Social Networking Site Use on Social Capital of Older Adults

Completed Research

Nicole O’Brien
McMaster University
obrien@mcmaster.ca

Yufei Yuan
McMaster University
yuanyuf@macmaster.ca

Abstract

Older adults social connections tend to become fragmented and decrease as they age. This paper examines the influence that SNSs have on older adults’ social capital. The use of SNSs and its various dimensions are analyzed as to their influence on social capital of older adults. The various dimensions explored in this paper are active use, intensity of use, type of contacts and the message content. The different dimensions vary in influence on social capital with some positively affecting social capital and others have little to no affect.

Keywords (Required)
Older adults, Social Networking Sites, Social Capital

Introduction

As we age, our social connections become fragmented and decline due to the many life changes that occur (Antheunis, et al., 2015). This reduction in social connections has a negative impact on the quality of life for many older adults. Of the various tools that are available for older adults to keep socially connected, there is the internet and more specifically social networking sites (SNSs). These social networking sites may help increase and restore older adult’s social connections. Such that the objective of this research is to understand the influence SNSs have on social connections of older adults.

For those older adults over the age of 65, social connections tend to be reduced as a consequence of their changing life circumstances and social network (Antheunis, et al., 2015). The changes in their social network are a result of retirement, death of family members and friends, becoming a caregiver, along with moving of friends and family or oneself (Cotten, et al., 2013). The changes in life circumstances negatively affect one’s social life, for example financial constraints or health issues that reduce mobility and affect functional ability (Victor, et al. 2000). Social connections are considered a resource for older adults in that they may insulate them from health and mental decline (Gilmour, 2012). Being socially connected reduces, the probability of cognitive decline in older adults (Zunzunegui, et al., 2003) as well as increases the likelihood of good physical health and reduced mortality rates (Lubben and Girdron, 2003). The more social connections older adults have the less likely they are to be socially isolated and lonely (de Jong Gierveld, et al., 2015). Thus, social connections for older adults tend to reduce the negative consequences of aging or at least keep it at bay for longer.

In Canada, almost 16% of the population was over the age of 65, in 2014, and that portion of the population is increasing on a yearly basis (Statistics Canada 2015). Over 24% of older adults perceived that they should be more socially active; with 19% of older Canadian adults being socially isolated (Gilmour, 2012). Social isolation is the lack of social connections in both quality and quantity (Hawklley, et al., 2008). Social isolation negatively affects quality of life and health.

To date, different interventions have been applied to relieve older adults’ social isolation such as telephone buddies and visiting volunteers with inconclusive results regarding their effectiveness (Dickens, et al., 2011; Findlay, 2003). As well, various computer-mediated interventions have been investigated, with some having significant impact on social connections and others either reducing social connections or having little to no impact (Damant et al., 2017; Sum et al., 2008). A study on internet use was found to have both a positive and negative impact on older adults’ social capital and wellbeing (Sum,
et al., 2008). The influence of information and communication technologies on social connections has been found to be mixed in several reviews (Damant, et al., 2017). This suggests that the context and nuances of use of social media and SNSs needs to be further investigated.

SNSs are online websites that allow for communication, collaboration, and sharing of content among the various users (Boyd and Ellison 2008). SNSs are used to communicate with others online. They can be utilized to enhance existing relationships and create new ones (Kaplan and Haenlein, 2010). SNSs have been found to strengthen social capital for college students, both bonding and bridging (Ellison et al., 2007). While the Ellison et al. (2007) study examined the influence of use Facebook had on social capital, only the intensity of use and type and quantity of connections were examined. Social capital is the strength that one has in relationships. Higher levels of social capital have been associated with positive wellbeing of older adults (Gilmour, 2012).

As this study is focused on how older adults utilize SNSs to increase and maintain social connections, there is a need to understand the way in which they interact with SNSs. Older adults tend to use SNSs less frequently than any other age group and they are less inclined to actually use the medium (Smith, 2014). Therefore, there is a need to understand not only the motivation of the user but also how older adults use SNSs. As Quinn (2016) suggested that, the effect that SNSs have on social capital is influenced by the way in which it is utilized.

