6-18-2013

An Empirical Study of the Factors Influencing Use of Social Network Service

Jaeyoung Lee
POSTECH, jaeyoung@postech.ac.kr

Euiho Suh
POSTECH, ehsuh@postech.ac.kr

AN EMPIRICAL STUDY OF THE FACTORS INFLUENCING USE OF SOCIAL NETWORK SERVICE

Jaeyoung Lee, Dept. of Industrial and Management Engineering, POSTECH, Republic of Korea, jaeyoung@postech.ac.kr

Euiho Suh, Department of Industrial and Management Engineering, POSTECH, Republic of Korea, ehsuh@postech.ac.kr

Abstract

Social network service (SNS) has become a popular media for social interaction and information exchange. However, it is not clear why people use SNS. In addition, human behaviour researches related to SNS are not sufficient despite of its prominence. Hence, the goal of this paper is to explain why people use SNS. First, we empirically examined what individual's characteristics affect the use of SNS. To examine these characteristics, we developed a structural model on the basis of three popular theories; Technology Acceptance Model (TAM), Network Externality, and Innovation Diffusion Theory (IDT). Also, to achieve our goal, we applied Structural Equation Modeling (SEM) approach to evaluate the effect of each construct. The finding shows that Perceived Usefulness (PU), Perceived Ease of Use (PEU), Members (M), and Compatibility (C) have a positive significant effect on the Actual Use (AU) of SNS. Moreover, we identified the differences between Facebook users and Twitter users. From the control variable (Facebook and Twitter users) analysis, we concluded that PU and M are important factors to Facebook users, while PEU and C are prominent to Twitter users.

Keywords: Social network service, Structural Equation Modeling, Technology Acceptance Model, Network Externality, Innovation Diffusion Theory

1 INTRODUCTION

In recent years, Social Network Service (SNS) have penetrated people's daily life with amazing rapidity to become an important social platform for computer-mediated communication (Correa et al., 2010; Powell, 2009; Tapscott, 2008). Facebook and Twitter are successful examples (Kang and Lee, 2010; Pempek et al., 2009). SNS provides a new method of communicating, employing computers as a collaborative tool to accelerate group formation and escalate group scope and influence (Kane et al., 2009).

As the internet was widely spread, Facebook's popularity has grown exponentially over recent years, from 5.5 million active users in 2005 to around 500 million active users in 2011 (Facebook, 2011). Facebook allows users to create a profile where they can post information about themselves ranging from their occupation, to their religious and political views to their favorite movies and musicians. On this profile, both the user and their 'friends' can post web links, pictures and videos of interest. Further, Facebook also offers the facility to send private and public messages to other users and even engage in real time instant messaging. All of these features coupled with the creation of applications, groups and fan pages make Facebook broadly popular for online socializing. Although Facebook is the largest SNS, there are others. All social networking sites facilitate online, social interaction, yet they do not all offer the exact same services or have the same focus.

The newest and perhaps most interesting SNS is Twitter, as its focus seems to be on the sharing of opinion and information (Kwak et al., 2010) rather than on reciprocal social interaction (Huberman et al., 2009). Twitter allows users to update their account with short statements named ''tweets'' limited to 140 characters. Other users are able 'follow' these updates. The service is rapidly growing with recent statistics suggesting that in January 2010 alone Twitter attracted 73.5 million unique viewers, and from 2009–2010 it demonstrated an annual membership growth rate of 1105% (TechCrunch.com, 2010). Twitter currently has in the region of two-hundred million registered accounts (Twitter, 2011). Twitter, unlike Facebook offers the opportunity to reinstate some of the anonymity previously sought in online communication (Huberman et al., 2009). Users do not need to post information about themselves to find 'friends' and thus the site focuses less on 'who you are' and more on what you have to say (Huberman et al., 2009). The reduction of social pressure brought about by anonymity may mean that reasons for using Twitter differ from Facebook. It is expected that these differences will be evident in the relationships between personality and Twitter and Facebook usage.

