

The Role of Sense of Belonging in Social Media Usage: A Tale of Two Types of Users

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ABSTRACT

Social media websites have continued to proliferate, and the way in which people stay connected has also evolved. The issue of user loyalty a website remains crucial given that the competition is severe. Websites need loyal users who continue to use their sites to survive and be successful. In this research, we applied self-regulation framework to investigate the factors leading to user loyalty to a social media site. In particular, the role of sense of belonging, which is a common emotional reaction to a social media site, is examined. A survey of users in a popular social media site in Taiwan was conducted. Results show that both sense of belonging and service quality have direct effect on loyalty, whereas trust affects loyalty indirectly by fostering a sense of belonging. Service quality affects loyalty through trust and sense of belonging. Notably, trust has insignificant effect on loyalty as originally proposed. Users are then classified into two groups, namely, heavy and light users, based on their usage. Among light users, service quality has no direct effect on loyalty. Therefore, sense of belonging has sole direct impact on loyalty. Both service quality and sense of belonging contribute to loyalty in users who spend more time online. Implications of this study are also discussed.

Keywords: Social Media, Sense of Belonging, Web 2.0, Loyalty, Trust

I . Introduction

Social media websites are Information Systems (IS) that support interpersonal communication and collaboration using Internet and Web-based platforms. "Being social" is at the heart of the new crop of technologies (Web 2.0) that enabled millions of individuals to be connected online and become content creators of the wild Web. These websites provide

users and members the ability to post articles, share pictures and videos, participate in discussions, leave messages, and meet and connect to family and/or friends online, or a combination of services of these. In other words, Web 2.0 is socialized web. The Web became social media (Clarke, 2008; O'Reilly, 2005).

In this new form of Information Systems, user behavior depends more on other users since the goal is to interact with and connect to others (Cheung

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et al., 2011). Take the words from Mark Zuckerberg, the creator of Facebook.com, the whole purpose of Facebook is to connect people online as we do offline (Grossman, 2010). Same can be said for other social media technologies. Compared to traditional websites, the challenge facing social networking websites is not only to provide useful information and quality service in terms of being useful and providing values to end user (Cheung et al., 2011; Yang and Lin, 2014), being easy to use (Rauniar et al., 2014) and trustworthy (Sledgianowski and Kulviwat, 2009), but also to create a communal sense among members – sense of belonging (Lin, 2007; Lin, 2008; Lin et al., 2014). We would further argue that sense of belonging is the key factor for users to participate in communal activities. However, its role has been overlooked in prior IS research.

In this study, we try to understand the role that sense of belonging plays in customer loyalty for social media sites through the lens of the self-regulation framework (Bagozzi, 1992). We propose that sense of belonging is at the core of user's decision to continued use of a social media site. Other factors impact loyalty also by influencing sense of belonging in addition to direct effects, if any. This approach recognizes the essence of social media: the connectedness and user's desire for "belonging." Although research on user loyalty can be said to be abundant, few studies took this approach. We believe our research will shed light on the underlying process in which user experiences lead to loyalty to a social media site. Insights gained from the study have both theoretical and practical implications.

It is the goal of this research project to investigate factors leading to user's loyalty to a social media website. Findings have values also to other types of websites. Cooke and Macfarlane (2009) believe that the use of Web 2.0 tools can create a better

sense of belonging to the industry. Traditional websites increasingly incorporate Web 2.0 tools, such as user reviews on products and live chat with a salesperson for additional personal assistance. University library websites have widely used Web 2.0 features, such as Rich Site Summary (RSS) feeds and instant messaging (Harinarayana and Raju, 2010). This new trend of turning traditional sites into "social" sites requires a deeper understanding of user loyalty to social media.

II . Theoretical Background

Bagozzi (1992) proposed a self-regulation framework to explain the relationship among attitudes, intentions, and behaviors based on Lazarus theory of emotion and adaptation (Lazarus, 1991; Smith and Lazarus, 1990). This approach recognizes the role of cognitive and emotional mechanisms in determining intentions and behaviors. We applied this framework as the theoretical lens through which we examine the process of how users' experience leads to their loyalty to a social media site.

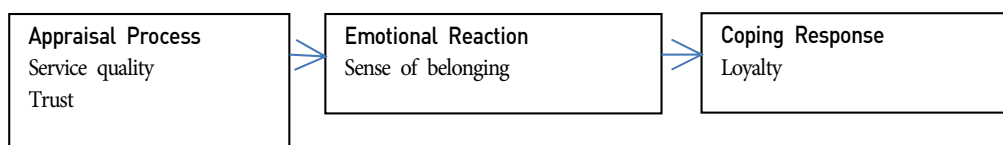
Since a positive attitude by itself will not always generate behavioral intentions, Bagozzi's framework (1992) posits that "attitudes can lead to intention, but they appear to do so either by simulating a volitive desire or by freeing up an appetitive desire." (p. 186) Thus, desire provides the motivational commitment role that translates attitude to intention. According to Bagozzi (1992), outcomes are events occurred to people or things people have done or will do. A desire is a conative state whether one wants to approach or avoid something. *During appraisal process*, people *assess a situation* to see whether their goals can be achieved, i.e., whether the outcome aligns with one's desire or not. Emotional reactions are

formed based on this interaction between outcome and desire. Emotional reactions can be positive or negative. Further, particular coping responses will form to deal with the situation based on the emotional reactions. One simple example of intention resulted from an outcome-desire fulfillment scenario is the plan to go back to a restaurant in the future after a positive experience with good service and high quality food.