The previous SNS adoption research (Wagner, et al., 2010): gave an understanding of why an individual uses SNSs and the factors that affect the user’s adoption of the medium. However, they did not explain how individuals use them and the impact, that use has on older adults social connections.

As many of the past studies have been inconclusive as to whether SNSs can increase social capital the different facets of use are examined in this paper to give a better understanding of the underlying mechanisms of SNSs use and their influence on social capital. The constructs for use of SNSs are based on the different aspects of use. The constructs include who and how often individuals interact with the medium, the types of interactions with the medium and also the type of content shared.

To address the gap in understanding we propose to investigate how social media in the form of SNSs enhances and extends older adults social capital. More specifically the research questions are: (1) Can the use of SNSs strengthen social ties for older adults? (2) What characteristics of SNSs use have the most influence on extending or enhancing social capital? We organize the rest of the paper as follows: We first review the literature on social capital and propose a theoretical model to investigate how the use of SNSs may enhance and extend social connections of older adults. We then discuss the methodology and results. We conclude with a discussion on theoretical and practical implications along with future directions.

**Research Model and Theoretical Foundations**

To address the above research questions a model was created to reflect older adults’ use of SNSs influence, as shown in Figure 1. Social Capital is being used as the underlying theoretical foundation to explain the affect that the use of SNSs have on social connections. Social capital represents social relationships as a resource (Coleman, 1988). Social capital has been found to influence psychological wellbeing, such as loneliness, and life satisfaction (de Jong Gierveld, et al., 2015; Ellison, et al., 2007). The use of social capital theory will aid in the understanding of the creation of social capital of older adults using SNSs. Therefore, the creation or maintenance of social capital will also aid in understanding if the use of SNSs have a direct effect on increasing social capital, as well as an indirect effect on increasing social connections in the aid of increasing quality of life.

**Social Capital**

Social capital is defined as “The connections among individual’s social networks and the norms of reciprocity and trustworthiness that arise from them” pg. 19 (Putnam, 2000). These norms of reciprocity and trustworthiness facilitate supporting each other through the connections created and maintained. These collectives of personal relationships and by extension communities are held together and enhanced by social capital (Sum, et al., 2008). Social capital is the intangible asset that is created by the interactions of individuals. It is created through the social network that exists in the community. Individual’s social
capital can be created and expanded over time and if not nurtured, decreases as the quality and extensiveness of the individual’s social network declines.

For this research, social capital has been divided into two separate categories, bridging and bonding (Erickson, 2011). Bridging capital is the social connections between friends and acquaintances as a weak tie, which is for the sharing and exchanging of information (Granovetter, 1973). Bonding social capital is the social connections between close friends and family as a strong tie (Granovetter, 1973). Bonding social capital facilitates the emotional connections between friends and family (Erickson, 2011).

**Use of Social Networking Sites**

SNSs are online sites that allow for collaboration, communication and interaction between members (Boyd and Ellison, 2008). Users of these sites can create a profile that is either public, or semi-public. SNSs permit members to list the members they are connected to, while giving other members the opportunity to connect with others by viewing the list of others (Boyd and Ellison, 2008).

There are two functions of SNS. The first is to maintain and enhance communication with their already established social network (Ellison, et al., 2007). The second is to facilitate connections between individuals that would not have been made in other circumstances (Ellison et al., 2007).

As the way in which older adult use SNSs are varied, so are the number of contacts and amount of time older adults spend on SNSs differs. The way in which users of SNSs interact with the media differs. Thus, the use of SNSs has been broken down into several dimensions. These dimensions are Intensity of Use, Active Use, Contact Profile, and type of message content (Information Sharing, and Private/Emotional Content). Each of the various dimensions will be discussed in further detail along with the hypotheses. The seven construct definitions are given in Table 1.

