Association for Information Systems
AIS Electronic Library (AISeL)

Cannot Live without Facebook? An Expectation Confirmation Model with the Moderating Effects of Narcissism

Chih-Hung Chou
National Central University, gtcch@hotmail.com

Ya-Wen Lin
National Central University, arwen0128@gmail.com

Chien-Hung Lin
National Central University, aa05231990@gmail.com

C. K. Farn
National Central University, ckfarn@gmail.com

Follow this and additional works at: http://aisel.aisnet.org/pacis2017

Cannot live without Facebook? An Expectation Confirmation Model with the Moderating Effects of Narcissism

Indicate Submission Type: Completed Research Paper

Chih-Hung Chou
Department of Business
Administration, Ming Chuan
University
250 Zhong Shan N. Rd., Sec. 5, Taipei
111, Taiwan
gtcch@hotmail.com

Ya-Wen Lin
Department of Information
Management, National Central
University
No. 300, Zhongda Rd., Zhongli
District, Taoyuan City 32001, Taiwan
arwen0128@gmail.com

Chien-Hung Lin
Department of Information
Management, National Central
University
No. 300, Zhongda Rd., Zhongli
District, Taoyuan City 32001, Taiwan
aa05231990@gmail.com

C. K. Farn
Department of Information
Management, National Central
University
No. 300, Zhongda Rd., Zhongli
District, Taoyuan City 32001, Taiwan
ckfarn@gmail.com

Abstract

Facebook provides an ideal channel for people to admire their own performance. People tend to show off themselves to others and confirming their feedback on Facebook. With behavior on Facebook, narcissism is now highlighted by many researchers. Hence, based on the expectation confirmation theory (ECT), our study looks into continuance Facebook usage behaviors. It explores the relationship between perceived feedback, confirmation, satisfaction, and continuance intentions, and most important of all, it examines the moderating effects of narcissistic traits on these relationships. Data are collected from 420 valid respondents through self-administered questionnaires. Results revealed that: (1) Continuance Facebook behavior intention is jointly influenced by perceived feedback and satisfaction, which in turn is determined by confirmation. Then, confirmation is influenced by perceived feedback; (2) Narcissism has the moderating effect on the relationships between feedback and confirmation as well as confirmation and satisfaction. Finally, interpretations and implication of these findings are discussed.

Keywords: Facebook Behaviors, Narcissism, Perceived Feedback, Continuance Intentions

Introduction

Nowadays information technology aims at satisfy our every last need and to put us in the driver's seat. The internet is more I-centric than ever and it is all about you. "I" is omnipresent in cyberspace and the entire digital world is at the disposal of the first-person pronoun (Aboujaoude, 2012). A recent cross-temporal meta-analysis found narcissism levels in American college students to have risen over the past two decades (Twenge et al., 2008). Twnege and Campbell (2009) found a phenomenon where the rise of narcissistic tendency coincides with the extravagant use of the Internet and social media. It is just like the infectious diseases overspreading in a fashion to be called 'Narcissism Epidemic'. There is no doubt that the Internet has radically and irreversibly changed our behavior and relate to one

another. Thus, the relationship between narcissism and network behaviors has gathered more and more attention recently and has become a popular research topic.

The Social Network Sites (SNSs) is like a virtual stage providing people an arena of self-promote and self-presentation (Ellison, 2007). SNSs offer an environment for narcissists to establish self-image and construct their ideal identities (Mehdizadeh, 2010; Zhao et al., 2008). Facebook is the most popular SNSs, and their popularity is continuing to grow. Narcissism has received particular attention in research examining predictors of Facebook use. Previous research shows there is a relationship between narcissistic personality traits and the use of SNSs. Facebook behavior (Buffardi & Campbell, 2008; Bergman, et al., 2011; Ryan & Xenos, 2011). Studies on the behavior of using Facebook focus more elaboration on the correlation between narcissistic personality and the usage of Facebook. However, little is known about the satisfaction with Facebook behaviors (e.g. posting status updates and photos of oneself, updating profile information) and the influences of narcissism on the continuous using behavior. Why are people increasingly addicted to Facebook? What role does narcissism play in the Facebook phenomenon? Answers to these questions can improve our understanding of continuous usage and personality expression in Facebook.

Oliver (1980) proposes the expectation-confirmation theory (ECT) which is established on the basis of consumer satisfaction model. Since then, many other researchers put forward different models to conform to different scenarios. The ECT is widely used in related research of repurchasing behavior and continuous usage of information system (Bhattacherjee, 2001a; Chiu et al., 2013; Hsu & Lin, 2015). The Facebook offers people an outlet for attracting their friends to thumb them up or commend by means of posting self-relevant information, photos, and checking in. Friends' feedback (e.g., comments and "likes") will motivate people to use Facebook to satisfy their vanity. Therefore, Feedback is very likely an important factor that people continue using Facebook.

This study proposes the ECT model in investigating Facebook behavior continuance in which ECT is adapted from prior researches ((Bhattacherjee, 2001a, Wen et al., 2011; Hsu & Lin, 2015;). We conduct a survey and employ structural equation modeling to assess research model and hypothesis. The current study begins with the perceived feedback on the basis of ECT. Narcissistic personality traits are explored as moderators in investigating their influences on the continuous Facebook using behavior. The purpose of this paper is to examine the relationships between the perceived feedback, confirmation, and satisfaction. And the moderating effects on the relationships between the perceived feedback and confirmation as well as between confirmation and satisfaction are also tested. It is hoped that there will be further understanding and findings in the phenomenon of Facebook usage and provide empirical research results for related studies and practices in the future.