This framework has become one dominating and well supported theory explaining the relationship between service quality and customer satisfaction in marketing (Brady and Robertson, 2001; Oliver, 1997). It has been applied in prior research in information systems to study user loyalty in various contexts with success, such as IT service provider, online shopping and virtual communities (e.g., Chiou, 2004; Ha and Stoel, 2012; Lin et al., 2014). To some extent, a user's visit to a social media site is similar to a customer patronizing a store. After an encounter or several encounters, the experience on the site will be assessed in terms of whether it fulfilled the user's desire to be connected or to share and gain information and so on. In the case of a fulfillment with pleasant experience, some positive emotional reactions would be developed. A coping response would naturally be to revisit or be loyal to the site in order to sustain or experience the positive feeling again. In this study, the framework acts as a guiding lens for us to examine the process and factors leading to user loyalty to a social media website. <Figure 1> shows a mapping of interested constructs as to Bagozzi's framework.

First, the sense of belonging is the main emotional reaction to experiences with a social media site. We can safely claim that one of the purposes for users to try out social media is to socialize with others. The members' feeling toward each other and the community (the site) is very important to the success of the community (Blanchard, 2008). If the experience leaves them feeling rejected or left out, users more than often will not revisit. Thus, the sense of belonging is a central, positive emotional reaction users of a social media site have to have for them to be loyal to such a site (Lin, 2007; Lin, 2008; Lin et al., 2014). This emotional reaction is the result of an outcome-desire fulfillment situation. During appraisal process users assess the situation with their goal in mind. They take the features and characteristics of the site into serious consideration. Two factors are particularly important: service quality (Lin, 2007) and trust (Lin, 2008). We argue that social media site is a service provider. How well the site provides the socializing services and conveys a message of welcoming to its users is determinant to members feeling a sense of belonging. In addition, trust building is crucial since trust is the foundation of fair and rewarding communication both online and offline.

Another aspect we were interested in was usage intensity. One would speculate that, although similar, the factors and mechanism might be somewhat different between heavy, involved, experienced users and light, causal, less experienced users because they might be looking for different things in a service



<Figure 1> Conceptual Mapping of Constructs

and at different stages forming intentions. It has been found that heavy Facebook usage has a reverse correlation on users' forming mature relationship (Foubert and Mason, 2014). A study based on task-technology fit and social-technology fit models to examine users' intention reveals that for heavy users task-technology fit and task requirement seem less important than social reasons. On the other hand, users spending less time online still rely on task-technology fit to develop their intention to use (Lu et al., 2014). Although little research has been done in this area, at least these studies show that usage intensity warrants closer examination. In the spirit of exploration, we wanted to look at the issue of usage intensity in this study as post-hoc analysis.

III. Research Model and Hypotheses

<Figure 2> presents the research model of this study. Key constructs are discussed. In the center of our research model is the concept of sense of belonging. Other factors, such as service quality and trust impact loyalty also by impacting sense of belonging in addition to direct effect, if any.

3.1. Customer Loyalty

Loyalty is a deep commitment to a brand or a service provider (Oliver, 1999). By going through cognitive, affective, conative, and action phases, customers develop a strong attachment to a brand or service provider and are not easily allured away by competitors. While cognitive/affective loyalty is similar to behavioral loyalty focusing on the repatronizing behavior, conative/action loyalty is similar to attitudinal loyalty and represents a higher level and long term commitment to the provider (Dick and

Basu, 1994; Shankar et al., 2003). At this level, customer loyalty entails customer intention to future business and recommendation (Zeithaml et al., 1996), in addition to just revisit themselves. Customer loyalty is as important to online businesses as for brick-and-mortar business, if not more important, since competitors can be reached by just one simple mouse click (Anderson and Srinivasan, 2003; Gefen, 2002). Social media sites powered by interactive technologies provide a platform and space for members to participate in sharing and collaboration, let it be their thoughts, opinion, experience, photos, videos, and much more online. In this sense, a social media site is a service provider and needs address the issue of customer loyalty as well. For most sites, such as YouTube, Facebook.com, and blogger.com, membership (at least basic level) is free and no monetary transactions take place between the site and members. However, members' continued use is critical to the survival and success of such sites, either by attracting sponsorship and/or advertisement. In addition, willing to recommending the site to family and friends is particular valuable to social media sites because a network can be formed or strengthened by the new users who are already in an offline network. Thus, our model focuses on conative/action loyalty in the context of social media sites, which is the members' commitment to continued use and recommendations to others.

3.2. Sense of Belonging

Sense of belonging is "the psychological state of being part of the community in an online social network" (Chuang et al., 2010). It can be derived from affective, evaluative, and cognitive social identity. On a social media website, members start a conversation or discussion or a group or a network

either by posting articles, questions, videos, pictures, invitation, and so on and so forth, rather than passively receiving information from the website. Others can join in by commenting and replying. These sites also provide features to facilitate private communication in addition to public ones. It is this active participation of members during information exchange that makes such a site different from a traditional website (Clarke, 2008). Only feeling comfortable with the site and its culture can members start contributing. Community identification is defined as the perception of belonging to a community. It is found to positively affect knowledge sharing intentions (Hsu and Lin, 2008) and behavior (Chiu et al., 2006; Shen et al., 2010) in online communities. Active member involvement is the key for a site's success, making cultivating members' sense of belonging a necessity (Lin, 2007; Lin, 2008; Lin et al., 2014). We can imagine that only feeling being part of the group will we remain in the group, especially being in the group is totally voluntary as most website memberships are. Thus, we posit:

H1: Users' sense of belonging will positively affect their loyalty to the website.

