

# ONLINE AND OFFLINE SOCIAL TIES OF SOCIAL NETWORK WEBSITE USERS: AN EXPLORATORY STUDY IN ELEVEN SOCIETIES

PETER W. CARDON

University of South Carolina, Columbia, SC 29208

BRYAN MARSHALL

Georgia College & State Univ.

JEONGIL CHOI

Soongsil Univ.

MAHA M. EL-SHINNAWAY

American Univ. of Cairo

MATTHEW NORTH

Washington Jefferson College

LARS SVENSSON

Univ. West

SUJIE WANG

Nankai Univ.

DANIEL T. NORRIS

McNeese State University

LIXIN CUI

Beijing Institute of Technology

NATALYA GOREVA

Point Park Univ.

VORAPHAN RAUNGPAKA

Kasetsart University

AYSELI USLUATA

Yeditepe Univ.

CATHERINE WHELAN

Georgia College & State Univ.

JUYUN CHO

Colorado State Univ. - Pueblo

CAROLINE COLLIER

Georgia College & State Univ.

STEFAN NILLSON

Univ. West

GILAD RAVID

University of Haifa

JUAN PABLO VALENZUALA

Georgia College & State Univ.

---

## ABSTRACT

This study presents results of a survey about social network website (SNW) usage that was administered to university students in China, Egypt, France, Israel, India, Korea, Macao, Sweden, Thailand, Turkey, and the United States. The offline and online social ties of SNW users were examined by nationality, levels of individualism-collectivism (I-C), gender, SNW usage, age, and access location. Contrary to existing literature, we found no differences in the number of offline friends between individualist and collectivist nations. Similarly, there was not a difference in the number of online social ties between individualist and collectivist nations. However, members of collectivist nations had significantly more online social ties never met in person. Heavy SNW users in individualist nations maintained significantly higher numbers of offline social ties; however, heavy SNW users in collectivist nations did not have higher numbers of offline social ties. Related implications and recommendations are provided.

**Keywords:** social ties, online social ties, individualism, collectivism, social networking websites

## INTRODUCTION

How does use of social networking websites (SNWs) relate to online and offline social ties? How do relationships between SNW usage and social ties vary across cultures? Since we believe that cross-cultural and cross-border communication will increasingly be computer-mediated, we conducted this study to identify cross-national differences in offline and online social ties of SNW users. In particular, we wanted to examine SNWs because they have frequently been identified as increasingly useful in the workplace [2,6,8].

Within just five to ten years, SNWs have rapidly grown in popularity throughout the world. A May 2008 list of worldwide SNWs contained 48 SNWs that have over one million registered users. The following nine SNWs each report over 50 million registered users: Windows Live Spaces (120,000,000), MySpace (110,000,000), Habbo (100,000,000); hi5 (80,000,000); Facebook (70,000,000), Orkut (67,000,000), Friendster (65,000,000), Flixter (63,000,000), and Classmates.com (50,000,000). Market leaders in various countries and cultural regions include Facebook in the United States, Orkut in India, Mixi in Japan, LunarStorm in Sweden, Bebo in the United Kingdom, Friendster in Southeast Asia, hi5 in Portugal and Latin America, and Cyworld in Korea, to name a few. Each website contains features that appeal to the various cultures [4,35].

SNWs have become most popular among younger users such as university students. One reason they may have become so popular among younger individuals is that they have an equalizing effect in that individuals often feel the freedom to express themselves in ways not possible through other outlets. SNWs have even been identified as increasing self-esteem among younger people [5,12,23,26].

Since the enormous amount of social interaction facilitated by SNWs throughout the world is a fairly new phenomenon, research about cross-national differences in the nature of offline and online social ties on SNWs is particularly warranted. An understanding of cross-national differences among university students' offline and online social ties across countries can provide insight into how cross-national virtual work will be conducted in the future. In terms of online collaboration and cooperation, examining social ties is important because social ties identify the degree to which people interact with one another and is tied to the degree to which others are trusted [1].

## LITERATURE REVIEW AND HYPOTHESES

Literature about SNWs is fairly limited and has mostly focused on impression management and security [3,4,11,22,31]. One consistent finding has been that SNWs are used primarily to sustain existing offline relationship — few users use SNWs to meet people [4]. However, no cross-cultural studies of SNWs are known to have been conducted, leaving a major void in understanding cross-cultural similarities and differences among SNW users. In a 2008 analysis of the literature on SNWs, Boyd and Ellison concluded that “scholars still have a limited understanding of who is and who is not using these sites, why, and for what purposes, especially outside of the U.S.” [4] (p. 15).

Given that our primary purpose was to examine cross-national differences in offline and online social ties on SNWs, we first discuss the impact of individual-collectivism on social ties. We then discuss how frequency of SNW usage may impact offline and online social ties. Finally, we discuss other relevant factors that may impact offline and online social ties among university students.

### *Cultural-Level Collectivism and Social Ties*

In cross-cultural research, individualism-collectivism (I-C) has been identified as the most important cultural dimension related to social ties [32]. Individualists tend to have more friends but fewer long-term, intimate friendships. Collectivists tend to have fewer friends but enjoy more long-term, intimate friendships [14,16,20]. These propositions about individualist and collectivists, however, have been examined empirically in few studies. A recent study examined these propositions in terms of a construct defined similarly to social ties – social capital. Allik and Realo [1] examined the relationship between I-C and social capital. Social capital was a measure of voluntary membership in organizations. In an analysis of 42 countries, there was a strong and significant correlation between higher individualism and higher social capital ( $r = .50$ ). This relationship remained when controlling for GDP per capita ( $r = .39$ ). They concluded, “In societies where individuals are more autonomous and seemingly liberated from social bonds, the same individuals are also more inclined to form voluntary associations and to trust each other and to have a certain kind of public spirit” (pp. 44-45). Thus, individuals in individualist societies tend to form more voluntary associations with others and enjoy more trust of others. Interestingly, China was a notable exception in their study in that despite being collectivist, individuals in Chinese society have high trust of others. Since individualists generally move between relationships more easily and are able to trust others more easily, we predict that individualists will maintain a higher number of offline social ties than collectivists:

H<sub>1</sub>: Student groups from individualist countries will have more offline social ties than student groups from collectivist countries.

As far as total number of online social ties, the available research is based primarily on the North American, individualist context. This research shows that most SNW users sustain existing offline relationships and rarely make new friends never met in person [4]. Furthermore, the role of I-C in developing online friends (on SNWs) is far from clear in the literature. William Gudykunst, one of the foremost intercultural communication scholars, developed

the anxiety/uncertainty management (AUM) theory to describe how individuals and groups manage the inevitable anxiety and uncertainty involved in meeting and interacting with those who are not acquaintances (strangers). He proposed that individualists, compared to collectivists, are more comfortable in situations with strangers and are more likely to be socially expressive [6,15,16]. From this perspective, it is possible to assume that individualists would more easily make friends online.

