Understanding Positive and Negative Outcomes of SNSs Usage from A Social Network Analysis Aspect

Research-in-Progress

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ABSTRACT

Social Networking Sites (SNSs) shape the individuals’ online network structures and real life communication patterns. However, integrating offline networks and lowering communication cost can increase social support as well as social stressors (overloads and conflicts). This study focused on the online network structure’s influence on both positive and negative outcomes of SNSs usage. In this paper, the causal relationships between the positive benefits (social support) and negative outcomes (social conflicts and social overload) are also discussed.

Keywords (Required)
SNSs, Network Structure, Social Support, Social Conflicts, Social Overload.

INTRODUCTION

In the past few years, Social Network Sites (SNSs) have mushroomed evidently with the wave of Web 2.0 technologies. There is a growing tendency for a diversity of the user population, and SNSs will gradually become an important part of people’s daily life. Previous behavioral studies of SNSs are mainly focusing on the motivations of usage as well as SNSs usage patterns (e.g., Joinson, 2008; Hu & Kettinger, 2008). The studies related to usage outcome especially negative outcomes are lacked and cannot reach an agreement.

Researchers have investigated the possible benefits gained from using SNSs such as enlarging social capital and enhancing self-esteem (e.g., Steinfield et al., 2008; Valenzuela, 2009). Previous studies proved an association between use of Facebook and social capital, with the strongest effect of bridging social capital and the weaker effect of bonding social capital (Ellison et al., 2007). However, researchers also found that the online communication, social capital, and the size of the network in SNSs may influence each other negatively (Ellison et al., 2011; Vitak et al., 2011; Burke et al., 2009). It seems that there are some inhibitors which influence the social capital. A traditional given social network may bring support referring to the positive aspects of relationships, relational conflicts/demands which refers to the negative aspects of relationships (House et al., 1988). Considering the negative aspects, SNS research mainly focuses on the concerns for privacy issues (e.g., Debatine et al., 2009). They may have more troubles in controlling their networks in the face of public audiences (DiMicco & Millen, 2007; Lampinen et al., 2009). People in the workplace reported tensions when mixing personal and professional personas as requirements from the two sometimes contradict (Skeels and Grudin, 2009), which is well studied as role stress in transitional organization research. However, studies investigated the benefits gaining from SNSs or the costs such as privacy concerns all failed to combine the two dimensions together and state the internal mechanism clearly.

In this study we intend to complement and improve the research in SNSs which is in a state of neglecting causal directions of the relational outcomes (between positive and negative), and also investigate relationship between the network structure and this process. SNS is a tool for individuals to perform relational activities which should in accordance with both positive and negative aspects of social relationships. Social support is considered one of the most significant positive outcomes of social communication and social capital. Bridging social capital’s main benefit is gaining informational support from weak ties while main benefit of bonding social capital is gaining emotional support from strong ties. Negative inhibitors discussed in SNSs studies include the negative consequences of disclosing information, information overload, etc. These descriptions of negative activities are similar with role stressors (including role conflicts and role overload), which were often studied with social support in the offline situation. In this study, we intend to extend the concepts in SNSs environments to better investigate the relationship between negative and positive outcomes in SNSs.

Research Question 1: What’re the network structure’s impacts on both positive and negative outcomes obtained through SNSs engagement?

Research Question 2: What’re impacts of negatives outcomes on positive outcomes of SNS usage?
The current study is aimed at enriching our understanding of the relationships between positive relational outcomes (social support) and negative outcomes (social overload/conflicts) gained from SNS usage, which are both influenced by the SNS network structure. Further studies will test the SNSs existing features’ effect on minimizing the potential negative outcomes, or designing new features directly on the basis of the current framework. We expect these studies can bring insights for the practice as well. For instance, given the trend of increasing size and diversity of SNS friends, we can test or design features (e.g. Facebook list; new information presentation scheme) to reduce the negative outcomes without doing harm to the positive relational outcomes.

