

Winter 12-6-2018

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How Social Anxiety and Social Factors Influence and Moderate Social Commerce (Full Paper)

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ABSTRACT

Following the fast growth of social networking sites (SNS) such as Facebook, Twitter and LinkedIn in the cyber world recently, social commerce has become an important emerging issue on the Internet. Researchers have studied not only online factors but also offline factors, according to the offline-to-online consumer-behavior model. Hence, this study applied approaches to social anxiety, online social interaction and online social support to comprehend the influences of social commerce intentions. After the research survey collected data from SNS (Facebook) users for one month, the researcher analyzed the data and made several findings. First, social anxiety positively moderates the relationship between online social support and social commerce intention. Second, online social interaction directly and indirectly affects social commerce intention through online social support. Theoretical contributions and managerial implications are also discussed, providing several future research directions and suggestions for scholars and SNS operators, respectively.

Keywords: Social anxiety, online social support, online social interaction, social commerce

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INTRODUCTION

Since social networking sites (SNS) emerged in the cyber world, many online users have joined and become members of them. SNS are applications that enable online users to connect with each other by creating personal profiles and supplying information, inviting friends and colleagues to access their files, and sending e-mails, instant messages, and footage between friends. These personal profiles can include various types of information including photos, videos, audio files, and public bulletin boards blogs (Kaplan and Haenlein 2010). Through the inter-personal social activities, which are based on various applications, SNS members act to develop their social lives and accumulate social capital (Boyd and Ellison 2007).

Offline and online user behaviors have become important research topics recently (Koufaris 2002), and both online and offline influences such as personality and psychological factors have played important roles for users taking part in SNS (Amichai-Hamburger and Vinitzky 2010; Nadkarni and Hofmann 2012; Yang *et al.* 2012). Social anxiety and the online-to-offline factor have received increasing empirical attention in recent years (Pierce 2009). Whereas most studies of social anxiety have focused on computer-mediated-communication (CMC) for Internet use compared with face-to-face (FTF) interactions (Prizant-Passal *et al.* 2016), this research tries to make progress in investigating social commerce on SNS for socially anxious users who might also need shopping information for commercial reasons.

Socially anxious individuals are also called social phobia and are increasing dramatically in parallel with the Internet's rapid growth (Anderson and Hope, 2009); they often fear to talk in public or meet with strangers and are uneasy about making new friends in the real world (Chang *et al.* 2014; Okamoto 2015; Pierce 2009; Prizant-Passal *et al.* 2016). Therefore, for those users who have high social anxiety, SNS may be regarded as a good environment to develop their personal social life because individuals in SNS are invisible, allowing them to avoid physical face-to-face contact and feel more comfortable (Pierce 2009; Prizant-Passal *et al.* 2016). Hence, they may be more willing to contact and interact with others online compared to offline. Moreover, social commerce has developed through the sharing of information, knowledge and shopping experience with regard to products or services with other online users, and this can be considered a type of e-word-of-mouth (eWOM; Liang *et al.* 2011; Liang and Turban 2011). It is burgeoning tremendously due to the growth of SNS users' population (Ng 2013; Shin 2012). According to the report of Forrester Research (Anderson *et al.* 2011), the social commerce market will grow up to about US\$30 billion in U.S. by 2018. Moreover, since socially anxious individuals seem to feel comfortable in computer-mediated-communication (CMC) interactions (Caplan 2007; Prizant-Passal *et al.* 2016), they may be more likely to participate in SNS and adopt social commerce than other users.

This study attempts to explore how the offline factor and social anxiety influence online social behavior such as social support and social commerce on SNS (Liang *et al.* 2011; Liang and Turban 2011). This research also selects online social interaction as an antecedent to predict online social support leading to social commerce intention (SCI). The results could provide suggestions to SNS operators on how to run SNS more effectively and efficiently from users' personal perspective. The main purpose of the study is to investigate whether socially anxious individuals prefer to adopt social commerce in SNS, as many studies have shown that they feel more comfortable on the Internet (Caplan 2007; Pierce 2009; Prizant-Passal *et al.* 2016). In summary, the purposes of the study are to:

- I. Explore how the offline factor and social anxiety influence social interaction, social support, and SCI

- II. Understand social anxiety as a moderator that influences the relationship between social support and SCI
- III. Comprehend the effects of online factors, social interaction, and social support on SCI

