Internet social network communities: Risk taking, trust, and privacy concerns

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ARTICLE INFO

ABSTRACT

Individuals communicate and form relationships through Internet social networking websites such as Facebook and MySpace. We study risk taking, trust, and privacy concerns with regard to social networking websites among 205 college students using both reliable scales and behavior. Individuals with profiles on social networking websites have greater risk taking attitudes than those who do not; greater risk taking attitudes exist among men than women. Facebook has a greater sense of trust than MySpace. General privacy concerns and identity information disclosure concerns are of greater concern to women than men. Greater percentages of men than women display their phone numbers and home addresses on social networking websites. Social networking websites should inform potential users that risk taking and privacy concerns are potentially relevant and important concerns before individuals sign-up and create social networking websites.

1. Introduction

In the United States, 24% of adults have visited social networking websites in the past 30 days (Ipsos Insight, 2007). In April 2006, MySpace was the most popular social networking website with an estimated 38.4 million unique visitors (Nielsen/NetRatings, 2006). Among undergraduate college students, the three most visited social networking websites are Facebook, MySpace, and Friendster, with one study reporting Facebook use as the most popular at 90% (Stutzman, 2006) while another study reports Facebook use as most popular with 78.8% who "sometimes" or "often" use Facebook (Hargittai, 2007). Undergraduate students using Facebook averaged 10–30 min daily use for the time categories and averaged 150–200 friends for the friend categories (Ellison, Steinfield, & Lampe, 2006).

Students and alumni use Facebook to communicate, connect and remain in contact with others (Acquisti & Gross, 2006; Charnigo & Barnett-Ellis, 2007; Ellison et al., 2006). There are conflicting reports whether Facebook is used for dating with one study that reports such use (Charnigo & Barnett-Ellis, 2007), while another study reports that students do not use Facebook for that purpose (Acquisti & Gross, 2006). Also, undergraduate students typically use Facebook for fun and "killing time" rather than gathering information (Ellison et al., 2006). Although Facebook is very popular among students, others have profiles on it too. In one study about faculty and student relationships on Facebook, two-thirds of the students responded that

it was acceptable for faculty to be on Facebook. Men were twice as likely as women to be accepting of this faculty presence on Facebook (Hewitt & Forte, 2006).

In a study on privacy and Facebook use, those with profiles on Facebook had greater concerns than those who did not have profiles on Facebook for concerns about a stranger knowing where they lived and about their schedule of classes (Acquisti & Gross, 2006). That study also showed that among those on Facebook, there was no relationship between participants' privacy concerns for strangers knowing their schedule of classes and where they lived and the likelihood of their providing this information on the website. Among the 16% of the participants who expressed the highest privacy concerns for a stranger knowing their schedule and where they lived, even so 22% provided at least their home address and 40% provided their schedule of classes (Acquisti & Gross, 2006). In another study, college students agreed that it was important for them to protect their identity information (Stutzman, 2006). These same students on average rated for a number of different items as either "agree" or "strongly agree" that it was okay if their friends, family, or classmates accessed their social networking profile. However, on average they rated as "neutral" the item about strangers accessing their social networking profile (Stutzman, 2006).

1.1. General literature review

1.1.1. Risk taking

There are a number of studies focusing on risk taking behavior among college students. Some are reviewed below. In a sample of

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865 individuals, college attendance was protective of the sexual risk taking behavior of high-risk sex even after adjusting for high school grade point average, risky sex while in high school, and substance use while in high school (Bailey, Fleming, Henson, Catalano, & Haggerty, 2008). In another study with a sample of 70 individuals, the outcome was the adolescent risk taking questionnaire which was slightly modified for the college student sample. In the regression analyses, NEO personality variables of extraversion and conscientiousness but not behavioral measures were associated with total risk taking score (Skeel, Neudecker, Pilarski, & Pytlak, 2007).

There are gender differences too. In a meta-analysis of 150 studies of different age groups published from 1964 to 1997, most of the studies provide evidence for greater risk taking among men than women. This gender effect size diminished over time for the two cohorts of 1964–1980 ($d = 0.20$) and 1981–1997 ($d = 0.13$). With regard to the college-age sample defined as those of ages 18–21, there was an effect size of $d = 0.24$ for greater risk taking among men than women (Byrnes, Miller, & Schafer, 1999). Recent studies continue to support this gender difference of greater risk taking among men than women. In a sample of 312 individuals in college (139 men, 173 women), those with higher scores on the reasons for living inventory had lower scores on the physical risk taking inventory. There were gender differences with regard to the physical risk taking inventory where women participated in fewer overall risky behaviors, and also fewer risky behaviors related to health or sports than men (Pompili et al., 2007).

