SUPPORTERS IN DEED – STUDYING ONLINE SUPPORT PROVISION FROM THE PERSPECTIVE OF SOCIAL CAPITAL

Research-in-Progress

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Abstract

The phenomenon of social support – aid and assistance exchanged through social relationships and interpersonal transactions – has been studied for decades with a focus on discovering the mechanism that lies between support exchange and personal well-being. In the age of the Internet, researchers also have shifted their focus to online support exchange. However, little attention has been paid to conceptualizing the determinants of support provision in virtual support communities. Drawing from social capital theory, this study attempts to bridge this gap by presenting a model that applies the structural, relational, and cognitive dimensions of social capital to theorize the determinants of the provision of informational and emotional support in virtual support communities. Through the use of social network analysis and machine learning techniques, messages from a virtual support community for women with breast cancer are analyzed. The analysis results are used for empirically testing the framework modeling support provision.

Keywords: Virtual community, social support, social capital, machine learning


**Introduction**

The burgeoning number of Internet users participating in virtual support communities and the accompanying growth of the number of virtual support communities (Haynes, 2009) has drawn researchers from various fields to study the online social support phenomenon. For example, there are studies focusing on the effect of virtual support communities on health outcomes (e.g., Eysenbach et al., 2004); types of support exchanged in online support communities (e.g., Coulson, 2005); and relationships formed among members of such communities (Pfeil and Zaphiris, 2007).

In the literature on social support studies, however, little attention has been paid to the provision of social support as a dependent variable, i.e., the discovery of the psychological, relational, or contextual determinants that predict the provision of social support (House and Kahn, 1985). House et al. (1988) also emphasized on the importance of identifying the determinants of the quantity and quality of support provision so as to unravel the mechanisms that lead from social support to individual health. In addition, for practitioners and community administrators, identified determinants can also lead to appropriate healthcare intervention, and improved design of the online environment to encourage more support contribution, resulting in facilitated support exchange that benefit both providers and receivers, and the longevity of the community (Kollock and Smith, 1996; Wellman and Gulia, 1999).

According to Pfeil (2009), informational support – the provision of information about the stress itself or how to deal with it (Cutrona and Suhr, 1992), and emotional support – the communication of love and caring (Cutrona and Suhr, 1992) have been identified as the most common types of social support exchanged online. This study attempts to bridge the gap in the literature on social support in virtual support communities by examining the determinants of the provision of informational and emotional social support. The structural, relational, and cognitive dimensions of social capital (Nahapiet and Ghoshal, 1998) are applied in the context of virtual support communities to predict their contributions to the two types of social support. More specifically, online relationships formed among members of a cancer virtual support community are analyzed according to the dimensions of social capital to determine how the different aspects of social relations among members of the target virtual support community affect their provision of informational and emotional support.

This research makes three main contributions. First, this study represents one of the few attempts to explore the determinants of support provision, and is the first endeavor to pursue this topic in online contexts. The results of this study will provide researchers, practitioners, and community administrators with insights into the social dynamics that take place in virtual support communities, and facilitate studies on the relationships between online social support and community members’ physical and mental health. Second, the relationships among employees, business units, and organizations, which are characterized through the structural, relational, and cognitive dimensions of social capital, and their impact on collective knowledge exchange and creation has been investigated extensively in the management and information system disciplines (e.g., Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998). However, little effort has been made to apply these social capital dimensions to study other social contexts and behaviors such as online social support exchange. To the best of the authors’ knowledge, this study is the first to examine the applicability of Nahapiet and Ghoshal (1998)’s social capital framework to social support activities. In addition, different from research that applies social capital theory to study a single type of online activity (e.g., Wasko and Faraj, 2005), this study focuses on two types of online contribution: informational and emotional social support. The third contribution of this paper is the use of an automated method to analyze messages in virtual support communities. An automated content analysis method would generate more reliable results by better representing the target community due to its ability to analyze large amounts of data spanning a long period of time (Huang et al., 2010). Furthermore, the use of an automated method to analyze message content avoids some potential biases associated with other widely used research methods such as survey questionnaires (Gable, 1994; Krosnick, 1999; Pinsonneault and Kraemer, 1993). Based on the results of this research, knowledge about online social dynamics in virtual support communities is expected to be furthered.

