HOW BEHAVIORS ON SOCIAL NETWORK SITES AND ONLINE SOCIAL CAPITAL INFLUENCE SOCIAL COMMERCE: THE CASE OF FACEBOOK

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Abstract

Following the fast growing of social network sites (SNS) such as Twitter, LinkedIn and Facebook in the cyber world recently, the social commerce has become an important emerging issue in these SNS. The aim of the study is to comprehend the antecedents for SNS users’ social commerce intention (SCI) of giving and receiving shopping information about products or services on SNS. According to the literature review, the study applied SNS behavior (participating and browsing), social capital theory (bonding and bridging) to investigate how these factors influence SCI. The study conducted an empirical research on SNS. After the research survey collected from SNS (facebook) users for one month, the research has several findings. First, SNS behavior and social capital affect SCI simultaneously, and the effects between SNS behavior and SCI are partially mediated by the bonding and bridging social capital. Second, both of browsing and participating behaviors have significantly positive relationships with bonding and bridging social capital. Theoretical contributions and managerial implications are also discussed providing several future research directions and suggestions to the scholars and SNS operators, respectively.

Keywords : SNS Behavior, Social Capital Theory, Social Commerce

* Corresponding author
1. INTRODUCTION

The social network sites (SNS) have emerged in the virtual world in recent years. Increasingly more online users have become members of SNS. SNS adopt the Internet as a platform that enables online users to connect with each other through the creation of personal information and profiles, invite friends and colleagues to access files, and send e-mails and instant messages including online videos between friends (Boyd & Ellison 2007). These personal profiles can include various types of information, including photos, videos, audio files, and public bulletin boards (blogs) (Kaplan & Haenlein 2010). Through the interpersonal social activities that are based on the applications, SNS members act and develop their social lives and accumulate social capital (Ellison et al. 2007). SNS has become more and more popular and an essential part of individuals’ daily life in recent years.

Social commerce (SC), a subset of e-commerce, adopts Web 2.0 technologies and infrastructure to assist online interpersonal interactions and contributions for acquiring and exchanging shopping experiences about products and services (Liang et al. 2011). It is burgeoning tremendously due to the growth of SNS users’ population (Ng 2013; Shin 2012). According to the report of statista.com (Statista, 2016), the social commerce revenue has grown up to approximately US$30 billion worldwide in 2015. Moreover, according to Barria (2014), there are some elaborations about social commerce in the developing processes of SNS. While most users of SNS such as Facebook (FB) regularly click the “like” or “share” function to their friends’ accounts, another function is developing in social media to give users the ability to “buy” products as they browse SNS. Therefore, FB also tried to test the function of the “buy” button for a few small- and medium-sized businesses with limited use for their operations in the US (Facebook 2014). This shows that FB also tries to promote social commerce on the website actively.

The objectives of this research include the following: First, to comprehend the relationship between SNS behaviors and online social capital. Second, to explore the effect of social capital theory on social commerce intention (SCI). Third, to realize whether SNS behavior influences SCI directly. Last, to test how the relationship between SNS behaviors and SCI is mediated by social capital.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1. SNS Behavior

SNS provides basic social interaction and networking features such as information exchange, message posting, and contact management. In addition, other various forms of social interaction such as online consumers’ numerical ratings of products and services (favorability), the number of online reviews (visibility), and online users’ opinions have been found to be important references for the SNS users (Ng 2013). Previous literatures for SNS identified two main types of users’ behavior as interactive and non-interactive (Burnett 2000). Similarly, Hammond (2000) proposed that communicative members represents those who take an active behavior by
interacting with the members in the SNS. Those behaviors include generating contents such as posting comments on other users’ posts, posting questions related to the host company’s services or the community topics in general, and posting product reviews and experiences. As a result, the communicative members’ behavior can be regarded as participating. Similarly, quiet members usually refer to users who just read other members’ posts and rarely post anything. Their behaviors are regarded as browsing (Hammond 2000). These two types of SNS behavior were also applied in other literatures to discuss SNS-related behaviors (Casaló et al. 2010; Pöyry et al. 2013). Therefore, this study separated SNS behaviors into participating and browsing for further analysis. Furthermore, previous studies involve adopting Web 2.0 social media technologies and infrastructures to support online interpersonal interactions and online users’ contributions to assist in acquiring shopping information about products and services (Hwang et al. 2014; Liang et al. 2011; Noh et al. 2013). In other words, SNS behavior may directly influence SCI including giving and receiving.

