

Online Privacy Concerns Among Social Networks' Users

QUESTION CONCERNANT LES AFFAIRES PERSONNELLES DES UTILISATEURS DE RÉSEAUX SOCIAUX EN LIGNE

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Abstract: The study investigates how online social networks' users in two Arab countries are concerned about their online privacy. A structured questionnaire was used to collect data from a sample (N=325) of Arab respondents in Emirates and Egypt. The results reveal a negative correlation between online privacy concerns and respondents' likelihood of providing personal information. Females are found to be more concerned about their privacy than males. Also, they tend to be more concerned than males in taking actions that protect their privacy. Emiratis use less online social networks than Egyptians and Arab residents in the UAE, while Egyptians have greater trust in online social networks.

Key words: Online privacy concerns; Online social networks; Trust in online social networks; Privacy protection and Communication Privacy Management theory

Resumé: L'étude examine comment les utilisateurs des réseaux sociaux en ligne dans deux pays arabes sont préoccupés par leurs affaires personnelles en ligne. Un questionnaire structuré a été utilisé pour recueillir des données auprès d'un échantillon (N = 325) des répondants dans les Émirats arabes et l'Égypte. Les résultats révèlent une corrélation négative entre la préoccupation sur la vie privée et la probabilité des répondants de fournir des renseignements personnels en ligne. Les femmes sont plus préoccupées par leur vie privée que les hommes. En outre, elles ont plus de tendance que les hommes à prendre des mesures qui protègent leur vie privée. Les Émiratis utilisent moins les réseaux sociaux en ligne que les Égyptiens et les résidents arabes des Émirats Arabes Unis, tandis que les Égyptiens ont une plus grande confiance en réseaux sociaux en ligne.

Mots-clés: problèmes concernant la vie privée en ligne; réseaux sociaux en ligne; confiance en réseaux sociaux; protection de la vie privée et la théorie de la gestion des affaires personnelles dans la communication

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While the Internet has great strengths as a medium in breadth, depth, reach, immediacy, and interactivity, it has serious drawbacks, among which none has received as much attention as the threat to privacy (Hong, McLaughlin, Pryor, Beaudoin, & Grabowicz, 2005). Online social sites are one of the recent Internet virtual communities most people are using all over the world. These sites are online spaces that allow individuals to present themselves, articulate their social networks, and establish or maintain connections with others. Users of online social networks may use these sites' communication tools to interact with those they know from offline contexts such as schools, or they may use the sites to meet new people (Ellison, Steinfield, & Lampe, 2006).

Much of the media coverage surrounding young people and online social networks is focused on type and amount of personal information people make available on these networks. Are they sharing information that will harm their future or put them at risk of victimization? Do females differ from males in managing their online privacy? Many social networking services, such as Facebook and MySpace, provide users with a choice of who may view their profiles. This prevents unauthorized user(s) from accessing their information.

ONLINE SOCIAL NETWORKS

Boyd and Ellison (2007) define social network sites as web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system; (b) articulate a list of other users with whom they share a connection; and (c) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.

In theory, the online social network is an internet community where individuals interact, often through profiles that re/present their public persona and their networks of connections to others (Acquisti & Gross, 2006). Moreover, online social networks, such as MySpace, Friendster or Facebook, are types of virtual communities that have grown tremendously in popularity over the past few years all over the world and recently have experienced great growth in membership in the Arab world. According to Nielsen (2009), in the United States alone, total minutes spent on social networking sites have increased 83% year-over-year. Total minutes spent on Facebook increased nearly 700 percent year-over-year, growing from 1.7 billion minutes in April 2008 to 13.9 billion in April 2009, making it No. 1 among social networking sites, when ranked by total minutes for the month. Time spent online among children increased 63% in the last five years. Thus, these networks offer an attractive means for interaction and communication; however, they raise privacy and security concerns as well.

When people join social networking sites, they begin by creating a profile. Then, they make connections to existing friends as well as those they meet through the site. A profile is a list of identifying information. It can include a user's real name or a pseudonym. It also can include photographs, birthday, hometown, religion, ethnicity, and personal interests. Members connect to others by sending a "friend" message, which must be accepted by the other party to establish a link. "Friending" other members gives them access to the user's profile, adds them to the member's social network, and vice versa (Dwyer, Hiltz, Starr, & Passerini, 2007).

In addition, Lenhart and Madden (2007a) concluded that online social network websites offer a variety of ways for users to communicate with people both in and out of their personal social network. One of the major reasons why teens are such enthusiastic users of social networks is that such sites give them an opportunity to present themselves to a group of peers and then get feedback and affirmation via the content tools built into the online social networking system. Teens get to feel like they are part of a group of like-minded friends and can visualize their network of relationships, displaying their popularity to others. Lenhart and Madden (2007b) note that the explosive growth in the popularity of these sites has generated concerns among parents, school officials, and government leaders about the potential risks posed to young people when personal information is made available in such a public setting.

ONLINE PRIVACY CONCERNS

Privacy is a multifaceted notion, encompassing personal autonomy, democratic participation, identity management and social coordination. Central to this multidimensional construct is the desire to keep information out of the hands of undesirable others, which is a privacy concern (Cho, Rivera-Sanchez & Lim, 2009).

In the United States of America, with over half of Americans online, the threat to online privacy has become a public concern that ranks above other public policy issues, including health care and crime (Hong et al., 2005). Lenhart and Madden (2000) noted that over 84% of American online users report being concerned about the invasion of privacy via collection of personal information online.