LITERATURE REVIEW AND THEORETICAL DEVELOPMENT

2.1 Social Exchange Theory

Social exchange theory proposes that individuals' social behavior is the result of an exchange process, and the purpose of the exchange is to maximize benefits and minimize costs (Leventhal *et al.* 1980; Molm 1997; Thibaut and Kelley 1959). According to this theory, people consider and measure the potential benefits and costs of social relationships. When the costs exceed the rewards, people will terminate or abandon that social relationship. The costs, involving cognitions or perceptions, are seen as negatives to the individual and are equivalent to putting money, time, and effort into an interpersonal relationship. The benefits are the things the individuals acquire from relationships, such as friendship, emotions, companionship, and social support. The theory proposes that individuals essentially take the benefits and minus the costs in order to determine the worth of a relationship. Positive relationships are those in which the benefits exceed the costs, while negative relationships occur when the costs are more than the benefits (Cherry 2013). Therefore, the theory suggests that individuals employ cost-and-benefit analysis to evaluate their social relationships and engage in social exchange only when the benefits outweigh the costs (Blau 1964; Homans 1958).

2.2 Social Compensation Theory

Social compensation theory proposed that individuals who are high in social anxiety and low in social skills typically have difficulties forming interpersonal relationships in face-to-face interactions and will adopt online activities to compensate for deficits they encounter in the offline world (Poley and Luo 2012). Furthermore, the Internet offers an alternative approach to nonsocial uses such as information seeking or playing games, exacerbating social withdrawal. However, it is also possible for shy individuals to utilize the Internet to fulfill their social life and enhance their social relationships by finding friends and building friendships by facilitating social interactions that might be considered more difficult during physical face-to-face interaction (Amichai-Hamburger and Vinitzky 2010). Hence, socially anxious individuals turn to the Internet to communicate with and form relationships with peers, because these interactions are more difficult in person (Laghi *et al.* 2013). Therefore, this study will adopt this theory in order to explain the relationship between the behaviors of socially anxious individuals and the adoption of social commerce intention (SCI).

2.3 Social Anxiety

Social anxiety, which is the same as the otaku phenomenon (Galbraith 2010), is defined as "a state of anxiety resulting from the prospect or presence of interpersonal evaluation in real or imagined social settings" (Leary 1983); it is characterized by an extensive fear of being evaluated by others (Wieser *et al.* 2010); and it is also regarded as a form of shyness (Madell and Muncer 2006). It is an anxiety disorder characterized by intense fear of social situations causing considerable distress and impaired ability to function in at least some parts of daily life (Prizant-Passal *et al.* 2016). Socially anxious individuals describe their personal relationships with family, friends, and even partners as damaged (Erwin *et al.* 2004; Whisman *et al.* 2000). The Internet can be considered a communication tool to avoid contacting people face to face (Prizant-Passal *et al.* 2016). Therefore, the recently fast-growing SNSs provide socially anxious individuals with a good environment to communicate with others and help them to expand their social life in the cyber world.

2.4 Online Social Interaction

Individuals develop a preference for online social interaction as an alternative to face-to-face communication because they perceive it to be less threatening and perceive themselves to be more efficacious when interacting with others online (Caplan 2007). Researchers have identified two primary uses of online social interaction. One is that users can find others with similar interests, ranging from romantic relationships to social networks (Correa *et al.* 2010; McKenna *et al.* 2002). Another major usage is to maintain pre-existing social connections in actual life (Ellison *et al.* 2007). Most online users visit SNSs to keep in touch with persons they already know in real life (Lenhart, Purcell, Smith, and Zickuhr 2010). In addition, studies have also found that many relationships first formed online result in real-world contacts (Ross *et al.* 2009).

2.5 Online Social Support

Social support refers to an individual's experiences of being helped by people, being responded to, and being cared for in that individual's social group (House 1981). Because social support can create warmth and understanding for an individual, it can also be treated as a responsiveness to satisfy one's psychological needs (Maslow, Frager, Fadiman, McReynolds, and Cox 1970). Moreover, the definition of social support varies from study to study; it is widely acknowledged that social support has multiple dimensions: emotional, instrumental, appraisal, and informational (Bo 2008; House 1981).