2.2. Social Commerce
The term “social commerce” was first introduced in 2005 on Yahoo! It was announced on November 11, 2005, that Yahoo!’s Shoposphere was the earliest product to break into social commerce. The “Pick Lists” feature lets users comment on and review the products lists. The user-generated content (UGC) makes Shoposphere like a “blogosphere” (Wang & Zhang 2012). Although the term “social commerce” emerged in 2005, Amazon.com and eBay.com have introduced some social commerce related functions and features in their websites, i.e., reader rating systems and discussion forums on the products’ browsing pages as early as the late 1990s, such as Listmania (Amazon.com) and the feedback forum (eBay.com). Because social commerce applied SNS as a platform to combine both shopping and social networking activities, eWord-of-Mouth(eWOM) can be an essential element of social commerce. Hence, Dennison et al. (2009) defines SC as having taken eWOM where it never existed before in online shopping. Online users are now seeking ways to learn from each other’s expertise and experiences and comprehend what others are purchasing and to get more information to make more effective purchasing decisions. Simply speaking, SC is the word of mouth utilized in e-commerce. As regards the definition of SC, this study summarized previous studies and proposed social commerce to utilize Web 2.0 technology such as social media to support social interaction and to receive or give shopping information including experience, eWOM, and user-generated content (UGC) for transactions (Liang et al. 2011; Zhang et al. 2014).

2.3. Online Social Capital
Putnam (2000) defined the concept of social capital and measured social capital by the amount of trust and “reciprocity” in a community or between individuals and separated social capital as two different characteristics of social capital, which are bonding and bridging social capital. Bonding social capital is more exclusive and “reinforces exclusive identities and homogeneous groups” (Putnam 2000). Hence,
bonding social capital has a little diversity in its background but stronger personal connections. The bonding social capital between individuals in tightly-knit, emotionally close relationships for high recognition and mutual goals, such as family, close friends, or even neighbors, is referred to as “strong ties” (Baron et al. 2000; Granovetter 1973). Such ties can be costly to maintain, requiring much time and attention. Strong ties feature frequent contact and multiple foci and are found in dense networks (Donath and Boyd 2004). These strong ties provide emotional or substantive support rather than informational quality for each member in the network. Bonding social capital also refers to resources obtained from within-group ties (Yuan & Gay 2006).

Bridging social capital is linked to what network researchers refer to as “weak ties,” which are loose or fragile connections between individuals who may provide useful or novel information or new perspectives for one another but typically not emotional support formed by mutual benefits; colleagues or community groups from different networks such as heterogeneous groups lack internally cohesive or emotionally close relationships (Granovetter 1973). Bridging social capital occurs when individuals from different backgrounds make connections between social networks (Williams 2006). It can also be viewed as the broadening of one’s social horizons or worldviews because it lacks in depth, but makes up for this in breadth. Bridging social capital (weak ties) can be less costly to maintain, and a person who has many weak, heterogeneous ties has access to a wide range of information and opportunities (Burt 2002; Granovetter 1983), but it provides little in the way of emotional support (Putnam 2000).

3. METHODOLOGY

Ellison et al. (2007) examined the relationships between Facebook usage and the formation of social capital among university students. Johnston et al. (2011) applied their research framework and concluded that the intensity of Facebook usage plays an important role in the creation of social capital. As for the social capital to SCI, Wasko and Faraj (2005) applied social capital theory to evaluate knowledge contribution, and Chiu et al. (2006) used social capital to measure the quantity of knowledge sharing. When contributing or sharing knowledge regarding products or services, knowledge contribution and sharing represent the same behavior as social commerce.

Pöyry, et al. (2013) utilized SNS behavior to estimate the purchase and referral intention which can be regarded as SCI. SNS support social interaction and user contribution that can assist for acquiring information about products and services (Liang et al. 2011). Hence, SNS behavior is considered as the factor influencing SCI.