Many researches have focused on the individual's behaviors on the adoption of system using TAM, while it is not enough to explain individual's behavior of using human relationship-oriented information technology such as Social Network Service (SNS). Thus, in this paper, we used research model on the basis of Technology Acceptance Model (TAM), Network Externality, and Innovation Diffusion Theory (IDT) using Structural Equation Modeling (SEM) approach. The remaining of this paper is organized as follows; we will provide 1) past literatures reviews about TAM, Network Externality, and IDT, 2) introduction to our research model and hypotheses, 3) the result of survey we conducted and measurements for each construct, 4) reliability and validity of our model and total effect of each construct, and 5) discussion of results derived from our study.

2 LITERATURE REVIEW

2.1 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM), was coined by Davis (1989), is popular model to identify why people accept new information technology. A purpose of TAM is to provide the impact of external variables on internal variables such as attitude, intention, and etc. (Legris et al., 2003; Kwon and Wen, 2010). TAM shows that Perceived Ease of Use (PEU) and Perceived Usefulness (PU) are the most important factors which explain user's adoption to system (Nan et al., 2008). TAM is based on Theory

of Reasoned Action (TRA). TRA provides that intention determines person's behavior, and both attitude and subjective norm influence person's intention (Fishbein and Ajzen, 1975).

However, TAM may have a lack of ability to explain other factors which can support to individual's behavior on system usage (Lee et al., 2012). For example, Legris et al. (2003) said that TAM is needed to imply more variables for stronger model. In fact, many researches used extended-TAM to explain user's behavior in various information technology industries (e.g., Wu and Wang, 2005; Chen et al., 2009; Kwon and Wen, 2010). In this paper, two constructs (Members and Compatibility) was added to original TAM.

2.2 Network Externality

Network externality is defined as ''the value or effect that users obtain from a product or service will bring about more values to consumers with the increase of users, complementary product, or service'' (Katz and Shapiro, 1985). Thus, the more users use products or service, the more attracted or joined users are (Lin and Bhattacherjee, 2008). Online auction sites are typical example of network externality. In this case, the more users who buy and sell, the more provided products or services are, the more transactions are. As such, the number of users and availability of complementary goods or services are factors that drive network externality.

Many researchers (e.g., Gupta and Mela, 2008; Lin and Bhattacherjee, 2008) have claimed that network externality is divided by two types: 1) direct and 2) indirect. Direct network externality occurs when the number of users for a product or service increased (e.g., online auction sites described in the paper). Conversely, indirect network externality is derived from increase of complementary products. Taking an example as Microsoft office, this software has been used widely as Microsoft window is a dominant design in computer OS industry.

2.3 Innovation Diffusion Theory (IDT)

Innovation Diffusion Theory (IDT), was coined by Rogers (1983, 2003), explain how and why new technology spreads. Many researchers (e.g., Nan et al., 2008; Chen et al.; 2009) used IDT to examine individual's behavior on technology adoption. IDT includes five significant attributes of innovation: 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability and 5) observability. Rogers defined relative advantage as "the degree to which an innovation is perceived as better than the idea it supersedes". Compatibility is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters". The definition of complexity is "the degree to which an innovation is perceived as relatively difficult to understand and to use". Trailability is defined as "the degree to which an innovation may be experimented with on a limited basis". The last attribute, observability, is "the degree to which the results of an innovation are visible to others". Rogers claimed that all of these attributes are positively related to rate of innovation adoption.

In this paper, only compatibility is considered as a construct because Wu and Wang (2005) claimed many researches have suggested not only relative advantage, compatibility, and complexity are consistently related to innovation adoption but also relative advantage and complexity are similar to perceived usefulness and perceived ease of use, respectively. That's why only compatibility was added to proposed research model.