The article is organized as follows. Section 2 provides background knowledge on social support, virtual support communities, and social capital theory. After discussing the theoretical foundations, the proposed model incorporating the dimensions of social capital as determinants of support provision is then
presented and discussed in section 3. In section 4, the methodology for testing the proposed model is briefly discussed.

**Theoretical Background**

**Social Support and Virtual Support Communities**

Pfeil (2009, p. 124) defined social support as “the exchange of verbal as well as nonverbal messages in order to communicate emotional and informational messages that reduce the retriever’s stress.” For Lakey and Cohen (2000, p. 187), social support is “aid and assistance exchanged through social relationships and interpersonal transactions.” Social support concerns supportive interactions embedded within interpersonal relationships. Social support researchers have been trying to theorize about the social support phenomenon and to investigate the role that social support plays in mediating individuals’ life stressors and their personal health. Social support has been found to have positive effects for individuals (Pfeil, 2009), either through a main effect that directly increases one’s physical, mental and social health and reducing their mortality rate regardless of exposure to stress (Berkman and Glass 2000; Thoits 1995), or a buffering effect that helps individuals cope with negative events or lessen these events’ impacts on individuals (Cohen and Wills 1985; Thoits, 1986; 1995).

When individuals facing similar life situations are connected, formally or informally, to foster social support exchange, social support groups are formed. Such groups feature face-to-face, small group interaction, with an emphasis on personal participation, voluntary attendance, and an acknowledged purpose of solving problems collectively or providing social support (Katz and Bender, 1976; Taylor et al., 1986). Social support groups are based on the premise that people who share similar difficulties, disease, condition, or distress would be better able to empathize with one another and exchange support (Barak et al, 2008).

In the age of the Internet the number of virtual support communities has grown exponentially (Haynes, 2009). Through message forums, listservs, chat rooms, or newsgroups, community participants engage in social interaction with peers who are facing or have gone through similar life stresses (Wright and Bell, 2003). Virtual support communities, compared to the offline ones, have some distinctive features such as weak-tie connections, anonymity, invisibility, delayed reactions, and neutralizing of status (Barak et al., 2008; Wright and Bell, 2003). These features allow community participants to access diverse information, disclose information about self safely without the fear of being stigmatized, create a sense of solidarity, and enhance the feeling of personal empowerment (Barak et al., 2008; Wright and Bell, 2003). This phenomenon of exchanging social support in online settings has attracted social support researchers’ attention as well. Examples of research on online social support include: the features of computer-mediated online environments and their implications to support exchange (Wright and Bell, 2003); the formation of identities, norms, and values in virtual support communities (Maloney-Krichmar and Preece, 2005); the characteristics of online support social networks and their relationships to support behavior (Bambina, 2007); and the effect of engaging in social support exchange in virtual support communities on individual well-being (Han et al., 2011; Shaw et al., 2006).

In this study, the phenomenon of social support is studied in the context where resources are actually provided to those who are facing stressful life events (Cobb, 1976; Cohen and Wills, 1985) instead of one’s subjective perception of being cared and supported by others (Barrera, 1986; House and Kahn, 1985; Lakey and Cohen, 2000). Research focusing on this “enactment” perspective of social support generally studies the buffering effects of social support on individuals when facing stressful situations, i.e., social support is enacted to help support recipients deal with the stressor and/or adapt to it. Among the social support studies based on this view, the types of supportive resource that are exchanged and the function that each type of support has on individuals have been a common interest. Various support classifications have been proposed so far. For example, Schaefer et al. (1981) classified social support into emotional, tangible, and informational support. House (1981) identified four support categories: emotional, instrumental, informational, and appraisal. In online settings, researchers also have taken great efforts to identify the types of support exchanged among community participants to help explore the socio-behavioral dynamics in virtual support communities. Some researchers adopt existing offline support classification (e.g., Braithwaite et al., 1999) while others inductively create new support categorization (e.g., Klemm et al., 1998). Despite the different frameworks of support classification that these studies
used or discovered, informational support and emotional support have emerged as the most common types of social support exchanged online (Pfeil, 2009).