The experiences of social support by socially anxious individuals in a social network may also help them to avoid negative experiences (e.g., economic or legal problems) that otherwise would increase the probability of psychological or physical disorder (Cohen and Wills 1985). When SNSs have entered people's lives in recent years, the role of the Internet has changed to become an effective and efficient way for individuals to facilitate social interaction (Liang *et al.* 2011).

2.6 Social Commerce in SNS

Following the fast-growing development of popular SNSs such as Facebook, LinkedIn, and Twitter, social commerce has become an important discussion topic (also known as a social business) in the virtual world. Social Commerce Today (2011) defined SC as “The use of social technology in the context of commerce for selling with social media.” It involves adopting Web 2.0 social media technologies and infrastructures to support online interpersonal interactions to acquire shopping information about products and services. Also, it refers to transactions via social media, and delivery of e-commerce activities, usually by applying Web 2.0 software in social media (Liang *et al.* 2011; Liang and Turban 2011). Hence, SC can be regarded as a branch of e-commerce that involves adopting social media as a platform to assist e-commerce processes such as transactions and activities.

Dennison *et al.* (2009) defined SC as having taken e-word-of-mouth (eWOM) where it never existed before in online shopping. Online users are now seeking ways to learn from each other’s shopping expertise and experiences in order to get more information to make effective purchasing decisions. Simply speaking, SC is word-of-mouth utilized in e-commerce. Regarding social commerce, actual behaviors are difficult to quantify, and intention is a common measurement for behavioral researchers to predict possible human actions. A large body of research has proven that behavioral intention has a significant correlation with actual behavior such as the theory of reasoned action, the theory of planned behavior, and the technology acceptance model. Hence, this study utilizes social commerce intention (SCI) to represent social commerce (Liang *et al.* 2011).

METHODOLOGY

3.1 Research Framework

The research framework is shown in Figure 1. The study seeks to explain the relationships among social anxious, online social interaction, online social support, and social commerce intention. Online social support is hypothesized as being an important mediator between online social interaction and social commerce intention. In addition, social anxiety is also hypothesized as moderating the relationship between online social support and social commerce intention.