However, we believe that collectivists may in fact be more likely to engage in online social ties than individualists. We base this proposition on several studies. In Matei and Ball-Rokeach's [25] study of offline and online ties among seven ethnic neighborhoods in Los Angeles, they examined how many online friends (never met in person) the various ethnic groups had formed. Overall, just 22 % of respondents had made a friend online. This varied significantly by ethnicity: 44% of Koreans, 31% of Chinese, 13-19% of Whites, 16% of African Americans, and 7-15% of Hispanics had made friends online. Thus, the most collectivist ethnic groups (the Koreans and Chinese) had formed two to three times as many online friends never met in person as European-Americans. Gender, age, and income had no impact. In Kim and Yun's [23] study of Koreans' use of SNWs, they found that respondents reported communicating on SNWs in ways not possible in face-to-face communications due to the collectivist norm of high-context communications. Korean respondents reported the freedom to explicitly address emotional concerns on SNWs that they would not otherwise discuss with friends. In Miura and Yamashita's [26] study of Japanese bloggers, they found that Japanese respondents felt particularly sensitive to negative feedback about their blogs. However, this medium still presented fewer risks of self-expression than face-to-face encounters. They proposed this was due to the collectivist mentality of the Japanese. Thus, collectivists may want to maximize their self-expression on SNWs because they are less risky forums for negative feedback than in face-to-face interactions. We propose the following three related hypotheses:

H<sub>2</sub>: Student groups from collectivist countries will have more online social ties on SNWs than student groups from individualist countries.

H<sub>3</sub>: Student groups from collectivist countries will have more online social ties with individuals never met in person than student groups from individualist countries.

H<sub>4</sub>: Student groups from collectivist countries will have more online social ties than offline social ties.

### *Frequency of SNW Usage and Social Ties*

Existing research has shown that increased use of the Internet, particularly in relation to email and other social activities, is associated with more offline social ties. In other words, people who manage relationships online the most are also those who have the most offline relationships. Zhao [37], using data from 2,817 Americans in the 2000 General Social Survey, found that heavy Internet social users had more offline social ties than light Internet social users. We believe that this relationship will be true in individualist and collectivist cultures:

H<sub>5</sub>: Heavy users of SNWs will have more offline social ties within student groups from individualist and collectivist countries.

### Other Factors Relevant Factors Related to Social Ties

Offline and online ties are certainly affected by a number of variables, not just cultural-level I-C and frequency of SNW usage. We modeled our examination of other relevant factors based on Zhao's [37] study of offline and online ties in the United States. We thus included gender and age as variables. Rather than ethnicity, we employed nationality. However, we did not include the following of Zhao's variables: family income, education level, marital status, work status, or urbanicity. We excluded these variables for a few reasons. First, some variables are problematic in interpreting across nationalities (i.e., family income, work status). Second, some apply to a small percentage of undergraduate university students (i.e., marital status). Third, some variables are essentially the same for each university student (i.e., education level, urbanicity) (see *Samples* section for more details).

Consistent with our previous review of I-C and frequency, we make the following hypotheses when controlling for other variables:

- H<sub>6a</sub>: High cultural collectivism will be positively related to fewer offline social ties, more online social ties, and more online social ties never met.
- H<sub>6b</sub>: High SNW usage will be positively related to offline social ties, online social ties, and online social ties never met.

In Hargittai's [19] study of SNW use among American university students, she found that, consistent with previous work about online interactions, females are more likely to use SNWs than males. Likewise, a June 2008 study showed that in the United States women were more likely to use SNWs than men, and that women did so to strengthen and nurture existing relationships [30]. Similarly, Debrand and Johnson [9] found that females perceive email as more useful than males do, particularly for relationships with others who are geographically distant. Research about blogging in the United Kingdom and the United States suggests that women are more likely to blog than men [29]. These studies focus more on time spent on SNWs and writing blogs rather than the number of online social ties. However, we assume that more time spent on SNWs by females will translate into more online social ties:

- H<sub>6c</sub>: Females are likely to have more online social ties.

The most recent Rapleaf [30] study, based on a database of 49.3 million SNW users aged 14 to 74, showed that 14-24 year olds comprise two thirds of all SNW users. The percentage of SNW users drops significantly after 24 years of age (with the exception of LinkedIn – the social networking website for professionals). For example, 18-24 year olds were twice as likely to be Facebook users as 25-34 year olds. Thus, we believe that older university students are likely to have fewer online friends. We predict the following for age:

- H<sub>6d</sub>: Older students (26 or older) will have fewer offline friends, fewer online friends, and fewer online friends never met.

We believe where university students access SNWs will affect the number of online ties they maintain. Hargittai's [19] study showed significant differences in how students with various

access points used SNWs. University students access SNWs from various locations: home, school, and other locations, such as libraries, coffee shops, and even Internet cafes. Each location has varying amounts of privacy and concurrent offline social involvement with others. We believe that home locations allow maximum privacy and freedom of self-expression; thus, we expect that SNW users who primarily access their SNWs at school or elsewhere are less likely to make friends online.

- H<sub>6e</sub>: SNW users who primarily access their SNWs at school or elsewhere (not including home) are less likely to maintain online friends never met.

## METHODOLOGY

In order to examine the nature of offline and online ties, we adopted and slightly modified questions from a recent survey conducted by the Pew Internet & American Life Project about SNW usage among American teenagers [24]. To assess social ties, we used four questions about the number of friends that respondents maintained regular contact with (meaning at least once per week). We examined three contexts: offline friends, online friends, and online friends never met (in person). Respondents chose from the following choices: (0) 0, (1) 1 to 4, (2) 5 to 9, (3) 10 to 14, (4) 15 to 19, and (5) 20 or more friends. For statistical analysis, we followed Zhao's [37] method (using numbers in parentheses preceding each categorical choice). Statistical findings are presented in tables in the *Results* section. For figures in the *Results* section, we used scores based on midpoints for each category, thus allowing closer estimates to the actual number of offline and online friends reported by respondents.

As far as independent variables, we collected data about the following: frequency of SNW usage, gender, age, access location, and cultural collectivism. Frequency of SNW usage was broken into three groups: heavy (access SNWs at least daily); medium SNW users (access SNWs a few times per week); and light SNW users (access SNWs less than once per week). Age was categorized as under 21, between 21 and 25, and 26 or older. Access location was based on the location where respondents most frequently accessed SNWs and was categorized as home, school, or elsewhere. Collectivism was broken into high, medium, and low based on rankings from the GLOBE research team, which surveyed 17,000 managers in 62 societies in order to replicate and extend Hofstede's [20] seminal work on cross-cultural values [14].

