disclosure Score

Dependent Variable: Self-Disclosure Score

Source	Type III Sum of			F	Sig.
	Squares	df	Mean Square		
Corrected Model	142.603 <sup>a</sup>	28	5.093	1.141	.320
Intercept	90.340	1	90.340	20.234	.000
PP	17.206	1	17.206	3.854	.053
PS	2.057	1	2.057	.461	.499
NAT	2.644	1	2.644	.592	.444
GEN	26.416	1	26.416	5.917	.017
EDU	3.162	1	3.162	.708	.403
AGE	119.995	23	5.217	1.169	.300
Error	330.387	74	4.465		
Total	3058.000	103			
Corrected Total	472.990	102			

a. R Squared = .301 (Adjusted R Squared = .037)

**Table 6.3 Univariate analyses of Self-Disclosure Score**