Following the above literature review, this study adopted SNS behavior, social capital as an antecedent’s factor to associate with social commerce intention. SNS behavior, social capital, social commerce intention are divided into participating and browsing, bonding and bridging, and giving and receiving, respectively as shown in Figure 1.
3.1 HYPOTHESES DEVELOPMENT

Valenzuela et al. (2009) proposed that social capital exists on SNS. Their results provide stable evidence of positive associations between SNS and social capital. Also, their study also pointed out that the intensity of FB usage seems to be related to personal satisfaction, greater trust, and involvement in political and civic activity among undergraduate students. The study argued that these certain features of FB usage enable online users to take part in behaviors that contribute to their online social capital. In addition, FB (SNS) helps users establish and maintain communication with facilitating deeper, meaningful communication with a more selected group of strong ties as bonding social capital (Aubrey & Rill 2013). Close friends who connect through FB are likely to find an efficient and easy way to keep in touch, and the lightweight interactions enabled by the site are likely to benefit these more developed relationships as well (Ellison et al. 2011). The study proposes:

**H1: SNS behavior is positively associated with individuals’ perceived online bonding social capital.**

The intensity of using SNS behavior positively associates with bridging social capital because SNS can lower barriers to users (Ellison et al. 2007). Therefore, SNS may encourage the formation of weak ties (Steinfield et al. 2008). Moreover, their studies also proposed that SNS also breaks distance and time limits to let SNS users browse and participate with other SNS users’ (family, friends or acquaintances) current information by its function of instant update information. Aubrey and Rill (2013) adopted FB habit defined as part of participants’ regular Internet routine and their study also found FB habits positively predicted online bridging social capital. The extent to which FB was habitual for users was
associated with an increase in online bridging social capital. Therefore, this leads to the following hypothesis:

**H2: SNS behavior is positively associated with the individuals’ perceived online bridging social capital.**

The strong ties (bonding social capital) are imperative for transferring sophisticated knowledge across department boundaries in an organization (Hansen 1999). Moreover, the strong tie also facilitates the transfer of tacit knowledge. According to the definition of SC (Huang & Benyoucef 2013), the study presumed that SC utilizes Web 2.0 social media technologies and infrastructures to support online interpersonal interactions and online user contributions to assist in acquiring or giving shopping information about products and services. Shopping information may include various forms of information, even specific or complex knowledge like 3C (computer, communication, and consumer electronics) products or general information about daily usage products in regular life. Hence, the study proposes the following:

**H3: Individuals’ perceived online bonding social capital is positively associated with SCI.**

According to the weak-tie theory originally proposed by Granovetter (1983), distant and infrequent relationships (i.e., weak ties) are efficient for knowledge sharing because those friendships provide access to novel information by bridging otherwise disconnected groups and individuals in an organization (Wasko and Faraj 2005). Moreover, bridging social capital (weak tie) more easily obtains novel information than bonding social capital (strong tie) because weak ties are more likely to link an information seeker with sources in disparate parts of a social network such that information seekers may not previously know that the information is circulating in the social network (Cross and Borgatti 2004). Hence, the study hypothesizes the following:

**H4: Individuals’ perceived online bridging social capital is positively associated with SCI.**

According to past studies’ definition of SC, these studies involve adopting Web 2.0 social media technologies and infrastructures to support online interpersonal interactions and online users’ contributions to assist in acquiring shopping information about products and services (Hwang et al. 2014; Liang et al. 2011; Noh et al. 2013). Hence, the usage of behaviors in social media (SNS) is positively associated with SC because social media (SNS) is a platform assisting online and offline activities in the buying and selling of products and services to adopt SC. Therefore, the study postulates:

**H5: SNS behavior is positively associated with SCI.**

If both of H1 and H3 are supported, online bonding social capital is the mediator between SNS behavior and SCI. Similarly, if both of H2 and H4 are supported, online bridging social capital is the mediator between SNS behavior and SCI. Hence, this study proposes the following hypotheses:

