The Antecedents and Consequences of Sense of Community on Social Networking Sites

Completed Research Paper

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ABSTRACT

Evolution of information technologies facilitates new forms of communication and enables emergence of virtual communities. One key question which has been debated among researchers is whether virtual communities represent bona fide communities or if they are better described as networks of individuals. We draw on research in traditional offline communities, which emphasizes psychological sense of community as the focal construct for understanding community dynamics, and we develop a nomological framework of antecedents and consequences associated with sense of community. We evaluate the framework in a survey of 638 Facebook users. We find that sense of place associated with the social networking site and social interactions contribute to the development of sense of community among social networking site users. We also find that sense of community is a key attitudinal factor affecting information sharing and intentions to remain a member of the social networking site.

KEYWORDS

Sense of community, social networking sites, sense of place.

INTRODUCTION

Virtual communities have been a subject of active research in Information Systems (Bateman et al. 2010; Levina and Vaast 2006; Ma and Agarwal 2007). One of the key questions which have been debated is whether virtual communities are in fact bona fide communities or if they are better described as networks of individuals (Jones 1997). The distinction is important because prior studies in offline communities have distinguished between settlements and communities. Settlements are characterized by people living in the same geographic location, but lacking the social ties which characterize communities. Settlements lack sense of community which has important consequences for the community members. Communities become important instrumental and emotional support systems (Prezza and Costantini 1998). Communities are also a source of social capital that can be mobilized to address community concerns. For example, a study of two Boston neighborhoods has revealed that a neighborhood characterized by a high sense of community had a much lower crime rate compared to a closely socio-economically matched neighborhood which lacked the sense of community (Chavis and Wandersman 1990).

We draw on research in traditional offline communities to gain insight on factors which contribute to the development of sense of community in virtual communities. We focus on the psychological sense of community (SOC) as the core construct which predicts individual engagement with and contribution to a community. Sense of community has been typically associated with specific geographic locales. It emerges from a sense of attachment to a specific location and it grows through social interactions with members of the community. Social interactions with members of a community play a critical role in the development of sense of community. Building on research in offline communities we develop a nomological framework of antecedents and consequences associated with sense
of community. We evaluate the framework in a survey of Facebook users. We examine the independent effects of attachment to a place and social interactions on the development of sense of community in social networking sites. Social networking sites represent an important emergent phenomenon. Facebook, the largest social networking site, has already attracted over 1 billion users worldwide and it continues to grow. We explore the effects of sense of community among Facebook users on the sustainability of the social networking site by examining the impact of sense of community on users’ intentions to share information and remain involved on the social networking site. Our study implicates sense of community as a key attitudinal factor which affects sustainability of virtual communities and it provides the theoretical foundation for examination of sense of community across different virtual community contexts.

The next sections are structured as follows. First, we review prior research on sense of communities in offline contexts. Next, we develop a research model of antecedents and outcomes associated with the psychological sense of communities and evaluate the framework in the context of Facebook. We conclude with a discussion of our findings, limitations and our contribution to theory and practice.

**THEORY BACKGROUND AND HYPOTHESES DEVELOPMENT**

Virtual community is commonly defined as “a group of people who communicate and interact, develop relationships, and collectively and individually seek to attain some goals in an IT-supported virtual space” (Ma and Agarwal 2007). Virtual communities have been a subject of active research in Information Systems. Prior studies highlighted the potential of virtual communities to provide support in crisis situations (Preece and Editor 2002), help medical patients find instrumental and emotional support (Leimeister et al. 2005), and offer companies a source of novel ideas supporting new product design (Füller et al. 2009). While the earlier research had focused on exploring the motivations underlying virtual community participation (Ma and Agarwal 2007; Ridings et al. 2006), the more recent studies have shifted to exploring attitudinal factors which predict sustained community engagement. Bateman et al., (2010) examined the role of commitment attitudes in promoting information consumption and information contribution in a professional question and answer forum and had found that while individual utility reflected in calculative commitment promotes information consumption, continuance commitment which reflects subjective norms influences information contribution behaviors (Bateman et al. 2010). Sense of community has been identified in offline community research as the key attitudinal factor which predicts individual and community outcomes. The focus of the present study is on understanding antecedents and consequences associated with sense of community in virtual communities. In the next sections we review research on offline communities which provides the foundation for the theoretical framework in our study.

