

PREDICTORS OF COLLEGE STUDENTS' ATTITUDES TOWARDS PRIVACY ON
SOCIAL NETWORKS

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Abstract

The daily use of Social Networking Sites (SNS) such as Facebook has become a routine for millions of Internet users. As a result, SNS's are becoming more than just a phenomenon; they are a type of technology that is being massively adopted by societies around the world (Gross & Acquisti 2005). In particular, Facebook provides a place where users can personalize a profile with their information, pictures, and videos that can be shared with other users. Sometimes this information can be used in ways that may violate users privacy with and without their knowledge. This research addresses issues of privacy on Facebook as well as attitudes towards violations of one's privacy. By surveying college students, this research will attempt to answer whether users' Facebook use, Facebook self-efficacy, and attitudes towards Facebook privacy are significant predictors of privacy concerns about Facebook's use of personal information.

Introduction

Since the introduction of the Internet, people from around the world have been drawn to their computer screens. The Internet provides an easy way to communicate and reach millions of people instantly. Many Internet users spend their time on Social Networking Sites (SNS), which provide them with a wide array of services. Many SNS support already existing social networks, but they can also offer a place for people to reach out to other users who share similar interests. Some sites also provide ways to share information as well as send messages, play games, and share photos/videos. The daily use of SNSs, such as Facebook, has become a routine for millions of Internet users. According to the PEW Research Center, the number of people in the U.S. using social networking sites has nearly doubled since 2008, 59% of internet users compared to 34% in 2008. As a result, SNS are not just an Internet phenomenon, but also a useful technological innovation that is being adopted on a massive scale by societies around the world (Gross & Acquisti, 2005).

What is a Social Networking Site?

Boyd & Ellison (2008) define social networking sites as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.” What makes social networking sites so appealing is their ability to connect individuals who otherwise would not have been able to communicate. Many of these users aren’t “networking” to meet new people; most users want to connect with their already existing social networks. User profiles can be filled with information provided by the individual,

as well as pictures, videos, and status updates, providing a small window into the user's life. The information provided by users can be seen by their social network, which may include family, friends, and co-workers, all of whom also subscribe to the SNS.

After joining a SNS, simple questions can be answered, like age, marital status, and interests, to begin the personalization of their profile. The user fills in an "About Me" section, providing a profile photo, if he or she so chooses. Some sites also allow users to change the look and feel of their profile, while others, like Facebook, provide a template to add information and applications to enhance the profile. The visibility of a profile changes from site to site, and many are up to the user's discretion. Some profiles, like on the website Friendster, may be visible to anyone on the Internet. Users on the site Myspace have the option to make their profile public or private, and Facebook, by default, allows users to view other profiles in the same network, unless the profile owner changes their settings to private. After joining the site and filling in some information, users are prompted to seek out others with whom they share a personal relationship.

The label given to certain relationships varies across different sites; Facebook uses the label "Friends" which can include not only friends, but other personal relationships as well. Public display of "Friends" is a crucial component of SNSs (Boyd & Ellison, 2008). The list contains links to each users profile, enabling viewers to search for relationships through others networks. Most SNSs provide messaging services that allow users to send either a private message or post a "comment" on another users profile. Facebook also allows users to chat with others who they are "Friends" with and happen to be on the website at the same time. Beyond these messaging services, SNSs also provide a way for users to share photos, videos, and links to separate websites. Many

SNSs, including Facebook, connect users living in the same geographical area or users who share specific information, like high school and certain friends. The features provided by SNSs provide an explanation as to why they are so successful and why individuals have integrated them into their daily lives.

The History of Online Social Networks

According to Boyd & Ellison, the first SNS was developed in 1997 and was named Sixdegrees.com. By allowing its users to create profiles, friends' lists, and have the lists publicly displayed, sixdegrees.com shared several common attributes found in modern social networking sites. Although Instant Messaging clients, like AOL Instant Messenger, already had the capability of supporting a list of friends, they were not visible to others. The website classmates.com allowed users to search for friends in their high school and college networks, but lacked the feature of a customized profile and friend list until years later.

SixDegrees provided a website that people used as a way to help connect and send messages to others, and while it attracted millions of users, it was shut down in 2000. While the Internet was rapidly gaining popularity, many of its users did not have networks of friends that they could find online. Most of the early Internet adopters would have little to do after accepting friend requests, and did not want to meet strangers. Later, the services provided on SixDegrees will have more success, showing that the website may have been "ahead it's time" (Boyd & Ellison, 2008).