**Social Capital and its Dimensions**

Social capital (Bourdieu, 1986; Burt, 1992; Coleman, 1988; Nahapiet and Ghoshal, 1998; Putnam, 1995) refers to the existence of social relationships and the relational assets, such as trust, value, identity, and social norms that are embedded within the relationships. The emergence and maintenance of social capital allows connected partners to share benefits, such as increased accessibility to useful information (Burt, 1992) and increased community solidarity (Coleman, 1988).

The concept of social capital provides a theoretical perspective for examining various social phenomena in the public health realm. For instance, there is evidence that social capital indicators such as interpersonal trust and voluntary group membership are significantly associated with mortality rates and individual self-rated health status (Kawachi et al., 1997; Kawachi et al., 1999). Social capital has also been used to examine the phenomenon of social support in online and offline settings. For example, Drentea and Moren-Cross (2005) conducted content analysis on a virtual support community for pregnant women and new mothers and identified the formation of social capital and the resulting facilitated support exchange. Lin (2011) studied the effect of the exchange of social support via instant messaging (IM) on the formation of social capital, which in turn affects the IM usage.

By providing a theoretical foundation to explore and seek explanations for various aspects of social behavior, social capital theory seems appropriate to investigate motivations that lie behind virtual support community members' contributions of social support. Furthermore, according to House and Kahn (1985), it is desirable that the existence, type, and structure of these social relations, and the exchange of social support within these social relations be conceptualized and measured in a single study. This study incorporates social capital theory, a conceptual framework that examines the existence, type, and structure of social relations, with measurements of the provision of social support, which, as House and Kahn (1985) suggest, will facilitate the comprehension of the inter-relationships among these different aspects of social relations.

In order to address different aspects of social relations, and to follow previous studies modeling the relationship between social capital and the contribution of help (Chiu et al., 2006; Wasko and Faraj, 2005), the proposed study is based on Nahapiet and Ghoshal (1998)'s conceptualization of social capital, wherein the properties of social relations within an organization are linked to the creation of organizational knowledge. In their conceptualization, facilitated organizational knowledge exchange and combination are the benefits embedded within social relations, which are characterized by three dimensions of social capital – structural, relational, and cognitive (Nahapiet and Ghoshal, 1998):

- **The structural dimension** concerns the existence of social interaction ties and the structural pattern of the connections among social actors.
- **The relational dimension** concerns the development and maintenance of interpersonal relationships and the assets created in these relationships such as trust, social norms, and identity.

By adopting Nahapiet and Ghoshal (1988)'s conceptualization of social capital, we clarify our use of the social capital concept in this research. In contrast to many social support studies that treat the exchange of resources, such as physical material (money, goods, etc) and social support (informational, emotional), as aspects of social capital (e.g., Beaudoin and Tao, 2008; Di Nicola et al., 2011), this study considers these facilitated social activities as the outcome benefits of the existence of social capital within social relations.

In this study the level of analysis is at the individual actor level, which highlights the “external” perspective of social capital (Adler and Kwon, 2002). While the “internal” view of social capital focuses on the structure of social relations among actors within a collectivity, the “external” perspective emphasizes the relations a social actor maintains with others (Adler and Kwon, 2002). In other words, instead of
focusing on the social capital of the target virtual support community as a whole, the dimensions of social capital are operationalized and measured for each member linking to others in the community. Our goal is to analyze the relationship between the social characteristics of an individual in the target virtual support community according to the three dimensions of social capital and the resulting facilitated provision of informational and emotional support.