**Intensity of Use:** Intensity of use is defined as the frequency, and the amount of time spent on SNSs. Ellison et al. (2007) found the intensive use of Facebook increased social capital of the user. The findings suggest that the more time an older adult is engaged in SNSs along with the number of connections they have has a positive impact on social capital. With increased amount of time spent connecting with family and close friends the ties between them will be strengthened. Whereas, the higher the number of connections one has will increase the quantity of weak ties for an older adult.

H1a: Intensity of use of SNSs will positively influence bridging social capital.

H1b: Intensity of use of SNSs will positively influence bonding social capital.

**Active Use:** Active use of SNSs is defined as the posting, commenting, and interacting with others. SNSs have been used for interacting socially, information-seeking, entertainment and passing the time (Whiting and Williams, 2013). These uses of SNSs can be categorized as either passive or active use. Active use of SNSs are posting, broadcasting and direct communication, in a simpler context it is the use of SNSs to interact with others. Passive use (lurking) of SNSs are the consumption of content with little to no interaction with others. As passive use does not entail social connections, we will not be examining it in the context of creating or maintaining social connections. The more active the use of SNSs, the more interactions with others online, such that social connections are either created or maintained. This creation or maintenance of social connections can influence an older adult’s social capital positively.

Broadcasting is a one-way communication that can be sent to numerous older adults. The function of broadcasting is to disseminate information to a group or network of older adults, such as posting status updates (Burke and Krut, 2014). On SNSs, older adult have the ability to broadcast messages in the form of posts, blogs, updating their status, pictures and video for others to consume. It has been found that the mere act of updating one's status can foster a sense of social inclusion in the group (Deters and Mehl, 2012). This suggests that even one-way communication can increase a person’s feeling of inclusion within the group, causing the perception of an increase in social capital. As broadcasting is a form of information sharing this would influence the bridging component of social capital. The other form of active use is direct communication with others. This is in the form of two-way communication between older adults. Direct communication can be used for both sharing information and connecting with close friends and family. Direct communication can aid in strengthening the ties between older adults. Thus, active use of SNSs is considered the direct communication and broadcasting of information and content to others. Such that the active use of SNSs will have a positive impact on both bonding and bridging social capital.
H2a: Active use of SNSs in the form of interacting with others will positively influence bridging social capital.

H2b: Active use of SNSs in the form of interacting with others will positively influence on bonding social capital.

**Contact Profile:** Contact profile is defined as the number and type of social connections. The number of contacts an older adult has on SNSs are an indicator of the types of connections they have (Kietzmann et al., 2011). Individuals that have a limited number of connections tend to use SNSs to connect and keep up to date with close friends and family (Ellison et al., 2010). Such that SNSs are used to strengthen and maintain the social ties. Individuals that have a large and broad number and type of social connections tend to utilize SNSs as a means of connecting with others. The larger the number of connections and groups an older adult belongs to is an indication of a broad social network (Ellison et al., 2010).

H3a: A broad contact profile will positively influence bridging social capital.

H3b: A narrow contact profile will positively influence bonding social capital.

**Message Content:** The intimacy level of the message content is influenced by the closeness of the relationship. Close friends and family are privy to more private or personal information (Granovetter, 1973). Older adults are more inclined to share emotional problems and issues with those close to them, such that the message content would be more emotionally based at times. Thus, the more intimate the message content in either personal/private information or emotionally telling of the message will positively influence the social connections of those closest to the older adult.

While those that have a less intimate relationship the messages would be more informational (Granovetter, 1973). Sharing of information between close friends and family is also necessary to create and maintain bonds with these older adults. Thus, the sharing of information that is neither highly personal nor private will influence both close and non-close relationships.

H4a: Information sharing in communication using SNSs positively influences bridging social capital

H4b: Information sharing in communication using SNSs positively influences bonding social capital.

H5a: Personal/private content in communication using SNSs does not influence bridging social capital.

H5b: Personal/private content in communication using SNSs positively influences bonding social capital.