From 1997 to 2001, several websites began implementing profiles and public friend lists. Websites like AsianAvenue, BlackPlanet, and MiGente provided users the tools to create their own personal, professional, and dating profiles. After its launch in

1999, LiveJournal provided a list of friends on users profiles, so others may see and follow one another. In Korea, a virtual world site, Cyworld, added SNS features and a Swedish web community, LunarStorm, contained lists of friends as well as other SNS-type features. In 2001, several business networking websites were established, such as Ryze, Tribe.net, LinkedIn, and Friendster, which connected members professionally as well as personally. In the end, Friendster became the most significant site, while Ryze never gained mass popularity, Tribe.net attracted a specific user base, and LinkedIn was used for mostly business purposes. While the history of SNS is somewhat incomplete, three separate sites, Friendster, MySpace, and Facebook have been the most significant in the history of Social Networking on the Internet.

Friendster was launched in 2002 in order to compete with popular dating sites, and was designed to help friends-of-friends meet (Boyd & Ellison, 2008). As Friendster gained popularity, it also gained several functionality problems. The site could not handle the heavy traffic coming in, and suffered from countless technical difficulties. The growth also meant that users were exposed to a larger group of contacts, including their bosses and co-workers. Eventually, the site began restricting the activities of several users and profiles. All of the problems with the website resulted in many users leaving the website in search of something new with a better performance.

Since 2003, SNSs had grown in popularity and several had been launched to meet this demand. One of the most popular, Myspace, was used worldwide, and attracted three distinct populations: musicians/artists, teenagers, and the post-college social crowd (Boyd & Ellison, 2008). One of the main sources of Myspace growth was the relationship the site created between musicians and their fans. Bands were able to connect with their fans,

and the fans were able to identify and promote their favorite bands. Furthermore, Myspace allowed users to personalize their pages, which did not restrict users from using HTML to form their profiles and allowed for completely unique backgrounds and layouts. In July 2005, Myspace was bought by Fox News Corporation, which attracted massive attention across the media. Afterwards, safety issues, including the implications of sexual encounters between adults and minors, plagued the site and users were interested in finding a new site to provide communication between networks.

Other communities reaching out to niche demographics have been started. Many of these sites seek narrow audiences, like aSmallWorld and BeautifulPeople, which restrict access to heighten the elite status of their users. Others, like Couchsurfing, BlackPlanet, and MyChurch, are limited by their target demographic and are smaller sites. The increased use of SNS has indicated a trend towards people instead of interests, with the individual at the center of the community (Boyd & Ellison, 2008). Certainly, one of the most well-known SNS, Facebook, has taken this into consideration, and offered an easy to use website that provides it's users with perfect combination of personalization, individuality, and simplicity that has enabled them to take over the SNS market.

The Emergence of Facebook

A Harvard college student, Mark Zuckerberg, who had already developed a number of social-networking websites for fellow students, including Coursematch, which allowed users to view people in their class, and Facemash, where you could rate people's attractiveness, launched Thefacebook.com on February 4, 2004, and began the one of the most popular and successful websites on the Internet known now as Facebook. Initially, Facebook was restricted in membership to students of Harvard College, but it eventually

expanded to Stanford, Columbia, and Yale. Shortly after, Facebook was opened to other Ivy League schools, and gradually to most universities in the United States.

In December of 2004, the website reached nearly one million users, and in August of 2005, the name of the website officially changed from Thefacebook.com to Facebook. In September 2005, Facebook was opened to high school students, and eventually reached over 5.5 million members. In 2006, the site expanded by adding employees of companies and ended with membership available to anyone with a valid email address. By the end of 2006, Facebook had reached over 12 million active users. Today, Facebook reports an estimated figure of more than 800 million active users on the website, and 75% of Facebook users are reported to live outside of the United States.