3 HYPOTHESES AND RESEARCH MODEL

We drew upon three theories (TAM, Network Externality, and IDT) to develop a research model which explains why individual use SNS (Figure 1). The proposed research model consists of five constructs and a control variable which describes type of user who uses particular SNS (Facebook and Twitter).

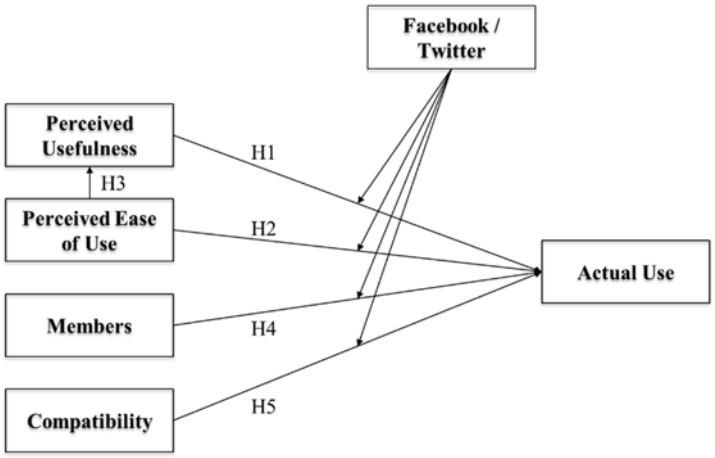

Figure 1. Proposed research model

3.1 Perceived Usefulness (PU)

Perceived Usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance the word from useful" (Davis, 1989). Many researches (e.g., Davis et al., 1989; Agarwal and Prasad, 1999; Venkatesh, 1999) have claimed that PU has a direct influence on the actual usage of system. For this reason we considered PU as a construct in our research model.

H1: "Perceived Usefulness" has a positive significant effect on "Actual Use"

3.2 Perceived Ease of Use (PEU)

Davis (1989) defined Perceived Ease of Use as "the degree to which a person believes that using a particular system would be free of effort the word from ease". This concept has been widely used to explain user's adoption to system (e.g., Davis et al., 1989; Agarwal and Prasad, 1999). Since many systems can be explained by PEU, we put PEU into our research model and expected that PU is a good predictive variable.

H2: "Perceived Ease of Use" has a positive significant effect on "Actual Use"

In addition, in the original TAM, Perceived Ease of Use have a positive significant effect on Perceived Usefulness, thus, we put the hypothesis H3 into the model.

H3: "Perceived Ease of Use" has a positive significant effect on "Perceived Usefulness"

3.3 Members (M)

"Members" is defined as "the degree to which a person use particular technology or system because of other people's use (e.g., friends, family, and etc.)". This construct was derived from Network Externality Theory. Sledgianowski and Kulviwat (2009) suggested that a user intend to use SNS once its participants reach a significant number. In order to attract more users, SNS provides users with the supporting tools such as social games, message function, page function, etc. (Lin and Lu, 2011). In other words, users can interact with each other actively using the supporting tool provided by SNS. From the reason, "Members" was added to our research model.

H4: "Members" has a positive significant effect on "Actual Use"

3.4 Compatibility (C)

Compatibility is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters". SNS provides many complementary services for users to enjoy in virtual worlds through various social applications (Lin and Lu, 2011). In other words, compatibility may explain adoption on SNS, where users want to reflect their lives into virtual sites. Thus, we put Compatibility into our research model and hypothesized as below.

H5: "Compatibility" has a positive significant effect on "Actual Use"

4 RESEARCH METHODS

4.1 Data collection

A survey was conducted to collect data through the Google docs. We had a target population of 415 respondents which include 246 Facebook users (59.2%) and 169 Twitter users (40.7%). The sample size is enough because recommended sample size is at least 200 (Tabachnick and Fidell, 1996). The target of this survey is limited to Facebook or Twitter users because one of the purposes on this study is to identify the differences between Facebook users and Twitter users.