Literature and Hypotheses

Expectation-Confirmation Theory and Perceived Feedback

Expectation-confirmation theory (ECT) originally developed by Oliver (1980) theorizes that consumers intention to repurchase a product or reuse a service is determined primarily by their satisfaction with prior use of that product or service. Satisfaction is jointly determined by confirmation and expectation. In this model confirmation is the most immediate influence on satisfaction. ECT is widely used in the consumer behavior literature to study consumer satisfaction, post-purchase behavior, and service marketing in general. The predictive ability of this theory has been demonstrated over a wide range of product repurchase and service continuance contexts. Bhattacherjee (2001b) applied ECT to examine cognitive belief and affect influencing individuals' intention to continue using information systems. Since expectations are denoted in their research model as perceived usefulness, a positive effect can be theorized from confirmation to perceived usefulness. Bhattacherjee (2001a) integrated ECT, Technology Acceptance Model (TAM) and agency theory to examine key drivers of consumers' intention to continue using B2C e-commerce services in the online brokerage context. There have been a variety of studies in the literature in recent years about continued IS usage behavior, IS continuance, and post-adoptive IT usage (Bhattacherjee, 2001a; Guinea & Markus, 2009; Chiu et al., 2013; Hsu & Lin, 2015).

Facebook offers people an outlet for attracting their friends to provide "like" or commend by means of posting self-relevant information, photos, and checking in. It is very likely an important factor that people continue using Facebook to satisfy their vanity. Christofides et al., (2009) concluded that the motivation young people having presence on networking sites such as Facebook is to connect them to a social network. Because being visible within a social network is regarded as an important aspect of popularity. Selfie, one kind of Facebook posting, is the most typical manifestation of narcissistic

behavior through smart phone and social networks sites. And it is a way of self-expression and it requires feedback from the audience. Lee and Sung (2016) showed that individuals higher in narcissism are more involved in the feedback (e.g., comments and "likes") they receive on their selfies. Individuals maybe enjoy involved in other people's feedback received on their Facebook posting. London and Smither (2002) argued that the likelihood of acting on the feedback to guide behavior change and performance improvement. In our study, perceived feedback is defined as Facebook users' perception of how friends' respond fulfills their needs, expectation, and desires. Song and Zinkhan (2008) considered that interactivity is a key feature of Web sites and indicated that message type (i.e., how personal a particular message is) is the strongest predictor of interactivity perceptions. Facebook can be an ideal tool for self-promotion as users can frequently post status updates, comments or photos of themselves and reasonably expect timely and frequent positive feedback. Accordingly, considering that feedback on social media is predominantly supportive for users (Valkenburg et al., 2006). Furthermore, Hepper et al. (2010) have shown how narcissists utilize various self-enhancement and self-protection strategies to regulate and satisfy their self-view. Facebook offer the unique circumstance for an individual's audience. Therefore, the feedback received from them presumably takes on particular importance. Therefore, our study argued that perceived feedback is the key factor on Facebook continuance. Based on ECT, we integrated perceived feedback to research model to test how it affects continuance Facebook behaviors.

This paper examines a determinant of users' intention to continue Facebook posting. Compared to the previous studies using different determinants to exam continuance intention (e.g., perceived, usefulness, perceived usability, perceived quality, and perceived value), our study is based upon Bhattacheree's theory and perceived usefulness is denoted in our study as perceived feedback.

Narcissism and Facebook use

Narcissism is typically characterized as a tendency to consider one's self to be better than others, to constantly seek veneration from others, and to engage in self-centered thinking and behavior (Campbell, et al., 2002; Morf & Rhodewalt, 2001). From a basic trait perspective, narcissism is associated with a high degree of extraversion/agency and a low level of agreeableness or communion (Miller & Campbell, 2008; Paulhus & Williams, 2002). Narcissists lack empathy, center on oneself, exaggerate one's own importance and have few, close relationships, yet they strongly desire social contact, as others serve as their primary source of admiration and attention (Bergman et al, 2011). Because narcissists are unable to regulate their own self-esteem, they must rely on external sources for affirmation (Campbell et al., 2002; Morf & Rhodewalt, 2001). Thus, narcissists engage in a variety of strategies aimed to maintain their inflated egos, such as exhibitionism and attention-seeking behavior (Buss & Chiodo, 1991). Ackerman et al. (2011) indicated that narcissists like to present themselves so as to be noticed at all time.