Growing urbanization of many industrial societies undermined the sense of community typically associated with small towns and close neighborhoods and sparked research seeking to understand factors which contribute to the development of a community. Seymour Sarason provided a key contribution in this stream of research (Sarason 1974). Sarason (1974) argued that the psychological sense of community was essential to understanding societal problems. Sarason saw the lack of the sense of community as the leading cause of many societal problems stemming from alienation and individualism. Sarason’s work laid the foundation for the research that followed. McMillan and Chavis (1986) took the next step in developing a theoretical foundation underpinning the psychological sense of community. McMillan and Chavis (1986) proposed a framework emphasizing the multidimensional nature of sense of community. According to McMillan and Chavis sense of community encompasses four dimensions: membership, influence, fulfillment of needs, and shared emotional connection (McMillan and Chavis 1986). Membership in a community reflects identification with the community – membership defines who is a part of the community and who is not. Influence reflects a need to have a voice in what goes on in a community. The instrumental and symbolic benefits obtained through participation in a community contribute to the fulfillment of individual needs and make sense of community more vital in the mind of a person. Social capital available to members of a community has been seen as an important resource. The community is also often a source of emotional support. The shared
emotional connection among the community members is reflected in the experience leading to the formation of sense of community.

The research on offline communities suggested that communities can develop in one of two ways. First, geographically rooted communities typically arise from shared experiences of living in a given geographic area, which can be a neighborhood, a town or a larger geographic region (Mannarini and Fedi 2009). Second, communities can arise from shared interests, for example communities of sports fans (Underwood et al. 2001). While interest-based communities may not have a specific geographic area which they co-inhabit, engagement in a community nonetheless requires that there be a place where the community members can interact. Without a location for social interaction there would be no community. Sports stadiums become the rallying points where sports fans converge. The locations where members of a community meet become important artifacts which enable shared experiences and bonding among the community members. Therefore, even for interest-based communities, the places where the community members socialize play an important role in the development of communities.

In a parallel line of research environmental psychologists have discovered that people frequently develop attachments to physical locations which they inhabit (Relph 1997). Sense of place has evolved in environmental psychology as the focal construct that captures individual identification and needs fulfillment associated with a physical location. Importantly sense of place helps to understand how people feel about and act in relation to physical locations which are important to them. For example, a study of Michigan residents living around a lake has revealed a strong sense of a place among the residents reflected in attachment to their homes and the lake (Jorgensen and Stedman 2001). The importance of the geographic locale to the individual residents was reflected in a strong reaction to proposed changes in the lake environment suggested by a local municipality. Sense of place, which develops as a consequence of spending significant time in a given location, leads to protective territorial behaviors and resistance to any changes.

The evolution of telecommunication technologies has expanded the range of communication options available in modern society enabling social interactions which do not require people to meet in person. Social networking sites are perhaps the most remarkable socio-technical phenomenon. Social networking sites enable users to construct online profiles, establish connections with other users and engage in information exchanges. Prior research reveals that information sharing is the primary activity which occurs on social networking sites (Christofides et al. 2009). Users join social networking sites to maintain existing relationships and establish new connections. Relationship maintenance requires personal information disclosure. Facebook, the largest online social network, reports that users share over 1.7 billion messages per day (Kern 2012). The system supporting the social networking sites becomes the place where users get together and share information. The process of information sharing creates an information artifact represented by the users’ profiles, photo albums and online conversations which act as a focal place where information exchanges occur. Prior research suggests that users often treat information artifacts similarly to the way they treat physical locations and form attachments to the information systems (Goel et al. 2011). The sense of place has been found to be strongly related to the psychological sense of community in traditional geographic communities (Mannarini et al. 2012). We expect that sense of place associated with the social networking sites will be positively related to sense of community which the users experience in relation to the online community.

H1. Sense of a place associated with the social networking site is positively related to sense of community.

The second critical process underlying the development of the psychological sense of community consists of the social interactions which occur among the community members (Riger and Lavrakas 1981). In the offline communities members interact regularly with each other exchanging information, seeking advice and emotional support. This process also occurs in virtual communities. A longitudinal investigation of interactions among members of a newsgroup revealed the exchange of information among the community members helped to build sense of community among the participants (Blanchard and Markus 2004). A recent experimental study of a movie review site has shown that features enabling communication among the system users have a positive impact on the
sense of attachment to the site (Ren, Harper, Drenner, & Terveen, 2012). Social interactions play a pivotal role in the formation of offline communities we expect that they will play a similar role in the formation on online communities.