4.2 Measurement

Using well-known and validated theories, we had advantages to examine individual's behavior on adoption of SNS. For better validation, we used the measurements already developed (Table 1). The measurements for Perceived Ease of Use (PEU), Perceived Usefulness (PU) and Actual Use (AU) are derived from Davis' research (1989). And we referred to and modified measurements developed by Lin and Lu's (2011) to evaluate Member (M). In the case of Compatibility (C), we used the measurements suggested by Wu and Wang (2005). All indicators were evaluated using 5 points Likert type scale with anchors from strongly disagree to strongly agree.

Construct	Indicator	Measures
Perceived Usefulness (PU)	PU1	Using the SNS enables me acquire more information or meet more people
	PU2	Using the SNS would improve my efficiency in sharing information and connecting with others
	PU3	The SNS is a useful service for communication
Perceived Ease of Use (PEU)	PEU1	Learning to use SNS would be easy for me
	PEU2	The process of using the SNS is clear and understandable
	PEU3	It would be easy for me to become skillful at using SNS
Members (M)	M1	I think most people are using SNS
	M2	I think many friends around me use SNS
	M3	I anticipate many friends will use SNS in the future
Compatibility (C)	C1	Using SNS fits my lifestyle
	C2	Using SNS is compatible with communication activities
	C3	Using SNS fits well with the way I like to engage in communication activities
Actual Use (AU)	AU1	I tend to use SNS frequently
	AU2	I spend a lot of time on SNS
	AU3	I exerted myself to SNS

Table 1. Measurement for indicators

5 RESULTS

5.1 Validation

We conducted a confirmatory factor analysis (CFA) using SPSS AMOS 16.0 to test fit of the proposed research model. Table 2 shows various fit indices provided by AMOS 16.0. We do not use $\chi 2$ statistics because of its high sensitivity to number of sample size (Hong et al., 2003; Levesque et al., 2004). Instead we used the ratio of $\chi 2$ and degree of freedom and obtained the value of 1.73 which is within the value of 3.00 recommended by Hayduk (1987). Moreover, in order to test fitness of model, Tucker Lewi Index (TLI) and Comparative Fit Index (CFI) are used. The range of these values is from 0.00 to 1.00. In general, a reasonable model represents the values of CFI and TLI which are larger than 0.90, respectively (Bentler, 1990; Tucker and Lewis, 1973). While we obtained the value of 0.85 for CFI, 0.82 for TLI which are smaller than the value of 0.90 recommended, we admitted that our constructs are usable because 0.85 and 0.82 could be approximate to 0.90. On the other hand, the value of Root Mean Square Error of Approximation (RMSEA) is 0.09 which is within 0.10 recommended by Hu and Bentler (1999). For this reason, while the recommendations are widely accepted (Seyal and Pijpers, 2004; Wu and Wu, 2005), we conclude that our model fitness is reasonable and usable to explain individual's behavior on use of SNS.

Goodness-of-fit	Structural model	Recommended value
$\chi 2$/degree of freedom	1.73	< 3.00
CFI (Comparative fit index)	0.85	> 0.90
TLI (Turker Lewi Index)	0.82	> 0.90
RMSEA (Root Mean Square Error of Approximation)	0.09	< 0.10

Table 2. Fit indices for the measurement model

Moreover, we tested convergent validity as shown in Table 3. Firstly, all of factor loadings are larger than the value of 0.50 recommended by Hair et al. (1998). Secondly, the values of average variance extracted (AVE) for each construct are larger than 0.50. Thirdly, the composite reliability (CR) is higher than 0.7. Thus, we could conclude that our constructs had the convergent validity.