1.1.2. Trust

There are a number of studies focusing on trust among college students. Some are reviewed below. In a sample of 52 individuals, trust was one of the three major skills reported by individuals who had a long-distance relationship. Reasons included that trust was essential for relationship development, trust taught them more about themselves, and by learning to trust these individuals felt more self-confident (Mietzner & Lin, 2005). In another study of a sample of 165 individuals in college, different patterns existed for trust violation for different domains. In this experimental design of a simulated interview, when the trust violation concerned competence, perceptions of competence were lower than perceptions of integrity. When the trust violation concerned integrity, perceptions of integrity were lower than perceptions of competence (Kim, Dirks, Cooper, & Ferrin, 2006).

There are gender differences too. In a sample of 208 men and 220 women, dating violence with regard to sexual and non-sexual betrayal of trust was studied. Men reported that hitting was more justified than women. Also, betrayed women were reported to have more of a right to hit than betrayed men (Forbes, Jobe, White, Bloesch, & Adams-Curtis, 2005). In another study of a sample of 126 men and 167 women, trust was compared with self-disclosure. Women with low trust had significantly more self-disclosure than men with low trust. Also, women with high trust had significantly more self-disclosure than men with high trust (Foubert & Sholley, 1996).

1.1.3. Privacy

There are a number of studies focusing on privacy among college students. Some are reviewed below. In a sample of 414 college students regarding website evaluation criteria for clothing purchases, the category of privacy/security had the highest mean score from the five website evaluation criteria categories for all three shopping orientation groups (hesitant in-home shoppers, practical shoppers, and involved shoppers) and also for the online information searcher and online purchaser groups (Seock & Chen-Yu, 2007). In another study of a sample of 163 individuals, most of whom were in college, participants were asked to choose a product

or service that they would not want most of their friends and/or relatives to know about. They were then asked the reasons for choosing to be alone when buying or using this product or service and whether they were concerned about some particular groups. Reasons for seeking privacy included classification into two themes of control over intrusion and control over disclosure. Control over intrusion included: (1) avoidance of behavioral response from others, (2) avoidance of embarrassment, and (3) avoidance of evaluations by others. Control over disclosure included: (1) protection of enjoyment, (2) protection of information about the self, (3) protection of the self-image, and (4) protection of the undesired self (Goodwin, 1992).

There are gender differences too. In a sample of 408 college students, (United States: 95 men, 105 women; Turkey: 100 men, 108 women), there were gender differences with regard to desired privacy in dorm rooms. Men had a greater desire for privacy than women (Kaya & Weber, 2003). Another study measured privacy attitudes of a sample of 210 men and 165 women from high schools and colleges in Turkey. On this measure of privacy, women had higher mean scores for measures of intimacy with friends and lower means scores for isolation and reserve than men. There were no mean differences for solitude, intimacy with family, and anonymity (Rustemli & Kokdemir, 1993).

1.2. Theoretical framework

Social contract theory is the theoretical framework guiding this study. This theory posits that consumers assume an implied social contract when exchanging information in a transaction (Pan & Zinkhan, 2006). Social contract theory involves three aspects of: (1) individual consent, (2) agreement among the moral agents, and (3) an approach for which the agreement is made (whether an actual or hypothetical agreement) (Dunfee, Smith, & Ross, 1999). Social contract theory has been applied to many situations related to general business ethics and also marketing ethics (Dunfee & Donaldson, 1995; Dunfee et al., 1999). It has been used to understand situations related to risk taking, privacy, and trust (Pan & Zinkhan, 2006), and also for gender issues (Mayer & Cava, 1995).

1.3. Study aims

Young adulthood is the time where individuals often learn new skills, often experience new things, and often experiment with change. Risk taking can often be involved with these changes. Thus, the primary objective of this study is to compare if among college students whether one's sense of risk taking is related to use of social networking websites. We also compare a number of trust and privacy measures with regard to the use of social networking websites. We repeat these analyses to see if there are differences between men and women. As choice of participation in a specific social networking website may be associated with more trust in that particular social networking website, we conduct a number of comparisons regarding trust for the two popular social networking websites of Facebook and MySpace. Lastly, we also compare men and women with regard to a number of behaviors relevant to privacy concerns that are done on social networking websites.

2. Method

2.1. Participants and procedures

Participants were 205 students from a 4-year undergraduate commuter inner city college. This was a convenience sample and included people approached in the cafeteria, classrooms, library,

and other public places. Of the 213 people who were approached, 205 completed the survey for a response rate of 96.2%. Participants were approached and asked to complete anonymous surveys on social networking website topics and Internet privacy topics. The survey was exempt from Institutional Board Review and was conducted consistent with the ethical principles of the Declaration of Helsinki. Informed consent was obtained. Data collection occurred during May 2007.