3.3. Trust

Another often studied factor leading to loyalty is trust. Trust is a multidimensional constructs and various types of trust exist (Hsu et al., 2007; Tan and Sutherland, 2004). Trust formation is a dynamic process going through different stages of any relationship. Despite of the complexity of the trust concept, the finding that trust is an important leading factor to customer loyalty is quite consistent in e-service and e-commerce contexts (e.g., Flavian et al., 2006; Gefen, 2002; Luarn and Lin, 2003). In a pro-

fessional virtual community, trust, including economy-based trust, information-based trust, and identification-based trust, is related to knowledge sharing behavior (Hsu et al., 2007). Wang (2014) shows that trust is a main factor leading to loyalty to social network websites. In this research, we take the holistic view of trust in that we are interested in the users' overall feeling of trustworthiness of the site. Thus, we posit the following hypothesis:

H2: Customer trust will positively affect loyalty.

Online communities are largely anonymous and lack of face-to-face interaction among community members. Members may have greater concerns about the truthfulness of others (Blanchard, 2008). Trustworthiness of a social media site is crucial for the success and sustainability since it provides its members an expectation of successful operation and reduces uncertainty stemmed from more dynamic nature of social media sites. User trust will foster a sense of belonging. It is found that trust has a positive impact on members' sense of belonging in online communities (Lin, 2008). According to Bagozzi's self-regulation framework, the appraisal of the situation would induce emotional reactions. In this case, a positive assessment of the trustworthiness should contribute to members' sense of belonging. Thus, we test the following hypothesis:

H3: Customer trust will positively affect sense of belonging.

3.4. Service Quality

Social media sites are service providers in that they provide a platform so that users can contribute, share, interact, publish, collaborate, and more. Service quality is the overall user assessment for service delivery. How effective and efficient a site is in meeting

users' needs affects user assessment and perception. Positive relationship between service quality and trust has been established in prior research in e-commerce (Gefen, 2002; Kim et al., 2004). In regard of the impact of service quality on customer loyalty, the relationship has long been confirmed in both traditional and electronic commerce. For social media sites, service quality should still be an important factor to loyalty among their members. It is a fairly new approach to relate service quality to sense of belonging in online communities. Nonetheless, the prediction is only logical. Service quality reflects how the site treats its users. A reliable and caring site sends out the signal of hospitality, making users "feel at home." It fosters a sense of belonging in its members. No user will remain loyal to a lousy website, especially in an environment with abundant alternatives and little switching barriers. We would even argue that, according to the Bagozzi's framework, service quality is part of the appraisal of the situation. A positive evaluation should lead to a positive emotional re-

action, here, sense of belonging. The route via sense of belonging would be the underlying mechanism between service and eventual loyalty. Service quality's effect on sense of belonging has been documented in virtual community research (Lin, 2007). Thus, we test following hypotheses:

H4: Service quality will positively affect trust.

H5: Service quality will positively affect sense of belonging.

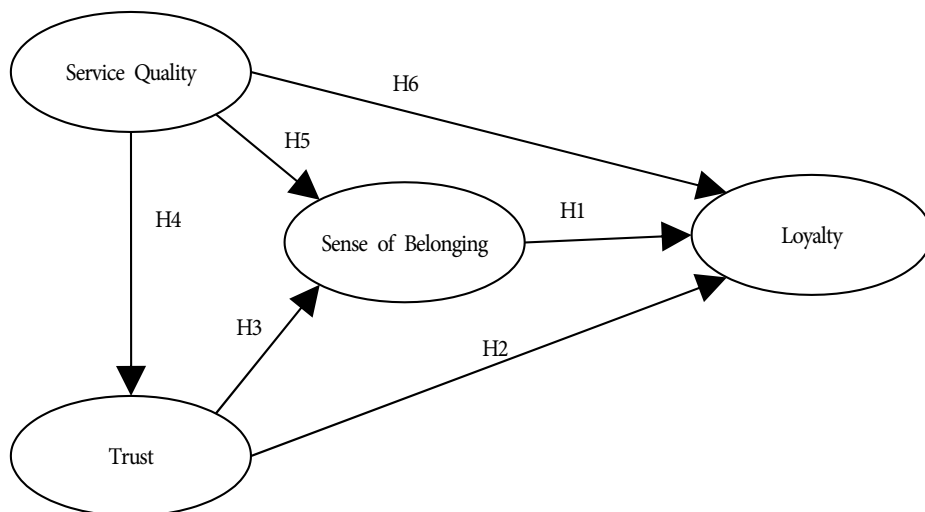
H6: Service quality will positively affect loyalty.

IV. Research Methodology

To test the proposed research model as shown in <Figure 2>, a survey research methodology was used. In this section, details of questionnaire design and distribution procedures are reported.