We chose country samples based on the composition of our research team, which included individuals from China, Egypt, France, Israel, India, Korea, Macao, Sweden, Thailand, Turkey, and the United States. Throughout this paper, we treat Macao separately from China. Although the two societies are officially one country, they have developed under far different social and economic circumstances over the past sixty years. The survey was translated into simplified Chinese for the China sample, traditional Chinese for the Macao sample, French for the France sample, Korean for the Korea, and Thai for the Thailand sample. The remaining groups took the survey in English (at institutions where English proficiency was a condition of entrance to the university). Each of the samples was from urban locations: Beijing, Shanghai, Tianjin, and Guangzhou in China; Cairo in Egypt; Paris in France; Jerusalem in Israel; Mumbai (Bombay) in India; Seoul in Korea; Macao; and Göteborg in Sweden; and three cities in the Eastern and Southern United States.

The surveys were conducted online. A total of 1,763 surveys were completed. We were interested in those respondents who were SNW users. A total of 1,186 surveys were completed by individuals who stated they were SNW users. Among survey respondents in various nationalities, those who described themselves as SNW users ranged from a low of 31% in China to a high of 90% in Egypt. For the final dataset, we also removed students who were currently in study abroad programs and not residing in their home countries, thus yielding a total of 1,113 surveys for analysis (see Table 1). Table 2 provides demographic details for each country sample.

#### Analysis and Reporting

For the first three hypotheses regarding variation between nationalities for offline social ties, online social ties, and online social ties never met, we conducted ANOVA tests of significance. For the hypothesis 4 regarding differences between offline and online social ties within countries, we conducted t-tests of

significance. For hypothesis 5 regarding frequency of SNW usage within countries, we conducted an ANOVA test of significance. For hypotheses 6a through 6e related to the degree to which cultural I-C, frequency of SNW usage, gender, age, and SNW access location impact offline social ties, online social ties, and online social ties never met, we conducted a regression analysis. Because the independent variables are nonmetric, dummy variables were used similar to Zhao's [37] analysis of offline social ties and Internet use. Each of the dummy variables represents differences compared to a baseline or reference category [18]. These baseline categories are listed in parentheses in Table 8.

Throughout the analysis and reporting, we refer to cultural clusters, which include national groups with similar bundles of cultural values. We refer to these culture clusters because certain national groups within the same culture clusters tended to exhibit similar characteristics in this study. We use the GLOBE research teams' cultural clusters [17]. Six cultural clusters are represented: Anglo, Latin Europe, Nordic Europe, Middle East, Southern Asia, and Confucian Asia (see Table 1).

**TABLE 1**

#### Country characteristics and samples

Country	Culture Cluster	Collectivism Level	Surveys Completed	SNW Users	Domestic SNW Users
China	Confucian Asia	High	237	73 (31%)	73 (100%)
Egypt	Middle East	High	80	72 (90%)	71 (99%)
France	Latin Europe	Medium	136	59 (43%)	59 (100%)
Israel	Latin Europe	Medium	98	78 (80%)	77 (99%)
India	South Asia	High	320	206 (64%)	146 (71%)
Korea	Confucian Asia	High	127	84 (66%)	83 (99%)
Macao	Confucian Asia	High	107	84 (79%)	82 (98%)
Sweden	Nordic Europe	Low	101	60 (59%)	59 (98%)
Thailand	South Asia	High	216	184 (85%)	184 (100%)
Turkey	Middle East	High	45	31 (69%)	31 (100%)
United States	Anglo	Low	296	255 (86%)	248 (97%)
Totals			1,763	1,186 (69%)	1,113 (94%)

**TABLE 2**

#### Demographics of country samples

Country	Female	Age Group		
		Under 21	21 to 25	26 or older
China	37 (51%)	66 (90%)	6 (8%)	1 (1%)
Egypt	43 (61%)	48 (68%)	16 (23%)	7 (10%)
France	25 (42%)	16 (27%)	39 (66%)	4 (7%)
Israel	35 (45%)	4 (5%)	37 (48%)	36 (47%)
India	75 (51%)	75 (51%)	54 (37%)	17 (12%)
Korea	28 (34%)	1 (1%)	48 (58%)	34 (41%)
Macao	68 (83%)	71 (87%)	11 (13%)	0 (0%)
Sweden	30 (51%)	8 (14%)	22 (37%)	29 (49%)
Thailand	145 (79%)	46 (25%)	123 (67%)	15 (8%)
Turkey	16 (52%)	12 (39%)	16 (52%)	3 (10%)
United States	150 (60%)	168 (68%)	64 (26%)	16 (6%)
Totals	652 (59%)	515 (46%)	436 (39%)	162 (15%)

## RESULTS

Generally, each national group had similar numbers of offline friends, with the exception of four national groups, each of which tended to have fewer offline friends: Israel and Sweden (Latin European cultures) and the Chinese cultures of China and Macao (Confucian Asian cultures). Notably, the high collectivist cultures of Turkey, Korea, Thailand, Egypt, and India had statistically equal numbers of offline friends as the highly individualist culture of the United States (see Table 3). Therefore, our first hypothesis is rejected. The only countries that fall into the pattern of individualists having more friends are differences between the United States and China and Macao. All other comparisons

**TABLE 3**

*Offline friends by nationality*

Nationality	<i>N</i>	<i>Mean</i>	<i>SD</i>
China	63	1.08	1.26
Egypt <sub>a, b</sub>	69	2.70	1.47
France <sub>a, b</sub>	53	2.79	1.54
Israel <sub>a</sub>	70	2.39	1.21
India <sub>a, b, c</sub>	129	2.78	1.41
Korea <sub>a, b</sub>	82	2.72	1.30
Macao	75	1.68	.87
Sweden <sub>a</sub>	58	2.03	1.03
Thailand <sub>a, b</sub>	176	2.58	1.37
Turkey <sub>a, b</sub>	30	2.97	1.27
United States <sub>a, b, c</sub>	240	2.93	1.48

*Note.*  $F(10, 1034) = 14.54, p = .0$ . An *a* subscript indicates a mean significantly higher than China, a *b* subscript indicates a mean significantly higher than Macao, and a *c* subscript indicates a mean significantly higher than Sweden on Tukey's post-hoc test at  $p < .05$ .

