

MOTIVATIONAL AND SOCIAL CAPITAL FACTORS INFLUENCING THE SUCCESS OF SOCIAL NETWORK SITES: TWITTER CASE

Julie Ann A. Dumlao

Kyungpook National University, Daegu, South Korea, julieann_dumlao@yahoo.com

Sung Ho Ha¹

Kyungpook National University, Daegu, South Korea, hsh@mail.knu.ac.kr

Abstract

Information is considered as an all-encompassing element that weaves connections and facilitates continued use in social networking. This study provides a new perspective by delineating the nature of information in social networking into hedonic and utilitarian information quality as well as information providers' characteristics such as their reputation and intentions (altruism). Extending DeLone and McLean's model of information system success, this study devises a model of online social networking success, a new framework that incorporates motivation and social capital dimensions, which fittingly characterize the social networking context. We adapt the scales from previous research on information systems, marketing, and sociology and validate the model first through a pilot study based on a sample of 101 Twitter users in Korea. We then conduct the actual survey (a combination of online and offline surveys) by considering a sample of 249 Twitter users. The results indicate that the utilitarian quality of tweets and tweet providers' intentions were significantly related to perceived trust, whereas the hedonic quality of tweets and tweet providers' reputation were positively related to user satisfaction. Perceived trust and user satisfaction were significantly related to continued use intentions.

Keywords: Social network service, Tweet quality, Tweet provider's quality, Continued use intentions.

¹ Corresponding author, Tel: +82-53-950-5440, Fax: +82-53-950-6247

1 INTRODUCTION

This study extends previous research on information system use and motivation in the context of OSN. From marketing and sociological perspectives, this study proposes that the hedonic and utilitarian quality of information incorporated into an SNS by information providers is an important motivator for users' continued use of the SNS. In addition, information providers' reputation and intentions facilitate their continued use intentions. The information posted by information providers implicitly mirrors this virtual reputation, which reflects their status, knowledge, and expertise. The intentional display of altruistic behavior in their messages and shared information constitutes the so-called "virtual altruism" (Gruzd et al. 2011).

2 LITERATURE REVIEW

The concepts of hedonism and utilitarianism have been widely used to examine information system use and motivation, although not for describing or classifying information. The traditional view in information system use and information quality is utilitarian because most information systems are employed in organizational settings (DeLone & McLean 2003; Petter et al. 2008). On SNSs, however, the hedonic nature of information has been verified to be inherent (Agarwal & Karahanna 2000; Van der Heijden 2004). The concepts of hedonism and utilitarianism have been used mainly in research on information system use and adoption (Davis et al. 1992; Dholakia et al. 2004; Wasko & Faraj 2005; Park & Yang 2006; Gu et al. 2010). These studies have underscored the hedonic and utilitarian aspects in the usage, adoption and motives in SNSs, albeit not using them specifically to describe information quality. Previous studies on reputation have been largely focused on e-commerce (Ba & Pavlou 2002; Fuller et al. 2007), information-sharing communities (Carter et al. 2002), and reputation systems (Wang & Benbasat 2008; Utz et al. 2009) but has been sparse in the social networking context. On the other hand, users' intentions (or altruism) (McAllister 1995) are reflected in their interest in helping other users to get useful information (Gruzd et al. 2011). Trust plays a crucial role in social interactions, particularly in online ones (Riegelsberger et al. 2005) such as in e-commerce (Gefen 2000; Kim & Ahn 2007). DeLone and McLean (1992) noted that user satisfaction may be the most widely-used measure of information system success and it has been given attention in previous studies (Chiu et al. 2007; Mun et al. 2010). The previous studies cited in the context of e-commerce and virtual communities have given this paper a good foundation in the attempt to extend the DeLone-McLean model of IS success to the social networking context. The combination of trust, reputation and altruism alongside with the hedonic and utilitarian qualities of information proposed in the model of OSN success could lend an interesting line of research on SNSs in the IS field.

3 EMPIRICAL ANALYSIS

3.1 Theoretical Framework

Previous studies of motivation have focused on hedonic and utilitarian aspects of a system, although not specifically on information quality. Several information system studies have examined and emphasized this dichotomy (Van der Heijden 2004; Park & Yang 2006; Kim & Han 2009; Gu et al. 2010). This study dichotomizes information quality into the hedonic and utilitarian quality of tweets.