Figure 1 illustrates the proposed model. In this model, the provision of informational and emotional support by a community member is determined by one's level of structural embeddedness within his/her social relations – the structural dimension of social capital, the characteristics of his/her friendship network and the level of trust s/he has on other community members – the relational dimension of social capital, and his/her intellectual ability to provide support across social relationships – the cognitive dimension of social capital. The dimensions of social capital, when manifested in our proposed model, captures different aspects of one's social relations, which will lead to facilitated actions in one's social network (Nahapiet and Ghoshal, 1998). Specifically, the dimensions of social capital create necessary conditions for a virtual support community members’ provision of high quantity and quality informational and emotional social support (House and Kahn, 1985).

Hypotheses

Structural Dimension of Social Capital and Support Provision

In introducing the structural dimension of social capital, Nahapiet and Ghoshal (1998) cited Granovetter (1992) and stressed the idea of “structural embeddedness.” Structural embeddedness concerns the impersonal configuration of one’s social network which denotes who you reach and how you reach them (Burt, 1992). People with higher connectedness with others in a group have better access to others’ information and support, and thus have higher awareness of others’ needs (Ryan et al., 2005; Wellman and Wortley, 1990). Such people are also more likely to be requested by others for help (Granovetter, 1982; Ryan et al., 2005; Wellman and Wortley, 1990). These result in higher opportunities for these people to engage in supportive interactions. Barnes and Duck (1994) also suggested that frequent social interactions set up a context that fosters support exchange.

As with Tsai and Ghoshal (1998)’s study and findings that informal social activities foster organizational knowledge exchange, our interest in this study is to see how non-support related social interactions in virtual support communities affect the provision of support. This focus is supported by Hays and Oxley (1986)’s call for research on the possible effects of positive social interactions – engaging in social interactions for fun and relaxation (Barrera and Ainlay, 1983) – on support exchange so as to elucidate the health-promoting potential of social relations. In addition, Huang (2012) found that close to 40% of message threads in a virtual cancer support community are initiated not for support exchange, but for positive social interactions. As a result, we hypothesize that in virtual support communities, as members interact through their participation in discussion threads initiated for positive social interactions, information and support channels will also be created among them, leading to higher opportunities for support exchange. The more frequently one participates in others’ discussion threads for positive social interactions, the more information about other members and their support needs will flow through such engagement. This degree of one’s structural embeddedness resulting from the participation in social activities for fun and relaxation via online message postings can be captured by the measurement of degree centrality (Ahuja et al., 2003; Tsai and Ghoshal, 1998) – the number of direct social ties a network actor has to others (Wasserman and Faust, 1994). Hence:

**H1.** An individual with higher degree centrality in his/her social network formed through the participation in positive social interactions in a given virtual support community will contribute (a) higher volume and (b) higher quality emotional support to other members.

**H2.** An individual with higher degree centrality in his/her social network formed through the participation in positive social interactions in a given virtual support community will contribute (a) higher volume and (b) higher quality informational support to other members.
Figure 1. Proposed Model of Support Provision in Virtual Support Communities.

Relational Dimension of Social Capital and Support Provision

The relational dimension of social capital is concerned with the relational embeddedness of an individual in a community (Granovetter, 1992; Nahapiet and Ghoshal, 1998). This dimension focuses on the “kind” of relationship such as friendships formed and maintained by people through a history of interactions (Granovetter, 1992), and the assets that are created and leveraged therein (Nahapiet and Ghoshal, 1998). The assets created with respect to the relational dimension of social capital include, for example, trust and trustworthiness (Fukuyama, 1995), social norms (Coleman, 1988), and social identity (Tajfel and Turner, 1985). The “quality” of relationships that the relational dimension of social capital focuses on is an important factor affecting the provision of social support in offline settings (Dunkel-Schetter and Skokan, 1990; Iida et al., 2008).