**H6: Online social capital is the mediator between SNS behavior and SCI.**

**H6a: Online bonding social capital is the mediator between SNS behavior and SCI.**

**H6b: Online bridging social capital is the mediator between SNS behavior and SCI.**
Ellison et al. (2007) indicated that the information commonly included on SNS users’ profiles was likely to be relevant to existing acquaintances or friends and nearly all users felt that their SNS friends had viewed their profile. FB users could randomly browse the profiles of those in their FB ‘network’ (potentially thousands of individuals) whose privacy settings permitted access, and try to make friends with other SNS users. Also, FB also enables SNS users to find those with the same interests (e.g., through groups or searchable profile fields) (Ellison et al. 2011). According to the study of Smith (2014), the average time spent on FB per visit is approximately 21 minutes. More than 80% FB users have more than 50 friends, and FB users have an average of 254 friends. It is expected that the time for browsing is longer than the time for posting, that is, participating on SNS. SNS users may not participate (posting information, photos and comments, responding comments, leaving messages, etc.) on SNS for a long time, but they may browse the SNS whenever they log in. By browsing the SNS, users could track the updated status such as photos, messages, or replies from their colleagues, close friend, or even regular friends. Hence, compared to participating, browsing gives the users more and recent information regarding their friends online. When a user has an average of 254 friends on FB as mention previously, it is difficult for FB users to interact with their friends. Therefore, it will be easier for the users to feel connected with their online friends by browsing SNS than by participating the site.

Additionally, Lee (2013) also suggested the Web technologies are assumed to create weak and distance tie (bridging social capital) easily because FB users have better control over their customization of interface with users’ privacy settings, appearance, and navigation (Yoder & Stutzman, 2011). Consequently, the advantages will encourage the users to conduct browsing rather than participating. Hence, the study proposes:

**H7: Browsing behavior has a higher impact on social capital than participating behaviors.**

**H7a: Browsing behavior has a higher impact on bonding social capital than participating behavior.**

**H7b: Browsing behavior has a higher impact on bridging social capital than participating behavior.**

Casaló et al. (2010) found that participating behaviors in online travel communities have a positive effect on consumer intention to utilize online traveling community products. Participation on SNS implies in-depth knowledge or information exchange about the value of the products and services offered by the SNS users. More frequent participation increases awareness of SNS users that may broaden their shopping information sources. Moreover, building relationships with familiar online users who may have similar interests creates a comfortable atmosphere that helps SNS users to share the information offered by the SNS friends. Therefore, users with more frequent participation are more willingness to purchase the products of online traveling community. More interactive behaviors on SNS also implies more familiar with each other and to increase social capital (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998).
Wasko and Faraj (2005) proposed that the ability to have extrinsic rewards may become more efficient than intrinsic returns to motivate knowledge contribution when electronic networks of practice are used to support professional activities. Similarly, users in SNS will contribute their knowledge to gain their reputation among online friends. Henceforth, participating behavior is more likely to encourage sharing shopping information as professional knowledge than browsing on SNS. Useful or interesting information will be forwarded to other SNS users by those who are motivated to help others and enhance their self-worth in their WOM behavior (Hennig-Thurau et al., 2003). Consequently, the study proposes the following hypotheses:

**H8:** Participating behavior has a stronger relationship with SCI (giving and receiving) than browsing behavior.

**H8a:** Participating behavior has a stronger relationship with SCI (giving) than browsing behavior.

**H8b:** Participating behavior has a stronger relationship with SCI (receiving) than browsing behavior.

With regard to Putnam (2000) mentioned, bonding social capital provides emotional support with homogenous group on a dense network (Baron et al. 2000; Granovetter 1973) and bridging social capital provides information support and has many weak heterogeneous ties to access a broad range of information and opportunities (Burt, 2002; Wellman & Gulia, 1999; Wellman & Potter, 1999). Hence, the emotional support and information support are also both important factors for SNS users to SCI (Hajli, 2014).