4.1. Questionnaire Design

Validated items from prior research were the basis



<Figure 2> Research Model and Hypotheses

for measures of the various constructs. Measures for service quality consisted of six items based on Ahn et al. (2007). Trust was measured by a three-item scale adapted from Hsieh and Hsiang (2004). Measures for loyalty consisted of five items adapted from Zeithaml et al. (1996). Sense of belonging was measured by items based on Lin (2008). All items were constructed using a 5-point Likert-Scale ranging from strongly disagree to strongly agree (1 = strongly disagree; 5 = strongly agree).

In addition, demographic questions and usage questions were included. The time spent online and social media site was measured with one item, "on average, time spent online per day." Scale is: (1) less than one hour, (2) 1-3 (including) hours, (2)

3-5 (including) hours, and (4) more than 5 hours.

4.2. Sampling and Respondent Profile

Users of a popular site in Taiwan were solicited to take the web-based survey. The site (<http://www.wretch.cc>) is the largest social media website in Taiwan. It provides blogging, sharing of photos and videos, and other features to members. A convenient sample was used. 309 users filled out the survey. Six of them did not have the experience of using the site and were excluded from data analysis. So the sample size was 303. No differences were found in responses to key constructs (service quality, trust, sense of belonging, and loyalty) in terms of

<Table 1> Demographics of Respondents

Demographic variables	Category	Sample	Percentage
Gender	Male	146	48.1
	Female	157	51.8
Education Level	High school and below	8	2.64
	College & Associate degree	164	54.1
	Graduate school and above	131	43.2
Age	<=19	15	4.95
	20-29	274	90.4
	30-39	14	4.62
	>=40	0	
Profession	Student	208	68.6
	Services	18	5.94
	Manufacture	16	5.28
	Business	17	5.61
	Military, Government, Education	10	3.30
	Freelancing	8	2.64
	Other	28	8.58
Time spent online per day	< 1 hour	6	2.0
	1-3 (including) hours	96	31.7
	3-5 (including) hours	79	26.1
	More than 5 hours	122	40.3

individual characteristics (gender, education level, age, and profession). <Table 1> shows the demographics of the respondents.

A typical user of the site is a young, college student. The most used features of the site are browsing blogs (31.7%) and photo albums of others (32.1%). Other often used features include uploading photos (12.5%), blogging (15.9%), and watching videos (5.39%). Based on number of hours spent online each day, 102 are relatively light users (less than 1 hour and 1-3 hours per day), while 201 are heavy users. Among them, 79 spend 3 to 5 hours and 122 five hours or more online per day.

V. Data Analysis and Results

In investigating the proposed relationships among key constructs, which involves complex mediating effects, structural equation modeling (SEM) was used since it is better suited for analyzing the intricate causal networks (Gefen et al., 2000). A two-phase approach was utilized (Anderson and Gerbing, 1988). First, measures were examined in terms of reliability and construct validity. Second, the structural model expressing our hypothesized research model with directional paths was estimated. In testing our research model, we also contrasted two rival models. Both the measurement and the structural models were estimated by software SPSS 12.0 and LISREL 8.51.

5.1. Measurement Model

The measurement items used in this study are listed in <Table 2>. To test construct validity we conducted a confirmatory factor analysis of the measurement model using collected data. To assess model fit, we first examined three absolute fit indices. The

ratio of χ^2 to the degree of freedom (df) was adopted in light of the sensitivity of χ^2 to sample size. The value of 2.50 ($\chi^2 = 322.03$, $df = 129$) in this study showed a good fit of the data because a ratio between 2 and 5 indicates a reasonable fit (Bentler, 1988; Marsh and Hoceva, 1985). Two other absolute fit indices are Goodness-of-Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA). GFI should be greater than .80 (.89 in this study) (Etezadi-Amoli and Farhoomand, 1996) and RMSEA should be below .10 (.07 in this study) (Browne and Cudeck, 1993). We also looked at comparative fit indices, including Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI). A well fitted model should have an NNFI greater than .90 (.98 in this study) and CFI greater than .90 (.98 in this study) (Bentler 1988; Hayduk, 1987). Based on these criteria, the goodness of fit measures of this model was satisfactory.

Measurement properties are listed in <Table 2>. The Cronbach's alpha of the key constructs range from .84 to .89; and composite reliability (CR) ranges from .83 to .90; all are above the acceptable level of reliability of 0.7 (Nunnally and Bernstein, 1994). To assure convergent validity, all factor loadings of items should be significant (t -value should be greater than 1.96). In this study, the t -values range from 12.02 to 20.39, significant at $p < .001$ level. Standardized item loadings should exceed the value of .60 to establish convergent validity (Bagozzi and Yi, 1988). All item loadings are above .60. In addition, the average variance extracted (AVE) estimates should be greater than 0.5 (Fornell and Larcker, 1981). In this study AVE range from .56 to .72.

Furthermore, discriminant validity of measures was assessed by performing confirmatory factor analysis on a series of constrained models. A constrained model is based on a measurement model with the

correlation between a selected pair of constructs being fixed at one. The minimum difference of χ^2 between the constrained models and the unconstrained model (the original model) was 94.71, greater than $\chi^2_{(0.999,1)} = 10.83$. This shows the evidence of discriminant validity. Correlation coefficients between constructs are provided in <Appendix> for your information.