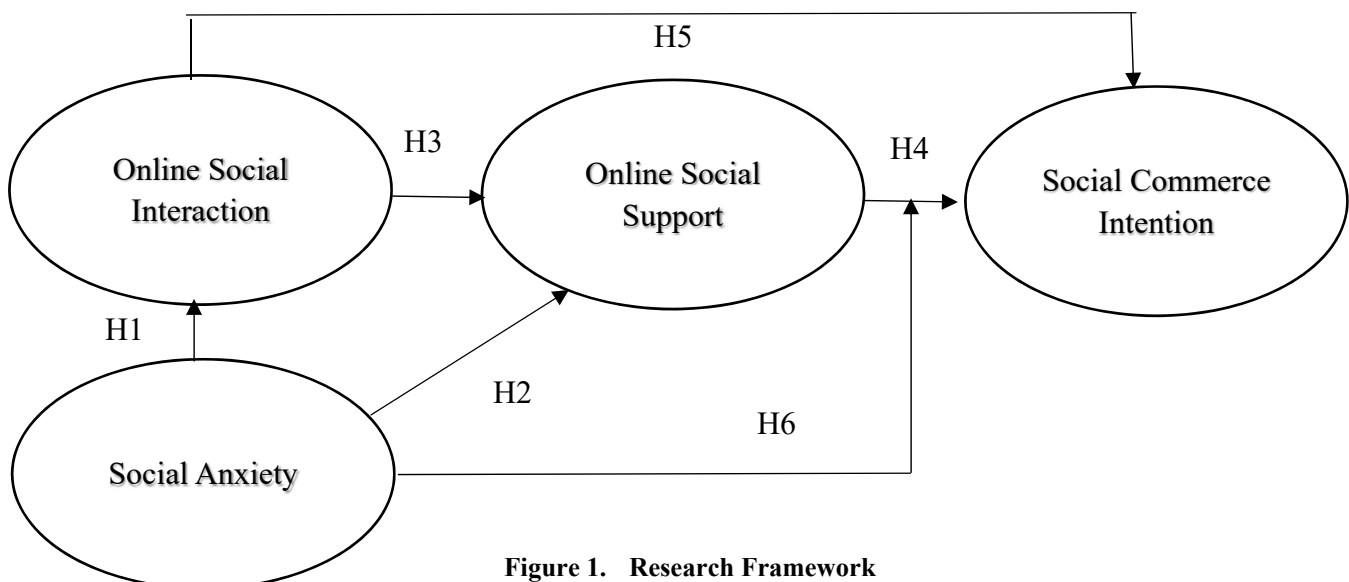


Figure 1. Research Framework

3.2 Research Hypothesis

According to the social compensation theory, socially anxious individuals are unfamiliar with their social interpersonal skills with other persons compared to face-to-face interaction. Moreover, human beings need social interactions to fulfill their social needs for belonging and support (Maslow *et al.* 1970). As a result of this, they will visit SNS more frequently to compensate for their struggles in interpersonal relationships in real life and will develop or maintain new interpersonal relationships in the virtual world (Zywica and Danowski 2008). Therefore, they may engage more online social interactions to compensate for what they have suffered or lost in real life. Furthermore, social anxiety is positively associated with online social interaction because the Internet provides opportunities for less stressful interactions compared to those in real life (Caplan 2007; Prizant-Passal *et al.* 2016). Therefore, this study proposes the following:

H1: Social anxiety is positively associated with online social interaction.

Because social support creates warmth and understanding for individuals, it can also be treated as a form of responsiveness to satisfy one’s psychological needs for users (Maslow *et al.* 1970). Moreover, following social exchange theory (Blau 1964; Homans 1958), SNS users may accept social support from other users who will return their social support in the future, creating mutual social support. It is uneasy for socially anxious individuals to conduct social interactions with people in real life. According to social compensation theory, users with high social anxiety may prefer to receive higher social support from other SNS users for the compensation of offline behavior (Poley and Luo 2012). Hence, this study suggests:

H2: Social anxiety is positively associated with online social support.

Social support is one of the benefits of relationships and an important factor in causing people to want to maintain interpersonal relationships. Individuals will try to reciprocate social support from others and will behave similarly in social interactions. Therefore, frequent social interaction with friends and neighbors can be interpreted as a high level of social support (Rook 1984). Human beings need social interactions to satisfy their social needs for belonging and support (Liang *et al.* 2011; Maslow *et al.* 1970). Hence, SNS is a platform for online users to interact with each other and to exchange informational and emotional support with their knowledge and personal experiences (Kaplan and Haenlein 2010). Therefore, this study hypothesizes:

H3: Online social interaction is positively associated with online social support.

Based on social exchange theory, when individuals acquired benefits from others, they reciprocate others' support (Cropanzano and Mitchell 2005; Emerson 1976). A growing number of studies have provided concrete evidence that CMC can indeed help form and maintain online relationships that can facilitate the exchange of social support (Alam *et al.* 2011; Bo 2008; Ellison *et al.* 2007; Jang *et al.* 2016; Steinfield *et al.* 2008). An SNS is an IT platform for online users to share different kinds of support such as emotional and informational support with each other. The interchange motivation resulting from the perception of social support encourages online users to share purchasing experience, shopping information, product knowledge, and even brand loyalty with their online friends by e-word-of-mouth (eWOM) and to receive feedback from other online users. Hence, online social support enhances the social commerce intention on SNSs.

Moreover, Liang *et al.* (2011) conducted their study on Plurk, a microblog SNS site, and their results confirmed the relationship between online social support and social commerce intention. Therefore, this study proposes:

H4: Online social support is positively associated with the online social commerce intention.

Chen *et al.* (2011) stated that WOM is a well-established construct in the marketing literature (Arndt, 1967). Dennison *et al.* (2009) defined social commerce as the type of WOM utilized in e-commerce, and SC could be considered a form of social interaction in which shopping information and purchasing experiences are exchanged. Furthermore, when online users conduct more online interactions about products and services information, knowledge, and shopping experience with others, these actions will create a special atmosphere leading to a stronger social commerce intention (Liang *et al.* 2011). Ultimately these online users could interact and exchange their shopping experience and product information more effectively. Hence, this study proposes:

H5: Online social interaction is positively associated with social commerce intention.

Previous research has found that the most socially anxious individuals are likely to strengthen their Internet interactions in order to avoid face-to-face interactions (Erwin *et al.* 2004; Prizant-Passal *et al.* 2016). In addition, Kraut *et al.* (2002) suggested that socially anxious individuals who spent a large amount of time interacting with others on the Internet were more likely to express greater comfort in Internet interactions and higher reliance on the Internet as a social outlet to the exclusion of face-to-face interactions. These people were more inclined to proclaim they are comfortable initiating and maintaining online compared to face-to-face conversations with others and prefer discussing their problems with others on the Internet rather than face-to-face socially.