**TABLE 4**

*Online friends by nationality*

Nationality	<i>N</i>	<i>Mean</i>	<i>SD</i>
China	65	1.91	1.47
Egypt <sub>a</sub>	66	2.56	1.54
France	55	1.15	.97
Israel	70	1.93	1.47
India <sub>a, b, c, d, e, f</sub>	128	2.85	1.46
Korea <sub>a</sub>	78	2.60	1.25
Macao <sub>a</sub>	71	2.01	1.26
Sweden <sub>a</sub>	58	2.07	1.45
Thailand <sub>a</sub>	172	2.19	1.25
Turkey <sub>a, b, c, d, e, f</sub>	28	3.46	1.45
United States <sub>a, b, c, d, f</sub>	232	2.72	1.55

*Note.*  $F(10, 1012) = 11.55, p = .0$ . An *a* subscript indicates a mean significantly higher than France, a *b* subscript indicates a mean significantly higher than China, a *c* subscript indicates a mean significantly higher than Israel, a *d* subscript indicates a mean significantly higher than Macao, an *e* subscript indicates a mean significantly higher than Sweden, and an *f* subscript indicates a mean significantly higher than Thailand on Tukey's post-hoc test at  $p < .05$ .

between individualist and collectivist patterns are counter to the hypothesis.

For online social ties, French university students reported far fewer online friends. All nationalities except China and Israel reported more online friends than France. Indian, Turkish, and American students reported the most online friends (see Table 4). Overall, Hypothesis 2 is rejected. There is not a clear relationship between I-C and online social ties. With the exception of India and Turkey, the remaining collectivist nations do not have more online social ties than the individualist nations (with the exception of France, which is medium in collectivism). Furthermore, the individualist nation of the United States maintains an equal number of social ties as India and Turkey and more online social ties than the collectivist nations of China, Macao, and Thailand.

For online social ties never met, the French, Americans, Israelis, and Swedish stood out in terms of having the fewest friends. Indians by far reported the most online friends. The Chinese, Macanese, Thai, and Turkish students also reported significantly more online friends than a number of other nationalities (see Table 5). Hypothesis 3, therefore, is accepted. For the most part, collectivist nations do have more online social ties never met and no individualist nations have more online social ties never met than any of the collectivist nations. Turkey and India report significantly more friends than all four individualist countries; China, Macao, and Thailand report significantly more online friends never met than the individualist countries of France and the United States; and the Korean and Egyptian samples each report higher numbers of friends than the samples from individualist countries, although none of these differences are significant.

As far as the disparity between offline and online friends, most of the groups showed no difference. However, the Chinese, Macanese, and Thai all reported having more online friends than offline friends. Conversely, the French and Israelis reported having more offline friends than online friends (see Table 7).

**TABLE 5**

*Online friends never met in person by nationality*

Nationality	<i>N</i>	<i>Mean</i>	<i>SD</i>
China <sub>a, b</sub>	65	.97	1.46
Egypt	68	.65	1.16
France	58	.22	.42
Israel	70	.43	.84
India <sub>a, b, c, d, e, f, g</sub>	132	1.30	1.18
Korea	79	.76	1.22
Macao <sub>a, b</sub>	71	1.00	1.2
Sweden	56	.55	.85
Thailand <sub>a, b</sub>	174	.83	1.23
Turkey <sub>a, b, c, d</sub>	27	1.44	1.42
United States	242	.37	.92

*Note.*  $F(10, 1031) = 12.24, p = .0$ . An *a* subscript indicates a mean significantly higher than France, a *b* subscript indicates a mean significantly higher than the United States, a *c* subscript indicates a mean significantly higher than Israel, a *d* subscript indicates a mean significantly higher than Sweden, an *e* subscript indicates a mean significantly higher than Egypt, an *f* subscript indicates a mean significantly higher than Thailand, and a *g* subscript indicates a mean significantly higher than Korea on Tukey's post-hoc test at  $p < .05$ .

Figure 1 depicts these relationships with adjusted estimates of the number of online and offline friends. Thus, Hypothesis 4 is partially accepted. Some collectivist nations do have more online social ties than offline social ties. Conversely, some individualist nations have more offline social ties than online social ties. However, there is not a statistical difference between offline and online friends for four of seven collectivist nations and for two of four individualist nations.

Since a number of studies have showed that heavy Internet use, particularly for social purposes, is associated with more offline friends in American samples, we wanted to know if this relationship stood for other cultures as well. There was a significant difference for just three of the nationalities: the French,

Israeli, and Swedish groups each reported that heavy SNW users had significantly more offline social ties. The American group also reported this relationship and approached significance ( $p = .06$ ) (see Table 8). Figures 2 and 3 illustrate these relationships. Figure 2 presents the relationships for individualist nations (each of which follows a pattern of heavy SNW associated with more offline social ties); whereas Figure 3 presents the relationships for collectivist countries, which shows that there is no relationship between frequency of SNW use and number of offline friends. Thus, Hypothesis 5 is supported for individualist countries but not for collectivist countries.

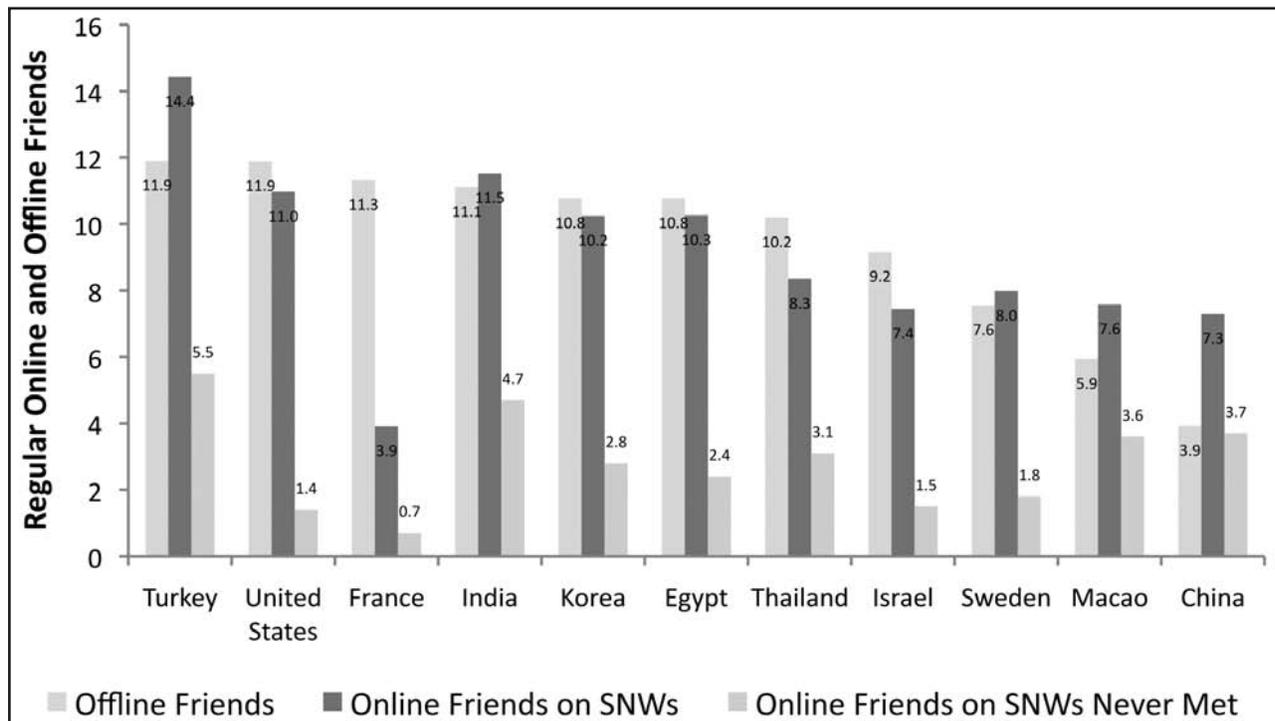
In Table 8, we present the results of the regression analysis. Model 1 provides details about number of offline social ties as the