**Methodology**

To test the hypotheses a structural equation model was created with 7 defined constructs. The constructs are defined in Table 1 below. When possible the constructs were from previously adopted measures, those being, bonding and bridging social capital, contact profile and intensity of use. When they were not available, the measurements developed using the steps outlined by Bowden et al. (2002) and Moore and Benbasat (1991). The constructs were conceptualized after an extensive literature review, with measurements developed from the definition. The measurements were then evaluated by two PhD students. Further evaluations of the measurements were conducted by four non-academics 2 in the non-target audience and 2 in the target audience to evaluate clarity. After this review, the necessary changes were made. Further testing of the developed constructs was conducted using a pilot test, which evaluated the convergent and discriminant validity of the newly created and existing constructs.

Table 1 gives the constructs and their measurements. All constructs were measured on a 7-point likert scale, from highly disagree to highly agree, with the exception of intensity of use. Intensity of use was measured on five numerical interval with each of the measurements.
<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
<th>Survey Measurements</th>
<th>Developed from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Use</td>
<td>Active posting, commenting and interacting with others.</td>
<td>I use SNSs to send videos to specific people and/or post for everyone.</td>
<td>Self-developed</td>
</tr>
<tr>
<td>Alpha=0.873</td>
<td></td>
<td>I use SNSs to send pictures to specific people and/or everyone.</td>
<td></td>
</tr>
<tr>
<td>CR=0.934</td>
<td></td>
<td>I make comments on others posts and blogs in social networks.</td>
<td></td>
</tr>
<tr>
<td>AVE=0.610</td>
<td></td>
<td>I use SNSs to email others.</td>
<td></td>
</tr>
<tr>
<td>Contact Profile</td>
<td>The number and type of social connections</td>
<td>Do you connect to... on SNSs?: 1. Family Members, 2. Friends, 3. New Friends, 4. Religious groups, 5. Hobby groups, 6. Special interest groups, 7. Other groups</td>
<td>(Litwin, 2001)</td>
</tr>
<tr>
<td>Alpha=0.842</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR=0.894</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVE=0.677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensity of Use</td>
<td>The frequency and amount of time SNSs is used.</td>
<td>How often do you use SNS? (Monthly, Weekly, Daily, Hourly, Constantly)</td>
<td>Kwon and Wen, 2010; Morahan-Martin and Schumacher, 2003</td>
</tr>
<tr>
<td>Alpha=0.700</td>
<td></td>
<td>How much total time a day do you spend on SNSs? (&lt;an hour, 1 hour, 1-2 hours, 2-4 hours, 4 or more hours)</td>
<td></td>
</tr>
<tr>
<td>CR=0.833</td>
<td></td>
<td>On average what is the amount of time you spend per visit on SNSs? (1-10 minutes, 10-20 minutes, 30-60 minutes, 1-2 hours, more than 2 hours)</td>
<td></td>
</tr>
<tr>
<td>AVE=0.626</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Sharing</td>
<td>The informational content of the communication</td>
<td>I use SNSs to share public information to others.</td>
<td>Self-developed</td>
</tr>
<tr>
<td>Alpha=0.719</td>
<td></td>
<td>I use SNSs to obtain information from my connections.</td>
<td></td>
</tr>
<tr>
<td>CR=0.842</td>
<td></td>
<td>I use SNSs for finding public information such as news, blogs, etc.</td>
<td></td>
</tr>
<tr>
<td>AVE=0.640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private /Emotional</td>
<td>The private and/or emotional content of the communication</td>
<td>I use SNSs to communicate personal information with others.</td>
<td>Self-developed</td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td>I use SNSs for communication of an emotional nature, such as issues with relationships, health problems etc.</td>
<td></td>
</tr>
<tr>
<td>Alpha=0.724</td>
<td></td>
<td>When I want a private chat with friends or family, I use SNSs to communicate with them.</td>
<td></td>
</tr>
<tr>
<td>CR=0.845</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVE=0.644</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonding Social Capital</td>
<td>The form of strong ties between each other. Bonding is connections between kin or close friends, which provide emotional support for individuals (Antheunis, Vanden Abeele and Kanters 2015).</td>
<td>I use SNSs to form a closer feeling to someone. On SNSs there is someone to discuss intimate problems with. There is someone I can turn to for advice about making very important decisions on SNSs. I use SNSs to communicate with people I feel close too. There are several people that I trust to help me solve my problems. There is always someone to chat with on social networks about my day-to-day problems.</td>
<td>(Williams, 2006)</td>
</tr>
</tbody>
</table>
Bridging Social Capital
Alpha=0.834
CR=0.889
AVE=0.668

The form of weak ties. These social relationships provide loose connections for information (Antheunis, Vanden Abeele and Kanters 2015).