**H2.** Social interactions among social networking site members are positively related to sense of community.

The interest in what differentiates a community from a mere settlement in which people share a geographic location grew out of the realization that psychological sense of community has many positive outcomes (Fisher et al. 2002). Sense of community creates a sense of empowerment among the community members (Chavis and Wandersman 1990), it is also associated with a positive impact on self-esteem (Prezza and Costantini 1998). Neighborhoods which are characterized as having a high level of sense of community have lower crime rates (Bellair 1997). In identifying the positive effects of sense of community in an online community we focus on the key activities essential for the sustainability of online communities. Online communities are built around information sharing. Information sharing by individual members is critical for creating information resources which have value for all community members. Research on offline communities reveals that members of communities characterized by high level of sense of community are more willing to help each other by offering instrumental and emotional support (McMillan and Chavis 1986). Advice and emotional support on social networking sites are communicated through sending messages, pictures, and videos. On social networking sites a greater degree of sense of community will be associated with increased information sharing.

**H3.** Sense of community is positively related to information contribution.

Social networking sites are unique in that self-disclosure is the principle activity which enables SNS users to maintain and build relationships (Christofides et al. 2009). Self-disclosure is the process of disclosing private information aimed at building trust and relationships. Disclosure or private information makes the disclosing party vulnerable to the recipient. Continued engagement in a social exchange depends on reciprocity (Gouldner 1960). Repeated acts of reciprocal personal information disclosure help to build trust and create a source of social capital and emotional support. Consequently self-disclosure is a critical aspect of information sharing in the context of social networking sites. In the offline communities a sense of community promotes disclosure of personal news among the community members (Chavis and Wandersman 1990). In the context of social networking sites sense of community will promote a higher degree of self-disclosure among the SNS users.

**H4.** Sense of community among social networking site members is positively related to self-disclosure.

Research on offline communities has emphasized the importance of community members' tenure to the sustainability of the communities (Lall et al. 2004). A greater sense of community in the offline context is associated with extended tenure in offline communities (Long and Perkins 2003). Association with the community enhances individual self-esteem and psychological well-being. Members of a community value their membership. Sustainability of online communities is similarly very much dependent on the tenure of an average user (Yuqing Ren et al. 2012). A high level of sense of community among social networking site users reflects users’ perceptions that the virtual community helps to fulfill their needs. An exit from the community would mean the loss of benefits gained through participation in the community, therefore a higher sense of community will be associated with lower intentions to exit.

**H5.** Sense is community among social networking site members is negatively related to the intention to exit.
METHODOLOGY

Practical relevance has been highlighted as an important consideration in information systems research (Rosemann and Vessey 2008). For this reason we chose to evaluate the theoretical framework in the context of Facebook, the largest social networking site. The present study relies on a cross-sectional survey to examine the hypothesized relationships among the theoretical constructs. Survey based research allows to evaluate theoretical models in a relevant context and it is a dominant methodology in information systems research (Palvia et al. 2004; Pinsonneault and Kraemer 1993).

Measurement

The survey instrument has been developed for the present study based on previously published scales. Age, gender, and the length of the SNS tenure measures were collected and used as covariates in evaluation of the research model. In line with the recommendations of (Diamantopoulos 2011) information contribution was measured using formative indicators. A properly measured formative construct has to include all factors that formatively contribute to the construct. Content contribution measure comprises frequency of contribution of different type of content which is typically shared on social networking sites: messages, status updates, pictures and videos. All other measures are based on previously published scales. The full survey instrument is provided in the Appendix.

Participants and Data Collection

Study participants were recruited through Amazon’s Mechanical Turk. Mechanical Turk (MT) is an online labor market that is organized around micro-tasks called human intelligence units (HITs). Participants recruited through Mechanical Turk were provided with a link to the survey. Following (Downs et al. 2010) recommendation, at the end of the survey a unique code will be provided to each participant successfully completing the survey. The code is used to track survey submissions and assign credit for participation through Mechanical Turk tracking system. A total of 638 participants were recruited to take the survey. 43 respondents did not complete the survey leading to 595 usable responses. The average age of the participants was 33.3 ± 11.4. The participants were 48% male. Additional descriptive statistics of the participant sample are provided in the Table 1.
Age | Mean: 33.35, SD = 11.45, Min = 18, Max = 71
---|---
Gender | Male: 48%  
Female: 52%
Education | High school diploma: 12%  
Some college: 39%  
Bachelor degree: 38%  
Advanced degree: 11%
Facebook tenure | Less than 1 year: 3%  
1-2 years: 11%  
2-4 years: 36%  
More than 4 years: 50%

Table 1. Study Participants Descriptive Statistics

RESULTS

The proposed theoretical model includes a combination of formatively and reflectively indicated constructs. We employed the Partial Least Squares method through the use of the SmartPLS software package to evaluate our research model.