2.2. Measures

2.2.1. Demographics

Demographic variables included age (years), sex, college status, race/ethnicity, broad field of study, born in the United States (yes/no), and if not born in the United States, the number of years lived in the United States.

2.2.2. Social networking website characteristics

Participants were asked if they had ever created an online profile with choices for MySpace (yes/no), Facebook (yes/no), and other social networking websites (yes/no). Continuous variables included "how many years have you had your profile(s) displayed?," "on a typical day how many times per day do you visit your profile(s)?," "on a typical day how many profiles from others do you view?," and "on a typical day how many hours do you spend viewing profiles (whether yours or others)?" Categorical variables included questions with response choices of either yes or no on the topics of: allowing anyone to view your profile(s), including a picture of yourself on your profile(s), including your e-mail address on your profile(s), including your instant messenger address on your profile(s), including your phone number on your profile(s), including your home address on your profile(s), including information about your interests on your profile(s), including information about your personality on your profile(s), writing on other people's profile page(s), personalizing your profile page(s), and including your real name on your profile. The last question was continuous and asked, "approximately how many different "friends" do you have on all your profile(s)?"

2.3. Questionnaires

2.3.1. Risk averseness scale

The risk averseness scale (Pan & Zinkhan, 2006) contains five items. Items are measured on a Likert-style scale ranging from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate more risk taking behavior. For example, one item from the scale is, "To achieve something in life, one has to take risks." In this sample, Cronbach alpha reliability was 0.76.

2.3.2. Consumer trust scales

There were two consumer trust scales of four items created from the original scale titled "Consumer trust and risk averseness: Rotated component matrix for exploratory factor analysis" (Pan & Zinkhan, 2006). We slightly modified the questions, changing the word Netshop.com to either Facebook.com. or MySpace.com. These consumer trust in Facebook and consumer trust in MySpace scales had items measured on a Likert-style scale with 1 = strongly disagree to 5 = strongly agree. Higher scores indicate that Facebook (or MySpace) is a trustworthy social network. The four items are as follows: "Facebook.com is a trustworthy social network," "I can count on Facebook.com to protect my privacy," "I can count on Facebook.com to protect customers' personal information from unauthorized use," and "Facebook.com can be relied on to keep its promises." In this sample, Cronbach alpha reliability for the consumer trust in Facebook scale was 0.95. The consumer trust in MySpace scale had the same four items and had the word

MySpace.com instead of Facebook.com. In this sample, Cronbach alpha reliability for the consumer trust in MySpace scale was 0.95.

2.3.3. Privacy behavior scale

The privacy behavior scale (Buchanan, Paine, Joinson, & Reips, 2007) contains six items. Items are measured on a 5-point scale from 1 = never to 5 = always. Higher scores indicate greater levels of privacy behaviors. Items consist of Internet specific items such as, "Do you read a website's privacy policy before you register you information?" and general items such as, "Do you shred/burn you personal documents when you are disposing of them?" Cronbach alpha reliability was 0.75 in the original study and in that study the scale was named the "General Caution Scale." In this sample, Cronbach alpha reliability was 0.80.

2.3.4. Time pressure scale

The time pressure scale (Mittal, 1994) contains three items. Items are measured on a Likert-style scale from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate a greater sense of time pressure. For example, one item from the scale is, "I am too busy to relax." Construct reliability was reported to be 0.79 in the original study. In this sample, Cronbach alpha reliability was 0.82.

2.3.5. Privacy concerns scale

The privacy concerns scale (Dinev & Hart, 2004) contains three items. Items are measured on a Likert-style scale from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate more concern with information provided over the Internet. For example, one item from the scale is, "I am concerned that the information I submit on the Internet could be misused." In the original study, Cronbach alpha reliability was 0.90. In this sample, Cronbach alpha reliability was 0.92.

2.3.6. Perceived ability to control information scale

The perceived ability to control information scale (Dinev & Hart, 2004) contains four items. Items are measured on a Likert-style scale from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate more concern with control over one's information provided on websites. For example, one item from the scale is, "I would only provide accurate and personal information at a website if the site allowed me to control the information they can use." In the original study, Cronbach alpha reliability was 0.78. In this sample Cronbach alpha reliability was 0.80.