Based on the people I interact with on SNSs it is easy for me to find useful information. The people I interact with on SNSs help me keep current on the news. The people I communicate with on SNSs help keep me current with what is new and popular. I like interacting with others on SNSs to learn new things.

(Williams, 2006)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Active use</th>
<th>BOSC</th>
<th>BRISC</th>
<th>Contact Profile</th>
<th>Intensity of Use</th>
<th>Information Sharing</th>
<th>Content</th>
<th>Private/Emotional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active use</td>
<td>0.756</td>
<td>0.03</td>
<td>0.869</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOSC</td>
<td>0.667</td>
<td>0.02</td>
<td>0.303</td>
<td>0.817</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRISC</td>
<td>0.668</td>
<td>0.026</td>
<td>0.487</td>
<td>0.573</td>
<td>0.817</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact Profile</td>
<td>0.677</td>
<td>0.022</td>
<td>0.321</td>
<td>0.418</td>
<td>0.474</td>
<td>0.823</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Construct definition, and measurements

A pilot study was done first to assess if the model and constructs were measured properly. The pilot model data consisted of 29 respondents that were over the age of 65, they were approached personally and are from the local university area. The model was assessed during a pilot study to ensure that all the constructs were viable and measuring the construct reliably. In the pilot stage, we decided to divide the construct message content into two distinct constructs, informational content and private/emotional content to create a more precise picture.

In the next step of testing the model Qualtrics, a popular survey company was utilized to collect the data. The survey respondents were Canadians over the age of 65 that used SNSs. From this survey, we had 330 usable responses. The participants included 231 female and 99 males. The age categories included 275 between the ages of 65-74, 47 between the ages of 75-84 and 8 over 85. Living situation for the participants was 125 living alone, 188 living with family, and 14 living with extended family. None of the participants lived in a long-term care/assisted living residence.

Results

We used the tool SmartPLS 3 to assess the model. The structural equation model was assessed for validity as was the constructs. The first step was to assess the factor loadings, measurements that were below 0.4 were removed from the model (Chin 2010). Next, the constructs were assessed for reliability and validity (Chin, 2010). The constructs show reliability and validity, as shown in Tables 1 and 2, are above the 0.7 tolerance for CR and Cronbach’s alpha and AVE is above 0.5 for all the constructs (Gefen and Straub, 2005). To assess common method bias the correlations between the constructs was examined all were below the 0.9 threshold (Baggozi, 1991).

Intensity of use is the exception as its alpha is just at the tolerance level of 0.7. Further assessment of the construct validity was done using variance inflation factor (VIF). All the VIFs for the indicators were above one, suggesting that each indicator was measuring a separate aspect of the construct it was creating (Hair, Ringle, & Sarstedt, 2011). Discriminant validity was assessed using two different methods, cross loadings and the Fornell-Larcker criterion, with both methods suggesting discriminant validity (Gefen and Straub 2005). Heterotrait-Monotrait ratio was also used in the evaluation of discriminant validity, with all the ratios below 0.85, which suggest discriminant validity (Sarstedt, Ringle, & Hair, 2017).
Intensity of Use  | 0.626 | 0.023 | 0.266 | 0.344 | 0.376 | 0.352 | **0.791**
Information Sharing | 0.64 | 0.027 | 0.423 | 0.421 | 0.669 | 0.522 | 0.332 | **0.800**
Private /Emotional Content | 0.644 | 0.024 | 0.263 | 0.587 | 0.466 | 0.45 | 0.328 | 0.492 | **0.803**

Table 2 Descriptive and Discriminant Validity N=330

The structural model was evaluated using bootstrapping of 500 resampling. As Figure 1 shows many of the hypothesis were supported. The model explained 51.5% of the variance for bridging social capital and 41.3% of the variance for bonding social capital.