Petronio (1991) introduced the communication privacy management (CPM) theory to explain how people manage their communication privacy. She proposed when people disclose to each other, they essentially link others into a privacy boundary. Once that happens, there are expectations that disclosers have when others are privy to their information. In addition, the recipients essentially become co-owners or shareholders of the information because of concomitant expectations that they will keep the information confidential (Petronio, 2004).

CPM has proposed three operations as the basis for boundary coordination. *First*, people face some issues when they co-own or share-hold private information that may belong to several other people collectively. *Second*, people move from a personal privacy boundary to a collective one by linking others into a privacy boundary through disclosure, which might be called "self-disclosure." *Third*, people coordinate these collective boundaries by establishing privacy rules or socializing with others to learn existing rules to manage the degree of permeability (Petronio, 2004).

CPM has proposed five primary principles formulating how people regulate the disclosure or concealment of private information. "*First*, individuals or collectives believe they own their private information. *Second*, because of their belief in ownership, people feel they have the right to control the flow of private information to others. *Third*, people use privacy rules to decide whether to open a privacy boundary; therefore, they can disclose or keep the boundary closed to conceal the information. *Fourth*, once individuals reveal, they make other individuals shareholders of the information and presume these co-owners will follow existing privacy rules or negotiate new ones. Petronio claimed this process changes the nature of management practices from individual-based-choices to collective ones. *Fifth*, because we don't live in a perfect world, management issues can become turbulent. Turbulence occurs when there is disruption in the coordination of privacy rules or when someone's privacy boundary is blatantly violated. Boundary turbulence often results in mistrust, anger, suspicion, or uncertainty about sharing private information" (Petronio, 2004, p 219).

In addition, online social networks are types of social communities in which people tend to share their personal information with others and may go through five stages or principles. When Chan and Cheng (2004) compared offline and online friendship, they found that offline friendship involved more interdependence, breadth, depth, understanding, commitment, and network convergence than online friendship. Thus, face to face communication provides feelings of greater privacy safety. Parks and Roberts (1998) concluded that there were no clear lines dividing "virtual" from "real" relationships among multi-user dimensions, object oriented (MOO) users. For them, "cyberspace" is not some exotic technological fantasy, but simply another place where people meet and get to know one another.

Lenhart and Madden (2007b) indicated teens who have online profiles are generally more likely to believe it is permissible to disclose certain pieces of information, such as cell phone number or e-mail address, in an offline situation than they are to have such information actually posted to their profiles. The only piece of information they are more likely to share online are the city and state where they live. That is why they think that teens struggle to find the balance point between sharing details that will facilitate meeting peers with similar interests and keeping themselves safe from unwanted online attention (p 25).

College students in the United States were found to realize the importance of protecting their identity information. They might let their friends, family, and classmates access their social network profiles, but they are "neutral" in letting strangers access these profiles (Stutzman, 2006).

Literature about online privacy suggests that privacy concerns vary across many factors. Age, gender, education, and nationality are the most important factors that affect online privacy concerns among individuals.

In current study, online social network privacy concerns among Egyptians and Emiratis and its relationship to trust will be investigated. In addition, it examines how online privacy concerns correlate with protective behaviors people might take to protect their online privacy. In this context, differences between Emiratis and Egyptians in online social network privacy concerns will be revealed.

RESEARCH QUESTIONS

What are the most popular online social networks among respondents?

What is the reason(s) for using, not using or quitting online social networks among respondents?

What personal information do respondents put in their online profiles?

How do respondents react to strangers they meet online?

RESEARCH HYPOTHESES

Gross and Acquisti (2005) argued while privacy may be at risk in social networking sites, information is willingly provided. Different factors are likely to drive information revelation in online social networks. The list might include peer pressure; relaxed attitudes towards (or lack of interest in) personal privacy; incomplete information about the possible privacy implications of information revelation; faith in the networking service or trust in its members; myopic evaluation of privacy risks; or the service's own user interface that may drive the unchallenged acceptance of permeable default privacy settings.

Acquisti and Gross (2006) found no relation between privacy concerns and the likelihood of providing personal information on the Facebook website. However, Govani and Pashley (2005), in a small-sample study on Facebook users' awareness of privacy, found that while 80% of participants knew about privacy settings, only 40% actually made use of them. More than 60% of users' profile contained specific personal information, such as date of birth, hometown, interests, relationship status and a picture.

Lenhart and Madden (2007b) focus group discussion findings showed that information that is almost never "okay" to share is the information that might allow someone to easily find or recognize an individual, such as address, home telephone number, parents' name, and personal identification. Information that is generally "okay" to share online is age, e-mail address, gender, religion, and affiliation (p 20). Therefore, it can be predicted that the more respondents are concerned with their online privacy, the less they might provide accurate personal information in their profiles.

H1: There is a negative correlation between online privacy concerns and respondents' likelihood of providing accurate personal information.

When Acquisti and Gross (2006) compared those with profiles on Facebook and those without, they found those with profiles had greater concerns than others about a stranger knowing where they live and their schedule of classes. Profiles require users to be active in updating the information included. Fox et al. (2000) indicated over 84% of American online users report being concerned about the invasion of privacy via collection of personal information online. So, it is predicted that when respondents believe there is possibility of invasion to their online privacy, they tend to be inactive in using their online social networks profiles.

H2: There is a significant correlation between online privacy concerns and online social network active usage.

Debatin, Lovejoy, Horn, and Hughes (2009) found evidence of third person effect; that is, perceived risk to the privacy of others is greater than the perceived risk to personal privacy. Their survey revealed that on Facebook, if a negative experience happens to self as opposed to hearing about it happening to others, users are actually more likely to take action to protect information. From spending more years in using online social networks, users are likely to acquire experiences in terms of danger(s) they might face if they make their personal information available to others. Govani and Pashley (2005) suggest that if users have experienced identity theft, stalking, or know somebody who has, they may be less likely to share their personal information. Therefore, it is predicted that when people spend many years in using online social networks, they differ in their online privacy concerns. The amount of years spent in using these networks may provide experience in terms of how effectively they may use the privacy options available, or how they can protect their privacy. In this context, the more years people spend using online social networks, the greater their concern might be about their privacy.