Facebook is exactly the stage for narcissists to show themselves. It denotes that it has become a general phenomenon of accessing Facebook through computers or smartphones. Recent literature has documented the manifestation of narcissism in Facebook usage. Among studies of the relation between Facebook use and narcissism, most point to a positive correlation between narcissism and amount of Facebook usage (Ryan & Xenos, 2011; Carpenter, 2012). Facebook offer users near complete control over self-presentations, making them a useful venue for the deployment of strategic interpersonal behaviors that narcissists use to construct and maintain a carefully considered self-image (Morf & Rhodewalt, 2001). Buffardi & Campbell (2008) proposed that Facebook provide excellent platforms for narcissistic self-regulation, because Facebook allow almost full control over self-presentation and afford the ability to maintain large social network bases of superficial relationships, which narcissists would be especially drawn to. Panek et al. (2013) suggest that for college students, posting on Twitter, is associated with the Superiority component of narcissistic personality while Facebook posting is associated with the Exhibitionism component. Kim et al. (2014) examined the factors influencing self-disclosure and the mediating role of self-disclosure examined in terms of subjective well-being. Based on the results of structural equation model analysis, communication in the Facebook had the biggest impacts on self-disclosure; information, entertainment, and privacy concerns also were influential. These studies described the relationship between narcissism and different kinds of behaviors in Facebook, but little is known about the satisfaction with Facebook behaviors and the influences of narcissism on the continuous using behavior. As expected, narcissists had more Facebook friends and wall-posts, and had profile pictures that are rated by others to be more physically attractive and more self-promoting than the profile pictures of non-narcissists. Our study argued that Narcissism as a moderating role on Facebook

posting. Our study is one of the first to examine the moderating role of Narcissism on Facebook posting in social network services.

Development of the Research Model and Hypotheses

This study proposes a model for Facebook posting continuance (see Figure. 1). The model is adapted from the ECT and related literatures and use narcissism as a moderating variable to propose an integrated research model to exam Facebook behaviors.

Facebook provides an ideal channel for people to admire their own performance. They tend to show off themselves to friends and get their adoration on Facebook (Mehdizadeh, 2010). Perceived feedback refers to the extent to which Facebook users' perception of how friends' respond fulfills their needs, expectation, and desires. Facebook behaviors need the feedback received from their friends. In our study, we argued perceived feedback is the key driver of consumers' satisfaction with Facebook behaviors. Therefore, the following hypothesis is proposed:

> **H1. Users' extent of perceived feedback is positively associated with their satisfaction of Facebook behaviors.**

Confirmation refers to the discrepancy between individuals' perceptions of a product or services performance and their expectation levels (Oliver, 1980; Limayem et al., 2007). In our study, we define feedback confirmation as individuals' perceptions of feedback and their expectation levels. Positive confirmation arises when the perceived feedback exceed one's expectations. It results in a positive relationship between perceived feedback and confirmation. Therefore, the following hypothesis is proposed:

> **H2. Users' confirmation is positively associated with their satisfaction with Facebook behaviors.**

Satisfaction is individuals' feelings of pleasure or disappointment resulting from comparing a product's perceived outcome in relation to their expectations. In our study, we defined satisfaction is an individual's feelings of pleasure resulting from comparing perceived feedback from friends in relation to his or her expectations. Satisfaction is jointly determined by confirmation. IS researches have provided empirical support for the relationship between confirmation and satisfaction (Chiu et al., 2005; Hsu & Lin, 2015). Therefore, the following hypothesis is proposed:

> **H3. Users' confirmation is positively associated with their satisfaction with Facebook behaviors.**

Oliver (1980) theorizes that satisfaction is positively correlated with future intention, both directly and indirectly via its impact on attitude. Satisfaction determines intentions to patronize or not to patronize the store in the future. Past studies found a strong link between satisfaction and continuance intentions (Limayem et al., 2007). Therefore, the following hypothesis is proposed:

> **H4. Users' level of satisfaction with Facebook behaviors is positively associated with their continuance intention.**

Kernis & Sun (1994) found that more narcissistic individuals, who regard positive feedback as confirmation of their glowing self-concepts. It may refers narcissistic individuals are likely to be more attentive to and interested in the feedback they receive on their own Facebook posting. We examined the relationship between narcissism and Facebook posting behaviors. Our study argued that level of narcissism moderates the relationship between Perceived feedback and confirmation. Therefore, the following hypothesis is proposed:

> **H5: The influence of a user's perceived feedback on his or her confirmation is moderated by the level of narcissism.**

Hepper et al. (2010) have shown how narcissists utilize various self-enhancement and self-protection strategies to regulate and satisfy their self-view. Lee and Sung (2016) showed that individuals higher in narcissism are more involved in the feedback (e.g., comments and "likes") they receive on their selfie-posting behavior. They also found individuals higher in narcissism regard the act of posting selfies more positively and are more willing to continue posting selfies in the future. Therefore, the following hypothesis is proposed:

H6: The influence of a users' confirmation on their satisfaction moderated by the level of narcissism.