Following the above statements, socially anxious individuals have an intention to explore the relationships they desire in a less threatening manner than traditional face-to-face interactions that others may use (Stevens and Morris 2007). Virtual social situations are especially suitable for measuring overt attention in an ecologically valid environment (Mühlberger *et al.* 2008). Thus, socially anxious individuals may prefer and trust online users' opinions and experiences rather than people in real life. Therefore, this study assumes:

H6: Social anxiety positively moderates the relationship between online social support and social commerce intention.**3.3 Research Method**

This study applied the partial least squares (PLS) method for structured equation analysis to test the causal effects of the research model. PLS includes a measurement model and a structure model simultaneously (Hair & Anderson 2010). The measurement model tests the relationship between observed and latent variables. The structure model, which is based on certain assumptions, explores the causal effects of latent variables. The study adopts SmartPLS 2.0 to analyze the measurement model and the structure model simultaneously. The validity of the constructs was assessed regarding unidimensionality, internal consistency, convergent, and discriminant validity.

RESULTS AND ANALYSIS

4.1 Data Collection

Because the questions based on the 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 to Chinese, this study proceeded backward, translating the questionnaire items with the help of four professionals who were Ph.D. candidates in e-commerce with sufficient English proficiency. They translated those items forward (English to Chinese) and backward (Chinese to English) several times until the meaning of the items was consistent.

Because Facebook is the most popular SNS for providing research samples under scrutiny (Valenzuela *et al.* 2009), this study chose Facebook users as the target SNS users in order to test the research model. College students from a university provided the samples for the pretest. Seven items with low loadings were deleted. The questionnaires were distributed online for college and MBA students in computer labs from March 1 to April 10, 2015. Out of 450 samples, 23 samples with incomplete data were dropped, resulting in an effective sample collection rate of 94.9%.

Female and male samples account for 62.2 % and 37.7%, respectively. The distribution of gender is similar to the survey by Smith (2015). Most of the respondents are college students, aged less than 22 (83.8%), and have more than two years of SNS experience (78.5%).

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 0.72 to 0.95. 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

Constructs	Item	Questions	Loadings	Source
Social Anxiety	Sax1	Afraid (Sum up 24 items from Liebowitz's Social Anxiety Scale)	0.91***	(Liebowitz <i>et al.</i> 1985)
	Sax2	Avoidance (Sum up 24 items from Liebowitz's Social Anxiety Scale)	0.95***	
Online Social Interaction (Social Benefits)	Sbe1	I am treated better in my online relationships than in my face-to-face relationships	0.90***	(Caplan 2007)
	Sbe2	I am more confident socializing online than I am offline	0.89***	
	Sbe3	I feel safer relating to people online rather than face-to-face	0.89***	
Online Social Interaction (Social Control)	Sco1	When I am online, I socialize with other people without worrying about how I look	0.74***	(Caplan 2007)
	Sco2	I can control how others perceive me when online	0.83***	
	Sco3	When I am online, I socialize with people without worrying about relational commitment	0.75***	
Online Social Support (Emotional Support)	Ems1	When faced with difficulties, some people on Facebook are on my side	0.90***	(Krause and Markides 1990)
	Ems2	When faced with difficulties, some people on Facebook comfort and encourage me	0.93***	
	Ems3	When faced with difficulties, some people on Facebook listen to me talk about my private feelings	0.72***	
	Ems4	When faced with difficulties, some people on Facebook express interest and concern in my well-being	0.90***	
Online Social Support (Information Support)	Ims1	On Facebook, some people offer suggestions when I need help	0.87***	(Krause and Markides 1990)
	Ims2	When I encounter a problem, some people on Facebook give me information to help me overcome the problem	0.92***	
	Ims3	When faced with difficulties, some people on Facebook help me discover the cause and provide me with suggestions	0.89***	
Social Commerce Intention (Giving)	Giv1	I am willing to provide my experiences and suggestions when my friends on Facebook want my advice on buying something	0.83***	(Liang <i>et al.</i> 2011)
	Giv2	I am willing to share my own shopping experience with my friends on Facebook	0.92***	
	Giv3	I am willing to recommend a product that is worth buying to my friends on Facebook	0.92***	
Social Commerce Intention (Receiving)	Rec1	I will consider the shopping experiences of my friends on Facebook when I want to shop	0.87***	(Liang <i>et al.</i> 2011)
	Rec2	I will ask my friends on Facebook to provide me with their suggestions before I go shopping	0.88***	
	Rec3	I am willing to buy the products recommended by my friends on Facebook	0.86***	