Measurement model

We evaluated convergent validity, discriminant validity and construct reliability of the measurement instrument. Item weights for formatively measured constructs are presented in Table 2. Items with low weights were retained because the emphasis of formatively measured latent constructs on inclusion of all factors that affect the construct (Diamantopoulos 2011).

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Weight</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Contribution</td>
<td>Status Updates</td>
<td>0.02</td>
<td>0.15</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Likes</td>
<td>0.73</td>
<td>5.90</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Comments</td>
<td>0.05</td>
<td>0.27</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Pictures</td>
<td>0.40</td>
<td>3.90</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Videos</td>
<td>0.10</td>
<td>0.66</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Table 2. Formative indicators of information contribution

Convergent validity was assessed by item cross-loadings for reflectively measured constructs (Fornell and Larcker 1981). The results are shown in Table 3. Individual survey items have loading factors above 0.7 on the respective constructs and the loadings on the respective constructs exceed loadings on other constructs in the model indicating good convergent validity. Discriminant validity was assessed by comparing inter-construct correlations with the square root of the average variance extracted (AVE) for each construct. The data are presented in Table 4. The average variance extracted is above 0.7 in all cases and the square root of AVE is greater than the correlation coefficients among the constructs, thus indicating appropriate discriminant validity. Construct reliability was checked with composite reliability and Cronbach’s alpha calculations. The data are provided in Table 3. All values of composite reliability and Cronbach’s alpha were above the generally accepted threshold of 0.70 (Fornell and Larcker 1981) indicating appropriate internal consistency.
Table 3. PLS Loadings and Cross-loadings

<table>
<thead>
<tr>
<th>CR</th>
<th>CA</th>
<th>Sense of Place</th>
<th>Social Interaction</th>
<th>Sense of Community</th>
<th>Self-disclosure</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.94</td>
<td>0.82</td>
<td>SoP1 0.933</td>
<td>0.491</td>
<td>0.502</td>
<td>0.557</td>
<td>-0.251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SoP2 0.889</td>
<td>0.422</td>
<td>0.458</td>
<td>0.406</td>
<td>-0.244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SoP3 0.929</td>
<td>0.521</td>
<td>0.590</td>
<td>0.578</td>
<td>-0.239</td>
</tr>
<tr>
<td>0.86</td>
<td>0.77</td>
<td>SocIn1 0.463</td>
<td>0.807</td>
<td>0.354</td>
<td>0.568</td>
<td>0.052</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SocIn2 0.392</td>
<td>0.830</td>
<td>0.518</td>
<td>0.316</td>
<td>-0.259</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SocIn3 0.458</td>
<td>0.817</td>
<td>0.281</td>
<td>0.349</td>
<td>0.057</td>
</tr>
<tr>
<td>0.93</td>
<td>0.89</td>
<td>SComm1 0.457</td>
<td>0.420</td>
<td>0.871</td>
<td>0.451</td>
<td>-0.424</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SComm2 0.560</td>
<td>0.419</td>
<td>0.839</td>
<td>0.560</td>
<td>-0.500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SComm3 0.471</td>
<td>0.396</td>
<td>0.880</td>
<td>0.387</td>
<td>-0.516</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SComm4 0.487</td>
<td>0.497</td>
<td>0.883</td>
<td>0.503</td>
<td>-0.509</td>
</tr>
<tr>
<td>0.89</td>
<td>0.82</td>
<td>SelfDisc1 0.515</td>
<td>0.461</td>
<td>0.344</td>
<td>0.821</td>
<td>0.049</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SelfDisc2 0.511</td>
<td>0.417</td>
<td>0.543</td>
<td>0.890</td>
<td>-0.168</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SelfDisc3 0.440</td>
<td>0.396</td>
<td>0.497</td>
<td>0.862</td>
<td>-0.127</td>
</tr>
<tr>
<td>0.92</td>
<td>0.88</td>
<td>Exit_1 -0.308</td>
<td>-0.156</td>
<td>-0.542</td>
<td>-0.154</td>
<td>0.950</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit_2 -0.229</td>
<td>-0.108</td>
<td>-0.586</td>
<td>-0.160</td>
<td>0.942</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit_3 -0.167</td>
<td>0.005</td>
<td>-0.349</td>
<td>0.061</td>
<td>0.787</td>
</tr>
</tbody>
</table>