**TABLE 6**

*Comparison between offline and online friends by nationality*

Nationality	Offline Friends Mean (SD)	Online Friends Mean (SD)	df	t	p
China	1.97 (1.48)	2.78 (1.81)	67	4.26	.00**
Egypt	3.73 (1.64)	3.62 (1.65)	65	.58	.56
France	3.88 (1.68)	2.00 (.72)	50	8.85	.00**
Israel	3.12 (1.60)	2.69 (1.70)	76	2.74	.01**
India	3.51 (1.87)	3.59 (1.93)	137	.613	.54
Korea	3.81 (1.60)	3.62 (1.44)	78	1.21	.23
Macao	2.69 (1.00)	3.04 (1.53)	69	2.08	.04*
Sweden	2.98 (1.09)	3.07 (1.61)	58	.539	.59
Thailand	3.60 (1.56)	3.21 (1.40)	171	3.09	.00**
Turkey	3.87 (1.59)	4.40 (2.08)	29	1.92	.06
United States	4.01 (1.70)	3.78 (1.79)	231	1.89	.06

**FIGURE 1. Number of Offline and Online Friends on SNWS with Whom Weekly Contact is Made.**



Note. Number of friends is primarily based on the midpoints from categories. The calculations are based on the following substitutions for categorical choices: 0 = 0; 1 to 4 = 3; 5 to 9 = 7; 10 to 14 = 12; 15 to 19 = 17; 20 or more = 22.

independent variable, model 2 provides details about the number of online social ties as the independent variable, and model 3 provides details about the number of online social ties never met as the independent variable. Hypothesis 6a was partially confirmed. As expected, high collectivism negatively related to offline friends and positively related to online friends never met. However, it was not associated with any differences related to online friends. Hypothesis 6b was strongly supported. Heavy SNW usage was positively related to offline social ties, online

social ties, and online social ties never met. Hypothesis 6c was not supported. In fact, females were significantly less likely to have online friends, counter to expectations. Hypothesis 6d was strongly supported. Older students (26 or older) had significantly fewer offline social ties, online social ties, and online social ties never met. Hypothesis 6e was not supported. In fact, counter to expectations, individuals who primarily accessed their SNWs someplace other than home or school reported significantly more online friends never met.

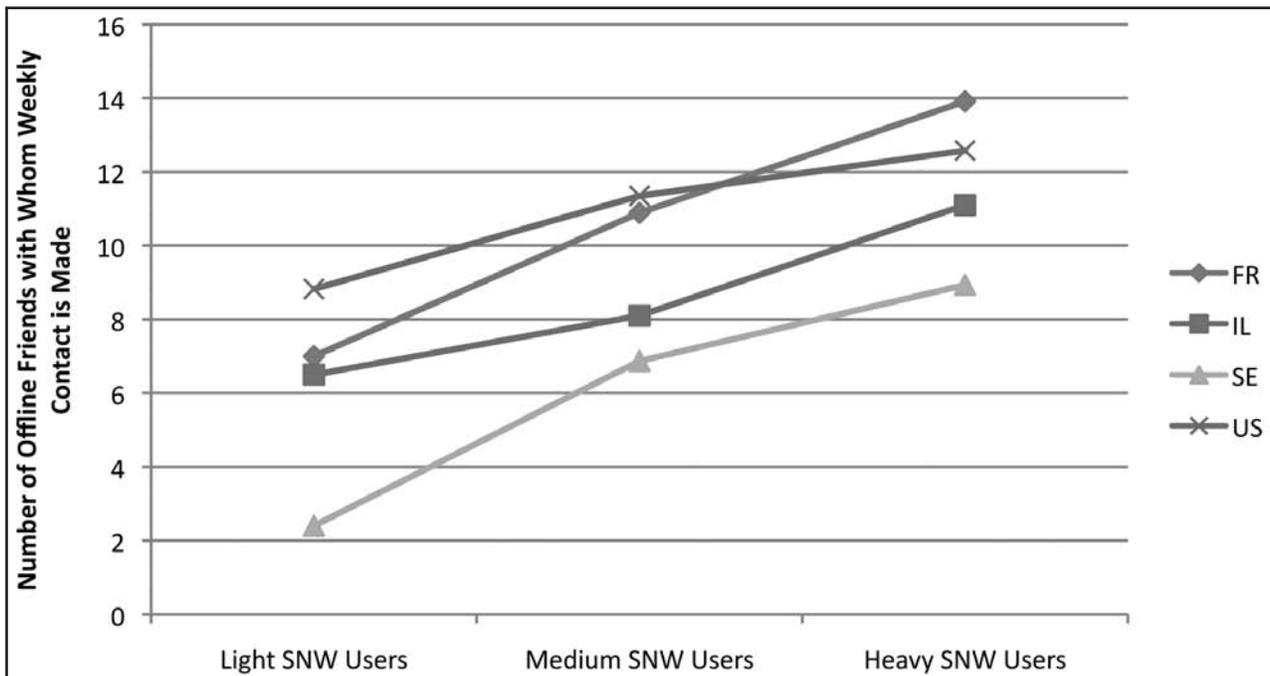
**TABLE 7**

*ANOVA differences in offline social ties based on frequency of SNW usage by nationality*