Figure 1. Research model and hypotheses
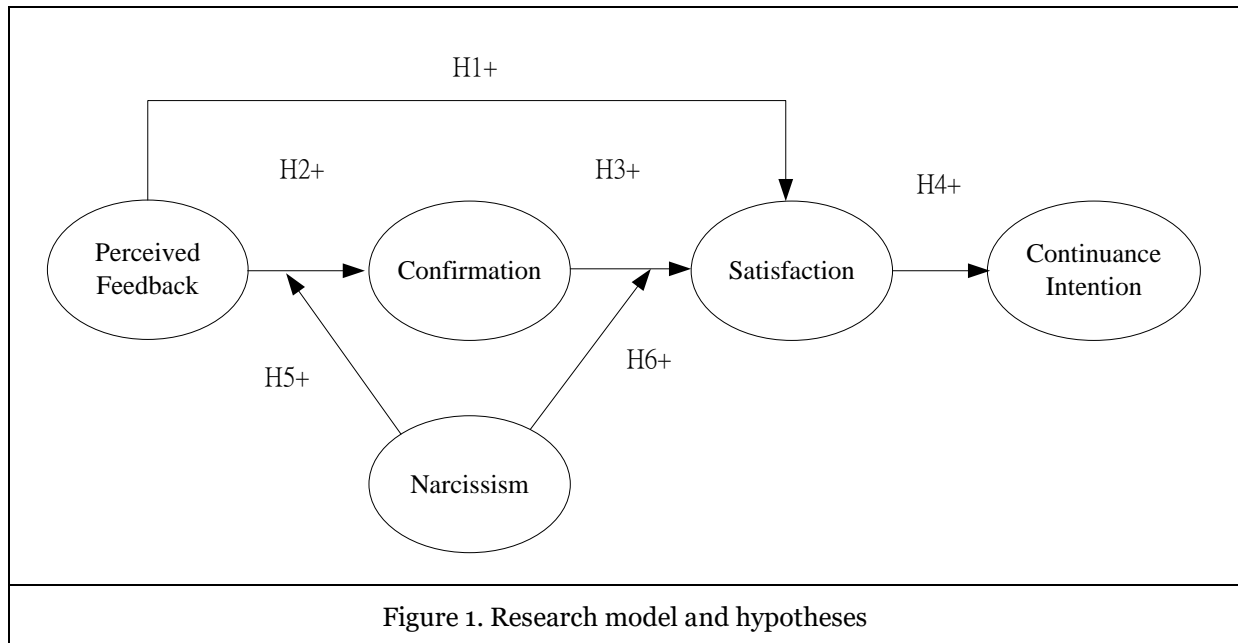
Data analysis

Sample, Setting, and Procedures

An online survey was conducted over a 2-week period in December 2015. The survey respondents were recruited by PTT, the most famous Bulletin Board System (BBS) based in Taiwan. The initial sample consisted of a total of 459 users who had ever posted on Facebook. Among them, 39 samples wre invalid, resulting in a final sample size of 420 for the analyses. The demographic profile of the respondents was shown in Table 1.

Table 1. Demographic profile of the respondents							
Characteristics	**Category**	**Freq.**	**%**	**Characteristics**	**Category**	**Freq.**	**%**
Gender	Man	144	34.3%	The time of using FB	never	0	0%
	Female	276	65.7%		Under 1 year	9	2.1%
Age	Under 18	38	9.0%		about 1-3 years	68	16.2%
	18-21	135	32.1%		over 3 years	343	81.7%
	22-25	178	42.4%	Daily FB use	Less than 1 hour	77	18.3%
	26-30	39	9.3%		1-2 hours	125	29.8%
	31-35	25	6.0%		3-4 hours	140	33.3%
	above 36	5	1.2%		over 5 hours	78	18.6%

Instrument

Items measuring continuance intention were adapted from prior work by Bhattacherjee (2001b). Items related to satisfaction were adapted from prior work by Oliver (1980). Items for perceived usability were adapted from prior work by London & Smither (2002). For the aforementioned measures, a 7-point Likert type was used, with anchors ranging from strongly disagree (1) to strongly agree (7). Narcissism was assessed using the 13-item Narcissistic Personality Inventory (NPI-13) that was developed from Gentile et al. (2013). The NPI-13 is a brief measure of the most widely used 40-

item Narcissistic Personality Inventory (NPI) that was designed to be used for nonclinical populations. Higher scores on the NPI indicate more narcissistic personality traits. The participants responded on a five point Likert scale (1 = strongly disagree to 7 = strongly agree). Measurement Model

The measurement model was first evaluated in terms of reliability, convergent validity, and discriminant validity. Reliability was examined using the Cronbach's alpha values. As shown in Table 2, all constructs and narcissim were above 0.7 (Nunnally, 1978); the result indicates a commonly acceptable level for explanatory research.