LITERATURE REVIEW

Uniqueness of SNSs

SNSs have the potential to reshape user’s social networks by integrating and maintaining relationships and lower the costs of communicating with the whole network. It’s described like that many groups important to an individual are simultaneously present in one context and their presence is salient for the individual (Lampinen et al., 2009). It is believed that the aggregated networks in SNSs help users manage their relations better, such as publish information to more audiences, gain resources and supports from a broader network of relations than reality in a constrained context.

However, most behaviors of humans are contextually bound in reality, which means people do not exhibit the total set of behaviors under the given context (Biddle, 1979). It was proved that having a private profile is associated with a higher level of online activity (Lewis et al., 2008), which means people have more concerns with high-level engagement and are inclined to hide certain information away from the whole public networks.

There is currently little empirical research that describes how the characteristics of the online relationships and structure of online personal networks predict the communication-based relational activities that occur on SNSs, and how these behaviors affect outcomes of usage.

Network Structure

Hall and Wellman (1985) argued characteristics of the social network influenced by personal and environmental factors can predict social support. Barton’s research (1981) suggested that different network structural characteristics (such as density, range, and multiplexity) may influence the nature of the social support available to a person and, hence, the person’s well-being. However the mechanisms how structure of networks in SNSs influences the support are still under estimated. Thus it is reasonable to investigate this in SNSs context. Toward these goals, we propose the analysis of social network structure for describing support processes.

Social networks can vary in their range including their size and diversity. Size of a network means the quantity of alters with whom ego has a specified relationship. In SNSs the size of ego-centered network refers to the number of “friends” added into users account. Diversity means types of links that stand for the types of relations in SNSs. It may refer to the number of ‘Clusters’ in ego’s network, which means the number of portions of the network with high density (the extent to which a network is interconnected). Diversity can also be interpreted as the number of roles one occupied or diverse relationships in different social situation.

In the traditional social support studies, the most frequent studied structural characteristics are including size, diversity, and tie strength. Other network characteristics are also discussed in some studies but not as frequent as the above three. Considering no current studies have investigated the relationship between network structures and outcomes of SNS usage in this way, we plan to test the basic characteristics firstly. However the emotional supports are usually coming from strong ties, and the information supports are provided mainly by weak ties (Granovetter, 1973). As the network structure we are going to measure is the general network level in SNS, we believe there are several problems to establish the relationship between tie strength (frequency/intimacy) and relational outcomes: 1) difficulty to test the network level tie strength 2) not applicable to predict the causal relationship based on the individual level arguments. Other social network characteristics will be not included in the current study, but will be discussed in the following studies if suitable.

THEORY BACKGROUND AND DEVELOPMENT

Social relationships can be a source of stress and support at the same time (Barrera, 1981). If social support represents the positive aspects of personal relationships, such as concern and love, then stress represents the negative aspects of these relations, such as negative affect and disconfirmation. SNSs can be taken as a tool for facilitating social communications among people, which can also be the source of stress and support at the same time.
Social Support Theory

Social support can be taken as an individual’s perceptions of general support or specific supportive behaviors from people in their social network, which enhances their functioning or may buffer them from adverse outcomes (Malecki & Demaray, 2003). House (1981) reviewed the former literature and summarized a typology of support content. He distinguished social support into four types: emotional, appraisal, informational, and instrumental. Emotional support refers to the provision of esteem, trust, empathy, concern and love. Instrumental support involves instrumental behaviors such as aiding, money, labor, time or modifying environment. Informational support refers to advice, suggestion, directives, and information, while appraisal support refers to affirmation, feedback, social comparison. In the context of SNS, people have few chances to seek for the instrumental support (e.g. lending money), and physical or money support is seldom reported as motivations of SNSs usage. Based on the former SNS literatures (Joinson, A. N., 2008; Koroleva, 2011), we find that appraisal support such as social comparison is less mentioned by participants than the emotional and informational support in SNS. Thus we will discuss the emotional support and informational support in the study.