Previous research has suggested that community members with more friendship ties in the community are more likely to feel attached to and stay in the community (Granovetter, 1992; McPherson et al., 1992). For example, in a study on the antecedents of emotional attachment to a voluntary group, Paxton and Moody (2003) found that a group member’s relational embeddedness (measured through the centrality of the member in the friendship network) significantly affected his/her sense of belonging and feeling of morale toward the group. This feeling of emotional attachment and belonging to a virtual community, in turn, has been identified to motivate individuals to make contributions to help others in virtual communities (Bateman et al., 2011). Based on this connection, it can be inferred that in virtual support communities, the degree centrality of a member in his/her friendship network should be positively associated with his/her contribution of support to other community members.

It is important to note the difference between “relational embeddedness” that is measured by one’s centrality index in his/her friendship social network, as pointed out here, and the “structural embeddedness”, which is measured by one’s centrality in his/her network of positive social interactions, discussed in the previous section. While the latter measures the span of one’s social activity, which is an indicator of one’s opportunity to have access to others and provide social support, the former assesses a community member’s friendship status, an indicator of quality social relationships that determines one’s provision of social support. Hence:

**H3.** An individual with higher degree centrality in his/her friendship network in a given virtual support community will contribute (a) higher volume and (b) higher quality emotional support.
**H4.** An individual with higher degree centrality in his/her friendship network in a given virtual support community will contribute (a) higher volume and (b) higher quality informational support.

Among the relational assets that are embedded in relationships, trust has been a research focus (e.g., Fukuyama, 1995; McAllister, 1995; Tsai and Ghoshal, 1998). In an online setting, trust has also been found to motivate the provision of knowledge over bulletin boards (Ridings et al., 2002) and organizational knowledge management systems (Chiu et al., 2006; Wasko and Faraj, 2005). In addition, researchers have found that trust is positively related to one’s sensitivity to the needs of others and thus one’s provision of help (McAllister, 1995).

One of the benefits that result from trusting relationships is that people are more willing to take risks in social exchange (Coleman, 1988; Nahapiet and Ghoshal, 1998), including the revelation of personal and sensitive information online. For instance, Dwyer et al. (2007)’s study on the revelation of personal information on social networking sites such as Facebook and MySpace found trust in the web site and its members to be associated with the person’s sharing of private information, such as photograph, real name, or phone number. According to Ridings et al. (2002, p. 278), users post personal information online to make “themselves appear to be more than just a stranger, and are showing that they trust others with sensitive information.” Therefore, by showing one’s trust in the virtual support community and its members through the revelation of personal information, one should also be motivated to provide support to others. Hence:

**H5.** The extent to which one discloses his/her personal information will be positively associated with the (a) quantity and (b) quality of his/her contributions of emotional support.

**H6.** The extent to which one discloses his/her personal information will be positively associated with the (a) quantity and (b) quality of his/her contributions of informational support.

**Cognitive Dimension of Social Capital and Support Provision**

The cognitive dimension of social capital refers to the shared language, vocabulary, mental models, and vision that are embedded in social relationships (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998). Adler and Kwon (2002) regarded the cognitive dimension of social capital as one’s “ability” to exchange the social capital benefits. This dimension of social capital is thus tightly related to one’s expertise and the exchange of knowledge across social relationships (Nahapiet and Ghoshal, 1998; Wasko and Faraj, 2005). Even if relationships among community members afford the opportunity and motivation to contribute knowledge, contribution is not possible unless one correctly interprets the other’s needs, correctly evaluates the context in which others need the resource, and knows what to provide (Adler and Kwon, 2002; Wasko and Faraj, 2005). Previous research also found out that one is less likely to contribute to other community members when one feels a lack of ability to do so (Wasko and Faraj, 2000). Wasko and Faraj (2005) conclude that “cognitive capital consists of both individual expertise, or mastery of the language within the practice, as well as experience with applying the expertise” (p. 41).