2.3.7. Privacy attitude scale

The privacy attitude scale (Buchanan et al., 2007) contains 16 items. Items are measured on a 5-point scale, and for this study were changed from not at all = 1 to very much = 5 to not at all = 1 to very often = 5. Higher scores indicate more privacy concerns for a number of Internet security topics. For example, one item from the scale is, "Are you concerned that an e-mail you send may be read by someone else besides the person you sent it to?" In the original study, Cronbach alpha reliability was 0.93. In this sample, Cronbach alpha reliability was 0.94.

2.3.8. Identity information disclosure scale

The identity information disclosure scale (Stutzman, 2006) contains eight items with two subscales. Items are measured on a Likert-style scale from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate less concern with identity information disclosure on social network communities. One subscale measures access and an item from that subscale includes, "I am OK with friends accessing my social network communities profile." In this sample, the Cronbach alpha reliability for the access subscale was 0.82. Also, as there was poor Cronbach alpha reliability for

the other subscale of identity information, we separately analyzed the four items. The four items are as follows: "It is important to me to protect my identity information," "I am concerned with the consequences of sharing identity information," "I am likely to share my identity information online in the future," and "I believe my identity information is well-protected online."

2.3.9. Statistical analysis

Descriptive statistics were calculated for the demographic and social networking website characteristics. Analysis of variance (ANOVA) was conducted comparing those who had social network profiles to those who did not, with the outcome measure of the scales and relevant items. Also, ANOVA was conducted for these same scales and items with the independent variable now consisting of gender (men versus women). These gender comparisons were repeated for the subset of men and women who had social networking profiles. As appropriate, either paired t-tests or ANOVA were conducted for the trust comparisons. As appropriate, Pearson Chi-square analysis or the Fisher's exact test were conducted comparing men and women to a number of categorical items about social networking websites. Also, either ANOVA or the Mann–Whitney test (for skewed data) compared men and women for continuous variables about the social networking websites. SPSS version 15 (SPSS, 2006) was used for all analysis.

3. Results

Table 1 shows the demographic characteristics of the sample. The average age was almost 22 years old (range: 17–32 years). There were approximately equal percentages of men and women. There was a representation from all college levels, albeit that there was a slightly greater representation from seniors. With regard to race/ethnicity, there was substantial minority representation, as

Table 1
Demographic characteristics of a sample of college students in a study regarding social networking websites

Variable	(%) Frequency	Mean (SD)
Age		21.74 (3.11)
Gender		
Men	50.2% (103)	
Women	49.8% (102)	
College status		
Freshman	14.1% (29)	
Sophomore	20.5% (42)	
Junior	25.4% (52)	
Senior	35.6% (73)	
Other	4.4% (9)	
Race/ethnicity		
African–American	21.5% (44)	
Hispanic–American	6.8% (14)	
Asian/Asian–American	7.8% (16)	
South Asian (India, Pakistan, surrounding areas)	10.7% (22)	
White	43.9% (90)	
Other	9.3% (19)	
Broad field of study		
Business	14.6% (30)	
Science	25.4% (52)	
Education	7.3% (15)	
Arts (film, theater, art)	5.9% (12)	
Ethnic studies	2.4% (5)	
Social sciences (sociology, psychology, etc.)	30.7% (63)	
Other	13.7% (28)	
Born in the United States		
Yes	60.0% (123)	
No	40.0% (82)	
If not born in the United States, how long you lived in the United States?		10.42 (5.02)

Note: SD, standard deviation.

Table 2
College students and social networking website characteristics

Variable	% (Frequency)	Mean (SD)
Have you ever created your own profile online that others can see, such as on a social networking site like MySpace or Facebook?[a]		
Yes	77.6% (159)	
No	22.4% (46)	
Facebook.com		
Yes	78.6% (125)	
No	21.4% (34)	
MySpace.com		
Yes	51.6% (82)	
No	48.4% (77)	
Other social networking website		
Yes	32.7% (52)	
No	67.3% (107)	
For how many years have you had your profile(s) displayed?		1.9 (1.28)
On a typical day, how many times per day do you visit your profile(s)?		2.4 (3.00)
On a typical day, how many profiles from others do you view?		4.0 (5.81)
On a typical day, how many hours do you spend viewing profiles?		1.0 (1.62)
Do you allow anyone to view your profile(s)?		
Yes	73.6% (117)	
No	26.4% (42)	
Do you include a picture of yourself on your profile(s)?		
Yes	86.2% (137)	
No	13.8% (22)	
Do you include your e-mail address on your profile(s)?		
Yes	35.2% (103)	
No	64.8% (56)	
Do you include your instant messenger address on your profiles(s)?		
Yes	49.1% (78)	
No	50.9% (81)	
Do you include your phone number on your profile(s)?		
Yes	9.4% (15)	
No	90.6% (144)	
Do you include your home address on your profile(s)?		
Yes	9.4% (15)	
No	90.6% (144)	
Do you include information about your interests on your profile(s)?		
Yes	83.0% (132)	
No	17.0% (27)	
Do you include information about your personality on your profile(s)?		
Yes	74.8% (119)	
No	25.2% (40)	
Do you write on other people's profile pages?		
Yes	79.9% (127)	
No	20.1% (32)	
Do you spend time personalizing your profile page(s)?		
Yes	52.8% (84)	
No	47.2% (75)	
Do you use your real name on your profile page(s)?		
Yes	81.8% (129)	
No	18.9% (30)	
Approximately how many "friends" do you have on all your profile(s)?		239.41 (268.44)