H3: There is difference in the level of online privacy concerns according to years of using online social networks.

There is little attention to the way youth are *protecting their privacy*. Cho et al. (2009) revealed that avoidance, opt-out, and proactive protection are three dimensions of privacy protective behaviors in a multi-national sample. Moscardelli and Divine's (2007) results suggest heightening adolescents' concerns about their privacy may lead to greater likelihood of using different types of privacy-protecting behaviors, such as providing inaccurate information when registering on websites and requesting removal from e-mail lists.

However, Lenhart and Madden (2007b) reported that while some teens choose to withhold certain types of information from their profiles, other teens take additional protective measures, such as posting fake information. It was reported that of all teens with online profiles, 56% have posted false information. In contrast, 8% said that most or all of the information on the profile is false, while 44% of teens said that their profile is completely truthful, and none of the information on it is false (p 23). Therefore, it is predicted that the more respondents are concerned about their online privacy, the more they tend to take protective behaviors.

H4: Online privacy concern correlates positively with privacy protective behavior.

Many studies have found some factors that might affect fear of privacy invasion through online social networks. A person's gender, race, ethnicity, and parental educational background are all associated with online social network usage as reported by Hargittai (2007). Cho et al. (2009) indicated that individual differences (age, gender, and internet experience), nationality, and national culture significantly influenced internet users' privacy concerns. Sheehan (1999) found female internet users were generally more concerned about their personal privacy than male users. Fogel and Nehmad (2009) indicated that gender makes a difference. They concluded that general privacy concerns and identity information disclosure concerns are of greater concern to women than men.

Also, education level and age are considered as significant factors that affect online privacy concerns. Elders and better educated people were more concerned about online privacy because they became more sensitive to or more aware of potential privacy problems (Bellman, Johnson, Kobrin, & Lohse, 2004).

H5: Males differ from females in the following variables:

- Online social networks usage
- Online privacy concerns
- Active usage
- Trust in online social networks
- Protective action

Not many scholars investigated cross-cultural differences in online privacy concerns. Many Internet users in the Arab world do not know the basics of how their online activities are observed and they do not use available tools to protect themselves. Albert (2009) found that almost the entire sample of Arab youth in an Egyptian university (N=400) were not concerned about privacy issues leaving their profile visible and adding their own photo. Half of the sample had not read the terms of using Facebook or the privacy policy before creating a profile. In the Arab region, it is possible that different cultural backgrounds affect the way Arabs use online social networks and their concerns about privacy protection.

H6: There is a significant difference among Emiratis, Arab residents in UAE, and Egyptians in the following variables:

- Online social networks usage
- Active usage
- Online privacy concerns
- Trust in online social networks
- Protective action

METHODOLOGY

Sample

According to Internet World Stats as of June 9, 2009, Egypt was the major African country in terms of the number of internet users with 12.6 million users (15.7% of the population) (Egypt: Internet Usage and Telecommunications Reports, 2009). In the United Arab Emirates, as of September 9, 2009 there were 2.9 million Internet users (60.9%). The UAE is on the fifth level of use among the Middle East countries after Iran, Saudi Arabia, Israel and Syria (United Arab Emirates: Internet Usage and Marketing Report, 2009). Obviously, one cannot know the exact number of online social network users in both countries, but the census indicates that UAE is expected to have more online social network users compared to the population density. The highest percentage of internet users compared to population was 2.86 million in the UAE or more than 50% of the total population (One Social Network with a Rebellious Message: Facts and Numbers, 2009).

Taking into consideration the fact that there are various Arab nationalities living in the Emirates for various purposes, it seems vital to have a sample from Egypt, the UAE and the Arab residents in the Emirates to get a broad idea about the online social networks users. Also, since the Emirates is considered more conservative than Egypt in terms of using online social networks, it is predicted that the results might vary among these samples, especially among the females.

The sample (N=325) is composed of Internet users, which include Emiratis (n=107) (32.9%), Egyptians (n=113) (34.8%) and Arab (n=105) residents in UAE (32.3%), composed of various Arab nationalities from Palestine, Syria, Lebanon, Oman, and Jordan. Their age ranged from 14 to 57 with a mean of 21.7 and Standard Deviation of 5.9. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.823. Sample characteristics are shown in Table 1.

Data Collection

A self-administrated questionnaire included 26 questions designed to collect data to measure the research variables and examine its hypotheses. It was written in Arabic since Arabic is the native tongue of all respondents. It helped them to understand the questions easily and answer accurately.

Prior to the final survey, the questionnaire was sent to three mass- communication professors, who are working in two different universities ⁽²⁾ to investigate the reliability and validity of the measurements. A pretest was conducted using a sample (n=15) of university students to check the validity of the measures

⁽²⁾ Prof. Abdel-Rahman Azzi in Sharja Univ. UAE, Prof. Hesham Mesbah in Northwestern State Univ. USA, and Prof. Mohamed Aysh, Sharja Univ. UAE.

included in the questionnaires. Some questions were modified and others were added. The data were collected in June 2009 from Emirates and in July 2009 from Egypt.

