

Personality's Influence on Facebook's Privacy Settings: A Case of College Students in Taiwan

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Abstract. Social networking sites such as Facebook have been experiencing tremendous growth for the last several years. In order to get connected with people, Facebook users have to create personal profile with real data about themselves, such as name, home address, email address, phone numbers, relationship status etc. However, there have been ongoing concerns about information disclosure and privacy. Research has indicated personality is one of many factors may have some influence on Facebook's usage, information disclosure, and privacy. The purpose of this research was to investigate possible influence of personality on Facebook privacy settings. Five hypotheses about personality and Facebook privacy settings were developed. Data were collected from 500 college students in Taiwan, with 441 valid data. Four hypotheses about personality and privacy settings were partial supported. People with high extraversion had low privacy settings on family and relationships, religious and political view, and birthday. People with high agreeableness had high privacy settings on wall, photos and videos, religious and political view, birthday, and comments. People with high continuousness had high privacy settings on browsing personal profile and searching personal profile. People with high emotional stability had high privacy settings on religious and political views, and birthday. However, one hypothesis about openness and privacy settings was not supported.

Keywords: Personality, Facebook's privacy settings, Taiwan.

1 Introduction

Facebook have been experiencing tremendous growth for the last several years. In 2006, there were around 1.2 million users, but there were 1.01 billion monthly active users as of September 30, 2012. Taiwan ranked 19th in the world with 13.23 million users (57.79% of population, the highest penetration rate in the world).

To open a Facebook account, users have to create personal profile with real data about themselves, such as name, home address, email address, phone numbers, relationship status etc. However, there have been ongoing concerns about information disclosure and privacy. Researches have indicated personality is one of many factors may have some influence on Facebook's usage, information disclosure, and privacy.

However, most of these researches are based on data collected from North America college students. The findings of these researches may not be applicable to users with different culture and languages.

The purpose of this research was to explore possible personality influence on Facebook's privacy settings of college students in Taiwan. Analyzing Taiwanese college students' personality influence on privacy settings may provide insights about Facebook's usage in a different culture and language.

2 Literature Reviews

2.1 Personality

There are many personality models for determining individuals' personality traits and types. One of the popular models is the Big Five Factors Model, which classified personality traits into five types: extraversion, conscientiousness, agreeableness, neuroticism and openness (McCrae & John, 1992). Many instruments for assessing the Big Five Factors have been developed with various numbers of questions (from 240 questions to 10 questions). If a research's focus is about relationship between personality and other constructs, then an instrument with a small number of questions would be suitable (Gosling, Rentfrow & Swann, 2003).

2.2 Personality and Facebook's Usages

Ross et al. (2009) indicated that users with different personality types did use different aspects of Facebook. High extraversion people joined more groups than low extraversion people, high openness people liked to be sociable on Facebook, and high neuroticism people liked to use the Facebook's Wall, but low neuroticism people preferred posting photos. Amichai-Hamburger and Vinitzky (2010) discovered a strong link between personality and Facebook uses. High extraversion people tended to have more friends and groups than low extraversion people. High neuroticism people tended to be willing to show more personal information and use private messages. High agreeableness people liked to post more pictures on Facebook. High openness people would use more features of the Facebook. High conscientiousness people tended to have more friends but less pictures loaded in the Facebook. Ryan and Xenos (2011) found out that Facebook users are likely to be extraverted, but less conscientious. Gosling, Gaddis, and Vazire (2007) found out that personality impressions from Facebook users' profiles are correlated with personality perceived by users themselves and by their friends. Gosling et al. (2011) also discovered that high extraversion and agreeableness people had more Facebook usages than other three types of personality.

2.3 Facebook's Privacy Settings

Facebook's users have revealed a large amount of personal information, but most users are not aware of privacy options and allow others to view and search their personal

profiles (Acquisti & Gross 2006; Lampe, Ellison & Steinfield, 2007; Stutzman, 2006). Lewis, Kaufman and Christakis (2008) found out that a student's gender, Facebook activity level, friends have influence on the student's private profile. Grubbs and Milne (2010) investigated gender differences in young adult Facebook users' privacy beliefs and privacy protection behaviors, and found out that women are more concern about their privacy and more likely to protect their privacy than men. Taraszow et al. (2010) analyzed Facebook profiles of 131 young people, and found out that young people between the age of 18 and 22 entered their real personal and contact information and accepted strangers' requests for friendship without knowing potential dangers of revealing private profile.