Note: SD, standard deviation.
[a] This is for the whole sample and not just those with a social network profile.

more than half were minority. There was substantial immigrant representation, with 40% not born in the United States.

Table 2 shows the descriptive statistics regarding the social networking websites. More than three-quarter of the students had created a social networking profile. Facebook had greater representation with more than three-quarter with a profile, while only slightly more than one-half had MySpace profiles. Other social networking websites were created by one-third of the students. The average years for the profile displayed were 1.9 years (range: 0–7 years). With regard to a daily visit to one's profile, the average was 2.4 times (range: 0–20 times). Other profiles were viewed on average 4 times (range: 0–50 times). With regard to daily hours

Table 3
Risk taking, trust, and privacy concern comparisons between those with and without social networking profiles

Variable	Social network profile yes M (SD) (n = 159)	Social network profile no M (SD) (n = 46)	F	p-Value
Risk averseness scale	16.74 (3.54)	15.57 (3.34)	4.05	0.046
Consumer trust in Facebook scale	12.69 (3.72)	10.02 (3.10)	19.64	0.001
Consumer trust in MySpace scale	10.40 (3.75)	9.72 (3.45)	1.24	0.268
Privacy behavior scale	17.52 (5.32)	17.33 (4.68)	0.05	0.822
Time pressure scale	10.78 (2.74)	10.48 (2.69)	0.44	0.509
Privacy concerns scale	10.74 (2.72)	10.80 (2.45)	0.02	0.889
Perceived ability to control information scale	14.09 (3.29)	13.28 (3.18)	2.17	0.142
Privacy attitudes scale	52.06 (14.10)	50.91 (11.52)	0.25	0.615
Identity information disclosure scale	8.97 (2.62)	8.09 (2.44)	4.23	0.041
It is important to me to protect my identity information	4.25 (0.97)	4.33 (0.90)	0.22	0.641
I am concerned with the consequences of sharing identity information	3.93 (1.03)	4.20 (0.96)	2.45	0.119
I am likely to share my identity information online in the future	2.58 (1.03)	2.15 (1.07)	6.15	0.014
I believe my identity information is well-protected online	2.57 (1.05)	2.46 (1.19)	0.41	0.522

Note: M, mean; SD, standard deviation.

Table 4
Risk taking, trust, and privacy concern comparisons between men and women

Variable	Men M (SD) (n = 103)	Women M (SD) (n = 102)	F	p-Value
Risk averseness scale	17.32 (3.73)	15.63 (3.09)	12.53	0.001
Consumer trust in Facebook	11.73 (3.98)	12.45 (3.50)	1.91	0.168
Consumer trust in MySpace	10.60 (3.72)	9.89 (3.63)	1.91	0.169
Privacy behavior scale	17.18 (5.21)	17.77 (5.14)	0.67	0.415
Time pressure scale	10.53 (2.90)	10.89 (2.52)	0.89	0.347
Privacy concerns scale	10.30 (2.77)	11.22 (2.46)	6.25	0.013
Perceived ability to control information scale	13.52 (3.60)	14.29 (2.87)	2.86	0.092
Privacy attitudes scale	51.57 (13.89)	52.03 (13.25)	0.06	0.81
Identity information disclosure scale	9.17 (2.70)	8.37 (2.44)	4.97	0.027
It is important to me to protect my identity information	4.08 (1.03)	4.46 (0.83)	8.64	0.004
I am concerned with the consequences of sharing identity information	3.78 (1.07)	4.21 (0.92)	9.56	0.002
I am likely to share my identity information online in the future	2.49 (1.06)	2.49 (1.06)	0	0.974
I believe my identity information is well-protected online	2.54 (1.11)	2.55 (1.05)	0	0.972

Note: M, mean; SD, standard deviation.

spent viewing profiles, the average was 1 h (range: 0–10 h). The average number of "friends" on profiles was 239 (range: 1–2,000 friends). Almost three-quarter allowed anyone to view their profile without restricting views to those specifically approved. Almost 10% included their phone number and home address on their profile. Of these individuals including phone numbers and home addresses, there was only 1 individual who allowed only specific people to view this individual's profile and posted a phone number. Otherwise, for all others including phone numbers and home addresses this very personal information was posted on profiles available for anyone to see (data not shown in table).