Emotional support in SNSs can include most of content in the offline situation. People can utilize the communication features provided by SNSs, such as posting a status, sending a private message or etc., to gain the sense of concern and belonging through friends’ feedback. Informational support should include two kinds, active-seeking by posting specific questions to solve problems and scanning postings from friends to enjoy the content.

Stressors: Social Overload and Social Conflicts

Social overload in virtual spaces is understood as a user’s feelings of too high social demands as being responsible to take care of friends, to address their problems, or to amuse them (Weinert et al., 2012), which is similar with role overload (an individual’s lack of the personal resources needed to fulfill commitments, obligations, or requirements). We define social overload’s main difference with role overload is that there is no forceful obligations or requirements from others when social communications happen in SNSs. For instance, to amuse Facebook friends, to address problems of Facebook friends, to be responsible to talk to Facebook friends can all be taken as social overload in SNSs, while people can choose to perform these or not more optionally.

Social conflicts originally refer to the negative or conflictive aspects of social relationship (House et al., 1988). The construct are usually measured by asking the participants whether the conflict situation such as “argue with somebody”, “angry or unpleasant manner”, or “upset/have a disagreement with somebody” happen to them (e.g. Lepore, 1992; House et al., 1988). We extend the content of social conflicts by integrating the role conflict, which is a well-studied construct in the work-life balance studies. Role conflicts refer to the condition that expectations for single or multiple roles contradict with each other and make it impossible for individuals to function effectively. Extended social conflicts now include both negative interactions with friends and conflicts among friends due to contradictory demands, which can represent more fully the negative aspect of relationships. In SNSs, when a professor’s contacts include the students, relatives and colleagues at the same time, he may find it confusing to maintain a friendly impression towards friends or a professional image towards students. When more connections are added into social network accounts, these conflicts will easily occur in SNSs. The most common role conflicts in SNSs mentioned in literature, are work-family/professional-personal conflicts (DiMicco & Millen, 2007). Expectation that family members/employers viewed one’s profile increased which may influence perceptions of the existing of conflicts (Lampe et al. 2008). In addition, students conveyed a sense of anxiety about interacting with the faculty on Facebook (Hewitt & Forte, 2006).

RESEARCH MODEL AND HYPOTHESES

![Figure 1 Research Model]
Network structure - Social Support

People may have the perception of confronting more relations at the same time in SNSs than the offline situation, which contains two main reasons. Firstly, the contacts, which lose connections attributing to context constrain (space and time) in the older days, are much easier to manage together through SNSs. As people aggregate more social contacts in the lifetime gradually, it is predictable that the range of SNS network will aggregate gradually as well. Compared with offline contacts which are vulnerable to lose, once added, people report that they seldom delete their friends’ contacts in SNSs. The second reason is contributed to consciousness. Ego is cognitively aware of the presence of resources embedded in social networks and makes a choice in evoking the particular resources. There may be ties and relationships that do not appear in ego’s cognitive map and thus not in her or his awareness of their existence in the offline situation (Lin, 2001). In SNSs the ego has no necessary to recall the friends they could seek for assistance but express demand directly as the whole network is available online compared with offline situation constrained by space. The presence of ties and relations is much more salient in SNSs than the offline world. All these make the SNSs user facing a larger and more diverse network online.

When we seek emotional support from SNSs, not only strong ties (usually the providers of emotional support) but also weak ties can immediately read and reply the message posting. Meanwhile literature shows that people seldom use SNSs to add strangers actually (Ellison et al., 2011). This may also prove that the situation may be rare that individuals indiscriminately accumulate large numbers of Friends – too many to engage with meaningfully, which may make the prediction power of the number of friends weak. The SNSs features can support requests for information and sharing information. When one’s network size is large, it is more possible that there are lots of weak ties (mainly provides of informational support, Granovetter, 1973), as the number of strong ties is stable and limited. We conclude that,

H1: Size of one’s SNS network is positively related to Emotional Support.