5.2. Structural Model

<Figure 3> shows the estimation of parameters pertaining to our proposed research model. The mod-

el performance statistics indicate that the hypothesized model had a good fit as in <Table 3>. <Figure 3> shows path coefficients. All except one are significant at $p < .01$ level. Thus, all but H2 are supported. The model explains 78% of the variance in Loyalty. Service Quality and Trust account for 60% of the variance in Sense of Belonging. Service quality accounts for 57% of the variance in trust.

5.3. Mediating Effect of Sense of Belonging

To further examine the mediating effects of sense

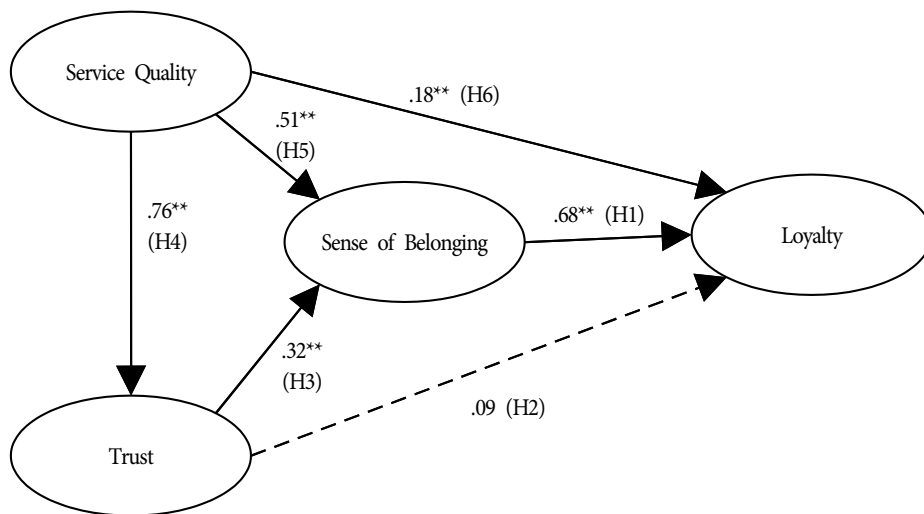
<Table 2> Measurement Properties

Construct	Item	Loading	t-value	AVE	CR
Service Quality	Mean = 3.15, SD = .67, Cronbach's alpha = .84			.56	.83
1	Anticipates and responds promptly to user needs and request	.70	13.16		
2	Can be depended on to provide whatever is promised	.73	14.31		
3	Instills confidence in users, reducing their uncertainty	.77	15.49		
4	Understands and adapts to the user's specific needs	.77	15.38		
5	Provides follow-up service to users	.72	13.94		
6	Gives a professional and competence image	.80	16.12		
Trust	Mean = 3.05, SD = .74, Cronbach's alpha = .84			.64	.90
1	The site can be relied upon to keep promises.	.85	17.78		
2	The site is trustworthy.	.93	20.39		
3	I have full confidence in the site	.76	15.20		
Loyalty	Mean = 3.31, SD = .72, Cronbach's alpha = .84			.72	.88
1	I will say positive things about the site to other people.	.75	14.82		
2	I will recommend the site to someone who seeks my advice.	.83	17.51		
3	I will encourage relatives and friends to use the site.	.89	19.48		
4	I will consider the site my first choice of social media website.	.78	15.96		
5	I will stop use this site (reverse).	.74	14.66		
Sense of Belonging	Mean = 3.21, SD = .75, Cronbach's alpha = .84			.56	.88
1	I feel a strong sense of belonging to the site.	.83	16.95		
2	I enjoy being a member of the site.	.85	17.84		
4	I am very committed to the site.	.65	12.25		
3	Overall, the site has a high level of morale.	.64	12.02		

of belonging on service quality -> loyalty and trust -> loyalty, we estimated models described in Baron and Kenny (1986) and Holmbeck (1997). Four conditions for mediation were examined. The first condition is satisfied if the independent variables (service quality and trust) affect the mediators (sense of belonging). The second condition is satisfied if the mediators (sense of belonging) affect the dependent variables (loyalty). In <Table 4>, under *All*, all path

coefficients in *Indirect* model are significant. T-value is in the parentheses. Thus, both of these conditions were met.

The third condition is satisfied if the independent variables (service quality and trust) affect the dependent variables (loyalty). Thus, we estimated a model with only direct paths from service quality and trust to loyalty (see *Direct* model column in <Table 4>) ($\chi^2 = 699.19$, $df = 133$, $CFI = 0.94$, and $RMSEA$



Note: **significant at $p < .01$ level, dashed line: non-significant paths

<Figure 3> Structural Model

<Table 3> Structured Models for Pooled Data, Light Users, and Heavy Users

	All (n=303)	Light Users (n=102)	Heavy Users (n=201)
H1: Sense of Belonging -> Loyalty	.68 supported	.85 supported	.59 supported
H2: Trust -> Loyalty	.09 not	.04 not	.11 not
H3: Trust -> Sense of Belonging	.32 supported	.39 supported	.28 supported
H4: Service Quality-> Trust	.76 supported	.72 supported	.77 supported
H5: Service Quality-> Sense of Belonging	.51 supported	.41 supported	.55 supported
H6: Service Quality -> Loyalty	.18 supported	.1 not	.21 supported
Model fitness	$\chi^2/df= 2.50$, GFI=.89, CFI=.98, NNFI=.98, RMSEA=.07	$\chi^2/df=2.04$, GFI=.78, CFI=.96, NNFI=.95, RMSEA=.1	$\chi^2/df=2.05$, GFI=.87, CFI=.98, NNFI=.98, RMSEA=.07

= 0.12). All direct paths were significant ($p < .05$) with standardized coefficients ranging as 0.57 and 0.39, thus satisfying the third mediating condition.