Social comparison theory (Festinger, 1954; Schachter, 1959) posits that, in order to maintain a stable self-appraisal, people are motivated to evaluate their opinions, performances, or feelings with objective standards or non-social realities such as scaled scores. When objective standards are unavailable, people look to others for comparative self-evaluation and guidance. The social comparison process “includes the desire to affiliate with others, the desire for information about others, and explicit self-evaluation against others” (Taylor and Lobel, 1989, p. 569). Investigations of social comparison theory further suggest that people under anxiety conditions are more likely to affiliate and seek information from those who adjust better than themselves (Bennenoek, et al., 2002; Molleman et al., 1986; Taylor and Lobel, 1989; Thoits, 1986). This tendency of “upward affiliations” – affiliating with better-off others or experts and look for helpful information – allows individuals to simultaneously acquire guidance from these experts for coping with the stressors, and treat experts as role models to provide hope and inspiration for themselves (Taylor and Lobel, 1989). As a result, it can be inferred that members of virtual support communities who have a high degree of non-reciprocal, incoming contacts from other community members are expected to have “either overcome their threatening circumstances or adjusted well” (Taylor and Lobel, 1989, p. 571) and are regarded by other members as experts and role models. Information provided by these experts is more likely to be useful (Constant et al., 1996). These “role models” should also be more likely to share their knowledge because they know what and how to contribute (Wasko and Faraj, 2005). Hence:
H7. An individual’s degree of non-reciprocal incoming friendship assignment by others will be positively associated with the (a) quantity and (b) quality of his/her contribution of informational support.

**Methodology**

**Data Collection**

The target virtual support community for this study is a large U.S. based online cancer support community that hosts discussion boards for various kinds of cancers and has more than a hundred thousand registered members posting hundreds of messages every day. Postings on these discussion boards are organized as message threads, in which each thread is initiated by a community member and is followed by a list of responses through which members exchange their conversation over a topic asynchronously. Breast cancer discussion board, the most active cancer discussion board of this virtual community, is chosen as the data source from which messages are downloaded. Online message threads that are initiated between March 2012 and May 2012 are downloaded for analysis. The data will contain thousands of online members’ interactions for three months, a period that is beyond the capability of humans to analyze manually. By using automated text classification method capable of analyzing this large amount of data (Huang et al., 2010), the results will be representative of the behavioral dynamics of the target message board. In addition to the downloaded message threads, the personal and relational information of members who post messages during the 3-month period will also be collected.

**Data Analysis**

There are three main stages of analysis in this study: automated support analysis, the creation of social networks, and hypotheses testing. For the first stage, an automated support analysis method (Huang et al., 2010) using machine learning techniques is adopted. Specifically, we use the LIBSVM software library (Chang and Lin, 2001) that implements the support vector machine (SVM) (Joachims, 1998) algorithm to do the automated learning and classifying. As a statistical machine learning algorithm (Vapnik, 1999), SVM has been shown to be effective doing automated text classification (Joachims, 1998) and has been successfully adopted to classify social support in virtual support communities (Huang et al., 2010), thus is suitable to our support classification task. This allows us to analyze and classify documents automatically into pre-defined categories based on their content, with minimal human intervention. This method does the follows: (1) classify message threads into threads initiated for positive social interactions or for support exchange; (2) classify support exchange message threads into either informational support or emotional support; (3) count support quantities and classify support into different qualities.