Literature Review

Facebook and Socio-Psychological Factors

Social Networking Sites have become ubiquitous in our culture, mostly due to their rapid use on the Internet. Young people are usually at the forefront of popular social media and this has been shown to be true in SNS use. A study composed by Valerie Barker (2009) investigates the motives for SNS use of older adolescents, focusing on social identity issues as well as gender. Barker (2009) found that positive collective self-esteem, the aspect of identity that has to do with the value placed on group membership, strongly correlated with communication in peer groups using SNSs and negative collective self-esteem was moderately related to social compensation (those who feel negative about their social group may use a SNS to communicate with other group members). As for gender differences, communicating with peer groups was a highly correlated mean for girls and there was a small but significant difference for males who

used SNS for learning. In summary, females were more likely to use SNS to communicate with peers, pass time, and entertain themselves while males were more likely to use SNS to seek social compensation, SIG (social identity gratification), and learning. Most of the participants who reported high collective self-esteem also reported high SNS use to communicate with peer group members, and females reported more interest in this type of communication, especially for entertainment and passing time. Those who reported negative collective self-esteem reported more interest in SNS use for social compensation, learning, and SIG. Males were more likely to report these interests. These findings suggest that those who were insecure about face-to-face interactions were more likely to use the Internet for interactions with others.

Hargittai (2007) composed a study that examined the differences between users and non-users of social networking sites. Facebook is the most popular service among the students surveyed, with almost four out of five using it, and over half of the overall sample doing so frequently. Myspace is used by more than half of the sample, although just over one-third uses it often. The other four sites (Xanga, Friendster, Orkut, and Bebo, in that order of popularity) are significantly less widespread in this group.

The differences among the user populations of these sites are small, but some of the trends are notable. First, the percentage of Asian/Asian American users varies, depending on the service. In particular, Asian/Asian American students in the sample are least represented on Myspace, whereas Xanga and Friendster are especially popular with this group. Second, students of Hispanic origin make up a considerably larger segment of Myspace users than their representation in the sample. Since it has long been known that people tend to socialize and spend time with others like them (Marsden, 1987), it is

reasonable to expect that students from similar backgrounds might migrate toward the same services. Third, there is a relationship between parental education and use of some SNSs. In particular, students who have at least one parent with a graduate degree are more represented on Facebook, Xanga, and Friendster than they are in the whole sample, while students whose parents have less than a high school education are disproportionately users of Myspace. The researchers also found that women are more likely to use SNS than their male counterparts.

However, in addition to gender, both context of use and experience with the sites are related to the adoption of the services. In particular, students who live at home with their parents are less likely to use SNSs than those who live with roommates or on their own. A possible reason for these results is that by spending less time on campus, students who live with their parents know fewer of their peers and know less about them, thus perhaps having less of a desire to keep in touch with them by using social network sites. Regarding experience, how long someone has been online is not related to SNS usage, but SNS use results in people spending more time online. Thus, based on what is known about these sites, it is fair to assume that one's existing offline network influences which site a person chooses to use. Forming relationships with members of one's cohort is an important part of the college experience, and one could argue that services like Facebook facilitate such interactions.

Facebook and Privacy

Brandtzæg, Lüders, and Skjetn (2010) explore content sharing and sociability, and how they affect privacy experiences and usage behavior among SNS users. When interviewed, parents were found to be motivated to use Facebook as part of their parental

monitoring, whereas the younger participants use it to keep informed about when and where to meet their friends and classmates. Although younger users mainly joined Facebook because of their friends, older adults and those who had children on Facebook said that checking up on their children was their main reason for starting to use Facebook. In addition to contact with new and old friends, the participants emphasized that they have had more contact with close and distant members of their families since joining Facebook.

The study found two important behaviors towards privacy on social networks. First, the interviews revealed that Facebook users in all age groups reported more contact with several different groups of people, which reflect different types of social capital (i.e., family, friends, and acquaintances), because of Facebook, but not without consequences for privacy. Having too many Facebook “friends” and access to different social capital disrupt the sharing process due to experiences of social surveillance and social control. This social control often forces younger people in particular to use conformity as a strategy when sharing content to maintain their privacy. Further, the interviews revealed different motivations and usage patterns when older and younger users are compared. Second, the usability test found a significant difference between younger and older adults in time completion and task completion related to Facebook settings. Younger users are more skilled in their Facebook usage, whereas adults over the age of 40 have difficulties in understanding the navigation logic and privacy settings. Additionally, younger and older adults display completely open public profiles without realizing it. The results from this study show that the presence of increasingly multiple social ties and groups on Facebook affects the experiences of social privacy in terms of social surveillance. This in

turn affects young people's user behavior, as they often experience increased self-awareness and choose conformity as a way to maintain their social privacy.