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 2. CR, AVE, Correlation between Constructs, and Square Roots of AVE

Latent Variable	CR	AVE	1	2	3	4
1. Society Anxiety	0.93	0.87	0.93			
2. Social Interaction	0.86	0.51	0.14	0.72		
3. Social Support	0.93	0.66	0.13	0.23	0.81	
4. SCI	0.93	0.68	0.12	0.17	0.45	0.82

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 0.86 to 0.93, and average Variance Extracted (AVE) ranged from 0.51 to 0.87. Composite reliability represents the ratio of a scale's estimated true score variance relative to its total variance, and AVE measures the reliability of 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, were 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 (common method variance; Babin *et al.* 2016), all of the indicators are measured by factor analysis with one factor. If the extraction sums of the squared variance are more than 50%, it may have CMV problems. The extraction sum of squared variance for all of the items of the constructs in the study is 31.57 %, indicating that common method biases are unlikely to contaminate our results.

4.3 Model Fit Evaluation and the Hypotheses Testing Results

Hair *et al.* (2014) proposed that the most widely applied way of measuring 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. The R² of the research is 0.11, 0.16, and 0.21, which all exceed the acceptable level (Henseler *et al.* 2009).

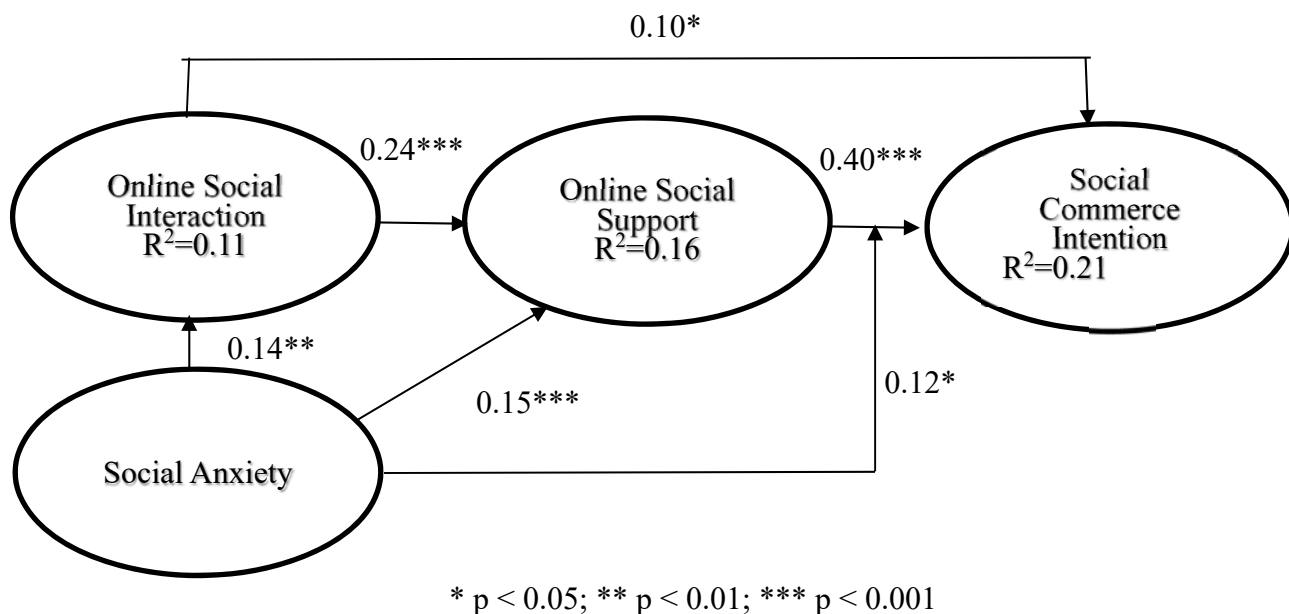


Figure 2 Results of the PLS Analysis

Figure 2 shows the results for Hypotheses 1 to 6. The results support all of the hypotheses in the study. Moreover, social anxiety positively moderates the relationship between online social support and social commerce intention (coefficient = 0.12*), and it could thus be a major finding of the study that socially anxious users are like to transform online social support into social commerce intention compared to other users.