Table 4. Descriptive statistics, Correlations, and Square Root of AVEs
Common Method Variance Analysis

Following guidelines provided by (Podsakoff et al. 2003), we performed the Harman single-factor test for all 6 core construct items in the model. This was done using a non-rotated exploratory factor analysis (principal components analysis) using SPSS 12. The highest variance explained by one factor was 26 percent, and all 6 components were present. Since more than one factor emerged from the analysis, we can conclude that common method variance is not a serious concern in our study.

Structural model

The hypotheses were assessed by examining the parameters by PLS structural modeling. $R^2$ values of the dependent variables reflect the predictive value of the model and standardized path coefficients indicate strength of the relationship between the independent and the dependent variables (Chin 1998). We used a bootstrapping resampling procedure with 500 samples to estimate the significance of paths in the structural model. The results are shown in Table 4.

Sense of a place ($\beta = 0.42$, $p < 0.001$) and social interaction ($\beta = 0.28$, $p < 0.001$) are positively related to the sense of community. Sense of community is positively related to information contribution ($\beta = 0.64$, $p < 0.001$) and self-disclosure ($\beta = 0.60$, $p < 0.001$). Sense of community is negatively related to exit intentions ($\beta = -0.49$, $p < 0.001$). The findings are summarized in Figure 4.

* Significant at $p < 0.05$, ** Significant at $p < 0.001$.

Figure 4. Structural model path coefficients
DISCUSSION

The current study develops and evaluates a nomological framework of antecedents and outcomes of the psychological sense of community among social networking site users. Building on prior research in the offline contexts we examine the effects of the sense of a place associated with the place where community members interact and the role of social interactions on the development of the sense of a virtual community. We find that both factors play an important role. SNS users’ attachment to a social networking site as a place and the frequency of social interactions occurring among the users both strongly influence the sense of community among the SNS members. In examining the impact of sense of community on the SNS users’ behaviors, we found that SOC is a strong predictor of information sharing and even more importantly self-disclosure in the context of SNS. Self-disclosure is critical for maintaining and building relationships. Self-disclosure is particularly challenging in the online contexts which lack many of the cues available in face-to-face communications. Echoing observations from the offline community researchers we find that a higher sense of community is predictive of community members’ intentions to share the details of their personal lives.

Our study makes a number of contributions to theory. First, we integrate prior research and develop a nomological framework outlining antecedents and consequences associated with sense of community. Sense of community has been established as a critical attitudinal factor affecting individual and community outcomes in traditional offline communities. We provide the foundation for examination of sense of community in online communities. While there has been qualitative evidence indicating that attachment to a place and social interactions among community members are important for the development of sense of community offline, this is the first study to empirically examine these relationships in the online context. We find that SNS users develop psychological attachment to the social networking site as a place where they interact with others. This attachment is in fact the dominant explanatory construct in the model of sense of community in the context of social networking sites. Sense of place has large effect size ($f^2 = 0.34$) in our sample, while the effect size of social interactions on the sense of community is medium ($f^2 = 0.20$). This is not entirely surprising as social networking sites emphasize the development of personal profiles which encourage high degree of user involvement with the construction of the individual profiles. The process of constructing online presence is similar to the process which underlies the development of sense of place in offline contexts. Working on improving a physical property location is associated with the development of sense of place (Jorgensen and Stedman 2001).

Our second contribution is in evaluating the impact of sense of community on the users’ behavioral intentions critical for the sustainability of social networking sites. Social networking sites are entirely dependent on users’ sharing information as a source of information which draws sustained patronage among the site members. Information contribution, disclosure of personal information and the intention to remain on the site are key parameters affecting sustainability of social networking sites. We find that sense of community is an excellent predictor of users’ behavioral intentions. Sense of community predicts 52% of variance in the intention to share information, 32% of variance in the intention to disclose personal information and 46% of variance in the intentions to exit the site. Our third contribution to theory is the provision of evidence supporting the bona fide nature of online communities. The significance of all predicted relationships in the research model and a high degree of variance explained lend strong support to the idea that online communities are in fact real communities which follow dynamics similar to offline communities.