H2: Size of one’s SNS network is positively related to Informational Support.

The previous studies proved that the diversity and size dimensions of network range affect exposure to stress, access to social support, and distress (Haines and Hurlbert, 1992). Users can create and maintain larger and diffuse networks in the internet, where they can potentially draw resources (Wellman et al., 2001). Different clusters of one’s network may be separated by specific characteristics (such as age, education level, work environment, country, etc.). These different personality traits possibly have a close relationship with the knowledge they owned. A diverse network contains people who are not similar with each other, and the different friends can offer diverse information one needs, then:

H3: Diversity of one’s SNS network is positively related to Informational Support.

Network Structure - Social Stressor

Recent years more and more researchers noticed the overload phenomena in SNSs. For example, information overload has been studied, which is defined as “the ability of users to select relevant information is inhibited because of the high amount and low value of information” in SNSs (Koroleva et al., 2010; Weinert et al., 2012). Social overload is highly correlated with information overload but not the same. Most of the social activities in SNSs (e.g. commenting on others’ status) need to be performed by scanning the information feeds. If one really has the demand to utilize the SNSs for purpose of managing social relations, activities such as reading close friends’ updates, sending birthday e-gifts to friends, or others will indeed increase one’s burden as the size of network enlarges. Information brings responsibilities which create feelings of overload due to plentiful unwanted social demands (Evans and Lepore 1993). As the network size increase, most of the relations in the network are weak ties who we do not have the patience or resources to enhancing and maintaining the relationships. These unfamiliar friends also post lots of personal information. These can be taken as unwanted demands from social network. Based on these we suppose that:

H4: Size of one’s SNS network is positively related to Social Overload.

SNS is serving as a tool of increasing support for users, which can be taken as a social support intervention. For example, SNSs can increase support from the following mechanisms: strengthen bonds with positive network members and weaken bonds with destructive network members (Cutrona & Cole, 2000). This may imply that in SNSs the negative aspects of social relationship may be not serious as people can refuse to add destructive network friends. We will mainly discuss the situation of role conflicts. Normally diverse network generates conflicts are determined by the different requirements from different roles. Requirements from university friends and high school friends may not be varied so much, while a professor must perform his professional role and family role separately. For instance, one may expect his colleague treats him as a competent and professional person. If he also wants to seek emotional support from the strong ties in SNSs by disclosing personal status, he may find the consciousness of existing of colleagues in SNSs will prevent him doing this. The conflicts are the results of what the users expect them to be facing different kinds of roles. Nowadays more and more SNSs provide functions for users
to solve these kinds of problems, which may influence the impact of diversity on social conflicts. We also know people who have clearly social circles and cliques in their social network structure are more inclined to group their contacts to control information (Jones & O’Neil, 2010). However there are also evidences showing that people are seldom using these functions because of the complexity or other reasons. The feature will serve as a moderator in the following studies. Here we propose the hypothesis as:

H5: Diversity of one’s SNS network is positively related to Social Conflicts.

Social Stressor - Social Support

On a basis of former literature, we know that the network size may not predict more benefits. We also find evidences that the larger size can be the antecedent of more negative outcomes such as social overload. Thus we infer that there may be causal relationships between social stressor and social support. We will demonstrate the above assumption from a control-theory perspective on behavior:

Control theory focuses on the feedback-based processes through which people self-regulate their actions to minimize discrepancies between actual acts (present state/perception) and desired or intended acts (reference value) (Carver & Scheier, 1990). People will use SNS to seek social support because there exist discrepancies between social supports’ expectancies and perceptions of current supports, and SNS can be taken as support intervention to increase social support. If people put efforts in seeking social supports (behavior) in SNSs, people will access the results from two aspects: 1) whether the discrepancies have been reduced, 2) whether the rate of discrepancy reduction is as expected.