Table 3 shows the comparisons for risk taking, trust, and privacy concerns between those with and without social networking profiles. For the risk averseness scale, those who had social networking profiles had significantly greater mean scores than those who did not have social networking profiles, indicating more risk taking behavior for those with social networking profiles. Regarding consumer trust in Facebook, those who had social networking profiles had significantly greater mean scores than those who did not have social networking profiles, indicating that they believed Facebook is a more trustworthy social network. With regard to the identity information scale, those who had social networking profiles had significantly greater mean scores than those who did not have social networking profiles, indicating less concern with identity information disclosure on social network communities. For the identity information question, "I am likely to share my identity information online in the future," those who had social networking profiles had greater mean scores than those who did not have

social networking profiles, indicating less concern with general Internet identity information disclosure.

Table 4 shows the comparisons for risk taking, trust, and privacy concerns between men and women. For the risk averseness scale, men had significantly greater mean scores than women, indicating more risk taking behavior for men. For the privacy concerns scale, women had significantly greater mean scores than men, indicating greater concern from women with regard to information provided on the Internet. For the identity information disclosure scale, men had significantly greater mean scores than women, indicating less concern with identity information disclosure on social network communities. For the identity information questions of, "It is important to me to protect my identity information," and "I am concerned with the consequences of sharing identity information," women had significantly greater mean scores than men.

Table 5 shows the men–women comparisons for the risk taking, trust, and privacy concerns for the subset who had social network profiles. As with the whole sample, men had significantly greater risk averseness scale mean scores than women and also women had significantly greater mean scores than men for the privacy concerns scale. Unlike the whole sample, there was no difference for the identity information disclosure scale. Also, for the items "It is important to me to protect my identity information" and "I am concerned with the consequences of sharing identity information," although in the same direction as the whole sample with higher mean scores for women, this now only approached significance.

Table 5
Risk taking, trust, and privacy concern comparisons between men and women for the subset who have a social networking profile

Variable	Men M (SD) (n = 83)	Women M (SD) (n = 76)	F	p-Value
Risk averseness scale	17.53 (3.72)	15.88 (3.12)	9.07	0.003
Consumer trust in Facebook	12.27 (3.86)	13.14 (3.52)	2.24	0.137
Consumer trust in MySpace	10.70 (3.71)	10.08 (3.79)	1.09	0.299
Privacy behavior scale	17.11 (5.35)	17.97 (5.28)	1.05	0.307
Time pressure scale	10.53 (2.80)	11.05 (2.65)	1.45	0.23
Privacy concerns scale	10.34 (2.79)	11.18 (2.58)	3.93	0.049
Perceived ability to control information scale	13.77 (3.58)	14.43 (2.92)	1.62	0.205
Privacy attitudes scale	51.40 (14.02)	52.78 (14.24)	0.38	0.54
Identity information disclosure scale	9.28 (2.73)	8.64 (2.47)	2.33	0.129
It is important to me to protect my identity information	4.11 (1.01)	4.41 (0.90)	3.87	0.051
I am concerned with the consequences of sharing identity information	3.78 (1.09)	4.10 (0.93)	3.66	0.058
I am likely to share my identity information online in the future	2.60 (1.06)	2.58 (1.01)	0.01	0.945
I believe my identity information is well-protected online	2.58 (1.08)	2.57 (1.01)	0.01	0.94

Note: M, mean; SD, standard deviation.

Table 6
Social networking website characteristics comparisons for categorical variables between men and women