	Light Users		Medium Users		Heavy Users		<i>df</i>	<i>F</i>	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
China	2.00	1.04	1.85	1.50	2.16	1.41	58	.289	.75
Egypt	4.00	1.83	3.21	1.58	4.04	1.67	68	1.73	.19
France <sup>a</sup>	2.83	1.34	3.78	1.63	4.52	1.68	52	4.51	.02*
Israel <sup>a, b</sup>	2.55	1.29	2.97	1.31	3.90	1.47	72	5.44	.01**
India <sup>a, b</sup>	3.72	1.94	3.47	1.58	3.60	2.01	137	.286	.75
Korea	3.78	1.92	3.44	1.37	4.11	1.57	81	1.58	.21
Macao	2.50	.93	2.61	.69	2.81	1.14	66	.50	.61
Sweden <sup>a</sup>	1.80	.45	2.91	.73	3.23	1.26	58	4.17	.02*
Thailand	3.54	1.67	3.64	1.58	3.66	1.57	177	.07	.94
Turkey	4.00	1.41	3.17	.75	4.36	1.62	29	1.53	.24
United States	3.29	1.11	3.87	1.66	4.19	1.65	236	2.82	.06

*Note.* \* $p < .05$ . \*\* $p < .01$ . An *a* subscript indicates a significant difference between light users and heavy users, a *b* subscript indicates a significant difference between light users and medium users, and a *c* subscript indicates a significant difference between medium users and heavy users on Tukey's post-hoc test at  $p < .05$ .

**FIGURE 2. Number of offline friends based on frequency of SNW usage within individualist nationalities.**



*Note.* Number of offline friends is primarily based on the midpoints from categories. The calculations are based on the following substitutions for categorical choices: 0 = 0; 1 to 4 = 3; 5 to 9 = 7; 10 to 14 = 12; 15 to 19 = 17; 20 or more = 22. Country codes are as follows: FR = France; IL = Israel; SE = Sweden; US = United States.

## CONCLUSIONS AND DISCUSSION

We consider our study exploratory in that no known research exists about cross-cultural differences in offline and online social ties in relation to SNW usage. The findings demonstrate that traditional understanding of the relationship between I-C and offline social ties is questionable and that there are some patterns in online social ties on SNWs that are attributable to

I-C. Furthermore, countries within common cultural clusters in this study tended to exhibit similar patterns of offline and online social ties. This study stands as a foundation for future work about cross-national differences in social ties on SNWs.

One longstanding proposition by prominent cross-cultural researchers (in offline social ties) is that individualism results in more but less intimate social ties, whereas collectivism results in fewer but more intimate social ties. Surprisingly, this seldom

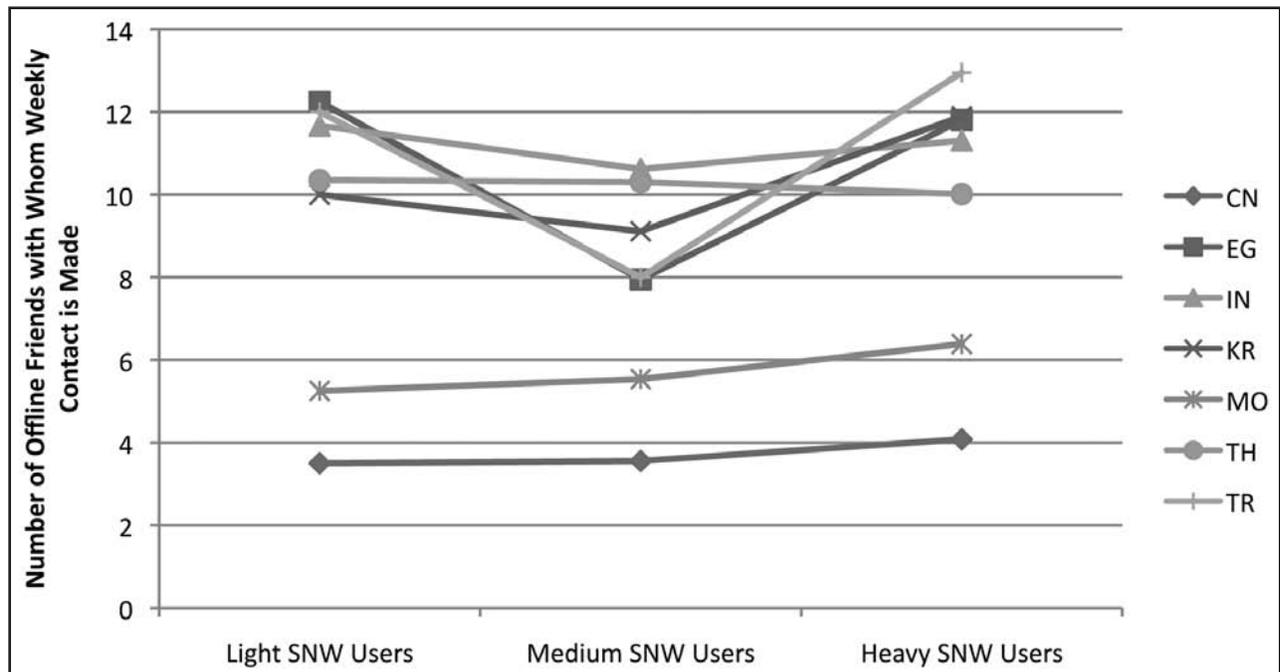
**TABLE 8**

*Regression of offline and online friends on social network website user groups*

	Model 1: Offline Social Ties		Model 2: Online Social Ties		Model 3: Online Ties Never Met	
	B	SE B	B	SE B	B	SE B
Collectivism (Low)						
Medium collectivism	-.07	.16	-.83**	.16	-.01	.12
High collectivism	-.31**	.1	-.08	.1	.56**	.08
Gender (male)						
Female	-.11	.09	-.20*	.09	-.08	.07
SNW Usage (light)						
Medium SNW usage	.28*	.14	.56**	.14	.41**	.11
Heavy SNW usage	.60**	.13	1.05**	.13	.41**	.11
Age (Under 21)						
21 to 25 years old	-.03	.1	-.06	.1	-.07	.08
26 years old and over	-.46**	.14	-.30*	.14	-.21*	.11
Access location (home)						
Access SNW at school	-.38**	.14	-.13	.14	-.19	.11
Access SNW elsewhere	.02	.16	.21	.16	.28*	.12

Note.  $R^2 = .06$  for Model 1;  $R^2 = .12$  for Model 2;  $R^2 = .09$  for Model 3. \* $p < .05$ . \*\* $p < .01$ . Variables in parentheses are baseline measures for dummy coded variables.