DISCUSSION AND CONCLUSIONS

5.1 Discussion

The importance of social commerce has been noticed by several large online companies. Google charges its advertisers to post product information, and Amazon has developed a shopping information-sharing system to promote other books. The development of SNS has even raised the importance of SC. Facebook, the SNS with the most users in the world, recently added a "buy" function on its website to encourage SC. Researchers have initiated studies of SC, but this paper is the first attempt to

include the offline factor and social anxiety in the model in order to investigate its influence on SC. The results supported all of the hypotheses indicating that socially anxious individuals will be more likely to interact with others online, receive higher social support, and show a higher intention of social commerce. Online social support is affected by social interaction and has a positive impact on SCI, consistent with the results by Liang *et al.* (2011). In addition, social anxiety is found to moderate the relationship between social support and SCI in which socially anxious individuals will have a stronger relationship between social support and SCI. This implies that socially anxious individuals may likely to access support and have more intentions for social commerce compared to other users. Hence, SNS operators may want to focus more on these socially anxious users as a higher potential customer base for promoting social commerce on SNS.

5.2 Theory Contribution

This study applied social compensation theory and social exchange theory to explain how socially anxious users behave online toward social commerce. Social compensation theory states that people may show different characters or behaviors in various environments, and the results of this study assert that the theory is suitable for explaining offline-to-online (O2O) effects for SNS users. Moreover, socially anxious users have higher social interaction and social support leading to greater SCI. These results confirm the claims of social exchange theory that online social interaction and online social support, including information and emotional support, positively influence SCI. Therefore, social exchange theory successfully depicts how people behave in the virtual world.

More importantly, most prior research studies on social anxiety focused on the different behaviors of face-to-face (FTF) and computer-mediated-communication (CMC), whereas this study emphasized the role of social commerce in SNS. In addition, this study may be the first to investigate the moderating role of social anxiety toward social commerce, and the results have confirmed the hypothesis.

5.3 Managerial Implication

The major finding of this research is that social anxiety significantly moderates the relationship between online social support and social commerce intention. Socially anxious individuals will show a stronger relationship to online social support and social commerce intention than users with lower social anxiety. Therefore, SNS becomes a suitable environment for socially anxious users to develop their social relationships and social life because human beings have a requirement for social interaction. These individuals may face difficulty in social activities in real life, but they will exhibit higher social interaction and social support on SNS and will eventually show higher SCI. Therefore, SNS operators could enhance their websites so that their users can interact comfortably and freely with others without any social pressure.

Second, online social interaction has direct and indirect influences on SCI through online social support. These results indicate that increasing online social interaction with other users not only directly affects SCI but also increases online social support, which indirectly influences SCI. Essentially, people need social interactions to satisfy their social needs for belonging and support both in virtual and real life (Maslow *et al.* 1970). SNS operators may find ways to encourage the social interactions among users such as responsive blogging, open forums, and so on. SNS operators may also implement some reward mechanisms for opinion leaders or forum managers of groups to enhance their reputation for sharing information (Wasko & Faraj, 2005).

5.4 Research Limitations and Future Research

First, this empirical study tested the research model based on samples from users of one SNS, Facebook, so the results may not be directly applicable to other SNSs such as Twitter, Line, and Groupon. The second potential limitation is that the analysis was based on survey data. Although the research has attempted to ensure that the survey was conducted in a rigorous way, what the users said may not be the same as what they do, and the result might be different from the actual user behavior. This is the inherent limitation of survey studies. The third potential limitation is that there are multiple types of social support in social networks. Only informational and emotional supports were included in this study. Hence the final result can only be interpreted in relation to these two chosen support forms. Finally, the study was conducted in one country with a fairly homogeneous population of users. Generalization to other forms of social support or other social and cultural environments needs to be further investigated.

Future study may include other social topics including social capital, social influence, and social identity and may study how socially anxious individuals behave in the virtual world while they have been proved to be high potential customers for social commerce on SNS when considering these e-commerce related topics. Moreover, other constructs such as commercial activity, social media, outcome measure, and so on are also important issues for social commerce since SNS has become a part of social life (Liang & Turban 2011).

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