Variable	Men (%) frequency	Women (%) frequency	p-Value
Do you allow anyone to view your profile(s)?			0.699
Yes	72.3% (60)	75.0% (57)	
No	27.7% (23)	25.0% (19)	
Do you include a picture of yourself on your profile(s)?			0.109
Yes	90.4% (75)	81.6% (62)	
No	9.6% (8)	18.4% (14)	
Do you include your e-mail address on your profile(s)?			0.082
Yes	71.1% (59)	57.9% (44)	
No	28.9% (24)	42.1% (32)	
Do you include your instant messenger address on your profiles(s)?			0.001
Yes	61.4% (51)	35.5% (27)	
No	38.6% (32)	64.5% (49)	
Do you include your phone number on your profile(s)?			0.029
Yes	14.5% (12)	3.9% (3)	
No	85.5% (71)	96.1% (73)	
Do you include your home address on your profile(s)?			0.239
Yes	12.0% (10)	6.6% (5)	
No	88.0% (73)	93.4% (71)	
Do you include information about your interests on your profile(s)?			0.644
Yes	84.3% (70)	81.6% (62)	
No	15.7% (13)	18.4% (14)	
Do you include information about your personality on your profile(s)?			0.747
Yes	75.9% (63)	73.7% (56)	
No	24.1% (20)	26.3% (20)	
Do you write on other people's profile pages?			0.036
Yes	73.5% (61)	86.8% (66)	
No	26.5% (22)	13.2% (10)	
Do you spend time personalizing your profile page(s)?			0.556
Yes	50.6% (42)	55.3% (42)	
No	49.4% (41)	44.7% (34)	
Do you use your real name on your profile page(s)?			0.137
Yes	85.5% (71)	76.3% (58)	
No	14.5% (12)	23.7% (18)	

We also conducted a number of additional analyses regarding trust in Facebook and MySpace. Among those with a Facebook profile (n = 125), Facebook had a significantly greater trust rating (M = 13.17, SD = 3.77) than MySpace (M = 10.34, SD = 3.82) by almost 3 points, t = 7.38, p = <0.001. Among those with a MySpace profile (n = 82), Facebook had a significantly greater trust rating (M = 12.67, SD = 3.52) than MySpace (M = 11.15, SD = 3.41) by 1.5 points, t = 3.78, p = <0.001. Among those with both a Facebook and MySpace profile (n = 59), Facebook had a significantly greater trust rating (M = 13.03, SD = 3.79) than MySpace (M = 10.86, SD = 3.53) by more than 2 points, t = 4.30, p = <0.001. Among those with both a Facebook and MySpace profile, there were no significant differences between men and women with regard to trust ratings for Facebook, and also between men and women with regard to trust ratings for MySpace.

Table 6 shows the comparisons for the social networking website characteristics for the categorical variables between men and women. Men had significantly greater percentages than women for including an instant messenger address and phone number on one's profile. With regard to writing on other people's profiles, there were a significantly greater percentage of women who did so than men. With regard to including an e-mail address on one's profile, this item approached significance for greater percentages for men than women.

Table 7 shows the comparisons for the social networking website characteristics for the continuous variables between men and women. With regard to how many years one had a profile and also number of friends, there was an approach to significance for greater values for men than women. With regard to how many profiles from others do you view, there was an approach to signif-

Table 7
Social networking website characteristics comparisons for continuous variables between men and women

Variable	Men M (SD) ($n = 83$)	Women M (SD) ($n = 76$)	F or z	p-Value
For how many years have you had your profile(s) displayed?[a]	2.06 (1.36)	1.71 (1.17)	2.96	0.087
On a typical day, how many times per day do you visit your profile(s)?[b]	2.07 (2.60)	2.76 (3.36)	−1.54	0.125
On a typical day, how many profiles from others do you view?[b]	2.89 (3.13)	5.13 (7.61)	−1.789	0.074
On a typical day, how many hours do you spend viewing profiles?[b]	0.87 (0.89)	1.15 (1.39)	−1.422	0.156
Approximately how many "friends" do you have on all your profile(s)?[b]	283.77 (312.61)	190.96 (200.99)	−1.922	0.055

Note: M, mean; *SD*, standard deviation.
  [a] ANOVA analysis.
  [b] Mann–Whitney test analysis due to presence of skewed data.

icance for greater values for women than men. For how many times per day do you visit your profile or hours spent viewing profiles, there were no significant differences between men and women.

4. Discussion

More than three-quarter of the students had created a social networking profile, with Facebook having a greater representation with more than three-quarter having a profile as compared to MySpace where slightly more than one-half had a profile. Individuals with social networking profiles had significantly greater risk taking attitudes than those without social networking profiles. Also, men had significantly greater risk taking scores than women. Women had significantly greater scores than men for privacy concerns but there were no gender differences for privacy behavior or privacy attitudes. Men also had significantly greater percentages than women for including a phone number and instant messenger address on one's profile.

In our study, we found that almost 10% of the participants provided their phone number on their social network profile. One other study among college students reports that 10% provided their home phone number, but 39% provided their cell phone number on their social networking profile (Acquisti & Gross, 2006). Our study has less phone disclosure than that study, although there is the slight possibility that college students may interpret "phone number" as referring to a home land-line phone and not a cell phone. Also, we found that almost 10% provided their home address which is much less than the 24% reported in the other social networking study (Acquisti & Gross, 2006). As our data were collected in 2007, while that study had data collection at an unknown time period before it was presented in 2006, it is possible that more people are aware today of the possible privacy concerns of disclosing a home address on a social networking profile. In our study, for both the phone numbers and home addresses, almost all those who provided them, allowed "anyone" and not just approved "friends" to view their profile.