The limitations of the present study stem from the reliance on survey methodology. Cross-sectional surveys rely on self-report measures which are a subject to common-method bias. We examined the common method bias in our study and we did not find significant indicators of common method variance. It is also important to note that although we drew a sample of 638 users from a population of over 1 billion. Further, we limited our sample to Facebook users residing in the United States, thus limiting our ability to generalize the findings. The limitations point to opportunities for further research. Experimental studies which would explore of various system variables
which may influence factors contributing to the development of sense of community among a more diverse group of participants would help evaluate the generalizability of the proposed model and uncover boundary conditions.

CONCLUSION

The present study addressed the issue of whether online communities resemble offline communities in terms of key processes which underlie community development and behavioral consequences which arise from sense of community in the online context. We found that sense of place and social interactions play a key role in predicting sense of community among social networking site users. Sense of community in turn is a strong predictor of users’ behavioral intentions affecting sustainability of online communities. Our study lends support to prior arguments that online communities share much in common with offline communities and it paves the way for further research on the individual, cultural and system variables which may affect online community formation.

REFERENCES


Kern, E. 2012. “Facebook is collecting your data — 500 terabytes a day,” *Gigaom*.


APPENDIX

Survey instrument.

All scales are 7 point Likert, anchored in 1 – strongly disagree, 7 – strongly agree, unless otherwise indicated.

Sense of place. (Jorgensen and Stedman 2001)

<table>
<thead>
<tr>
<th>SoP1</th>
<th>Facebook is my favorite place to be.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SoP2</td>
<td>Facebook is the best place for doing the things that I enjoy most.</td>
</tr>
<tr>
<td>SoP3</td>
<td>I feel happiest when I am on Facebook.</td>
</tr>
</tbody>
</table>

Social interaction. (Hunter 1975)

<table>
<thead>
<tr>
<th>SocIn1</th>
<th>How often do you chat with your friends on Facebook?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SocIn2</td>
<td>How often do you exchange favors with your friends on Facebook?</td>
</tr>
<tr>
<td>SocIn3</td>
<td>How often do you ask your friends on Facebook for advice?</td>
</tr>
</tbody>
</table>

1 - Never, 2 - Less than once a month, 3 – Once a month, 4 - 2-3 times a month, 5 – Once a week, 6 – 2-3 times a week, 7 - Daily

Sense of community. (Peterson and Speer 2008)

<table>
<thead>
<tr>
<th>SComm1</th>
<th>I feel like a member of Facebook</th>
</tr>
</thead>
<tbody>
<tr>
<td>SComm2</td>
<td>I belong on Facebook.</td>
</tr>
<tr>
<td>SComm3</td>
<td>I feel connected to others on Facebook</td>
</tr>
<tr>
<td>SComm4</td>
<td>I have a good bond with others on Facebook</td>
</tr>
</tbody>
</table>

Information contribution.

<table>
<thead>
<tr>
<th>Contrib1</th>
<th>How often do you post status updates on Facebook?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrib2</td>
<td>How often you &quot;like&quot; pictures/comments posted by others?</td>
</tr>
<tr>
<td>Contrib3</td>
<td>How often do you comment on friends' posts?</td>
</tr>
<tr>
<td>Contrib4</td>
<td>How often do you post pictures on Facebook?</td>
</tr>
<tr>
<td>Contrib5</td>
<td>How often do you post videos on Facebook?</td>
</tr>
</tbody>
</table>

1 - Never, 2 - Less than once a month, 3 – Once a month, 4 - 2-3 times a month, 5 – Once a week, 6 – 2-3 times a week, 7 - Daily

Self-disclosure. (Wheelees 2006)

<table>
<thead>
<tr>
<th>SelfDisc1</th>
<th>I usually talk about myself for fairly long periods at a time on Facebook.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SelfDisc2</td>
<td>I often discuss my feelings about myself on Facebook.</td>
</tr>
<tr>
<td>SelfDisc3</td>
<td>I intimately disclose who I really am, openly and fully in my conversations on Facebook.</td>
</tr>
</tbody>
</table>

Intention to exit (Turnley and Feldman 1999)

<table>
<thead>
<tr>
<th>Exit_1</th>
<th>I have frequent thoughts of leaving Facebook.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit_2</td>
<td>I frequently think of deleting my profile from Facebook.</td>
</tr>
<tr>
<td>Exit_3</td>
<td>I would switch to an alternative social network if there was one.</td>
</tr>
</tbody>
</table>