Construct	Indicator	Factor loadings	AVE	CR
Perceived Usefulness (PU)	PU1	0.87	0.53	0.77
	PU2	0.75		
	PU3	0.66		
Perceived Ease of Use (PEU)	PEU1	0.78	0.50	0.75
	PEU2	0.77		
	PEU3	0.66		
Members (M)	M1	0.72	0.50	0.75
	M2	0.74		
	M3	0.72		
Compatibility (C)	C1	0.86	0.55	0.78
	C2	0.78		
	C3	0.71		
Actual Use (AU)	AU1	0.70	0.50	0.75
	AU2	0.74		
	AU3	0.73		

Table 3. Result of convergent validity

We tested the discriminant validity by comparing the correlation coefficients of the construct and the square roots of average variance extracted for the construct (Table 4). The correlation coefficients of the construct should be less than square roots of average variance extracted. Thus, our model in this study shows satisfactory discriminant validity.

	PU	PEU	M	C	AU
PU	0.73				
PEU	0.11	0.71			
M	0.05	0.12	0.71		
C	0.13	0.30	0.25	0.74	
AU	0.31	0.13	0.36	0.38	0.71

Table 4. Result of discriminant validity
** Diagonal value is the square roots of average variance extracted*

5.2 Structural Models

We put five validated constructs into structural model in order to test our research model proposed in this paper: Perceived Usefulness (PU), Perceived Ease of Use (PEU), Members (M), Compatibility (C), and Actual Use (AU). Figure 2 shows the result of testing hypotheses, where bold lines indicated significant. Note that four hypotheses, H1, H2, H4, and H5, are positively significant to actual use of SNS, while PEU is not significant to PU (H3). PU has a positive significant effect on AU ($\beta = 0.26$, $p < 0.01$). The β of PEU is 0.23 and p value is smaller than 0.01. H4 indicates that M has positive significant effect on actual use of SNS, where β is 0.27 and p is smaller than 0.01. C also has a positive significant effect on actual use of SNS ($\beta = 0.28$, $p < 0.01$). It means that Facebook and Twitter user consider their usefulness, ease of uses, members, and compatibility when they use SNS.

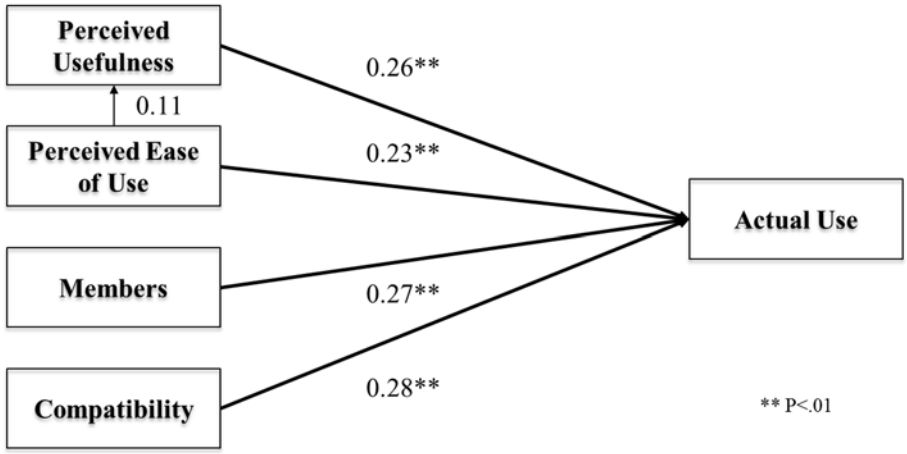

Figure 2. Result of research model

Furthermore, we did consider control variable to find out the differences of behavior between Facebook user and Twitter users using our research model proposed in this paper.

5.2.1 Structural model for Facebook user

The result of analysis for Facebook users (N = 246) is shown as Figure 3. We found that PU and M had positive significant effect on AU of SNS. In other words, from Facebook, Facebook users obtain usefulness for communications with others. Moreover it is noticeable that they use Facebook because their friends also use Facebook and it is compatible with their life. This will be discussed later in detail.