For classifying message threads into the two types of activities (positive social interactions and social support), only the first message of each message thread is considered. This strategy is taken due to the nature of online threaded discussion in which the first message of a thread sets up a discussion topic and the conversation that follows is supposed to revolve around this topic. For the classification of support messages into either informational support or emotional support, all the messages in support message threads are analyzed. The sentence is used as the unit of analysis, i.e., each sentence in a message is classified into either type of support. The quantity of either type of support is calculated by counting the total number of sentences that are provided for a type of support by a member, divided by the number of messages posted by him/her. 100 message threads, containing 1,291 messages from the target community are downloaded for manual content analysis in order to “train” the computer program to conduct the automated support classification tasks. To classify social support into different qualities automatically, two coders first independently classify a tenth of collected messages into low, medium, and high support qualities. This manual classification into qualities of informational support and emotional support is conducted based upon the degree of empathy identified in support messages. Items used to identify levels of empathy conveyed in support messages are created based on Håkansson and Montgomery (2003)'s identification of constituents of empathy, and on Pfeil and Zaphiris (2007)'s result of applying these constituents to virtual support communities. Specifically, the understanding and similarity constituents of empathy are taken as indicators for quality informational support, and the emotion and concern and relationship constituents of empathy are used as indicators for quality emotional support. These manual classification results are then used to train the computer program to automatically classify messages into
different qualities based on their contents.

At the second stage of the analysis, degree centrality values are calculated for each member’s friendship network and positive social interaction network. In the target cancer support community, each member can designate other members to be his/her friends. This friendship assignment is not necessarily reciprocal, which means a member A can assign another member B as friend without B’s assignment of A as friend. The degree centrality for one’s friendship network is calculated from his/her reciprocal friendship assignments. On the other hand, the non-reciprocal “incoming” friendship assignment (hypothesis 7) for each member is also calculated (in-degree centrality). The positive social interaction network is generated from community members’ participation in message threads initiated for positive social interactions. When a member posts a message to a message thread, a relationship is created linking the member to the one who initiated the thread. A member can respond to a thread initiated by others (outgoing relationship), others can also respond to a thread initiated by the member (incoming relationship). Since we consider a member’s engagement in positive social interaction with others, regardless of whether a message thread is initiated by the member or not, both in-degree and out-degree centralities will be considered for a member.

For the third and final stage of the analysis, the proposed model of support provision is tested. The testing of the proposed hypotheses is conducted through the use of ordinary least squares (OLS). In addition to the results of automated support classification and the generated friendship networks, online members’ degree of revelation of his/her personal information is also measured. In the target cancer support community, each member has his/her own personal profile page, in which a member can voluntarily reveal his/her private information such as photo, age, cancer type and stage, date of diagnosis, treatment, and personal story. For each member, this variable is calculated by dividing the number of revealed personal items by the total number of possible items to be revealed. This value will, thus, range between 0 (one doesn’t share any personal information) and 1 (all the possible personal items are revealed). With all these data at hand, the proposed model can be tested. Table 1 summarizes the variables used in this study.

**Project Status**

This is a research-in-progress study. We are currently collecting data and creating computer programs for automated support classification tasks. Upon the completion of data collection and computer programs, automated support classification can be conducted, and the hypotheses can be tested. Our aim is to have preliminary results by December 2012 that we can present and discuss at the ICIS conference.

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<tr>
<th>Variable</th>
<th>Measurement</th>
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<tbody>
<tr>
<td>Structural embeddedness of members in their positive-social-interaction network</td>
<td>Degree centrality, considering both In- and Out-degree</td>
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<tr>
<td>Relational embeddedness of members in their friendship network</td>
<td>Degree centrality, considering reciprocal ties only</td>
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<tr>
<td>Degree of members’ revelation of personal information</td>
<td>Based on the number of personal items revealed in a member’s personal profile</td>
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<tr>
<td>Degree of members’ incoming friendship contacts</td>
<td>In-degree centrality, considering non-reciprocal incoming ties only</td>
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<td>Informational support – Quantity</td>
<td>Based on the number of informational-support sentences</td>
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<td>Informational support – Quality</td>
<td>Based on the level of empathy identified in a message</td>
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<td>Emotional support – Quantity</td>
<td>Based on the number of emotional-support sentences</td>
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<td>Emotional support – Quality</td>
<td>Based on the level of empathy identified in a message</td>
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References