The fourth mediating condition states that, when the paths from the independent variables (service quality and trust) to the mediators (sense of belonging) are included in the model (the *Full* model in <Table 4>), it is full mediation if the direct paths from the independent variables (service quality and trust) to the dependent variables (loyalty) become insignificant. Otherwise, it is considered as partial mediation if the path is only reduced. In our case, the fit of the *Full* model ($\chi^2 = 322.03$, $df = 129$, $CFI = 0.98$, and $RMSEA = 0.07$) is similar to the

fit of the *Indirect* model ($\chi^2 = 333.65$, $df = 131$, $CFI = 0.98$, and $RMSEA = 0.072$), just slightly better, which indicates that sense of belonging does not fully mediate all the effects of service quality and trust on loyalty. Look closer, the path between trust to loyalty became insignificant, indicating full mediation effect of sense of belonging. On the other hand, the path of service quality to loyalty was reduced but still significant, indicating a partial mediation effect. Thus, these tests, as a whole, show that sense of belonging either *fully* or *partially* mediates the relationships between trust/service quality and loyalty.

<Table 4> Mediating Effect of Sense of Belonging

	All (n = 303)			Heavy (n = 201)			Light (n = 102)		
	<i>Indirect</i>	<i>Direct</i>	<i>Full</i>	<i>Indirect</i>	<i>Direct</i>	<i>Full</i>	<i>Indirect</i>	<i>Direct</i>	<i>Full</i>
Service Quality → Trust	0.76 (10.73)		0.76 (10.72)	0.77 (8.79)		0.77 (8.79)	0.72 (6.00)		0.72 (5.99)
Service Quality → Sense of Belonging	0.53 (6.30)		0.51 (5.67)	0.57 (5.20)		0.55 (4.79)	0.44 (3.27)		0.41 (2.77)
Trust → Sense of Belonging	0.32 (4.23)		0.32 (3.82)	0.29 (3.01)		0.28 (2.71)	0.39 (3.04)		0.39 (2.73)
Sense of Belonging → Loyalty	0.9 (12.93)		0.68 (8.04)	0.86 (10.42)		0.59 (5.84)	0.97 (7.27)		0.85 (5.32)
Service Quality → Loyalty		0.57 (8.25)	0.18 (2.21)		0.6 (6.80)	0.21 (2.00)		0.47 (4.36)	0.1 (0.92)
Trust → Loyalty		0.39 (6.98)	0.09 (1.27)		0.35 (5.29)	0.11 (1.22)		0.39 (4.85)	0.04 (0.39)
R^2 - Trust	0.57		0.57	0.6		0.6	0.52		0.52
R^2 - Sense of Belonging	0.65		0.6	0.67		0.62	0.6		0.55
R^2 - Loyalty	0.8	0.48	0.78	0.74	0.48	0.73	0.94	0.47	0.91
Chi-Square	333.65	699.19	322.03	278.54	507.09	263.82	264.09	361.65	263.6
DF	131	133	129	131	133	129	131	133	129
GFI	0.89	0.8	0.89	0.87	0.78	0.87	0.77	0.72	0.78
NNFI	0.98	0.93	0.98	0.98	0.93	0.98	0.95	0.9	0.95
CFI	0.98	0.94	0.98	0.98	0.94	0.98	0.96	0.92	0.96
RMSEA	0.072	0.12	0.07	0.075	0.12	0.072	0.1	0.13	0.1

5.4. Heavy and Light Users

This part of analysis was exploration in nature. Two groups were formed by separating the sample into two based on number of hours spent online per day. Among the respondents, 102 were relatively light Internet users while 201 were heavy users spending over 3 hours online each day. First, *t*-tests were run to see whether the two groups were different. <Table 5> shows group mean comparison on key constructs. Significant differences existed between the two groups on service quality and trust, indicating that further analysis may be worthwhile. Thus, separate structural models were run on the two data sets. <Table 3> shows the results along with the result from pooled data. The model for light users has lesser fit, which may be due to the relatively small sample size. For light users, H2 and H6 are not significant. For heavy users, H2 is not significant. <Figure 4> and <Figure 5> show the path coefficients for the two models.

Further, we conducted the same set of tests of mediating effects on the structural models for heavy users and light users respectively. Results are in <Table 4>. In heavy user group, the mediation effect of sense of belonging on Loyalty is partial for service quality and full for trust. In light user group sense of belonging fully mediates the effects of both service quality and trust on loyalty.

5.5. The Effects of Service Quality and Trust

Since sense of belonging is at the center of the mechanism translating attitude to loyalty, we would like to pinpoint which factor has more influence on sense of belonging. Thus, we statistically compared the effect of service quality and trust on sense of belonging. A constrained model in which the two paths (service quality -> sense of belonging and trust -> sense of belonging) were set to be equal was compared to the unconstrained model in which the paths were estimated freely. The results showed that there was significant difference between the two path coefficients. That shows the effect of service quality (.51) is statistically larger than that of trust (.32) on sense of belonging. We also run the same model for both heavy and light users. For heavy users, the difference was significant (.55 vs. .28), while there was no significance found for light user (.41 vs. .39).