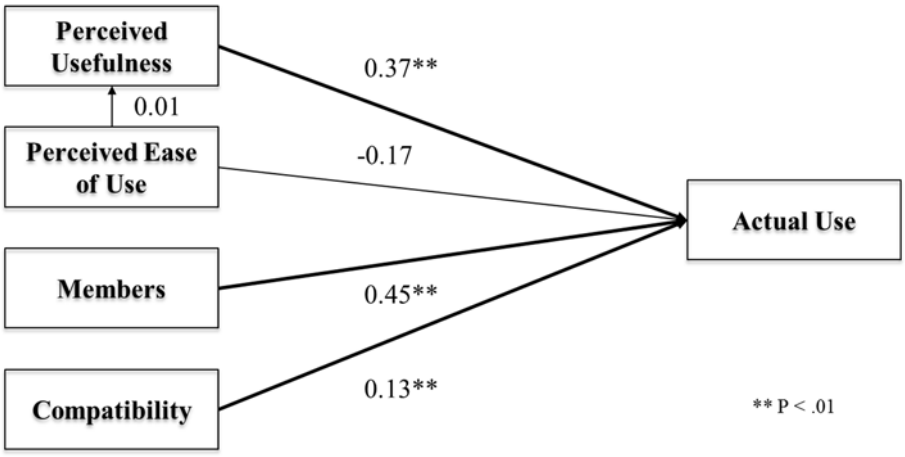

Figure 3. Result of the analysis for Facebook user

5.2.2 Twitter user

Figure 4 shows the result of the analysis for Twitter users (N = 169). From the result, PEU and C are significant factors when Twitter users use Twitter. It implies that Twitter users like to use Twitter because it is easy to use and compatible with their real life.

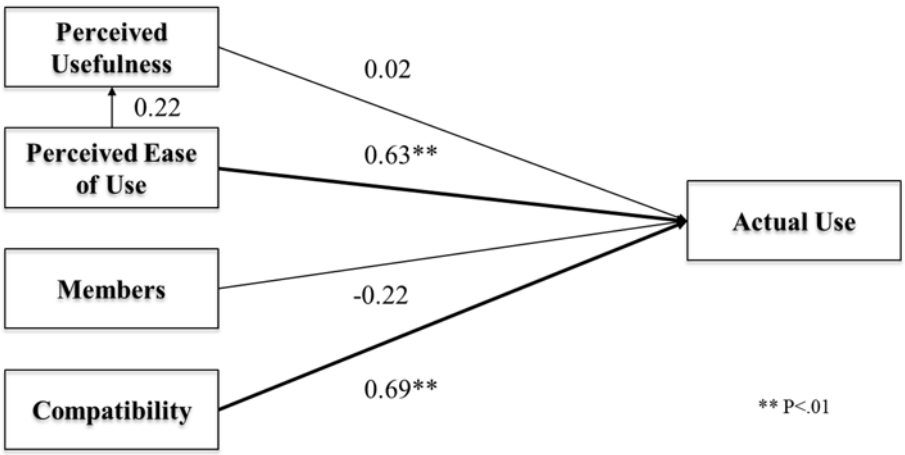

Figure 4. Result of the analysis for Twitter user

6 DISCUSSION AND CONCLUSION

Our main goal is to examine why people use SNS using SEM. We used TAM, Network Externality, and IDT to develop our research model. The model proposed in this paper consists of five constructs; Perceived Usefulness (PU), Perceived Ease of Use (PEU), Members (M), Compatibility (C), and Actual Use (AU). Using AMOS 16.0 as a statistical package, we confirmed that PU, PEU, M, and C affect the AU significantly as well as that our results are usable and reasonable in terms of good-of-fitness.

