Determinants and Moderators of Intention to Purchase using Social Commerce

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ABSTRACT

Social commerce (SC) is an increasingly popular form of electronic commerce that involves the use of social network sites (SNS) as commercial platforms. It is important for practitioners from the SC industry and SC researchers to understand which factors drive a user's intentions to purchase goods and services using SC. This study proposes a theoretical model of factors derived from previous studies which have causal or moderating effects on an individual's intentions to make purchases using SC. The model is analyzed and developed using data collected from a sample of 399 SC users. The study makes three contributions to theory: insights based on direct, indirect, and total effects rather than only direct effects; the study of social support variables; and the investigation of moderating effects due to gender, age, and SC experience. The findings confirm several results from previous studies and identify new results.

Keywords: Direct and indirect effects, Moderators, Social commerce, Social network

บทคัดย่อ

โซเชียลคอมเมิร์ซกำลังได้รับความนิยมเพิ่มขึ้นเรื่อยๆ โดยโซเชียลคอมเมิร์ซถือเป็นรูปแบบหนึ่งของ อิเล็กทรอนิกคอมเมิร์ซที่มีการใช้เว็บโซเชียลเน็ตเวิร์คเป็นแพลตฟอร์มในการทำธุรกิจติดต่อซื้อขาย จึงมีความสำคัญ อย่างยิ่งที่ผู้ประกอบธุรกิจที่เกี่ยวข้องกับโซเชียลคอมเมิร์ซและนักวิชาการที่ศึกษาเกี่ยวกับโซเชียลคอมเมิร์ซจะต้อง เข้าใจถึงปัจจัยต่างๆ ที่ส่งผลต่อความตั้งใจซื้อผ่านโซเชียลคอมเมิร์ซ ในการศึกษานี้ได้นำเสนอโมเดลของปัจจัย ที่ถูกรวบรวมมาจากการศึกษาในอดีตที่ทำการศึกษาเกี่ยวกับผลกระทบเชิงเหตุผลและอิทธิพลของตัวแปรกำกับที่มีต่อ ความตั้งใจซื้อผ่านโซเชียลคอมเมิร์ซ โดยโมเดลถูกวิเคราะห์และพัฒนาขึ้นมาจากข้อมูลของกลุ่มตัวอย่างคือผู้ใช้งาน โซเชียลคอมเมิร์ซ จำนวน 399 คน ประโยชน์ในเชิงทฤษฎีของการศึกษานี้มีสามด้านด้วยกันคือ ข้อมูลเชิงลึกเกี่ยวกับ

ผลกระทบทางตรง ทางอ้อมและผลกระทบโดยรวม การศึกษาปัจจัยทางสังคม และการศึกษาผลกระทบของตัวแปร ต่างๆ อาทิเช่น เพศ อายุ ประสบการณ์ในการใช้งานโซเชียลคอมเมิร์ซ ผลลัพธ์ในครั้งนี้ได้ยืนยันผลการศึกษาในอดีต อีกทั้งยังได้นำเสนอผลการศึกษาใหม่ๆ อีกด้วย

คำสำคัญ: ผลกระทบทางตรงและทางอ้อม ตัวแปรกำกับ โซเชียลคอมเมิร์ซ โซเชียลเน็ตเวิร์ค

Introduction

The development of internet technology has prompted more and more users to become connected online. Increasingly, a portion of an individual's time is allocated to online activities and more users are using internet services including the purchase of goods and services. The connected, online, or .com boom started in Western societies where infrastructure is more developed and spread eastward including Thailand. This led to new online businesses and the development of models to explain a user's intentions to purchase goods and services online. Consumers have shifted from visiting physical stores to select and make purchases to shopping online. They make purchasing decisions based on information available on websites at convenient times and places.

The internet provides a variety of services and activities for users (e.g. electronic mail, online payment, online banking transactions, voice over IP, teleconference, and telemedicine) and these features and functionalities have been adopted by a wide range of users. Organizations use the internet as a means of information exchange and individuals use it for entertainment-oriented activities.

A social network site (SNS) is an online platform which helps to build human relationships through the collection and sharing of information among specific or nonspecific other people. SNS serve virtual communities (e.g. online blog, bulletin board, and chat-systems) which are distinct from traditional communities as they are not characterized by the local physical proximity of the members. SNS have attracted an increasing amount of attention as the personalized media market emerges as an important web-based business development.

The use of SNS to distribute information related to products and services is referred to as social commerce (SC) which is a form of electronic commerce. Purchase transactions may be executed: at the SNS; or using a link to an e-commerce website; or using traditional means (Farivar, Turel, & Yuan, 2017; Lal, 2017). All of these forms of payment for purchases are included in this study.

Several researches have been conducted in the area of SC to identify and analyze direct effects on Social Commerce Purchase Intention. However, indirect and total effects on SC Purchase Intention are not fully understood or researched. In addition, other moderating factors such as Sex, Age, or SC Experience are generally not included in previous studies. Thus, the SC practitioner can utilize the finding of this paper to better respond to the needs and preferences of customer groups. Also, social support factors, which are key success factors for SNS platforms, are included in this study. They are often not included in SC studies even though SC is strongly related to the

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use of SNS. The findings from this study help firms to design a platform that suit customers' preferences. The findings also contribute to a theoretical understanding of factors which motivate social commerce purchasing behavior.