Debatin et al. (2009) investigated Facebook users' awareness of privacy issues and perceived benefits and risks of using Facebook. Specifically, they examined the relationship of Facebook privacy issues, privacy settings, perceived benefits and risks, routinization and ritualization, and invasion of privacy to the self and others. They surveyed 119 college students, and selected 8 participants to conduct open-ended face-to-face interviews. For the survey measures, they asked participants about their demographic, general Facebook habits, user practices with regard to privacy, the role of friends in Facebook use, and the potential risks of Facebook, in which participants were asked whether they had encountered any or all of these problems on Facebook: unwanted advances, damaging gossip, or personal data abuse by others. Participants further indicated whether they knew a person who was affected by any of these negative incidents, and, if so, how the participant reacted to hearing about it. This was included in order to examine differences between perceived negative incidents to oneself and those perceived about others. Using survey answers, 8 individuals were also brought in for interviews. The main categories the researchers used to identify and interpret statements were (1) invasion of privacy, (2) breach of trust, (3) violation of boundaries, (4) gossip and rumors, (5) habitual or ritualized use of Facebook. The interviews were included so that the research would give a deeper insight into behaviors and attitudes with relating to Facebook use and privacy issues, narratives about the attraction, relevance, and usage of Facebook, and experiences about invasion of privacy on Facebook.

The survey findings showed that the majority of Facebook users report having an understanding of their privacy settings and use them, but they may have a skewed sense of what that really entails. Also, the perceived benefits of Facebook outweighed risks of disclosing personal information. The risks to privacy were attributed more to others than to the self and if Facebook users reported an invasion of personal privacy, they were more likely to change privacy settings than if they reported hearing of an invasion of privacy happening to others. The findings from the interviews corroborate the survey findings. The benefits of Facebook outweigh privacy concerns, even when the user experienced privacy invasion.

Self-Efficacy

Bandura (1994) defined self-efficacy as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Beliefs about self-efficacy determine how people feel, think, motivate themselves and behave. People with a strong sense of self-efficacy approach difficult tasks and view them as a challenge to master. If they fail, they attribute it to a lack of effort or knowledge of skills. If they are presented with a threatening situation, they are able to face it with confidence. In contrast, people with a weak sense of self-efficacy view challenges as threats that should be avoided. If they are faced with difficult tasks, they focus on all of their deficiencies any other adverse effects rather than the task, which causes them to falter and give up quickly.

People's beliefs in self-efficacy can be produced by four sources of influence: Mastery experiences, vicarious experiences, social persuasion, and emotional states. The most effective way to gain a sense of self-efficacy is by mastery experience. Success

strengthens a person's self-efficacy, while failure undermines it. A true sense of self-efficacy is acquired when one overcomes obstacles with perseverance and resilience, and is able to reach their goal. Vicarious experiences are another way of strengthening one's self-efficacy. Observing people that are similar to one's self succeed using hard work and dedication raises one's belief of being capable of mastering similar techniques. Social persuasion can also be an effective way of raising a person's self-efficacy. If they are verbally encouraged and persuaded that they are able to succeed, it is more likely that they will put forth more effort and sustain that effort to succeed. People's emotional states also have an effect on their ability to succeed. They may equate stress or fatigue with signs of failure or vulnerability. People's mood, whether positive or negative, can also have an effect on a person's self-efficacy. All of these factors can play a key role in the development of a person's self-efficacy.

Compeau and Higgins (1995) surveyed managers and professionals to assess the impacts of computer self-efficacy and Social Cognitive Theory. Their research is concerned with the role that cognitive factors play in an individual's behavior, specifically involving self-efficacy. Several hypotheses related to self-efficacy were tested, including encouragement of others, other's use, support, computer self-efficacy, outcome expectations, affect, and anxiety. Their findings provided support for the Social Cognitive Theory perspective on computing behavior. They found that computer self-efficacy had a significant influence on individuals' expectations of the outcomes of using computers, their emotional reactions to computers (affect and anxiety), as well as their actual computer use. Self-efficacy was found to play an important role in shaping individuals' feelings and behaviors. Individuals in this study with high self-efficacy used

computers more, received more enjoyment from their use, and experienced less computer anxiety. An individual's self-efficacy was positively influenced by encouragement, as well as others' use of computers.