Based on previous literature, online users may rely on the information support to share the shopping information with other online users. The users with more bridging social capital have the capability to give or receive a wide range of shopping information while users with more bonding social capital is capable of giving or receiving narrow and specific knowledge in a dense network. Hence, bridging social capital is the better antecedent of information support (information sharing) while bonding social capital is more suitable for emotional support (Baron et al. 2000; Putnam 2000) especially SC is based on SNS as the platform to exchange shopping information between users. Therefore, this study proposes:

**H9:** Bridging social capital is associated with SCI (giving and receiving) more significantly than bonding social capital

**H9a:** Bridging social capital is associated with SCI (giving) more significantly than bonding social capital.

**H9b:** Bridging social capital is associated with SCI (receiving) more significantly than bonding social capital.
4. RESULTS AND ANALYSIS

4.1 Data collection
Because the questions based on literature review are presented in English and the samples in this study do not use English as the official language, this study translated them from English to Chinese. To ensure the measurement of items with precise interpretation from English, the study proceeded backward translation of questionnaire items by four professionals with sufficient English proficiency. They translate those item forward (English to Chinese) and backward (Chinese to English) several times until the meanings of measurements of items became consistent.

Because Facebook (FB) is the most popular SNS providing research samples under scrutiny (Valenzuela et al. 2009), this study chose the users of FB as the samples to test the research model. College students from a university provided the samples for the pre-test. Seven items with low loadings were deleted. The questionnaires were distributed to two sources, online and paper-based surveys. Information on recruiting questionnaire respondents was announced on Taiwan’s largest Bulletin Board System (PTT) to recruit the FB users. The samples of the paper-based survey were collected from the college students. Initial results showed no significant differences between the respondents from online and paper-based respondents. Therefore, all of the samples, 471 online and 499 paper samples were used for further analysis.

Partial Least Squares (PLS) is a multivariate data analysis technique based on the hypothesis of a linear relationship to construct the relationships of the entire research structure (Ranganathan et al. 2004). This study used PLS to test the causal effects of the research model and applied SmartPLS 2.0 to analyze the model.

4.2 Reliability and validity
The construct measurements, including questions, loadings, and sources are shown in Table 1. All of them have standardized loadings ranging from 0.71 to 0.93. A higher value represents a stronger relationship between the item and its corresponding construct, and a value larger than 0.7 is considered acceptable (Chin 2010).
### Table 1 Measurement items

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Item</th>
<th>Questions</th>
<th>Loadings</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating</td>
<td>Par1</td>
<td>I participate actively in FB activities.</td>
<td>0.72***</td>
<td>(Casaló et al. 2010)</td>
</tr>
<tr>
<td></td>
<td>Par2</td>
<td>I use to contribute to FB.</td>
<td>0.89***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Par3</td>
<td>I usually provide useful information to other FB members.</td>
<td>0.76***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Par4</td>
<td>I post messages and responses on FB frequently.</td>
<td>0.88***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Par5</td>
<td>I post messages and responses on FB with great excitement.</td>
<td>0.83***</td>
<td></td>
</tr>
<tr>
<td>Browsing</td>
<td>Bro1</td>
<td>I like to browse FB to see what friends shared through real-time timeline.</td>
<td>0.71***</td>
<td>(Novak et al. 2000)</td>
</tr>
<tr>
<td></td>
<td>Bro2</td>
<td>I like to browse FB to see what’s new (either directly on the community page or through newsfeed).</td>
<td>0.79***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bro3</td>
<td>I like to browse FB seeking new ideas and thoughts.</td>
<td>0.85***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bro4</td>
<td>I like to browse FB to help me to generate new ideas and thoughts.</td>
<td>0.83***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bro5</td>
<td>I like to browse FB to absorb new knowledge.</td>
<td>0.83***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bro6</td>
<td>I browse the contents of FB frequently.</td>
<td>0.74***</td>
<td></td>
</tr>
<tr>
<td>Online Bonding</td>
<td>Bon1</td>
<td>There are several SNS friends I trust to help solve my problems.</td>
<td>0.82***</td>
<td>(Williams 2006)</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Bon2</td>
<td>There is someone on FB I can turn to for advice about making very important decisions.</td>
<td>0.83***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bon4</td>
<td>When I feel lonely, there are several FB friends I can talk to.</td>
<td>0.79***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bon6</td>
<td>The people I interact with on FB would put their reputation on the line for me.</td>
<td>0.72***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bon7</td>
<td>The people I interact on FB would be good job references for me.</td>
<td>0.73***</td>
<td></td>
</tr>
<tr>
<td>Online Bridging</td>
<td>Bri1</td>
<td>Interacting with FB friends makes me interested in things that happen outside of my town.</td>
<td>0.79***</td>
<td>(Williams 2006)</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Bri2</td>
<td>Interacting with FB friends makes me want to try new things.</td>
<td>0.83***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri3</td>
<td>Interacting with FB friends makes me interested in what people unlike me are thinking.</td>
<td>0.85***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri4</td>
<td>Talking with FB friends makes me curious about other places in the world.</td>
<td>0.85***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri5</td>
<td>Interacting with FB friends makes me feel like part of a larger community.</td>
<td>0.74***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri6</td>
<td>Interacting with FB friends makes me feel connected to the bigger picture.</td>
<td>0.78***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri7</td>
<td>Interacting with FB friends reminds me that everyone in the world is connected.</td>
<td>0.72***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bri8</td>
<td>I am willing to spend time to support general FB activities.</td>
<td>0.71***</td>
<td></td>
</tr>
<tr>
<td>Social Commerce</td>
<td>Giv1</td>
<td>I am willing to provide my experiences and suggestions when my friends on the FB want my advice on buying something.</td>
<td>0.86***</td>
<td>(Liang et al. 2011)</td>
</tr>
<tr>
<td>Intention (giving)</td>
<td>Giv2</td>
<td>I am willing to share my own shopping experience with my friends on FB.</td>
<td>0.93***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Giv3</td>
<td>I am willing to recommend a product that is worth buying to my friends on FB.</td>
<td>0.90***</td>
<td></td>
</tr>
<tr>
<td>Social Commerce</td>
<td>Rec1</td>
<td>I will consider the shopping experiences of my friends on FB when I want to shop.</td>
<td>0.89***</td>
<td>(Liang et al. 2011)</td>
</tr>
<tr>
<td>Intention (receiving)</td>
<td>Rec2</td>
<td>I will ask my friends on FB to provide me with their suggestions before I go shopping.</td>
<td>0.88***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rec3</td>
<td>I am willing to buy the products recommended by my friends on FB.</td>
<td>0.89***</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***: p<0.01