- Hypothesis 1a: Hedonic quality of tweets has a positive effect on perceived trust.
- Hypothesis 1b: Hedonic quality of tweets has a positive effect on user satisfaction.
- Hypothesis 2a: Utilitarian quality of tweets has a positive effect on perceived trust.
- Hypothesis 2b: Utilitarian quality of tweets has a positive effect on user satisfaction.

Although many studies have employed social capital to examine reputation in the management information system (Ba & Pavlou 2002; Fuller et al. 2007; Wang & Benbasat 2008; Bente et al. 2011), few have considered it in the context of social networking. Another aspect of social capital relevant to

this study is users' intentions or altruism within the network, that is, their sense of responsibility and commitment in terms of helping other users (Wasko & Faraj 2005; Gruzdt et al. 2011). These two aspects of social capital constitute the quality of the information provider and can be additional factors motivating continued website use. This quality can be defined as the provider's online competency, social credentials, and altruistic behavior. Therefore, tweet providers' reputation can be defined as their desirable competency and social credentials relevant to acceptable behaviors. In this regard, we propose the following hypotheses:

- Hypothesis 3a: Tweet providers' reputation has a positive effect on perceived trust.
- Hypothesis 3b: Tweet providers' reputation has a positive effect on user satisfaction.

SNS users' good intention or altruism is reflected in their messages intended to help other users. For example, Twitter can foster social capital and cohesion between users, particularly when users provide public support during crises. In this regard, we define tweet providers' intentions as their altruistic behavior toward other users and propose the following hypotheses:

- Hypothesis 4a: Tweet providers' intentions have a positive effect on perceived trust.
- Hypothesis 4b: Tweet providers' intentions have a positive effect on user satisfaction.

Perceived trust is defined as one user's confidence in another user's reliability and integrity. Trust clearly plays an important role in online settings and is a key factor influencing continued use intentions toward websites and online services (Gefen 2000; Kim & Ahn 2007; Kim et al. 2008; Sledgianowski & Kulviwat 2009; Shin 2010) and fostering user satisfaction (Lee & Chung 2009). Perceived trust will have a positive effect on user satisfaction, which is defined as the user's evaluation of and affective response to his or her overall social networking experience. In this regard, we propose the following hypotheses:

- Hypothesis 5a: Perceived trust has a positive effect on user satisfaction.
- Hypothesis 5b: Perceived trust has a positive effect on continued use intentions.

Continued use intentions pertain to a user's intention to continue using a particular SNS. The key objective of SNSs is the continued patronage of their users. Therefore, perceived trust may have a positive effect on continued use intentions. Similarly, user satisfaction may be positively related to continued use intentions. In this regard, we propose the following hypothesis:

- Hypothesis 6: User satisfaction has a positive effect on continued use intentions.

3.2 Research Methods

We randomly selected survey respondents by using the Twitter public timeline. Using the @reply mechanism, we sent a solicitation tweet to 700 potential respondents. This tweet had 140 characters and included a short introduction on the study and a link to the online survey based on docs.google.com following Sibona and Walczak (2012). The URL link to the survey directed the respondents to docs.google.com. The solicitation tweets encouraged retweets by recipients. We employed cross-postings on Facebook and other SNSs to maximize the response rate. However, given the low response rate for online surveys (179 responses, 29.8%), we simultaneously conducted the offline survey, which interviewed 70 university students using Twitter in Korea.

3.3 Research Measures

We developed the measures based on a review of information system studies employing the DeLone and McLean's model (2003) as well as marketing and sociology studies. The questionnaire for the pilot study consisted of 47 items, and each construct had 5 to 13 items. Here we considered a sample of Twitter users (university students) in Korea. We obtained 101 valid responses and analyzed using SPSS 18.0 and LISREL 8.8 for CFA as well as face validity. The resulting questionnaire had a total of 24 items, and each construct had 3 to 5 items. We measured all the items for the main variables on a seven-point Likert-type scale. Other items covered the respondents' gender, age, education level, and employment as well as the frequency, length, and purpose of Twitter use.