Peng, Tsai, and Wu (2006) investigated college students' attitudes and self-efficacy towards the Internet, as well as the role that college students' perceptions of the Internet play in their attitudes towards the Internet. Using the Internet attitudes survey (IAS) for assessing students' Internet attitudes and the Internet self-efficacy survey (ISS) for measuring students' Internet self-efficacy, they found that students tended to appreciate the potential usefulness of the Internet, to demonstrate positive feelings when using the Internet, to feel confident about the independent control of their use of the Internet and to use the Internet frequently. Also, for gender differences between attitudes and self-efficacy, the male students expressed more confidence in their use of the Internet and demonstrated better communicative self-efficacy than the female students did. They used the Perceptions of the Internet Survey (PIS) for surveying students' perceptions of the Internet, and found that students were more orientated to perceive the Internet as technology and a tool. These results are important for educators in order to promote students' performance in Internet-based learning environments, and it helps explain how students' perceptions of the Internet may shape certain guiding beliefs about how to use the Internet and how to behave in Internet-based environments.

In the present study I was interested in exploring whether Facebook use and frequency, Facebook self-efficacy, and concerns of specific breaches of privacy on Facebook would predict participants' attitudes towards Facebook privacy. Although the extent of Facebook use would appear to be a plausible predictor, I hypothesized that

psychological variables, Facebook self-efficacy and feelings about Facebook using specific information without permission would better predict general attitudes about Facebook privacy than merely time spent using Facebook.

Method

Participants

A total of 335 university students who were enrolled at Texas State University - San Marcos volunteered to participate in this study. 51 participants (15.2%) were removed because of incomplete data, and the other 284 participants (84.8%), 216 female students (76.1%) and 68 male students (23.9%), were included in the final data analysis. The mean age of the participants was 25 ($SD = 1.799$). A majority of participants (57%) were White, Non-Hispanic, with 28% indicating Hispanic or Latino, 8% Black or African American, 4% Asian or Asian American, 2% American Indian or Alaskan Native, and 1% Hawaiian or other Pacific Islander. This study was granted an exemption by Texas State University's Institutional Review Board.

Materials and Procedure

The questionnaire was administered on November 8, 2011 as an extra credit option in a sophomore-level psychology course and consisted of 21 items. It included 3 demographic items, 3 daily activity items, 3 items measuring Facebook use and frequency (assessed using a 10-point Likert scale), 3 items measuring Facebook self-efficacy, 6 items measuring concerns of specific breaches of privacy on Facebook, and 3 items measuring attitudes towards Facebook privacy. Examples of the items include the following: "How often do you use Facebook per day", "How confident are you that you know how to reset your privacy settings", "A friend is able to tag you in a post on their

Facebook profile without your permission”, and “Does Facebook pose a potential threat to your personal privacy”. Items 10-21 were assessed using a 10-point Likert scale estimating the participants’ confidence level, ranging from Not Confident At All to Very Confident. The measures were found to be reliable (15 items; $\alpha = .74$). See Appendix for the survey items. The predictor variable categories of Use, Self-Efficacy and Specific Breach and the outcome variable of General Privacy Attitude were created by combining and summing the scores for 3 Use, 3 Self-Efficacy, 6 Breach and 3 General Privacy Attitude items.

Results

Descriptives

Daily Activity. 23% of participants spent 1-6 hours per day working, while 51% spent 7-12 hours working per day, and 23% of participants 13 to over 18 hours working per day. 53% of participants spent 1-6 hours per day at leisure, while 45% spent 7-12 hours at leisure per day, and 4% of participants 13 to over 18 hours at leisure per day. 37% of participants spent 1-6 hours per day sleeping, while 42% spent 7-12 hours sleeping per day, and 21% of participants 13 to over 18 hours sleeping per day. A majority of participants spent 9 to 10 hours per day working ($SD=2.069$), 7 to 8 hours at leisure ($SD=1.426$), and 8 hours sleeping ($SD=2.026$).

Facebook Use and Frequency. 40% of participants reported that they use Facebook frequently per day ($SD=2.848$), and when they access Facebook, they use it for about 4 hours per day ($SD=2.196$). A majority of participants also reported that they have around 300 friends on Facebook ($SD=2.761$).