VI. Discussion and Limitations

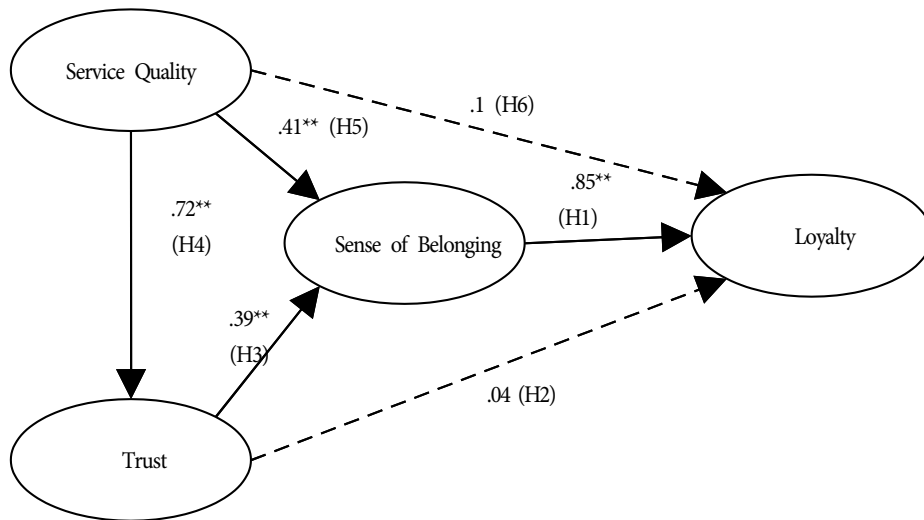
In this paper, we reported a study that investigates factors leading to user loyalty to social media sites. Sense of belonging and service quality have direct effect, while trust affects loyalty indirectly via sense of belonging. In addition, service quality also affects loyalty through trust and sense of belonging. One

<Table 5> Comparison of Two Types of Users

	Light (<i>n</i> =102)		Heavy (<i>n</i> =201)		Comparison	
	Mean	SD	Mean	DS	<i>t</i> -value	<i>p</i> -value
Service Quality	3.01	0.68	3.23	0.65	-2.74	.006**
Trust	2.92	0.71	3.11	0.75	-2.17	.03*
Sense of Belonging	3.10	0.68	3.26	0.74	-1.81	.07
Loyalty	3.22	0.73	3.35	0.76	-1.39	.17

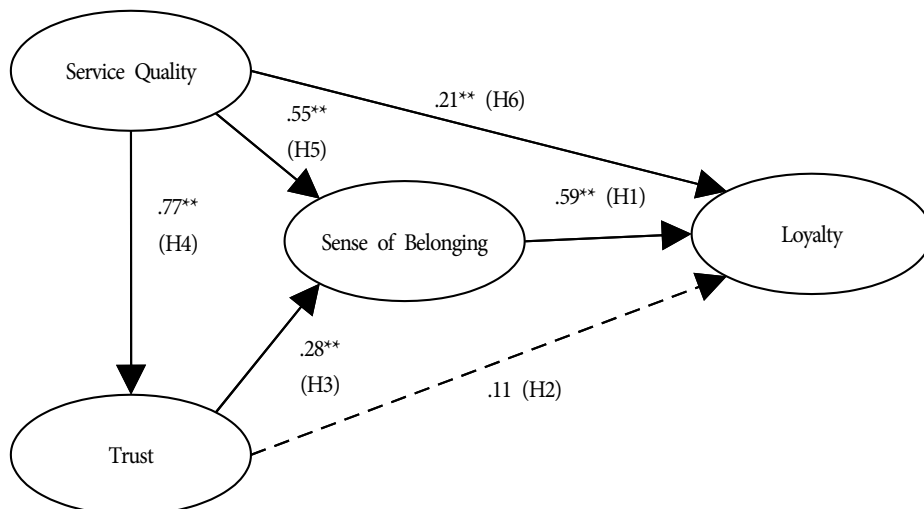
surprising finding is that trust has no significant direct effect on loyalty as originally proposed. Another interesting finding comes from light user group. Among light users, service quality has no direct effect on loyalty, making sense of belonging

the sole direct impact on loyalty. In addition, in light user group, the impact of service quality and trust is the same, while for heavy users service quality is more important.



Note: **significant at $p < .01$ level, dashed line: non-significant paths

<Figure 4> Structural Model for Light Users



Note: **significant at $p < .01$ level, dashed line: non-significant paths

<Figure 5> Structural Model for Heavy Users

6.1. Theoretical Implications

In this study, we applied the self-regulation framework to examine the process in which factors lead to user loyalty in the context of social media. Overall, the framework is supported by our results, which showed the mediating role of sense of belonging. As the emotional reaction, sense of belonging had partially mediated the effect of service quality and fully mediated the effect of trust on loyalty in our study. This demonstrated the validity of the framework and suggests that emotional reaction and desire should not be ignored in studies of user intention, especially in non-mandatory contexts. In the past, studies tested direct effect of service quality and trust on loyalty and found supportive evidence. We would not claim that they were wrong. However, our research showed that at least that was not the whole picture. Emotional reactions, such as sense of belongings, should be included to make the picture more complete. Applying self-regulation framework provides a systematic approach to examine factors leading to user behavioral intentions and should be adopted in studies in the field.