Table 1: The Characteristics of the Sample

	Characteristic	Frequency	%
Gender:	Males	157	48.3
	Females	168	51.7
Education:	Secondary	74	22.8
	University (under) graduate	251	77.2
Occupation:	Student	257	79.1
	Governmental employee	41	12.6
	Private employee	27	8.3
Age:	Less than 20	108	33.23
	20 to less than 30	196	60.30
	30 years and more	21	6.46
Marital status:	Single	283	87.1
	Married	41	12.6
	Divorced	1	0.3
Online social network:	Yes	241	74.2
	No	84	25.8
Users' Description			
	• Current users	205	63.1
	• Ex- users and will not go back to them.	36	11.1
	• Non-users	84	25.8
Importance of online social networks:			
	• Very important	45	13.8
	• Important	53	16.3
	• To some extent	83	25.2
	• Not important	22	6.8
	• Not important at all	2	.6

MEASUREMENTS

Online Privacy Concerns

Online privacy concerns is the independent variable of the study. It was measured using a Likert 5-point scale for five statements adapted from previous studies, such as Fogel and Nehmad (2009) and Dinev and Hart (2004). Other items were added. Some of these items are "I'm concerned that my personal information I submit to online social networks could be misused," "I don't think the information I put might be misused," "It's possible to share my personal information with others," and "I don't think personal information to online social networks might be misused by others." Cronbach's Alpha reliability test is (0.772). The total scale score was 25.

According to respondents' answers, there were (205) who still have online social networks profiles; while (120) respondents were non-users or ex-users. Respondents who have online social networks profiles (n= 205) were divided according to their answers to the online privacy concern question into three categories: high concern 19-25 points (23.9%), middle concern 12-18 points (68.2%), and low concern 5-11 points (7.8%). As indicated, most respondents who have profiles are in the middle level of concern about their privacy.

Privacy Protection Behaviors

Respondents were asked how frequently (always, sometimes, never) they behave to protect their privacy in terms of certain situations. Mean and Standard Deviation were calculated for these items.

Table 2: Actions Respondents Take to Protect Their Privacy

Protective Action Items	Mean	Std. Deviation
I put in accurate data about identity	1.77	.743
I don't let strangers see my profile	2.10	.807
I put some false personal information in my profile	1.60	.682
I don't put in my photo(s)	1.96	.882

The total score of this scale was 12 points. Respondents who are online social network users were classified according to their protective actions into three categories: 4-6 points are those who take low protective action (35.12%), 7-9 points are those who take middle protective actions (47.8%), and 10-12 points are those who take high protective actions (17.07%).

Online Social Networks Active Usage

Online social networks active usage refers to how active people are in using various features of online social networks websites. This variable was measured by asking respondents four questions. The first question was: In an average week, how many days do you use social networks? One day, 2-3 days, 4-5 days, 6 days, all days, and I have a profile but I never use it. The second question asked how frequently (always, sometimes, rarely and never) respondents used the 12 items reflecting online social networks facilities, such as chatting, sending messages, adding comments, IQ tests, sending video clips... among other items. The third question was on a four-point scale asking how frequently respondent updates his/her personal profile. The fourth question asked about the number of friends on social networks (less than 10, 10-19, 20-30, and more than 30). The total score of this scale was (48 points). Respondents were divided into three categories: high active users 33-48 points (23.9%), middle active users 17-32 points (69.7%) and low active users 1-16 points (6.3%).

Trust in Online Social Networks

Trust in online social networks refers to the extent online social networks users believe that these sites are safe, might not cause any trouble, and will not negatively affect their privacy. Measurement of this variable was adapted from Acquisti and Gross (2006). Respondents were asked if they read the privacy policy related to social networks in which they have a profile. Also, they were asked to what extent (highly, to some extent, do not and not at all) they trust online social networks in terms of friends they know via social networks, friends of their friends on online social networks, online networks users they didn't know before, and personal information protected from unauthorized usage. Cronbach's Alpha reliability test is 0.735.

The total scale score was 25. Respondents were divided according to their answers into three categories: high trust online social networks, 19-25 points (22.4%), middle trust, 12-18 points (62.4%), and low trust, 5-11 point (15.1%).

Demographic Variables

The questionnaire included questions about gender, age, education, occupation, and nationality. Also, it included questions about internet usage and online social networks in which respondents have a profile. Questions about years of using online social networks, types of personal information respondents put in social networks profiles, and how frequently respondents allow others to go into their profiles were also included.

Statistical Analysis

Descriptive statistics were used for demographics. ANOVA, Pearson correlation, and T-test were used to test the research hypotheses. Cronbach Alpha was used to examine scale reliability. KMO was used to measure sampling adequacy.

RESULTS

Descriptive Statistics

Online networks used by respondents. Online social networks in which respondents have profiles are shown in Table 3.

Table 4: Personal Information Respondents Put in Their Profiles (n=205)

Personal information	%
Nationality	49.5
Country where I live	48.6
Age	46.2
Name	44.6
Religion	43.7
School/University name	31.7
Personal Picture(s)	27.1
Telephone no.	10.8
Family pictures	4.6
E-mail address	0.9
Hobbies	0.9
Unreal name	0.6
Name of social club	0.3

Note: Table may exceed 100% due to multiple responses

Table 3: Online Social Networks in Which Respondents Have Profiles

Online Social Networks	%
Facebook	65.2
My Space	7.4
Hi 5	11.1
Others ⁽³⁾	7.4

Table 5: Respondents' Reactions to Strangers online (n=205)

Respondents' reactions	%
I Ignore him/her	37.07
I asked what he/she wants	37
I delete it	18
I replied and ask him to leave me alone	5.8
I told my parents asking for advice	1.46
It never happens	.4

As shown, Facebook is the most popular online social network among respondents. The reason might be that it is one of the oldest online social networks and has unique features that attract its users. Facebook has more than 250 million active users all over the world. About 70% of Facebook users are outside the United States. More than 120 million users log on to Facebook at least once a day (Facebook Press Room, 2009). Stutzman (2006) stated Facebook usage is the most popular among college students in the United States, while Hargittai (2007) indicated that 78.8% "sometimes" or "often" use Facebook as the most popular.