Our study found that those with social networking profiles had greater risk taking attitudes than those who did not have social networking profiles. As the Internet is not a private club, clearly those who are posting information about themselves on their social networking profiles are more comfortable with the possible risks of their information being seen by others. With regard to social contract theory, we see that this implied social contract is applicable even among those who have a greater risk taking approach and are creating social networking profiles and using them. We also found gender differences for the whole sample and also among those who had social networking profiles where men had greater risk taking attitudes than women. This is consistent with the literature on risk taking behavior where whether as adolescents (Jelicic, Bobek, Phelps, Lerner, & Lerner, 2007) or as young adults (Huang, Jacobs, Derevensky, Gupta, & Paskus, 2007) men have greater risk taking behavior than women.

Our study found that those with social networking profiles had greater trust in Facebook but not MySpace than those who did not have social networking profiles. We also found that whether among those with Facebook profiles, MySpace profiles, or those with both Facebook and MySpace profiles, that Facebook had greater trust ratings than MySpace. This may be because up until late 2006, Facebook was restricted to students while MySpace was open to all Internet users (Jesdanun, 2006). Based upon social contract theory, this greater level of trust for Facebook than MySpace can occur because consumers of social networking profiles do not believe that their contract with Facebook has been breached and hence maintain a level of trust. However, for whatever reason, consumers of social networking profiles believe that their contract with MySpace has been breached and hence do not maintain the same level of trust that is given for Facebook.

In our study we found that women had greater privacy concerns and less identity information disclosure than men. One study alludes to significantly higher average privacy concerns for women than men on social networking websites (Acquisti & Gross, 2006). However, that study did not indicate the specific items measured for these differences in privacy concerns. In this study we provide a reliable scale to measure these privacy concerns between men and women. We also add to the scientific literature the results of identity information disclosure differences between men and women. Based upon social contract theory, women before they accept this implied social contract and create a social networking profile, need to be reassured that their privacy is being protected. Even when women are reassured about privacy protection and create a social networking profile, to maintain their sense of being protected by an acceptable implied social contract they are less likely than men to disclose identity information.

We found that men were more likely than women to include their instant messenger address on their profile. This could be because men spend more time "instant messaging" than women (Chung & Soo Nam, 2007) and are therefore more comfortable disclosing their instant messenger address. We also found that men were more likely than women to include their phone number on their profile. This could be because based upon our anecdotal experience in face-to-face situations men are often more comfortable providing phone numbers to others than women. In our study we found that women were more likely to write on other people's profiles than men. This may be because women like to share their thoughts and feelings by writing on other people's "walls" as compared to men who use an instrumental relationship style, which includes a preference for doing activities together rather than expressing thoughts and feelings (Boneva, Kraut, & Frohlich, 2001). In our study we also found that men have more "friends" on their profiles than women. We must first understand what the word "friend" means to each individual. Friendship is often defined as an exceptionally strong relationship with emotional and practical support (Boyd, 2006). On a social networking website the choice of "friends" could refer to workers, classmates, family members, or just friends, as one is only offered one category to link

to others (Boyd, 2006). In our study, the women may care more about whom their "friends" really are and are more selective of whom they link to as a "friend" and who they can build a relationship with. Also, women may be more private when it comes to allowing strangers to become their "friends" as compared to men who are not as concerned and are comfortable with allowing strangers to become their friend and have access to their profile. Women might also be more afraid of stalking and of men making sex approaches if they include certain men as their "friends."

Limitations to this study include that our sample is from only one university and not from a nationally representative sample. Also, our survey was self-report rather than observing and recording the behavior patterns on participants' social networking profiles.

In conclusion, those who have profiles on social networking websites have greater risk taking attitudes than those who do not have profiles on social networking websites. Also, risk taking attitudes are greater among men than women. Facebook has a perception of being a trustworthy social networking website. General privacy concerns and identity information disclosure concerns are of greater concern to woman than men. Lastly, there are greater percentages of disclosure of phone numbers and home addresses among men than women. Based upon our results, we recommend that health care professionals, psychologists, communication professionals, and consumer advocacy groups advocate that sponsoring companies of social networking websites mention that risk taking behavior and privacy concerns are potentially relevant and important concerns at the sign-up period before individuals are allowed to create a social networking profile.

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