### Table 2. CR, AVE, correlation between constructs, and square roots of AVE

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>CR</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Participating</td>
<td>0.91</td>
<td>0.68</td>
<td>0.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Browsing</td>
<td>0.91</td>
<td>0.63</td>
<td>0.46</td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bonding Social Capital</td>
<td>0.89</td>
<td>0.61</td>
<td>0.39</td>
<td>0.47</td>
<td>0.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Bridging Social Capital</td>
<td>0.93</td>
<td>0.62</td>
<td>0.41</td>
<td>0.59</td>
<td>0.57</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SCI (Giving)</td>
<td>0.93</td>
<td>0.81</td>
<td>0.46</td>
<td>0.39</td>
<td>0.39</td>
<td>0.48</td>
<td>0.90</td>
<td></td>
</tr>
<tr>
<td>6. SCI (Receiving)</td>
<td>0.92</td>
<td>0.79</td>
<td>0.39</td>
<td>0.45</td>
<td>0.50</td>
<td>0.52</td>
<td>0.60</td>
<td>0.89</td>
</tr>
</tbody>
</table>

Notes: CR=Composite Reliability; AVE=Average Variance Extracted; Numbers on the diagonal (in boldface) are the square root of the average variance extracted (AVE). Other numbers are the constructs’ correlation.
Table 2 lists the results in which Composite Reliability (CR) ranged from 0.89 to 0.93, and Average Variance Extracted (AVE) ranged from 0.61 to 0.81. Composite Reliability represents the ratio of a scale’s estimated true score variance relative to its total variance, and AVE measures the reliability for the latent variable component score. These values all exceeded the recommended score of 0.7 for CR and 0.5 for AVE (Fornell & Larcker 1981), indicating the study has reliability and convergent validity. For the discriminant validity, the square root of AVE for a given construct was compared with the correlations between the construct and another construct (Fornell & Larcker 1981). The square root of AVE, the numbers on the diagonal, was greater than the off-diagonal elements in the corresponding rows and columns, demonstrating an adequate discriminant validity for the study.

According to Harmon’s testing for measuring CMV, all of the indicators are measured by factor analysis and set to one factor. If the extraction sums of squared variance are more than 50%, it may have CMV problems. The extraction sums of squared variance for all of the items of constructs in the study is 24.69%, indicating that common method biases are unlikely a contaminant of our results.