**FIGURE 3. Number of offline friends based on frequency of SNW usage within collectivist nationalities.**



Note. Number of offline friends is primarily based on the midpoints from categories. The calculations are based on the following substitutions for categorical choices: 0 = 0; 1 to 4 = 3; 5 to 9 = 7; 10 to 14 = 12; 15 to 19 = 17; 20 or more = 22. Country codes are as follows: CN = China; EG = Egypt; IN = India; KR = Korea; MO = Macao; TH = Thailand; TR = Turkey.

tested but oft repeated proposition is problematic based on the results of this study. Although in the regression model high collectivism was significantly associated with fewer offline friends, country-by-country analysis reveals many exceptions. Middle Eastern countries (Turkey and Egypt) and South Asian countries (India and Thailand) reported as many offline friends as the highly individualist United States; and Sweden, a highly individualist society reported significantly fewer offline social ties compared to the collectivist nation of India. The Confucian Asian cultures of China and Macao reported fewer friends. Gudykunst and colleagues [15,16] popularized this proposition largely based on distinctions between North American cultures and Confucian Asian cultures such as Japan and Korea. It is possible that this proposition is more likely a contrast of Anglo and Confucian Asian cultures rather than highly collectivist and highly individualist societies.

Traditional assumptions about the relation between I-C and social ties became even more problematic in online social ties; in fact, in many instances they are opposite of expected. For online social ties, the two Latin European cultures (France and Israel) and Sweden reported significantly fewer online ties compared to highly collectivist cultures of India and Turkey. Similarly, the highly collectivist cultures of Egypt, Korea, Macao, and Thailand each reported far more online ties than France. When comparing the number of online and offline friends within cultures, most countries report significantly similar number of friends. However, the three highly collectivist cultures of China, Macao, and Thailand report more online social ties than offline ties. The Latin European cultures of France and Israel report significantly fewer offline ties than online ties. Ultimately, we are unable to make any clear distinctions about the relationship between I-C and online social ties on SNWs. However, cultural similar countries (based on clusters) followed similar patterns. Thus, the bundle of cultural characteristics shared by these various clusters seems to be related to a pattern of online social ties.

The clearest relationship with I-C that we identified related to online social ties never met. Collectivist countries were far more likely to have online friends who had never been met. Five of the seven highly collectivist cultures, China, India, Macao, Thailand, and Turkey reported more online friends never met than France and the United States. This seems to indicate that members from collectivist cultures are more likely to be socially mobile online than members from individualist countries. Given these nation-by-nation results, it was not surprising that of the four regression models, the strongest beta coefficient was the relation between high collectivism and online friends never met (in model 3; see Table 10). Although there is no cross-national research available about online social ties, Matei and Ball-Rokeach's [25] study of online ties among American ethnicities matches findings with the present study. In their study, Chinese and Koreans were far more likely to have online friends. Thus, we believe that members of collectivist nations do indeed seek and maintain more online social ties never met. One possible reason for this finding is that collectivist cultures tend to be more restrained in developing new relationships in offline situations. The online environment may offer fewer restrictions and more opportunity for self-expression in less threatening ways, thus providing a strong appeal to collectivists who do not feel these opportunities as strongly in face-to-face encounters.

In some ways, traditional assumptions about I-C for offline ties held true when comparing Anglo and Confucian Asian

cultures but broke down when including other cultural clusters. Many propositions of I-C have been developed primarily through contrasts between North Americans and East Asians (originally the Japanese and later the Koreans and Chinese). It is quite possible, based on these results that consider a bundle of cultural attributes, that offline social ties are affected by much more than I-C. Most cross-cultural studies isolate differences in particular cultural dimensions. Possibly, it is the mix of cultural dimensions that provides the strongest explanatory power for some aspects of cross-cultural variation in behaviors and practices. Future studies of cross-cultural variation in CMC should examine this possibility.

Counter to expectations, gender was not a significant predictor in two of the regression models (offline friends and online friends never met) and females had significantly fewer online friends than males. Thus, we conclude that culture is a far stronger predictor than gender in terms of online and offline social ties. As expected, age had several significant relationships. Those belonging to the 26 and over group had significantly fewer offline friends and online friends never met. As far as fewer offline friends, it is likely that those students 26 and over are involved in professions and other pursuits to a greater degree than younger students and therefore have less time to devote to maintaining regular contact with friends.

As far as access location, one interesting finding was that those who access their SNWs at locations other than home or school have significantly more online friends never met. Several researchers in our group pointed out that one possibility for this finding is that many users who go to internet cafes are strongly involved in online games that involve extensive contact with game players who have never been met in person. These relationships may extend to SNWs.

Overall, frequency of SNW usage strongly and positively related to offline and online ties. However as illustrated in Table 8, this relationship is significant only in Western, individualist countries. In other words, frequent SNW users in individualist countries maintain more offline friends; however, there is no relationship between frequency of SNW usage and offline friendships among members of collectivist countries.

#### **LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This research demonstrates that much more research is needed about the differential use of SNWs across. To better evaluate the cultural impact on SNW usage, we suggest that future research address limitations that exist in this study. This research relied on cultural-level measures of I-C from other studies, thus future studies could incorporate measures of I-C or other cultural dimensions that could be interpreted on individual or cultural levels (i.e., Triandis's [34] I-C scale). Furthermore, this study relied on group samples of university students in urban locations and was thus not necessarily representative of the cultures at large; therefore, future studies that include representative samples of national cultures could contribute further to research about offline and online social ties across cultures. We also suggest that future work focus on interpreting results in terms of cultural clusters. In the design phase, researchers could ensure that three to four countries from each targeted cultural cluster are included in the study. Finally, we suggest additional measures related to social ties, such as social capital, trust, and impression management.

## SUMMARY

This article has presented findings related to SNW usage in eleven societies. In particular, we examined the offline and online social ties of SNW users and how these ties varied across nationality, culture, gender, age, level of usage, and access location. Overall, members of collectivist societies are far more socially mobile online with others who they have not met in person. In individualist countries, heavy SNW usage is associated with a higher number of offline friends; however, this association does not hold for collectivist countries. Older university students have far fewer offline and online friends. This study serves as a foundation for future work about cross-cultural and cross-national differences in online and offline social ties.