Fogel and Nehmad (2009) indicated that Facebook has a greater representation with more than three-quarter of the users having a profile as compared to MySpace where slightly more than one-half had a profile. Debatin, Lovejoy, Horn and Hughes (2009) stated that student life without Facebook is almost unthinkable.

According to Acquisti and Gross (2006), Facebook stands out for three reasons: its success among the college crowd; the amount and the quality of personal information users make available on it; and the fact that, unlike other networks for young users, the information is personally identified.

These results contradict what Lenhart and Madden (2007a) found. They revealed 85% out of a sample of 935 youths ages 12 to 17, who have created an online profile say the profile they use or update most often is on MySpace, while 7% update their profile on Facebook.

Reasons for not Using Social Networks or Quitting Usage

Respondents mentioned various reasons for not using online social networks: 14.5% stated "they're un-useful;" 10.2% said "they don't trust them;" 7.1% said "online social networks might cause troubles;" and 9.5% stated "they don't have time." Of those who quit using them, 5.2% expressed fear of losing their privacy.

⁽³⁾ Others include Flickr, Mashy chat, Friends Abroad, and Babble.

Personal Information Respondents Put in Their Profiles

Respondents differ in the type of personal information they usually put in their online social network profiles. (Table 4 shows the results.)

Table 4 shows "nationality" as the most personal information respondents put in their online profiles, then the "country" where they live, "age" and "name," while 10.8% of respondents put their cell phone number. Another study reached similar results. Fogel & Nehmad (2009) found that almost 10% out of 205 college students provided their phone number on their social network profiles. Another study found 10% of college students reported they provided their home phone number, while 39% from a sample of 506 members in Face book put their cell phone numbers on their social network profiles (Acquisti & Gross, 2006). Lenhart and Madden (2007b) indicated 81% of 886 online teens in 2006 provided information about the state where they lived, 71% provided their school name and 29% provided their cell phone number (p 21).

Parents' Awareness of Respondents' Online Profiles

Respondents were asked if their parents are aware of their profiles on the social networks sites. The results found 76.5% of online social networks users (n=205) reported that their parents knew about their profiles, while 9.7% did not tell their parents and 13.6% were not sure if their parents knew. This result is similar to what was reported in Pew Internet & American life Project report written by Lenhart and Madden (2007b). About 49% (n=935) of online teens' parents are aware of their children's profiles on the internet(p 12).

Respondents' Reactions to Strangers Online

In some cases, teens were contacted online by strangers through online social networks or other means of online communication, such as e-mail and chat rooms. Respondents were asked: How do you react when you find strangers online? The answers are shown in Table 5.

The results showed that 37% of social network users reported that they ignored strangers. A similar percentage of 37% replied they wanted to know what he/she wanted while 18% deleted it.

This finding contradicts what Lenhart and Madden (2007b) reported, which found that the vast majority of the teens contacted online by strangers responded to the most recent occurrence by ignoring or deleting the contact. Nearly two-thirds (65%) of teens who have been contacted by a stranger ignored or deleted the stranger's contact and were not bothered by it. Twenty-one percent of contacted teens said they responded to the stranger to find out more about the person; while 8% of teens who were contacted by unknown people responded by telling the stranger "to leave me alone." (p 35).

HYPOTHESES TESTING

H1: There is a negative correlation between online privacy concerns and respondents' likelihood of providing accurate personal information

Respondents (n= 205) stated that they share information via online social networks without any restrictions, such as the city they live in 39.7%, age 36.9%, religion 48.3%, gender 48.3%, favorite movie stars 39.7%, professors and teachers' names 25.5%, and real name 29.5%. As for personal information they do not share with others, 44.3% of respondents reported home phone number, 43.4% family photos, 33.3% cell phone number, 30.5% friends' photos, and 26.5% mother's work.

A weak negative correlation was found between online privacy concerns and respondents' likelihood of providing personal information ($r = - 0.309$, $p = .000$). In other words, the more respondents were concerned with their online privacy, the less likely they were to give accurate personal information. The first hypothesis was accepted. Also, no significant correlation was found between online social networks' privacy concerns and respondents' reaction to online strangers.

A positive correlation was found between online privacy concerns and respondents' tendency to keep their personal information from others ($r = .239, p = .001$).

H2: There is a significant correlation between online privacy concerns level and online social network active usage

A negative significant correlation ($r = -.276, p = .000$) was found between online privacy concerns and active usage. In other words, the more respondents were concerned about their online privacy, the less they actively used online social networks features. They do not use all features; do not have many friends; and diminish the frequency of updating their profiles and days of usage.

H3: There is a difference in the level of online privacy concerns according to years of using online social networks

One-way ANOVA was used to test the hypothesis. The number of years using online social networks makes no significant difference in online privacy concerns. The hypothesis was rejected.

However, it was found that years spent in using online social networks makes a difference among respondents in their active usage ($F = 4.51, p = .002$), trust in online social networks ($F = 3.22, p = .01$), and taking protective actions ($F = 2.86, p = .02$).

Post Hoc tests indicate that the difference in active usage is highest among those who are "less than 3 to 4 years" users ($mean = 30.58, p = .000$) and "less than 2 to 3 years" users ($mean = 29.34, p = .001$).