4 RESEARCH RESULTS

Data was analyzed using SPSS 18.0; AMOS 18.0 and Excel 2007. We employed structural equation modeling (SEM) to test the hypotheses. We built and tested the measurement model through a CFA using AMOS 18.0 and examined its goodness-of-fit by using six widely-used fit indices. Given that measures of OSN success are relatively new, this study followed Wu and Wang's (2006) justification for a lower threshold for fit indices. Therefore, we employed the fit thresholds suggested in Hair et al. (1998), and Hadjistavropoulos et al. (1999): GFI > 0.85 and AGFI > 0.8. All the fit indices satisfied their respective thresholds, indicating that the measurement model provided a good fit to the data. Convergent validity was assessed through composite reliability (CR) and the average variance extracted (AVE). CR was measured for internal consistency. The minimum factor loading was 0.69, the lowest and highest CR values were 0.79 and 0.92, respectively, and the AVE of all constructs exceeded 0.5 (the minimum of 0.58 for tweet providers' reputation).

Discriminant validity was verified through the square root of the AVE for each construct, which exceeded the respective correlations (Fornell & Larcker 1981; Limayem et al. 2007). Statistically checking the common method variance, the Harman's single factor test shows that there is no dominant factor which emerged from the analysis, indicating that common method variance is not a concern (Podsakoff et al. 2003). The structural model was estimated by using AMOS 18.0. The results indicate that those constructs for information quality and information providers' quality accounted for 64% of the variance in perceived trust, and that, together with the constructs for perceived trust, these constructs accounted for 56% of the variance in user satisfaction. However, perceived trust had a greater effect on user satisfaction ($\beta = .57, p < .001$). Perceived trust and user satisfaction together accounted for 44% of the variance in continued use intentions, but user satisfaction had a greater effect.

5 DISCUSSIONS

The results indicate that hedonic and utilitarian tweet quality had opposite relationships with perceived trust and user satisfaction. Hedonic tweet quality had a significant positive effect on user satisfaction ($\beta = .53, p < .001$) but not on perceived trust. On the other hand, the utilitarian quality of tweet (characterized as accurate, reliable, and factual) had a significant positive effect on perceived trust ($\beta = .58, p < .001$), which is consistent with the findings of previous e-commerce studies (Kim & Ahn 2007; Lee & Chung 2009), but not on user satisfaction (Wu & Wang 2006; Petter et al. 2008).

Tweet providers' reputation had a significant positive effect on user satisfaction ($\beta = .44, p < .001$), but contrary to expectations, it had no significant positive effect on perceived trust. On the other hand, tweet providers' intentions had a significant positive effect on perceived trust ($\beta = .57, p < .001$) but not on user satisfaction. Perceived trust had a significant positive effect on user satisfaction ($\beta = .57, p < .001$), which suggests that Twitter users' confidence in other users' reliability and integrity can foster positive Twitter experiences. Perceived trust had a significant positive effect on continued use intentions ($\beta = .26, p < .01$), which is consistent with the findings of previous e-commerce studies (Kim & Ahn 2007; Awad & Ragowsky 2008; Shin 2010). User satisfaction had a significant positive effect on continued use intentions ($\beta = .58, p < .001$). Figure 1 shows the analysis results of the model for an online social network success.

To further understand possible mediating effects based on the results, we employed Baron and Kenny's (1986) mediation procedure, a bootstrapping method, at the 95% confidence interval and found out that perceived trust mediated the relationship between utilitarian tweet quality and user satisfaction.