3 Research Methodologies

3.1 Hypotheses

The above researches indicated possible relationships between personalities and Facebook usages, and influence of gender, friends, and culture on private profiles; however, there is no discussion about possible personality influence on Facebook's privacy settings. The main purpose of this study was to explore possible relationships between personalities and Facebook's privacy settings. It was assumed that different personality traits may have influence on Facebook's privacy settings. Five hypotheses with five personality traits were developed.

1. High extraversion people's privacy settings are different from those of low extraversion people,
2. High agreeableness people's privacy settings are different from those of low agreeableness people,
3. High conscientiousness people's privacy settings are different from those of low conscientiousness people,
4. High emotional stability people's privacy settings are different from those of low emotional stability people,
5. High openness people's privacy settings are different from those of low openness people.

3.2 Survey Instrument

Personality data were collected with the TIPI (Ten-Item Personality Inventory) instrument to avoid negative feeling of using lengthy instrument (Gosling et al., 2003). It was used to assess personality with Big five personality traits of Openness (open to new experiences, complex vs. conventional, uncreative), Conscientiousness (dependable, self-disciplined vs. disorganized, careless), Extraversion (extraverted, enthusiastic vs. reserved, quite), Agreeableness (sympathetic, warm vs. critical, quarrelsome), and Emotional stability (anxious, easily upset vs. calm, emotionally stable). The instrument

used a seven-point Likert scale with rating from 1 (strongly disagree) to 7 (strongly agree).

Data about Facebook's privacy settings such as browsing my profile, searching my profile, my status, photo, and posting, walls, family and relationship, photos and videos, religious and political views, birthday, messages, email and instant message, phone and address were collected with three categories (1. Everyone, 2. Friends of friends, 3. Friends only).

3.3 Participants

Surveys were distributed to 500 college students in Taiwan, with 441 valid data sets. The data sets were analyzed with SPSS. Among the 441 students, 92 students were male (20.9%), and 349 students were female (79.1%). 100 students were freshmen (22.7%), 126 students were sophomore (28.6%), 145 students were junior (32.9%), 66 students were senior (15%), and 4 students were graduate (0.9%).

4 Results

4.1 Descriptive Statistics

10 items of personality's data were combined into 5 personality traits. Among the five personality traits, Openness has the highest mean of 5.02, and Extraversion has the lowest mean of 4.02.

Table 1. Descriptive Statistics of Personalities (N=441)

Item	Mean	Std. Dev.
Extraversion	4.24	1.45
Agreeableness	4.98	1.11
Conscientiousness	4.58	1.32
Emotional stability	4.31	1.42
Openness	5.02	1.07

Table 2 depicted means and frequency distributions of 10 privacy settings. Phone number and address has the highest mean of 2.37, and Search my personal information has the lowest mean of 1.79. Though the means were in the range between 1.79 and 2.37, frequency distributions showed that most users chose to disclose private information to either everyone or friends only. In addition, majority of users disclosed their birthday to everyone, and allowed everyone to browse and search their personal information. On the contrary, majority of users disclosed contact information such as email, phone number and address to friends only.

Table 2. Descriptive Statistics of Privacy Settings (N=441)

Item	Mean	Std. Dev.	Frequency Dist.*		
			1	2	3
Browse my personal information	1.89	.963	230	28	183
Search my personal information	1.79	.945	252	29	160
Status, Photos, and Posts	1.98	.957	205	38	198
Wall	1.96	.954	209	40	192
Family and relationships	2.05	.962	193	33	215
Photos and videos	2.04	.960	194	35	212
Religious and political views	1.97	.971	215	26	200
Birthday	1.87	.962	237	26	178
Comments	1.97	.957	208	38	195
Email and instant message	2.09	.965	187	28	226
Phone number and address	2.37	.900	127	24	290

*1: Everyone, 2: friends of friends, 3: friends.