The results show that the bridging social capital was positively influenced by intensity of use, active use, information sharing and private/emotional content while bonding social capital was positively influenced only by active use and private/emotional content. The content profile did not have any significant impact on either bridging social capital or bonding social capital.

**Discussion and Conclusion**

The study examined the influence of SNSs usage breaking it down into different facets of use, to give a better understanding its effect on social connections of older adults. Two types of social connections were examined for those that the older adult was emotionally close to and those that the older adult was not.
The use of SNSs sites to increase social connections is found to be helpful. However, the way in which older adults interact with influences whether social connections are increased or maintained. The more use of SNSs, the more social connections are nurtured and increased for friends. Yet, the intensity of use of SNSs does not seem to positively influence the social connections between families. Thus, this suggests that the bond between family members is not nurtured by the amount of contact but by the quality of the contact.

Older adults that actively used SNSs are able to increase their social connections between both family and friends. Additionally, older adults that used SNSs for sharing information tended to increase social connections of friends and acquaintances but did not seem to affect the closer relationships that older adults have. Further those that used the medium for more personal/private content where more inclined to see an increase in benefits with relationships between family and close friends.

The number and type of contacts an older adult has on SNSs does not seem to increase or decrease their social connections. The fact that the number or type of contacts effect is not significant on either bonding or bridging social capital, can explain why in the previous literature the extent of ones online connections is inconclusive when predicting social capital of individuals (Damant et al., 2017).

Thus, to increase social connections older adults need to be actively using the medium and the type of content in their messages needs to be of a more personal and private nature. To increase social connections and create new friendships via SNSs older adults should be actively, intensely using SNSs as well, they need to be willing to share information with others to create and foster relationships within SNSs.

The type of message content was found to affect the form of social connections for older adults. The influence that informational content in the message positively influenced weak connections, bridging social capital would be expected as these types of connections are used for informational purposes. While, the influence of informational message content was found not to increase the social capital older adults have in their close connections. The impact of informational content from the relationship being for emotional support such that some information that would be shared is expected and would have a negative impact on the relationship if information were withheld. Further, the emotional/private content of the message tends to influence both types of relationships. The hypothesized relationship between emotional/private information of the bridging social capital was expected to be non-significant. Yet, the relationship was found to be a significant positive relationship, which may suggest that to extend and enhance relationships of a weaker nature using SNSs more personal/emotional information about participants needs to be shared.

This paper adds to the literature both theoretically and practically. The paper further enriched the social capital theory by investigating how the use of SNSs can enhance social capital along different dimensions. Several different facets of the use of SNSs have been identified and their impact on the two types of social capital have been tested. It further expands the understanding of how older adults utilize the media, as well as its influence over social capital. The model has also contributed to a the furthering of the mechanisms of SNSs use underlying impact on social capital, and maybe used in understanding how the use of SNSs influence other forms of psychological wellbeing. The practical implications are a greater understanding of how the different facets of SNSs use can influence social capital of the older adult. This knowledge can be used to understand the nuances of how the older adult should be using SNSs to maintain and expand social connections. This knowledge will help those teaching and creating programs for older adults in utilizing SNSs. Further, the information about which portions of use influence social connections positively influence social connections can have an influence over program and policy creation for the betterment of older adults.

This paper has some limitations. The survey population of older adults lived on their own or with family. Many older adults live in retirement homes, or assisted living situations, which were not covered, in this study. Further study is needed to include this portion of the population. Furthermore, the influence that the various dimensions of SNSs usage may influence differently on social capital with the other age segments of the population. The study examined several different facets of the use of SNSs although there are more that were not incorporated into the study. For instance, older adults with different health and living conditions may affect their use of SNSs thus may influence social capital and psychological wellbeing so that they need to be investigated.
References