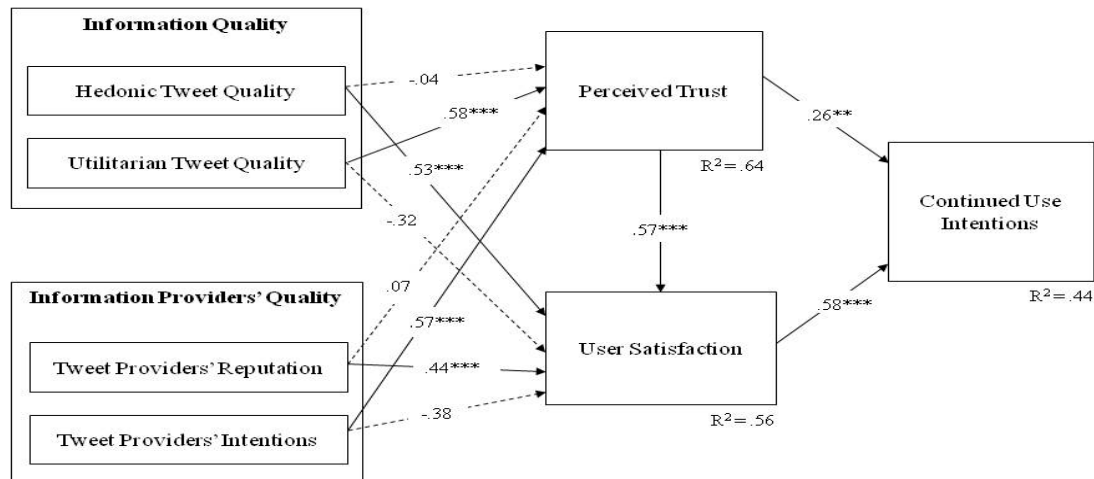


Figure 1. Path coefficients for the model of online social network success. Note: *, **, and *** indicate significance at the 5%, 1%, and 0.1% levels, respectively (a two-tailed *t*-test).

6 IMPLICATIONS AND LIMITATIONS

6.1 Practical Implications

The impact of the hedonic quality of information on user satisfaction suggests considerable information diffusion in the context of hedonism because it may be a form of information driving Twitter's growth. Collectively, tweets can be used to analyze substantive preferences in analyzing consumer-specific topics and predicting future fashion, entertainment, or movie trends. Although the hedonic quality of information may satisfy SNS users, the usefulness or utility of information to these users may prevent user "churn." SNSs continuously need to identify potential problems in their services and information control, particularly because of their explosive growth (e.g., the huge number of tweets being posted every minute). With the integration of information providers' quality with their reputation and intentions, the proposed model can be used specifically for other Twitter services of enterprises. Barnes and Bohringer (2011) noted that enterprise microblogging or "Twitter for the enterprise" is currently an important trend in the context of Web 2.0. The present study's results provide SNS managers with important insights into how information sharing, service provision, business reputation, and intentions can influence potential customers (in the form of followers) to follow their messages (tweets), thereby inducing subscriptions or purchases.

6.2 Limitations and Future Research

This study contributes to the limited body of literature on OSN success but has some limitations that may affect the generalization of the findings. First, we employed an ad-hoc method combining online and offline surveys. Meanwhile people of certain ages were concentrated in the sample. In this regard, future research should be expanded to other age groups by using a more consistent survey method to generalize the findings. Second, we employed cross-sectional data and thus could not establish causal relationships. For instance, trust between people takes time to form and be established. It would benefit future research on SNSs to understand the kind of trust emanating and pervading in this online environment. Third, this paper has been limited to exploring the applicable motivational and social capital factors leading to continued use intentions. As such, other aspects in understanding continued use intentions such as network effects of SNSs has not been given attention and could be extensions in the model for future research. Finally, the results may reflect some common method bias. To address this issue, we attempted to protect the respondents' anonymity and improve the items through a pilot study (Podsakoff et al. 2003).

7 CONCLUSIONS

This study integrates DeLone and McLean's (2003) model with motivation and social capital factors to devise a model of OSN success and provides an exploratory analysis of whether this model is applicable beyond organizational and e-commerce contexts. The results indicate that user satisfaction was influenced mainly by the hedonic quality of tweets and the reputation of tweet providers. Perceived trust depended mainly on the utilitarian quality of tweets and tweet providers' intentions.

In addition, even with the presence of hedonic information from tweet providers, the usefulness of information still had a greater effect on perceived trust. The results verify that SNS users' intentions or altruistic behavior has considerable influence on perceived trust and demonstrate the impact in the context of OSN. Twitter's asymmetric mechanism, that is, one-way connections may play an important role in how users rely more on the reputation (e.g., popularity or influence) of other users, thereby facilitating their satisfaction with Twitter use.

The form of information proliferation on SNSs and users' intentions and reputation are important variables in assessing the longevity of popular SNSs such as Twitter. The success and continued growth of Twitter in terms of its network size may be attributed to the presence of reputable and highly regarded users such as celebrities, politicians, and athletes. Such tweet providers, who are followed by many users, may provide hedonic tweets that amplify user satisfaction. On the other hand, in terms of building social capital based on trust, the results suggest that Twitter users' altruistic or citizenship behavior plays a critical role in inducing or maintaining users.