Facebook Self-Efficacy. 55% of participants reported that they were somewhat confident that they knew how to reset their privacy settings (SD=3.667), and 61% reported that they were somewhat confident that they knew what level of privacy their profile was currently set (SD=3.635). 41% are only somewhat confident that they know who is able to see posts on their wall (SD=3.684).

Specific Facebook Privacy Concerns. 67% participants felt somewhat confident that a friend tagging them in a post was not a violation of their privacy (SD=2.929), 54% reported that they were somewhat confident that a friend tagging them in a picture without their permission was not a violation of their privacy (SD=3.075), and 55% were somewhat confident that a friend checking you in to a place without permission was not a violation of their privacy (SD=3.067). 56% of participants reported they were somewhat confident that Facebook's facial recognition software tagging them in pictures without their permission was not a violation of their privacy (SD=3.189). 55% also felt somewhat confident that Facebook keeping an archive of their profile was not a violation of their privacy (SD=3.522), and 53% thought that Facebook tracking pages that they visit and tailoring ads to their interests was not a violation of their privacy (SD=3.387).

General Facebook Privacy Attitudes. 51% of the participants felt somewhat confident that Facebook poses a potential threat to their privacy (SD=2.909). 57% also felt somewhat confident that Facebook gathers information about them (SD=2.840), and 63% reported that their Facebook profile is at risk of being violated (SD=2.762).

Correlations

The 15 key items were inter-correlated, Cronbach's alpha= .74. How many times users accessed their Facebook per day was positively correlated with how many friends

they had on Facebook and how long they spent on Facebook per day, $r(284) = .110, p < .05$ and $r(284) = .219, p < .01$, respectively. It also positively correlated with how confident a user felt that their privacy was being violated when a friend tagged them in a post without their permission, $r(284) = .094, p < .05$, and when a friend tagged them in a picture without their permission, $r(284) = .119, p < .05$.

How many hours users spent on their Facebook page per day was positively correlated with how many friends they had on Facebook, $r(284) = .172 p < .05$. How many hours spent on Facebook was negatively correlated with whether they felt that their Facebook profile was at risk of being violated, $r(284) = -.122 p < .05$. How many friends that a user reported having on Facebook was positively correlated with whether users felt that their Facebook profile was at risk of being violated, $r(284) = .097 p < .05$. The Correlation values are shown in Table 1.

ANOVA Analysis

An analysis of variance was conducted to determine the extent that Facebook use, self-efficacy, and concerns of specific breaches of privacy on Facebook predict attitudes about Facebook violations of privacy. The predictor variable categories of Use, Self-Efficacy and Specific Breach and the outcome variable of General Privacy Attitude were combined and summed for the ANOVA. These included Use, which summed Facebook daily use, frequency of use, and number of friends, Self-Efficacy, summing confidence of how to reset profile privacy levels, the level of profile privacy currently set, and who is able to post on the profile, Privacy Breach, which summed whether friends were able to tag on a post, picture, or check-in about the participant without permission, and General Privacy Attitudes, which included attitudes towards Facebook posing a potential threat to

privacy, Facebook gathering information about the participant, and whether the participants profile was at risk of being violated. While self-efficacy was shown to be a significant predictor of attitudes towards privacy, $F(9,899) = 8.214$, $p = .000$ and privacy concern was shown to be a significant predictor of attitudes towards privacy, $F(9,899) = 7.366$, $p = .000$, Facebook use was shown to not be a predictive factor of attitudes towards privacy. The ANOVA values are shown in Table 2.

Discussion

This study examined the relationship of Facebook use, Facebook self-efficacy, Facebook privacy concerns, and attitudes towards Facebook privacy among a college population. As hypothesized, users who had a high level of self-efficacy on Facebook strongly felt that their Facebook privacy was at risk of being violating and that Facebook posed a potential threat to their personal privacy. This mirrors previous computer self-efficacy research, but applies it to Facebook (Compeau and Higgins, 1995). According to Compeau and Higgins (1995), self-efficacy was found to play an important role in shaping individuals' feelings and behaviors, and this also seems to be the case when using Facebook. Users with high self-efficacy reported feeling at risk more than their counterparts.