As for trust in online social networks, Post Hoc tests illustrate that trust increases as years of usage increases. "Four years and more" of usage was the source of difference among years of usage categories ($mean = 16.5, p = .002$). This might have occurred because as people spent more time in dealing with online social networks, they became more aware of privacy protection methods.

The Post Hoc Test shows that taking protective actions increased among respondents who were in the middle category of years of usage "less than 2 to 3 years" users ($mean = 6.77, p = .001$) and "less than 3 to 4 years" users ($mean = 7.15, p = .05$).

H4: Online privacy concerns correlate positively with privacy protective behavior

Since a positive significant correlation was found between online privacy concerns and privacy protective behaviors ($r = .391, p = .000$), this hypothesis was supported. The more respondents were concerned with their online privacy, the more they tended to take protective actions.

H5: Males differ from females in the following variables:

- Online social networks usage
- Online privacy concerns
- Active usage
- Trust in online social networks
- Protective behaviors

T-test was used to test this hypothesis and the findings are shown in table 6.

Table 6: Differences Between Males and Females in the Research Variable

Variables	Gender	Mean	T	Sig.
Online social network usage	Males	3.27	-.607	NS
	Females	2.40		
Online privacy concerns	Males	14.89	-4.978	.000
	Females	17.25		
Active usage	Males	28.73	2.767	.006
	Females	25.91		
Trust in Online social networks	Males	16.87	5.909	.000
	Females	13.59		
Protective behaviors	Males	6.81	-4.922	.000
	Females	8.09		

Table 6 illustrates the following:

Online social networks usage. No difference was found between males and females in their online social network usage.

Online privacy concerns. There was a significant difference between males and females in their online privacy concerns. Females were more concerned about their online privacy than males.

Active usage. There was a significant difference between males and females in their active usage of online social networks. Males were more active in using online social networks than females ($p = .006$).

Trust in online social networks. A significant difference was found between males and females in their trust in online social networks. Males ($M=16.87$) trust online social networks more than females ($M=13.59$, $p = .000$).

Taking protective actions. There is significant difference between males and females in taking protective actions when using online social networks. It was shown that females (mean=8.09) tend to protect their privacy more than males (mean=6.81, $p = .001$).

H6: There is a significant difference among Emiratis, Arab residents in the UAE and Egyptians in:

- Online social networks usage
- Online privacy concerns
- Active usage
- Trust online social networks
- Protective actions

ANOVA and Post Hoc tests were used to examine this hypothesis. There was no significant difference among the three groups in their online privacy concerns and active usage of online social networks. As for the other variables, the following table shows the results.

Table 7: Differences Between Emiratis, Egyptians, and Arabs in UAE in the Research Variable

Variables	Nationality	Mean	F	Sig.
Online social network usage	Emirati	2.86	3.712	.02
	Arabs in UAE	3.62		
	Egyptian	3.41		
Trust in Online social networks	Emirati	14.59	4.473	.013
	Arabs in UAE	14.39		
	Egyptian	16.25		
Protective actions	Emirati	8.45	10.89	.000
	Arabs in UAE	7.33		
	Egyptian	6.94		

Table 7 demonstrates that there is a significant difference among Emiratis, Arabs in the UAE and Egyptians in various variables as follows:

- Arab residents in the UAE use online social networks more than Egyptians and Emiratis. This might be due to the tendency of being in contact with their home-country friends and relatives.
- Egyptians trust online social networks more than Arabs in the UAE and Emiratis.
- Emiratis, more than Arab residents in UAE and Egyptians, tend to protect their online privacy. Emiratis' culture norms and legal systems that tend to be conservative and favor collective over the individual interests might play a role in their tendency to protect their personal information and privacy.

On the other hand, age makes a difference in online social network usage ($F=7.608$, $p=.001$). The younger the respondents, the more they use online social networks. Table 8 shows the distribution of social networks by age.

Table 8: Online Social Networks Usage Among Age Groups (n = 205)

Online Social Networks	Age	Less than 20	20 to less than 30	30 and above	Total
	Face book	93.9%	86.1%	73.3%	212
	MySpace	12.2%	9.0%	6.7%	24
	Hi 5	12.2%	16.0%	20.0%	36

Facebook is the most popular online social network among respondents from various age categories. People less than 20 years old use Facebook more than MySpace and Hi5. Although some respondents use the other two networks, they do not have the same popularity as Facebook.

No significant correlation was found in online social networks privacy concerns and its usage. The T-Test showed no significant difference in online privacy concerns among age groups.

DISCUSSION

The study examined privacy concerns among online social networks in two Arab countries. No significant differences were found among age and education groups in their online privacy concerns. Level of Internet usage does not affect the level of privacy concerns among respondents. Singh and Hill (2003) found the opposite; experienced and knowledgeable Internet German users were more concerned about online privacy concerns. They reasoned that increased expertise might make respondents more aware of how their data could be collected and used without permission. In contrast, Bellman et al. (2004) suggested that online privacy concerns should fall gradually as the level of Internet experience rises.

While Acquisti and Gross (2006) found no relation between privacy concerns and the likelihood of providing personal information on Facebook, this study found a negative weak correlation between online privacy concerns and respondents' likelihood of providing personal information. This might indicate that western people might not find putting personal information available online a problem. However, the more Arabs are concerned with their online privacy, the less they are willing to make their personal information available in their online profiles. This might be one of the tools they are using to protect their privacy as a result of not trusting online social networks. Morals and conservative traditions may play a role in making Arabs more concerned about their personal information.