As mentioned in previous section, PU, PEU, M, and C had positive significant effects on AU. We could conclude that SNS users who perceive usefulness tend to use SNS for their better usefulness for communication activities. In addition, SNS users, who perceive ease of use, use SNS because they can get many benefits from SNS easily. In the case of Members, SNS users may think that the more friends use SNS, the more chances they have for sharing information or promoting their friendship, and etc. And also, the fact that compatibility has a positive significant effect on actual use of SNS means using SNS reflects their real life well.

Another issue is the differences between Facebook users and Twitter users. In the result of the analysis using control variable for Facebook users, two constructs; Perceived Usefulness and Members are significant to use of SNS while, for Twitter users, Perceived Ease of Use and Compatibility are significant. From this finding, we could conclude that Facebook users tend to seek their soul mates from SNS. They always want to communicate with their friends. However, they feel that using Facebook is not easy due to many functions provided by Facebook. On the other hand, Twitter users use SNS only for reflecting their thoughts or opinions into virtual world. We think that Twitter user want to share their ideas or opinions with celebrities rather than real friends. Moreover, from the finding in this paper, we conclude that it is easier to use Twitter than Facebook because of limited functions provided by Twitter. It means that Twitter users want to simple function.

Further research should endeavor to acquire more samples for more various SNS user type to validate our research model and to examine the differences among users. Moreover, we can add more constructs such as self-efficacy, altruism, and etc. to consider other aspects.

References

Agarwal, P. and Prasad, J. (1997), "The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies", Decision Sciences, vol. 28, pp. 557-582

Ajzen, I. (1991). "The theory of planned behavior", Organizational Behavior and Human Decision Processes, vol. 50 No. 2, pp. 179–211

Bentler B. (1990), "Comparative Fit Indices in Structural Models", Psychological Bulletin, vol. 107, no. 2, pp. 238-246

Chen J., Yen D. and Chen K. (2009), "The acceptance and diffusion of the innovative smart phone use: A case study of a delivery service company in logistics", Information & Management, vol. 46, pp. 241-248

Correa, T., Hinsley, A. W. and de Zuniga, H. G. (2010), "Who interacts on the web? The intersection of users' personality and social media use", Computers in Human Behavior, vol. 26, pp. 247–253

Davis, F. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", MIS Quarterly, vol. 13, no. 3, pp. 319-340

Davis, F. D., Bagozzi, R. and Warshaw, P. (1989), "User acceptance of computer technology: A comparison of two theoretical models", Management Science, vol. 35, pp. 982-1003

Fishbein, M. and Ajzen, I. (1975). "Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research". Addison-Wesley"

Gupta, S. and Mela, C. F. (2008), "What is a free customer worth?", Harvard Business Review, vol. 86, pp. 102–109

Hair, J. J., Anderson, R., Tatham, R. and Black, W. (1998), "Multivariate data analysis (5th editions)", United States: Practice-Hall

Hayduk, L. (1987), "Structural equation modeling with LISREL", Johns Hopkings University Press

Hong, S. Malik, M. and Lee, M. (2003), "Testing configural, metric, scalar, and latent mean invariance across genders in sociotropy and autonomy using non-western sample", Educational and Psychology Measurement, vol. 63, pp. 636-654

Hu, L. and Bentler, P. (1999), "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", Structural Equation Modeling: A Multidisciplinary Journal, vol. 6, issue. 1, pp. 1-55

Huberman, B. A., Romero, D. M. and Wu, F. (2009), "Social networks that matter: Twitter under the micro-scope", First Monday, 14(1)

Hughes D., Rowe, M., Batey, M. and Lee, A. (2012), "A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage", Computers in Human Behavior, vol. 28, pp. 561-569

Kane, G. C., Fichman, R. G., Gallaugher, J. and Glaser, J. (2009), "Community relations 2.0", Harvard Business Review, vol. 87, pp. 45–50