4.2 Hypotheses Testing

In order to compare the “purer” personality differences, Ross et al. (2009) used a method of dividing the five personality's data into three groups, namely, low score, medium score, and high score, then compare data between the high and low groups only. This research used the same method, thus only the privacy data from the low and high groups were used to analyze possible personality influence on privacy settings.

Five hypotheses were tested with the independent sample *t* test method. Table 3 depicted only those personalities and privacy settings tested with significant differences. People with high extraversion were significantly different from people with low extraversion in 4 areas (family and relationships, religious and political view, birthday and comments). People with high agreeableness were significantly different from people with low agreeableness in 5 areas (wall, photos and videos, religious and political view, birthday, and comments). People with high conscientiousness were significantly different from people with low conscientiousness in 2 areas (browse my personal information, search my personal information). People with high emotional stability were significantly different from people with low emotional stability in 2 areas (religious and political view, birthday). However, people with high openness were not significantly different from people with low openness in any of 10 privacy settings.

Table 3. Hypotheses Testing of Personalities and Privacy Settings

Personality	Privacy Settings	Scores	Mean	Std. Dev.	<i>t</i> value	<i>p</i> value
Extraversion	Family and relationships	low	2.11	.956	1.966 *	.047
		high	1.89	.956		
	Religious and political view	low	2.07	.971	2.050*	.041
		high	1.84	.955		
	Birthday	low	1.99	.973	2.899**	.004
		high	1.67	.921		
	Comments	low	2.08	.956	2.514*	.012
		high	1.80	.938		
Agreeableness	Wall	low	1.83	.940	-2.235*	.026
		high	2.12	.943		
	Photos and videos	low	1.91	.957	-2.062*	.040
		high	2.17	.925		
	Religious and political view	low	1.86	.966	-2.666**	.008
		high	2.20	.937		
	Birthday	low	1.72	.939	-2.957**	.003
		high	2.10	.954		
	Comments	low	1.84	.940	-2.067*	.040
		high	2.11	.958		
Conscientiousness	Browse my personal information	low	1.84	.948	-2.135*	.034
		high	2.11	.974		
	Search my personal information	low	1.68	.900	-2.528*	.012
		high	1.99	.976		
Emotional stability	Religious and political view	low	1.78	.944	-2.781**	.006
		high	2.10	.971		
	Birthday	low	1.70	.931	-2.610**	.010
		high	2.00	.968		

Sig. level * $p < .05$, ** $p < .01$, *** $p < .001$.

5 Discussions

Previous researches about personality and Facebook's usages (Ross et al. 2009; Amichai-Hamburger & Vinitzky, 2010) showed that high extraversion people had more groups, more friends and more usage than low extraversion people, and Facebook users were more likely to be extraverted (Ryan & Xenos, 2011). This research discovered high extraversion people disclosed family and relationships, religious and political view, birthday, and comments to everyone. Therefore, the results about people with high extraversion were similar with findings of previous researches. However, it was surprised to see that high agreeableness people did not disclose their walls, photos and videos, religious and political views, birthday, and comments to everyone. People with high continuousness did not allow everyone to browse or search their personal profile. People with high emotional stability have high privacy

settings on religious and political views, and birthday. There were three privacy settings, namely, 1) status, photo and posts, 2) email and instant message, and 3) Phone number and address, were not significantly different for all 5 types of personality. This means that people prefer to disclose their contact information only to their friends regardless of their personality types.

6 Conclusions

Previous researches indicated people with different personality types did use different aspects of Facebook, and genders and friends had influences on privacy settings, but the results were not conclusive. There was no research about possible influence of personality on privacy settings. This research investigated possible connections between 5 personality types and privacy settings. The findings only partially supported that 4 personality types, namely, extraversion, agreeableness, conscientiousness, and emotional stability, had some influences on privacy settings, but openness did not have any influence on privacy settings.

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