Users who had a high level of concern with potential specific breeches of privacy on Facebook also strongly felt that their Facebook privacy was at risk of being violating and that Facebook posed a potential threat to their personal privacy. This includes potential specific breeches caused by other users (like a user's "friend") as well as breeches caused directly because of Facebook. Facebook users who were faced with several situations in which their privacy was compromised on Facebook strongly felt that

their Facebook profile was at risk of being violated and that Facebook posed a potential threat to their personal privacy.

Also following my hypothesis, Facebook use was not significantly related to attitudes of privacy on Facebook. How often a person uses Facebook does not predict their attitudes towards privacy on Facebook, including whether they feel Facebook has violated their privacy or whether their Facebook profile is at risk of being violated.

One limitation of this study comes from the sample, which was a convenience sample of undergraduate students, composed mostly of psychology majors. Another limitation is the gender bias within the sample, with the majority of respondents being female. This study showed that Facebook self-efficacy and concern with potential specific breeches of privacy on Facebook were both predicting factors of attitudes towards Facebook privacy. Further study might address age and gender as a predicting factors of attitudes towards Facebook privacy. Also, research of privacy across several different social networking sites could be addressed. Generally, the results of this study demonstrate the need for increased privacy on Facebook as well as the whole spectrum of social networks across the Internet.

Recently, the Federal Trade Commission (FTC) investigated Facebook over alleged privacy violations making aspects of users' profiles, such as name, picture, gender and friends list, public by default. The FTC alleged that Facebook engaged in deceptive behavior when it promised user privacy protections that it didn't fulfill. According to the Wall Street Journal, Facebook has agreed to a 20-year privacy settlement with the FTC that would require the company to ask users for permission before changing the way their personal information is released. As a part of the settlement, Facebook has agreed to

independent privacy audits every two years for a total of 20 years. If any violations are discovered, Facebook will have to pay \$16,000 in fines per violation. The privacy settings will stay the same as before, but any changes will now be “opt-in” instead of the “opt-out” preference Facebook was currently using. The settlement also requires that Facebook prevent access to a user’s personal information if it has been more than 30 days since they deleted their profile. It seems that Facebook has finally learned to listen to their users, even if it took a government intervention to help achieve the result. Users are worried about their privacy on social networks, and it seems like these websites are heading in the right direction with regards to personal privacy.

Table 1

Correlation Table

		Duration of Time on Facebook	Frequency of Friends	Reset Knowledge of Privacy Settings	Friend Tag in Post Without Permission	Friend Tag in Picture Without Permission	Felt Facebook Profile was at Risk
Facebook Daily Use	Pearson Correlation	0.219**	0.110*	0.041	0.094*	0.119*	0.087
	Sig. (1-tailed)	0	0.023	0.231	0.048	0.018	0.072
Duration of Time on Facebook	Pearson Correlation	1	0.172*	-0.007	0.002	0.046	-0.122*
	Sig. (1-tailed)	0	0.001	0.448	0.486	0.211	0.019
Friends of Friends	Pearson Correlation	0.172	1	-0.019	-0.036	-0.026	0.097*
	Sig. (1-tailed)	0.001	0	0.365	0.262	0.324	0.050

Note: **. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Table 2					
<i>ANOVA Table</i>					
	<i>df</i>	<i>F</i>	SS	MS	Sig.
Facebook Use	9	1.753	106.786	11.865	.073
Self-Efficacy	9	8.214	927.560	103.062	.01
Privacy Breach	9	7.366	573.652	63.739	.01
<i>Note:</i> Significant at the $p < 0.05$ level.					

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Appendix

This is a survey about your general use and information about social media and Facebook.

Please answer honestly and faithfully. Thank you for participating.

This is a survey about your general use and information about social media and Facebook.

Please answer honestly and faithfully. Thank you for participating.

Your honesty is appreciated.

If you do have a Facebook Account, answer items 7- 30.

If you do not have a Facebook Account, answer items 7 and 8 with a “1” and leave the remaining items blank (9-30).

1. What is your gender?

1. Male
2. Female

2. What is your age?

- | | |
|----------------|----------------|
| 1(a). Under 18 | 6(f). 22 |
| 2(b). 18 | 7(g). 23 |
| 3(c). 19 | 8(h). 24 |
| 4(d). 20 | 9(i). 25 |
| 5(e). 21 | 10(j). Over 25 |

3. What is your ethnicity?

(Please pick the option that best describes you.)