	Items	Mean	S.D.	Factor Loading
	Table 2. Scale summary			
Perceived Feedback	Cronbach's alpha=0.87			
PB1	When I post on Facebook, friends will respond their thoughts to me.	4.81	1.08	0.72
PB2	When my Facebook behaviors have showed my problems, friends will reply their support and assistance to me.	4.74	1.10	0.71
PB3	When I post on Facebook, I will receive "like" in short span of time	4.68	1.15	0.71
PB4	Friends always commend my Facebook behaviors.	4.16	1.09	0.73
Confirmation	Cronbach's alpha=0.86			
CO1	My experience with using Facebook behaviors was better than what I expected.	4.55	1.06	0.75
CO2	The service level provided by Facebook behaviors was better than what I expected.	4.93	1.17	0.93
CO3	Overall, most of my expectations from behaviors were confirmed.	4.50	1.13	0.68
Satisfaction	Cronbach's alpha=0.86			
How do you feel about your overall experience of Facebook behaviors:				
SA1	Very dissatisfied/Very satisfied.	4.08	1.07	0. 72
SA2	Very displeased/Very pleased.	4.02	1.06	0.77
SA3	Very frustrated/Very contented.	4.29	1.11	0.69
SA4	Absolutely terrible/Absolutely delighted.	4.35	1.52	0.74
Continuance Intention	Cronbach's alpha=0.81			
CI1	I intend to continue Facebook behaviors rather than discontinue its use.	4.94	1.12	0.82
CI2	My intentions are to continue using Facebook behaviors than use any alternative means.	4.56	1.27	0.80
CI3	If I could, I would like to continue my Facebook behaviors.	4.57	1.32	0.85
Narcissism	Cronbach's alpha=0.71			
NA1	I like having authority over other people. .	4.09	1.12	0.68
NA2	I have a strong will to power.	4.32	1.06	0.65
NA3	People always seem to recognize my authority.	4.67	0.86	0.60
NA4	I am a born leader.	4.23	1.09	0.73
NA5	I know that I am a good person because everybody keeps telling me so.	4.15	1.12	0.75
NA6	I like to show off my body.	4.31	1.08	0.71
NA7	I like to look at my body.	4.05	1.04	0.78
NA8	I will usually show off if I get the chance.	4.27	1.05	0.76
NA9	I like to look at myself in the mirror.	4.43	1.21	0.58
NA10	I find it easy to manipulate people.	4.52	1.06	0.53
NA11	I insist upon getting the respect that is due me.	4.37	0.92	0.74
NA12	I expect a great deal from other people.	4.31	1.04	0.65

NA13	I will never be satisfied until I get all that I deserve.	3.45	1.06	0.79

Convergent validity was evaluated for the measurement scales using two criteria suggested by Fornell and Larcker (1981): (1) all indicator factor loadings should be significant and exceed 0.70 and (2) average variance extracted (AVE) for each construct should exceed the variance due to measurement error for that construct (i.e., should exceed 0.50). As shown in Table 3, most items exhibited loading higher than 0.7 on their respective constructs (perceived feedback, confirmation, satisfaction and continuance intention), providing evidence of acceptable item convergence on the intended constructs. Two exceptions were the third item of the confirmation scale and the fourth item of the satisfaction scale, which loadings were slightly below 0.7. Besides, Factor loading of narcissism ranged from 0.53 to .79. These results are similar to NPI-13 developed by Gentile et al. (2013). AVE ranged from 0.61 to 0.89 (see Table 3), greater than variance due to measurement error. Hence, all two conditions for convergent validity were met.

Table 3. Scale Properties and Correlations							
	CR	AVE	PF	CO	SA	CI	NA
PF	0.87	0.79	0.89				
CO	0.91	0.89	0.58	0.94			
SA	0.94	0.89	0.48	0.80	0.94		
CI	0.86	0.82	0.35	0.60	0.70	0.90	
NA	0.89	0.61	0.38	0.31	0.25	0.19	0.78
Notes: 1. CR: Composite Reliability 2. Diagonals are the average variance extracted (AVE). Off-diagonals are the correlations. 3. PF＝Perceived Feedback, CO＝Confirmation, SA＝Satisfaction, CI＝Continuance Intention, NA＝Narcissism							

For satisfactory discriminant validity, the square root of the AVE from the construct should be greater than the correlation shared between the construct and other constructs in the model (Fornell & Larcker, 1981). Table 3 lists the correlations among constructs, with the square root of the AVE on the diagonal. The diagonal values exceed the inter-construct correlations; hence the test of discriminant validity was acceptable. Therefore we conclude that the measure for each construct satisfies construct validity.

Structure Model testing results

The partial least squares (PLS) method was used to solve the hypothesized model. The use of PLS can model latent constructs under non-normality and can be used for small to medium sample sizes in a component-based estimation (Chin, 1998). PLS is better than covariance-based estimation for testing moderating effects (Chin, 1999). Thus, PLS places minimal restrictions on normality, scales, sample size, and moderating effect testing. In our study, we use the PLS method and the SmartPLS software in our data analysis.

The significance of individual paths was examined and summarized in Figure. 1. All paths exhibited a P-value of <0.05. The path from Facebook feedback to satisfaction was significant with path coefficients of 0.13. The path from perceived feedback to confirmation and confirmation from Facebook behaviors satisfaction were significant with path coefficients of 0.6 and 0.73. Satisfaction exhibited a strong effect on continuance intention with path coefficients of 66%. Hypotheses 1, 2, 3 and 4 were support. Narcissism had significant moderating effect on the relationship between perceived feedback and confirmation with path coefficients of 0.39. And Narcissism had significant moderating effect on the relationship between confirmation and satisfaction with path coefficients of -0.28. Therefore, the influence of a user's perceived feedback on his or her confirmation and a user's confirmation on his or her intention are affected by the level of narcissism. Hypotheses 5 and 6 were supported.