Kang, Y. S. and Lee, H. (2010), "Understanding the role of an IT artifact in online service continuance: An extended perspective of user satisfaction", Computers in Human Behavior, vol. 26, pp. 353–364
Katz, M. L. and Shapiro, C. (1985), "Network externalities, competition and compatibility", American Economic Review, vol. 75, pp. 424–440
Kwak, H., Lee, Changhyun, H. and Moon, S. (2010), "What is Twitter, a Social Network or a News Media?", In Proceedings of the 19th World-Wide Web (WWW) Conference, Raleigh, North Carolina
Kwon, O., Wen Y. (2010), "An empirical study of the factors affecting social network service use", Computers in Human Behavior, vol. 26, pp. 254-263
Lee W., Xiong L. and Hu, C. (2012), "The effect of Facebook users' arousal and valence on intention to go to the festival: Applying an extension of the technology acceptance model", International Journal of Hospitality Management", vol. 31, pp. 819-827
Legris, P., Ingham, J. and Collerette, P. (2003), "Why do people use information technology? A critical review of the technology acceptance model", Information & Management, vol. 40, pp. 191-204
Levesque, C., Zuehlke, A., Stanek, L. and Ryan R. (2004), "Autonomy and competence in German and American university students: A comparative study based on self-determination theory", Journal of Educational Psychology, vol. 96, pp. 68-84
Lin, C. P. and Bhattacherjee, A. (2008), "Elucidating individual intention to use interactive information technologies: The role of network externalities", International Journal of Electronic Commerce, vol. 13, pp. 85–108
Lin, K. and Lu, H. (2011), "Why people use social networking sites: An empirical study integrating network externalities and motivation theory", Computer in Human Behavior, vol. 27, pp. 1152-1161
Nan, Z., Xunhua, G. and Guoqing, C. (2008), "IDT-TAM Integrated Model for IT Adoption", TSINGHUA SCIENCE AND TECHNOLOGY, vol. 13, Number 3, pp. 306-311
Pempek, T. A., Yermolayeva, Y. A. and Yermolayeva, S. L. (2009), "College students' social networking experiences on Facebook", Journal of Applied Developmental Psychology, vol. 30, pp. 227–238
Powell, J. (2009), "33 Million people in the room: How to create, influence, and run a successful business with social networking", NJ: FT Press
Rogers E.M. (1983), "The Diffusion of Innovation, third ed.", Free Press, New York
Rogers E.M. (2003), "The Diffusion of Innovation, fifth ed.", Free Press, New York
Seyal, A. and Pijpers, G. (2004), "Senior government executives' use of the internet: A bruneian scenario", Behavior & Information Technology, vol. 23, pp. 197-210
Sledgianowski, D. and Kulviwat, S. (2009), "Using social network sites: The effects of playfulness, critical mass and trust in a hedonic context", Journal of Computer Information Systems, vol. 49, pp. 74–83
Tabachnick, B. and Fidell, L. (1996), "Using multivariate statistics (3rd editions)", NY: Harper Collins
Tabachnick, B. G. and Fidell, L. S. (1996), "Using multivariate statistics (3rd Ed.)", NY: Harper Collins
Tapscott, D. (2008), "Grown up digital: How the next generation is changing your world", New York: McGraw-Hill
Tucker, L. and Lewis, C. (1973), "A RELIABILITY COEFFICIENT FOR MAXIMUM LIKELIHOOD FACTOR ANALYSIS", PSYCHOMETRIKA, VOL. 38, NO. 1, pp. 1-10
Venkatesh, V. (1999), "Creation of favorable uses perceptions: Exploring the role of intrinsic motivation", MIS Quarterly, vol. 23, pp. 239-260
Wu, I. L. and Wu, K. W. (2005), "A hybrid technology acceptance approach for exploring e-CRM adoption in organizations", Behavior & Information Technology, vol. 24, pp. 303-316
Wu, J. and Wang, S. (2005), "What drives mobile commerce? An empirical evaluation of the revised technology acceptance model", Information & Management, vol. 42, pp. 719-729