## REFERENCES

- [1] Allik, J. and Realo, A. "Individualism-collectivism and social capital," *Journal of Cross-Cultural Psychology* (35:1), 2004, pp. 29-49.
- [2] Baker, S. and Green, H. "Social media will change your business," February 20, 2008, *Business Week*.
- [3] Barnes, S. "A privacy paradox: Social networking in the United States." *First Monday* (11:9), 2006, article 5. Retrieved March 10, 2008, from [http://www.firstmonday.org/issues/issue11\\_9/barnes/](http://www.firstmonday.org/issues/issue11_9/barnes/)
- [4] Boyd, D.M. and Ellison, N.B. "Social network sites: Definition, history, and scholarship," *Journal of Computer-Mediated Communication* (13:1), 2007, article 11.
- [5] Bush, J. "The blogging czar of Russia," *Business Week*, February 25, 2008, p. 4072.
- [6] Cobo, L. "Social networking in Spanish," *Billboard* (120:9), March 1, 2008, pp. 20-21.
- [7] comScore. "Social networking goes global," July 31, 2007. Retrieved March 10, 2008, at <http://www.comscore.com/press/release.asp?press=1555>
- [8] Cooke, M. and Buckley, N. "Web 2.0, social networks and the future of market research," *International Journal of Market Research* (50:2), 2007, pp. 267-292.
- [9] Debrand, C.C. and Johnson, J.J. "Gender differences in email and instant messaging: A study of undergraduate business information systems students," *Journal of Computer Information Systems* (48:3), 2008, pp. 20-30.
- [10] Duronto, P.M., Nishida, T., and Nakayama, S.-I. "Uncertainty, anxiety, and avoidance in communication with strangers" *International Journal of Intercultural Relations* (29), 2005, pp. 549-46.
- [11] Dwyer, C., Hiltz, S.R., and Passerini, K. "Trust and privacy concern within social networking sites: A comparison of Facebook and MySpace," Proceedings of the Thirteenth Americas Conference on Information Systems, Keystone, Colorado: August 9-12, 2007, Retrieved March 10, 2008, from <http://csis.pace.edu/~dwyer/research/DwyerAMCIS2007.pdf>
- [12] Ellison, N.B., Steinfield, C., and Lampe, C. "The benefits of Facebook 'friends': Social capital and college students' use of online social network sites," *Journal of Computer-Mediated Communication* (12:4), 2007, article 1.
- [13] Facebook. "Statistics," March 11, 2008. Retrieved March 11, 2008, from <http://www.facebook.com/press/info.php?statistics>
- [14] Gelfand, M.J., Bhawuk, D.P.S., Nishii, L.H., and Bechtold, D.J. "Individualism and collectivism," In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations: The GLOBE study of 62 societies*, Sage, Thousand Oaks, California, 2004, pp. 437-512.
- [15] Gudykunst, W.B. "Applying anxiety/uncertainty management (AUM) theory to intercultural adjustment training," *International Journal of Intercultural Relations* (22:2), 1998, pp. 227-25.
- [16] Gudykunst, W.B. and Kim, Y.Y. *Communicating with strangers: An approach to intercultural communication* (3<sup>rd</sup> ed.), McGraw-Hill, New York, 1997.
- [17] Gupta, V. and Hanges, P.J. "Regional and climate clustering of societal cultures." In R.J. House, P.J. Hanges, M. Javidan, P.W. Dorfman, & V. Gupta (Eds.), *Culture, leadership, and organizations: The GLOBE study of 62 societies*, Sage, Thousand Oaks, California, 2004, pp. 178-218.
- [18] Hair, Jr., J.F., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L. *Multivariate data analysis* (6th ed.), Pearson Prentice Hall, Upper Saddle River, New Jersey, 2006.
- [19] Hargittai, E. "Whose space? Differences among users and non-users of social network sites," *Journal of Computer-Mediated Communication* (13:1), 2007, article 14.
- [20] Hofstede, G. *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2<sup>nd</sup> ed.), Sage, Thousand Oaks, California, 2001.
- [21] House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., and Gupta, V. (Eds.) *Culture, leadership, and organizations: The GLOBE study of 62 societies*, Sage, Thousand Oaks, California, 2004.
- [22] Jagatic, T., Johnson, N., Jakobsson, M., and Menczer, F. "Social phishing," *Communications of the ACM* (5:10), 2007, pp. 94-10.
- [23] Kim, K.-H. and Yun, H. "Cying for me, cying for us: Relational dialectics in a Korean social network site," *Journal of Computer-Mediated Communication* (15:1), 2007, article 11.
- [24] Lenhart, A. and Madden, M. *Teens, privacy & online social networks: How teens manage their online identities and personal information in the age of MySpace*, Pew Internet & American Life Project, Washington, D.C., 2007.
- [25] Matei, S. and Ball-Rokeach, S. J. "Real and virtual social ties," *American Behavioral Scientist* (45:3), 2001, pp. 550-564.
- [26] Miura, A. and Yamashita, K. "Psychological and social influences on blog writing: An online survey of blog authors in Japan," *Journal of Computer-Mediated Communication* (12:4), 2007, article 15.
- [27] Pal, M. and Buzzanell, P. "The Indian call center experience," *Journal of Business Communication* (45:1), 2008, pp. 31-36.
- [28] Perkins, B. "The pitfalls of social networking," *Computer World* (44:February 11), 2008.
- [29] Pedersen, S. and Macafee, S. "Gender differences in British blogging," *Journal of Computer-Mediated Communication* (12), 2007, pp. 1472-1492.
- [30] Rupleaf. "Rupleaf study of social network users vs. age," June 18, 2008, retrieved July 1, 2008 from [http://business.rupleaf.com/company\\_press\\_2008\\_06\\_18.html](http://business.rupleaf.com/company_press_2008_06_18.html)
- [31] Stutzman, F. "An evaluation of identity-sharing behavior in social network communities," *Journal of the International Digital Media and Arts Association* (3:1), 2006, pp. 10-18.

- [32] Talukder, M., and Yeow, P.H. "A comparative study of virtual communities in Bangladesh and the USA," *Journal of Computer Information Systems* (47:4), 2007, pp. 82-90.
- [33] Tong, S.T., Van Der Heide, B., Langwell, L., and Walther, J.B. "Too much of a good thing? The relationship between number of friends and interpersonal impressions on Facebook," *Journal of Computer-Mediated Communication* (13), 2008, pp. 531-549.
- [34] Triandis, H.C. *Individualism & collectivism*. Westview Press, Boulder, Colorado, 1995.
- [35] Wikipedia. "List of social networking websites," 2008, retrieved July 1, 2008, at [http://en.wikipedia.org/wiki/Social\\_networking\\_websites](http://en.wikipedia.org/wiki/Social_networking_websites)
- [36] Xue, Y., Sankar, C.S., and Mbarika, V.W.A. "Information technology outsourcing and virtual team," *Journal of Computer Information Systems* (45:2), 2004, pp. 9-16.
- [37] Zhao, S. "Do Internet users have more social ties? A call for differentiated analyses of Internet use," *Journal of Computer-Mediated Communication* (11), 2006, pp. 844-862.
-

Copyright of Journal of Computer Information Systems is the property of International Association for Computer Information Systems and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.