Figure 2. The research model
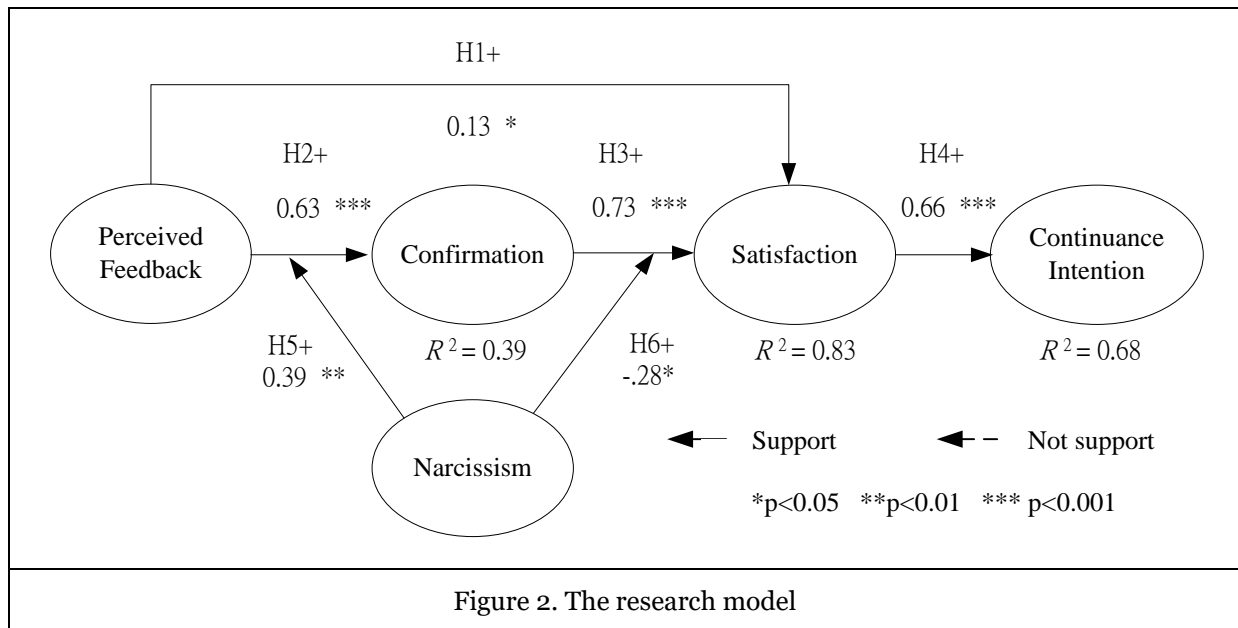
The explanatory power of the research model was also shown in Figure 2. R^2 values show that perceived feedback account for 39%of variance in confirmation, confirmation, account for 83% of variance in satisfaction and satisfaction accounts for 68% of variance in continuance intention.

Discussion

This study is to explore the experience of Facebook users interacting with friends through the relationship between Perception of feedback, confirmation, satisfaction, and continuance intention. The results show narcissism plays a moderating role on the relationship between perceived feedback and confirmation. Data analysis shows that all hypotheses are supported and the results are consistent with previous related studies (Chiu et al, 2013; Hong et al, 2006.).

Results and Discuss

The present study was able to explain a significant amount of variance in Facebook behavior satisfaction (83%) and continuance intention (68%). The results suggest that the research model provided good explanatory power of user satisfaction. Individuals higher in narcissism regard the act of posting selfies more positively and are more willing to continue posting in the future (Lee and Sung, 2016). This study found that perceived feedback exerted a strong effect on confirmation with path coefficients above 0.5. It means that users perceived feedback of Facebook posting as being better than expected. This study supported the notion that confirmation is a significant determinant of satisfaction. The path from confirmation to satisfaction was significant. The sum of path coefficients from perceived feedback to confirmation and usability confirmation to satisfaction were greater than that from perceived feedback to satisfaction. It showed that perceived feedback through confirmation to influence satisfaction is more significant. It means that users' perceived feedback indicates a slight influence on Facebook posting satisfaction. User further confirmed the degree of perceived feedback and deepened on Facebook posting satisfaction. As expected from ECT, confirmation was a stronger predictor of satisfaction than perceived feedback in this study.

Tobin et al. (2014) indicated that a lack of information sharing and feedback can threaten belonging needs. This study suggests that the essence function of Facebook is social interaction, people are eager to get feedback. This is indicative of the charm of Facebook is not, in complex functions, but close to the people's needs. It also represents the feedback mechanism of Facebook does affect users continuous usage. Interactive using features and functions of Facebook are important factors keeping the related services always popular. The results suggest that the Facebook provider should develop a long-term strategy to improve the way of interactive to the service to maintain or enhance users' loyalty to the service.

We assumed there to be a theoretical moderating effect on the relationship between perceived feedback continuance Facebook behaviors. Including, the influence of a user's perceived feedback on his or her confirmation is affected by the level of that user's narcissism and the influence of a users'

confirmation on their satisfaction is affected by the level of that user's narcissism. Our results showed that have a positive significant moderating effect on the relationship between perceived feedback and confirmation. Kernis & Sun (1994) found more narcissistic individuals, who regard positive feedback as confirmation of their glowing self-concepts. Accordingly, more narcissistic individuals are likely to be more attentive to and interested in the feedback they receive on their Facebook posting.