4.3 Mediation effect of online social capital between SNS behavior and SCI

Before testing the mediation effects, the study tested the direct effects between SNS behavior and SCI and it is significantly positive (H5). On the mediating effects, the research testified the influence of SNS behavior on bonding and bridging social capital (H1 and H2) and the influence of bonding and bridging social capital on SCI (H3 and H4), respectively. Baron and Kenny (1986) suggested an approximate significance test for the indirect effect of the independent variable on the dependent variable via the mediator (Sobel 1982). Hence, the study applied the Sobel test to measure bonding and bridging social capital as mediators between SNS behavior and SCI in the model. The Sobel testing results, the Z value of 5.09 and 6.84 are significant for bonding and bridging social capital as mediators between SNS behavior and SCI. Therefore, H6a, H6b, and H6 are all supported in the study.

4.4 Model fit evaluation and the hypotheses testing results

Hair et al. (2014) proposed that the most widely applied way to measure the structural model is the coefficient of determination (R² value). It is a measure of the research model’s predictive accuracy and is calculated as the squared correlation between a specific endogenous construct’s actual and predicted values. Chin (1998) describes R² values of 0.19, 0.33, and 0.67 in PLS path models as weak, moderate, and, substantial levels, respectively. Furthermore, if inner path model structures explain an endogenous latent variable by only a few (e.g., one or two) exogenous latent variables, “moderate” R² may be acceptable. Although the R² of SCI is 0.41 and at the moderate level for the study, it is acceptable by the criterion proposed by Henseler et al. (2009).
5. CONCLUSIONS

For the relationship between SNS behavior (participating and browsing) and social capital, the study by Ellison et al. (2011) showed the same results for H2, but different conclusions for H1. Before 2011, FB was popular mostly within young generations. Recently, several reports indicated that the ages of FB users have increased, and many parents of these young FB users have joined the cyber world. Consequently, the relationship between SNS behavior and bonding social capital becomes significant in this study with data collected recently. H3 and H4 are supported in this study implying that both of emotional support and information support are important factors encouraging users to conduct social commerce. The test result for H5 is similar to that of Pöyry et al. (2013). However, in their study purchase intention or referral intention were affected by browsing, not by participating.

The three hypotheses regarding mediating effects, H6, H6a, and H6b are all tested significantly. The partial mediating effects of bonding and bridging social capital indicate that close friends (bonding SC) and regular friends (bridging SC) are both helping the users’ intention to give and receive shopping information. Because social capital is partially mediating the effect of SNS behavior on SCI, SNS behavior might lead to SCI directly. That is, an individual user could have the SCI without having any friend online. This could explain why some web services promote product information sharing on their site while users’ interaction and blogging were unavailable gradually.
The results of H7a and H7b are consistent with the argument of Ellison et al. (2011) that SNS behavior positively influence bridging social capital. This study also found that both of bridging and bonding social capitals are positively influenced by SNS behavior. Furthermore, browsing has a higher impact on bonding and bridging social capital than participating in SNS. However, the results of H8, H8a, and H8b indicated that participating behavior has a higher influence on giving intention than browsing. Browsing and participating are indifferent on receiving intention. If the website operators intend to encourage their users providing product or service information, improving the website for participating is more effective than for browsing. For example, the online awarding mechanism was usually applied for only content providers who might receive awards if their contribution receives considerable views. The similar awarding system can also be used on those who participate to provide the product information. About receiving, interacting with SNS friends or simply browsing the SNS may have the same intention to receive shopping information. Hence, interacting with friends about shopping information or browsing the advertisements may have the same effects on receiving shopping information. In other words, while online users receive shopping information on SNS, the influences from interacting with SNS friends or browsing may have the same effects.

For the last hypothesis test, bridging and bonding showed no significant difference regarding the association with receiving, and the relationship with giving is stronger for bridging than for bonding. It is very likely that regular friends have higher possibilities to broaden SNS users’ product information and consequently lead to giving them shopping information. For those web operators aiming to increase the users’ intention of providing shopping information, they should improve their SNS so that it is easier for users to get acquainted with more friends.

REFERENCES