The study revealed that Emiratis, Egyptians and other Arab nationalities included in the survey are similar in their concerns about online privacy. However, the three groups differ in trust, level of usage and level of protective actions that are taken. Egyptians trust these networks more than others. Arab residents in the UAE use online social networks more than Emiratis and Egyptians. Emiratis are more conservative and tend to take protective actions. Although they share the same language, religion, and similar values and traditions, these findings indicate that culture makes a difference in dealing with online social networks among Arabs. This might be due to the level of education, historical background or social conditions, such as Arab residents in the UAE who want to be in contact with their families and friends through online social networks. Arabs, especially teenagers and youths, still need to be more aware of the dangers and problems they may face when "openly" dealing with online social networks. Parents, teachers and professors in universities should play a role in directing their attention to such dangers and to help in taking the required protective actions.

The current study found females are more concerned about their online privacy than males. Also, they tend to be more restrained than males about their personal information, and they take actions to protect their privacy. However, males are more active in using online social networks and trust these sites more than females. Similarly, Fogel and Nehmad (2009) found that women had significantly greater scores than men for privacy concerns, but there is no gender difference for privacy behaviors. Although they are similar to males in online social networks level of usage, these findings indicate that females mistrust and are more

concerned about online social networks than males. This result might be due to the research findings which confirm that females have a greater fear of danger than males (see as an example Harris & Miller 2000).

Online privacy concerns are important issues in the Middle East and the West. Arabs rapidly adapt new technologies and make use of them. But when these technologies can affect or threaten their privacy, they tend to take protective actions. In this regard, Borenstein (2008) noted the development and implementation of new technologies have led to a significant erosion of privacy. It is an arduous struggle to control one's personal information. Thus, we need to determine the best ways to protect individuals from being abused when their personal information is collected and distributed (p. 20).

LIMITATION AND FURTHER DIRECTIONS

The study highlighted online privacy concerns among respondents from various groups. It investigated online social network usage among 325 respondents from Emirates and Egypt. Therefore, the study is limited to the two nationalities that were examined. It didn't represent the Arab world, the results can't be generalized, and causality cannot be claimed.

Such studies might direct Arab media scholars' attention to examine how online communication through social networks might affect face to face communication, which is vital in most Arab cultures. In other words, will the online profile the respondents create lead to further interpersonal interaction, strengthen family ties, or any other kind of relationships in the Arab world? More importantly, will online privacy concerns lead to more protective actions and awareness among youth and teenagers when dealing with strangers? It is crucial to conduct similar studies in other Arab countries which might lead to different results. Cross-cultural studies are very important as well (see Chan & Cheng, 2004).

Donath and Boyd (2004) hypothesized that online social networks may not increase the number of strong ties a person may have, but could greatly increase the weak ties one could form and maintain because the technology is well suited to maintaining these ties cheaply and easily. In other words, various features of online social networks include the split between two worlds, the virtual and the real. One day the virtual world might win over the real world. Social networks might succeed in making virtual reality more powerful than the actual one. This research is an area that should be investigated, especially in the Arab world.

REFERENCES

- Acquisti, Alessandro & Gross, Ralph. (2006). *Imagined Communities: Awareness, Information Sharing and Privacy on the Facebook*. Pre-proceedings Version. Cambridge, UK : Privacy Enhancing Technologies Workshop (PET).
- Albert, Amany. (2009, November 7-10). *Connecting and Communicating on Facebook: a Field Study on the Uses of Arab Youth in Egyptian Universities*. Unpublished Paper Presented in the 14th Arab-US Association for Communication Educators (AUSACE) Annual Conference, Cairo, Egypt.
- Barker, Valerie. (2009). Older Adolescents' Motivations for Social Network Site Use: The Influence of Gender, Group Identity, and Collective Self-esteem. *Cyberpsychology Behavior*, 12(2)
- Bellman, Steven, Eric J. Johnson, Stephen J. Kobrin, Gerald L. Lohse. (2004). International Differences in Information Privacy Concerns: A Global Survey of Consumers. *The Information Society*, 20(5), 313-324.
- Borenstein, J. (2008). Privacy: A Non-existence Entity. *IEEE Technology and Society Magazine. IEEE Xplore*, 20-26.