But our study has a negative significant moderating effect on confirmation and satisfaction. A possible explanation is that higher levels of narcissism confirm friends' feedback, but would not be satisfy with friends' response. Narcissists tend to be self-focus and self-important, and to believe that they deserve special treatment form others yet need to give little or nothing in return. Moreover, psychologists indicated entitlement, a component of narcissism, is the narcissist expects special treatment. The narcissistically entitled think that good things will come their way because they are deserving of favorable outcomes (Raskin and Terry, 1988; Twenge and Campbell, 2009). Narcissists take for granted and never satisfied, that may be another possible explanation of the results. Conversely, lower levels of narcissism less care about friends' response, but would be satisfied easier with friends' feedback. Observing friends' posting and the likelihood of providing a comment or "like" on other people's posting are the way we interact with our friend in nowadays. Posting article, upload photos and films to Facebook to get more feedback on Facebook have become a part of our daily life.

Limitations and Suggestions

Some limitations and suggestions of the present study must be considered. First, because our respondents were college students, we need to be careful generalizing our statistical results to other kinds of samples. Second, reliability is sometimes improved in studies that rely on third-party observer reports rather than self-reports. Relying on observer ratings helped improve internal consistency. Using third-party observer reports make give our study more objective and reliable.

In the future work, some researches argue whether narcissism leads to increased Facebook use, whether Facebook use promotes narcissism, or whether some third variable (other than gender) best explains the relationship (Panek et al., 2013; Twenge and Campbell, 2009). Therefore, an interesting area for future studies is continued to distinguish between the various kinds of sites by identifying the absence or presence of various characteristics. Future studies are needed to delve into the interactive nature of selfies that may shed light on the yet-to-be discovered psychological matters underlying Facebook use.

Acknowledgements (optional)

References

Aboujaoude, E. 2012. Virtually You: The Dangerous Powers of the E-Personality, NY: W. W. Norton & Company.

Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., and Kashy, D. A. 2011. "What Does the Nacissistic Personality Inventory Really Mesure?" *Assessment*, (18:1), pp. 67-87.

Bhattacherjee, A. 2001a. "An Empirical Analysis of the Antecedents of Electronic Commerce Service Continuance," *Decision Support Systems* (32:2), pp. 201–214.

Bhattacherjee, A. 2001b. "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly* (25:3), pp. 351-370.

Bergman, S. M., Fearrington, M. E., Davenport, S. W., and Bergman, J. Z. 2011. "Millennials, Narcissism, and Social Networking: What Narcissists Do on Social Networking Sites and Why," *Personality and Individual Differences* (50:5), pp. 706–711.

Buffardi, L. E., and Campbell, W. K. 2008. "Narcissism and Social Networking Web Sites," *Personality and Social Psychology Bulletin* (34:10), pp. 1303-1314.

Buss, D. M., & Chiodo, L. M. 1991. "Narcissistic Acts in Everyday Life," *Journal of Personality* (59:2), pp. 179–215.

Campbell, W. K., and Foster, J. D. 2007. "The Narcissistic Self: Background, an Extended Agency Model, and Ongoing Controversies," in *the Self: Frontiers of Social Psychology*, C. Sedikides & S. J. Spencer (eds.), New York: Psychology Press, pp. 115–138.

Campbell, W. K., & Foster, C. A. 2002. "Narcissism and Commitment in Romantic Relationships: An Investment Model Analysis," *Personality and Social Psychology Bulletin* (28:4), pp. 484-495.

Carpenter, C. J. 2012. "Narcissism on Facebook: Self-Promotional and Anti-Social Behavior," *Personality and individual differences* (52:4), pp. 482-486.

Chin, W. W., & Newsted, P. R. 1999. "Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares," *Statistical Strategies for Small Sample Research*, (1:1), pp. 307-341.

Chin, W.W. 1998. The Partial Least Squares Approach for Structural Equation Modeling in Modern Methods for Business Research, Mahwah, NJ: Lawrence Erlbaum.

Chiu, C. M., Cheng, H. L., Huang, H. Y., & Chen, C. F. 2013. "Exploring Individuals' Subjective Well-Being and Loyalty Towards Social Network Sites from The Perspective of Network Externalities: The Facebook Case," *International Journal of Information Management* (33:3), pp. 539-552.

Christofides, E., Muise, A., & Desmarais, S. 2009. "Information Disclosure and Control on Facebook: Are They Two Sides of the Same Coin or Two Different Processes?" *Cyberpsychology & Behavior* (12:3), pp. 341-345.

De Guinea, A. O., & Markus, M. L. 2009. "Why Break The Habit of a Lifetime? Rethinking the Roles of Intention, Habit, and Emotion in Continuing Information Technology Use," *MIS Quarterly* (33:3), pp. 433-444.

Ellison, N. B. 2007. "Social Network Sites: Definition, History, and Scholarship," *Journal of Computer -Mediated Communication* (13:1), pp. 210-230.

Emmons, R. A. 1987. "Narcissism: Theory and Measurement," Journal of Personality and Social Psychology, (52:1), pp. 11-17.

Fornell, C. and Larcker, D. F. 1981. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error," *Journal of Marketing Research* (18:1), pp. 39-50.

Gentile, B., Miller, J. D., Hoffman, B. J., Reidy, D. E., Zeichner, A., & Campbell, W. K. 2013. "A Test of Two Brief Measures of Grandiose Narcissism: The Narcissistic Personality Inventory–13 and the Narcissistic Personality Inventory-16," *Psychological Assessment* (25:4), pp. 1120-1136.

Hair, J. F. Jr., Anderson, R. E., Tatham, R. L., and Black, W. C. 1998. *Multivariate Data Analysis*, NJ: Prentice-Hall.