Although our analysis of heavy and light users was exploratory, it showed interesting results and pointed out an issue that should be looked more closely in the future. As shown by our results, light users place sense of belonging at the center. Impacts of trust and service quality are considered in terms of whether these factors can increase their sense of belonging by light users. Light users could be newer or causal users, they are still in the stage to see whether a social site is a right place for them to be. On the other hand, heavy users are experienced and they would consider service quality independently, or even weight it more heavily. This finding is different from those by Lu et al. (2014). Although more

research has to be done to investigate usage intensity issue in a more positivist manner, our results at least suggest that the underlying process of loyalty decision may be different for different groups of users. We should not treat them as a homogeneous block; rather we should look into types of users by detailing their desires and their appraisal process of a situation.

6.2. Practical Implications

As a service provider, social media sites need loyal users for continued success. Factors contribute to user loyalty definitely are of importance. In our study, factors related to customer loyalty in other context still play important role. Service quality has both direct and indirect effect on loyalty, while trust has an indirect effect. To create a welcoming environment so that users feel at home, social media site should provide good service quality and build trust.

The central role played by sense of belonging is evidently clear as shown by our results. It is the mediating factor between service quality, trust, and loyalty. The two factors represent two aspects of the service relationship. Service quality is user's assessment of the service delivery and trust is the psychological bond between user and the site. In prior studies, there is a strong tie between trust and loyalty. In our study, the relationship is fully mediated by sense of belonging. Sense of belonging embodies the special needs of users in an environment in which participation is vulnerable and the purpose is to socialize. Practitioners should pay special attention to factors that foster the sense of belonging to their websites and online communities. Providing high quality of service to and building trust among members are two ways, as demonstrated by our study.

Traditional websites have added "social" components in order to provide better service. For example,

nowadays on an e-commerce site selling apparel, customers can provide feedback and comments on products they purchased. Although this practice was not new, its adoption by majority online retailers is recent. At first, it would feel different or even strange for this type of sites to develop sense of belonging, as a true social media site will do. Further it is would be very hard for them to do so since their own users would not naturally treat the site to be social media and managing a social site requires a different set of skills. However, at heart, customers of a site are a community though it can be a very loose one. With the added Web 2.0 features and social functions, the community becomes more visible and structured to some degree, making sense of belonging relevant in this situation. Thus, online retailers should strive to manage their sites, including all social features such as online forums, in a way to build sense of belonging in its customers, in turn to their sites and brands. At least, the online forum should not be the place that turns people away from their sites and brands.

Different users have different needs. As shown in our study, among light users sense of belonging is the sole direct effect on loyalty, which suggests that light users will continue using a social media site once they “feel at home.” On the other hand, for heavy users they still consider service quality independently from their sense of belonging in their commitment decision process. It suggests that different approaches are needed to retain light and heavy users. Although high service quality is important in general, for light users, to establish sense of belonging is a must. Services targeting sense of belonging can be deployed to retain light users. However, for heavy users, requirements for service quality are even higher.

6.3 Limitations and Future Research

The current study only includes two factors that affect sense of belonging: service quality and trust. Other factors can be included in future research, especially community-related factors, such as a responsive and constructive norm of a social media site. A positive affective social presence and cognitive social presence help build a stronger social identity with a virtual community, which in turn impact on users’ knowledge contribution behavior (Shen et al., 2010). Communal tie is another important factor in knowledge sharing literature. In addition to survey data, there are data generated by websites all the time. That is clickstream data. One approach rarely taken but will be very valuable is to study user behaviors using their behavior (clicks) in relation to sense of belonging and loyalty.

Social media technology is a collection of diverse technologies ranging from social networking, online community, blogging/microblogging, to crowdsourcing. In the current study we focused on a photo-sharing website that supports certain level of group activities and idea exchange. However, it is much different from pure social networking sites, such as facebook.com. Our plan is to test our model in other kinds of social media sites. In recent years, mobile social media has become extremely popular. Location based and ubiquitous social networking was made possible by advancement in technologies. We would also like to investigate networking dynamics via the lens of sense of belonging in these contexts.

VII. Conclusion

We have seen a great impact of Web 2.0 and social media technologies during the last decade.

However, the quest for customer loyalty is an old one. In this article, we studied the question in the new context of social media via the lens of self-regulation framework. Sense of belonging as a core construct is at the center of loyalty formation in this connected world, mediating the effect of service quality and trust on loyalty. Research in social network and social media should not overlook underlying

motivating factors, such as desire and emotion reactions. Our research contributes to areas beyond to information systems and marketing research since increased usage of such technologies by companies is not limited to marketing and sales. Internal use of social media will increase as well since companies are leveraging the technologies toward Enterprise 2.0 or Social Enterprise.

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<Appendix> Correlation Table

	Service Quality	Trust	Sense of Belonging	Loyalty
Service Quality	1	.692**	.628**	.662**
Trust	.692**	1	.608**	.641**
Sense of Belonging	.628**	.608**	1	.730**
Loyalty	.662**	.641**	.730**	1

**significant at $p < .01$ level

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