Social Overload/Conflict can interrupt the process of seeking social support from the two aspects. They can create frustration due to external (impediments or constraints) or internal (deficits of skill, knowledge, or effort) difficulties to reduce discrepancy of social support. The existence of social conflict caused by different demands from the network will constrain people’s seeking support behavior (Vitak et al., 2011), especially when people lack the ability to handle conflicts and the facilitating features of SNSs. Social conflicts reduce the autonomy of seeking support which may prevent the process of communication and posting behavior in SNSs when they want to get emotional support from friends. Social overload means the people lack the ability to handle social demands. Information overload can make the process to gain information support less efficient, thus create difficulties to reduce discrepancy quickly and easily (Burke et al, 2009). When people find the cost of finding useful information or friends’ updates huge, they will give up the way according to control theory. What’s more, the social stressors can also cause anxiety because of difficulties to reduce discrepancies and difficulties to reduce discrepancy quickly and easily. Tension and anxiety are the most frequent studied emotional strain, which are the outcomes of role stressors in previous organizational studies. When people cannot control negative impacts of social relationship and lack the ability to handle the conflicts can induce anxiety, social conflicts can induce tension. When seeking social support in SNSs, the unavoidable social overload can induce anxiety. Thus, social overload/conflict can reduce seeking support behavior. We can find that the social conflicts mostly happen when people seek emotional support by posting and self-disclosure, and social overload occurs when people read feeds from friends and satisfy their information needs. To cope with social overload in SNS, people may choose to read less feed information, which reduces the possible information support. To cope with social conflict in SNS, people may give up seeking support in SNS and turn to use other media to communicate. Thus we conclude that:

H6: Social Overload can have a negative effect on Information Support.

H7: Social Conflicts can have a negative effect on Emotional Support.

METHODOLOGY

Participants

A web-based survey will be conducted among users of Facebook, one of the most popular SNSs in the world. Facebook is chosen because it is a feature-rich social network service with a large and diverse user pool which reports a much wider age range than other SNSs.

Questionnaire Design

The questionnaire consisted of three sections. We intend to collect both the objective data and subjective data through questionnaire. Section A contained measures of network structure in Facebook. Respondents will be asked to identify the size and diversity of their networks.

The network size is measured as the number of friends in person SNS profile to adapt the special context (e.g. Ellison et al, 2007). The participants will be asked to check the actual number of their SNS friends, as well as the perception of their
network size. To test the diversity of network, we will adopt the number of the user-customized list. For those who do not use list function effectively, we provide a list of the spouse or partner, relatives, supervisor/colleague/subordinate, school/university classmates, “Friends” knowing in Facebook (e.g. interest minority), or others for participants to recall. Other constructs will be developed by self based on literature.

**Data Collection**

A pilot test will be conducted firstly to ensure that the questions were unambiguous and that there were no technical errors which may impede data collection. Because SNSs are characterized by an aggregation of ego-centered networks and there are no public boards or administrative mediators, respondent-driven sampling can be used to capture the web network typologies better than node/link sampling (Rau et al., 2008). Invitation letters will be sent to participants through the messaging function of Facebook. More invitation letters will be then sent to people who are directly connected to former participants to ensure the participants are to some extent active in Facebook.

**EXPECTATIONS**

The study will help draw a basic picture for those who intend to have a better understanding of the social networks in SNSs or other social media. Compared with investigating the enablers and inhibitors of SNSs usage, the two kinds of outcomes of SNS usage - social support and social stressors are put forward comprehensively. Network structure included in SNSs studies makes the whole study more reasonable. What we want to prove is that SNSs usage brings supports and may also cause stressors, and integrating networks to gain supports may adversely prevent the process.

Functions provided by SNSs to manage their accounts will be discussed in later studies. These functions may moderate the relationship between the network structures and outcomes of SNSs usage or directly influence the structure of the online network.

**REFERENCES**