Hepper, E. G., Gramzow, R. H., & Sedikides, C. 2010. "Individual Differences in Self-Enhancement and Self-Protection Strategies: An Integrative Analysis," *Journal of personality* (78:2), pp. 781-814.

Hong, S., Thong, J.Y.L., and Tam, K.Y. 2006. "Understanding Continued Information Technology Usage Behavior: A Comparison of Three Models in the Context of Mobile Internet," *Decision Support Systems* (42:3), pp. 1819-1834.

Hsu, C. L., & Lin, J. C. C. 2015. "What Drives Purchase Intention for Paid Mobile Apps?–An Expectation Confirmation Model with Perceived Value," *Electronic Commerce Research and Applications*, (14:1), pp. 46-57.

Kernis, M. H., & Sun, C. R. 1994. "Narcissism and Reactions to Interpersonal Feedback," *Journal of Research in Personality* (28:1), pp. 4-13.

Kim, J. Y., Chung, N., and Ahn, K. M. 2013. "Why People Use Social Networking Services in Korea: The Mediating Role of Self-Disclosure on Subjective Well-being," *Information Development*, (30:3), pp. 276-287.

Lee, J. A., & Sung, Y. 2016. "Hide-and-Seek: Narcissism and "Selfie"-Related Behavior," *Cyberpsychology, Behavior, and Social Networking* (19:5), pp. 347-351

Limayem, M., Hirt, S.G., & Cheung, C.M.K. 2007. "How Habit Limits the Predictive Power of Intention: The Case of Information Systems Continuance," *MIS Quarterly* (31:4), pp. 705-737.

London, M., and Smither, J. W. 2002. "Feedback Orientation, Feedback Culture, and the Longitudinal Performance Management Process," *Human Resource Management Review*, (12:1), pp. 81-100.

Mehdizadeh, S. 2010. "Self-presentation 2.0: Narcissism and Self-esteem on Facebook," *Cyberpsychology, Behavior, and Social Networking* (13:4), pp. 357-364.

Miller, J. D., & Campbell, W. K. 2008. "Comparing Clinical and Social-Personality Conceptualizations Of Narcissism," *Journal of personality* 76(3), pp. 449-476.

Morf, C. C., & Rhodewalt, F. 2001. "Unraveling the Paradoxes of Narcissism: A Dynamic Self-Regulatory Processing Model," *Psychological Inquiry* (12:4), pp. 177-196.

Nunnally, J. C. 1978. *Psychometric Theory*, NY: McGraw-Hill.

Oliver R. L. 1980. "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research* (17:4), pp. 460-469.

Panek, E. T., Nardis,Y., and Konrath S. 2013. "Mirror or Megaphone? How Relationships Between Narcissism and Social Networking Site Use Differ on Facebook and Twitter," *Computers in Human Behavior* (29:5), pp. 2004-2012.

Paulhus, D. L., & Williams, K. M. 2002. "The Dark Triad of Personality: Narcissism, Machiavellianism, and Psychopathy," *Journal of Research in Personality*, (36;6), pp. 556-563.

Qiu, L., Lu, J., Yang, S., Qu, W., & Zhu, T. 2015. "What Does Your Selfie Say about You?" *Computers in Human Behavior* (52), pp. 443-449.

Raskin, R., and Terry, H. 1988. "A Principal-components Analysis of the Narcissistic Personality Inventory and Further Evidence of Its Construct Validity," *Journal of Personality and Social Psychology* (54:5), pp. 890-902.

Ryan, T., and Xenos, S. 2011. "Who Uses Facebook? An Investigation into the Relationship Between the Big Five, Shyness, Narcissism, Loneliness, and Facebook Usage," *Computers in Human Behavior* (27:5), pp. 1658–1664.

Song, J. H., and Zinkhan, G. M., 2008. "Determinants of Perceived Web Site Interactivity," *Journal of Marketing*, (72:2), pp. 99-113.

Tobin, S. J., Vanman, E. J., Verreynne, M., & Saeri, A. K. 2015. "Threats to Belonging on Facebook: Lurking and Ostracism," Social Influence (10:1), pp. 31-42.

Twenge, J. M. and Campbell, W. K. 2009. The Narcissism Epidemic: Living in the Age of Entitlement, NY: Free Press.

Twenge, J. M., Konrath, S., Foster, J. D., Keith Campbell, W., & Bushman, B. J. 2008. "Egos Inflating Over Time: A Cross-Temporal Meta-Analysis of the Narcissistic Personality Inventory." *Journal of personality* (76:4), pp. 875-902.

Valkenburg, P. M., Peter, J., & Schouten, A. P. 2006. "Friend Networking Sites and their Relationship to Adolescents' Well-Being and Social Self-Esteem," *CyberPsychology & Behavior*, (9:5), pp. 584-590.

Wen, C., Prybutok, V. R., and Xu, C. 2011. "An Integrated Model for Customer Online Repurchase Intention," *Journal of Computer Information Systems* (52:1), pp. 14-23.

Zhao, S., Grasmuck, S., & Martin, J. 2008. "Identity Construction on Facebook: Digital Empowerment in Anchored Relationships," *Computers in Human Behavior* (24:5), pp. 1816-1836.