- 1(a). American Indian or Alaska Native
- 2(b). Hawaiian or other Pacific Islander
- 3(c). Asian or Asian American
- 4(d). Black or African American
- 5(e). White, Non-Hispanic
- 6(f). Hispanic or Latino

4. On average, how many hours per day do you spend working/studying (at a job, sitting in class, doing homework, household chores, ect.)?

- | | |
|--------------|----------------|
| 1(a). 1 - 2 | 6(f). 11 - 12 |
| 2(b). 3 - 4 | 7(g). 13 - 14 |
| 3(c). 5 - 6 | 8(h). 15 - 16 |
| 4(d). 7 - 8 | 9(i). 17 - 18 |
| 5(e). 9 - 10 | 10(j). Over 18 |

5. On average, how many hours per day do you spend at leisure (On the computer, watching tv, eating, ect.)?

- | | |
|--------------|----------------|
| 1(a). 1 - 2 | 6(f). 11 - 12 |
| 2(b). 3 - 4 | 7(g). 13 - 14 |
| 3(c). 5 - 6 | 8(h). 15 - 16 |
| 4(d). 7 - 8 | 9(i). 17 - 18 |
| 5(e). 9 - 10 | 10(j). Over 18 |

6. On average, how many hours per day do you spend sleeping?

- | | |
|---------------|----------------|
| 1(a). Under 3 | 6(f). 7 |
| 2(b). 3 | 7(g). 8 |
| 3(c). 4 | 8(h). 9 |
| 4(d). 5 | 9(i). 10 |
| 5(e). 6 | 10(j). Over 10 |

Your honesty is appreciated.

If you do have a Facebook account, answer all items.

If you do not have a Facebook Account, answer items 7 and 8 with a “1” and leave the remaining items blank.

FACEBOOK USE

7. How often do you visit Facebook per day?

- | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Never | | | | | | | | | Frequently |

8. How many hours do you spend on Facebook per day?

- | | | | | | | | | | |
|----------------------------------|---|---|---|---|---|---|---|---|----------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| I don't access
Facebook Daily | | | | | | | | | More than
8 hours Daily |

9. How many “friends” do you have on Facebook?

- | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Less than 50 | | | | | | | | | More than 700 |

FACEBOOK SELF EFFICACY

Items 10-12: Estimate how confident you are that you know about Facebook. The larger number selected indicates greater confidence level.

10. How confident are you that **you know how to reset your privacy settings?**

1 2 3 4 5 6 7 8 9 10

11. How confident are you that **you know what level of privacy your profile is currently set?**

1 2 3 4 5 6 7 8 9 10

12. When you post something on your Wall, how confident are you that **you know who is able to see your posts?**

1 2 3 4 5 6 7 8 9 10

Facebook Privacy

Items 13-18: Estimate how confident you feel the situations are a violation of your Facebook privacy. The larger number selected indicates greater confidence level.

13. A friend is able to tag you in a post on their Facebook profile without your permission.

1 2 3 4 5 6 7 8 9 10

14. A friend is able to tag you in a picture on their Facebook profile without your permission.

1 2 3 4 5 6 7 8 9 10

15. A friend is able to check you in to a place without your permission.

1 2 3 4 5 6 7 8 9 10

16. Facial recognition software on Facebook is able to tag you in pictures without your permission.

1 2 3 4 5 6 7 8 9 10

17. Facebook keeps an archive of your profile even though you may have deleted or disabled it. This archive contains everything that you may have posted on Facebook.

1 2 3 4 5 6 7 8 9 10

18. Even if you are logged out, Facebook can track pages you visit and tailor ads to your specific interests.

1 2 3 4 5 6 7 8 9 10

Attitudes about Facebook and Privacy

Items 19-21: Estimate how confident you are that you know about Facebook. The larger number selected indicates greater confidence level.

19. Does Facebook pose a potential threat to your personal privacy?

1 2 3 4 5 6 7 8 9 10

20. Does Facebook use your profile page to gather information about you?

1 2 3 4 5 6 7 8 9 10

21. Is your Facebook profile is at risk of being violated?

1 2 3 4 5 6 7 8 9 10

Thank you for participating. The preliminary results will be provided to your professor for posting on TRACS or elsewhere (e.g., paper copy).