- Boyd, Dana. (2004, April 24-29). Friendster and Publicly Articulated Social Networks. *Conference on Human Factors and Computing Systems (CHI 2004)*. Vienna: ACM. Retrieved from <http://www.danah.org/papers/CHI2004Friendster.pdf>.
- Boyd, Dana. M., & Ellison, Nicole. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), Article 11. Retrieved from <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>.
- Chan, Darius. K. S., & Cheng, Grand. H-L. (2004). A Comparison of Offline and Online Friendship Qualities at Different Stages of Relationships Development. *Journal of Social and Personal Relationships*, 21(3), 305-320.
- Cho, Hichang, Rivera-Sánchez, Milagros, & Lim, Sun Sun. (2009). A Multinational Study on Online Privacy: Global Concern and Local Responses. *New Media & Society*, 11, 395-416. Retrieved from <http://nms.sagepub.com/content/11/3/395.short>.
- Debatin, Bernhard, Lovejoy, Jennette P., Ann-Kathrin Horn M.A., & Brittany N. Hughes. (2009). Facebook and Online Privacy: Attitudes, Behaviors, and Unintended Consequences. *Journal of Computer-Mediated Communication*, (15), 83-108. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2009.01494.x/full>.
- Donath, J & D. Boyd. (2004). Public Displays of Connection. *BT Technology Journal*, 22(4), 71-82. Retrieved from <http://smg.media.mit.edu/papers/Donath/PublicDisplays.pdf>.
- Dwyer, C., Hiltz, S. R., & Passerini, K. (2007, August 9 - 12). Trust and Privacy Concerns within Social Networking Sites: a Comparison of Facebook and MySpace. *Proceedings of the Thirteenth Americas Conference on Information Systems, Keystone, Colorado*.
- Egypt: Internet Usage and Telecommunications Reports. (2009). In *Internet World Stats: Usage and Population Statistics*. Retrieved from <http://www.internetworldstats.com/af/eg.htm>.
- Ellison, Nicole., Steinfield, Charles, & Lampe, Cliff. (2006, June 19-23). Spatially Bounded Online Social Networks and Social Capital: the Role of Face Book. *Paper Presented at the Annual Conference of the International Communication Association (ICA), Dresden, Germany*.
- Facebook Press Room. Retrieved from www.facebook.com/press/info.php?statistics.
- Fogel, Joshua, & Nehmad, Elham. (2009). Internet Social Network Communities: Risk Taking, Trust and Privacy Concerns. *Computers in Human Behavior*, 25, 153-160.
- Fox, Susannah, et al. (2000). Trust and Privacy Online: Why Americans Want to Rewrite the Rules. *The Pew Internet & American Life Project*. Retrieved from http://www.pewinternet.org/~media/Files/Reports/2000/PIP_Trust_Privacy_Report.pdf.pdf.
- Govani, Tabreez & Pashley, Harriet . (2005). Student Awareness of the Privacy Implications when Using Facebook. Carnegie Mellon. Retrieved from <http://lorrie.cranor.org/courses/fa05/tubzhlp.pdf>.
- Gross, Ralph, & Acquisti, Alessandro .(2005). Information Revelation and Privacy in Online Social Networks: the Facebook Case. A Pre-proceedings Version. *ACM Workshop on Privacy in the Electronic Society (WPES)*. Retrieved from <http://www.heinz.cmu.edu/~acquisti/papers/privacy>.
- Hargittai, Eszter. (2007). Whose Space? Differences Among Users and Non-users of Social Network Sites. *Journal of Computer-Mediated Communication*, 13(1). Article 14. Retrieved from <http://jcmc.indiana.edu/vol13/issue1/hargittai.html>.
- Harris, Mary B., & Miller, Kari, C. (2000). Gender and Perception of Danger. *Sex Roles*, 43(11/12), 843-863.

- Hong, Traci, Margaret L. McLaughlin, Larry Pryor, Christopher E. Beaudoin, Paul Grabowicz. (2005). Internet Privacy Practices of News Media and Implications for Online Journalism. *Journalism Studies*, 6(1), 15-28.
- Internet Usage Statistics for Africa: Africa Internet Usage and Population Stats. Internet Coaching Library (2009). In *Internet World Stats: Usage and Population Statistics*. Retrieved from <http://www.internetworldstats.com/stats1.htm>.
- Lenhard, Amanda & Madden, Mary. (2007a). Social Networking Websites and Teens. *Pew Internet & American Life Project*. Retrieved from <http://www.pewinternet.org/Reports/2007/Social-Networking-Websites-and-Teens.aspx>.
- Lenhard, Amanda & Madden, Mary. (2007b). Teens, Privacy & Online Social Networks: How Teens Manage their Online Identities and Personal Information in the Age of MySpace. *Pew Internet & American Life Project*. Retrieved from <http://www.pewinternet.org/Reports/2007/Teens-Privacy-and-Online-Social-Networks.aspx>.
- Moscardelli, Deborah M., & Divine, Richard. (2007). Adolescents' Concern for Privacy when Using the Internet: an Empirical Analysis of Predictors and Relationships with Privacy-protecting Behaviors. *Family and Consumer Sciences Research Journal*, 35(3), 232-252.
- Nielasen, L. (2009). *Netratings*. Retrieved from http://www.nielsen-online.com/press.jsp?section=new_pr&theyear=2009.
- One Social Network with a Rebellious Message: Facts and Numbers* (2009). Report Released by Arabic Network for Human Rights Information. Retrieved from <http://www.openarab.net/en/node/1614>.
- Parks, Malcolm R., & Roberts, Lynne D. (1998). Making MOOsic: the Development of Personal Relationships Online and a Comparison to their Offline Counterparts. *Journal of Social and Personal Relationships*, 15(4), 517-537.
- Petronio, Sandra. (1991). Communication Boundary Management: a Theoretical Model of Managing Disclosure of Private Information between Marital Couples. *Communication Theory*, 1, 311-335.
- Petronio, Sandra. (2004). Road to Developing Communication Privacy Management Theory: Narrative in Progress, Please Stand by. *Journal of Family Communication*, 4(3-4), 193-207.
- Petronio, Sandra. (2007). Translational Research Endeavors and the Practices of Communication Privacy Management. *Journal of Applied Communication Research*, 35(3), 218-222.
- Phillip, David J. (2004). Privacy Policy and PETS: the Influence of Policy Regimes on the Development of Social Implications of Privacy Enhancing Technologies. *New Media & Society*, 6(6), 691-706.
- Sheehan, Kim B. (1999). An Investigation of Gender Difference in Online Privacy Concerns and Resultant Behaviors. *Journal of Interactive Marketing*, 13(4), 24-38.
- Singh, Tanuja, & Hill, Mark E. (2003). Consumer Privacy and the Internet in Europe: a View from Germany. *Journal of Consumer Marketing*, 20(7), 634-651.
- Stutzman, Frederic. (2006). An Evaluation of Identity-sharing Behavior in Social Network Communities. *iDMA Journal*, 3(1), 1-7.
- United Arab Emirates: Internet Usage and Marketing Report. (2009). In *Internet World Stats: Usage and Population Statistics*. Retrieved from <http://www.internetworldstats.com/me/ae.htm>.