Research Objectives

The objectives of the study are:

1. To identify factors related to an individual's intention to make purchases using SC.

2. To examine the relationships among these factors.

3. To determine which factors have significant causal or moderating effects on an individual's intention to make purchases using SC.

Contributions

The study makes theoretical and practical contributions:

1. Theoretical contributions: (i) insights based on the analysis of direct, indirect, and total effects rather than only direct effects; (ii) an understanding of the role of social support constructs; and (iii) an exploration of moderating effects due to gender, age, and experience.

2. Practical contributions: (i) practical advice based on the theoretical contributions on how to increase an individual's intention to make purchases using SC; (ii) beneficial advice to: individuals and organizations that are vendors of products and services on SC; organizations that operate SNS platforms which facilitate SC activities; and potential or existing SC customers who gain insights into what motivates customers to make purchases using SC.

Research Methodology

The subject is a Thai individual at least 18 years of age with a minimum of one month of experience in using SC and the subject has purchased goods or services using SC. The size of the target population exceeds 100,000. Using 5% precision and a 95% confidence level the minimum sample size is 400 (University of Florida, 2012) No sampling frame was available, so a purposive method was used to select participants. The questionnaire was distributed on Facebook as the most popular social network website in Thailand (Ella, 2018). An online questionnaire was created with Google Form and the link was posted on the Buy and Sell Group on Facebook. Participants could complete the questionnaire and transfer it to other respondents. Questionnaires were accepted from February 2018 to March 2018.

A theoretical model was developed from existing theory related to online community platforms. Data was collected by questionnaire using items from existing instruments. The questionnaire was prepared in the Thai language with the assistance of a focus group of five experienced SC users and a pilot study with 10 users.

Data entry in an SPSS worksheet was checked for a random selection of 10% of subjects. Questionnaires with missing values or outliers were removed from the sample. Construct validity (convergent and discriminant) and equivalence reliability were examined using Principal Component

factor analysis and Cronbach alpha coefficients following Straub, Boudreau and Gefen (2004) and George and Mallery (2003), respectively. For the purpose of descriptive analyses of model variables, the latent variables were converted to single interval scale measures using the weighted means of the values of the indicators with the standard deviations of the indicators as the weights. However, because the model was derived from existing theory a latent structured regression measurement model was used in the structural equation modeling (SEM) analyses with the separate values of indicators entered into the calculations as recommended by Schumaker and Lomax (2016). Kline (2016) was followed for SEM analyses procedures using Amos software.

Related Literature and Research Hypotheses

In accordance with the nature and purpose of this study the related literature focused on quantitative explanatory studies where a model was tested using data collected by questionnaire including: Rad & Benyoucef (2010); Hernández, Jiménez & José Martín (2011); Pharuepon (2012); Suraworachet, Premsiri and Cooharojananone (2012); Liang, Ho, Li and Turban (2012); Azam, Qiang and Sharif (2013); Talat, Azar and Yousaf (2013); Lee, Khong and Hong (2014); Hajli, Lin, Featherman and Wang (2014); Wang and Yu (2015); Xiang, Zheng, Lee and Zhao (2016); Chen and Shen (2015); Hajli (2015); Esmaeili, Mutallebi, Mardani and Golpaycgani (2015); Huang (2016); Chen and Wang (2016).

Among the studies very few have examined social support variables or moderator effects in the context of SC. The focus has been on only direct effects ignoring indirect and total effects and producing incomplete findings.

Based on previous studies three groups of variables were identified as having direct effects on both SC Trust and SC Purchase Intention:

Social Support Variables: Liang et al. (2012) described social support as an individual's experiences of being cared for, being responded to, and being helped by people in that individual's social group. Social support in this study comprise of three variables; Emotional Support, Informational Support and Personal Support. Liang et al. (2012) defined Emotional Support as the extent to which people on SNS show concern for others. Informational Support is the extent to which useful information is received from others on SNS (Liang et al., 2012). Personal Support is defined by Bhardwaj & Aggarwal (2016) as the extent to which others share and discuss their interests and provide tangible reliable support. House (1981) found Emotional Support to be the most important among these variables.

Social support in SNS can be in the form of ratings and reviews, recommendation and referrals, and forums and communities (Hajli, 2015). These kinds of shared information platforms give comprehensive information about products and services which later promote higher levels of trust. Social support also plays a crucial role in SC purchase intention. Since in the realm of online marketing consumers cannot experience the products and services and they don't spend time to interact with staff in a physical store. Thus, consumers' decisions rely heavily on other consumers' experiences (Ba & Pavlon, 2002).

Many studies show that social interaction in SNS can significantly influence trust. According to Lee et al. (2014) consumers' trust towards the products or services as well as to the sellers are shaped by user-generated contents, as well as reviews and ratings. Hence, social interactions in the context of SC are important elements that build a consumer's trust (Hajli, 2015). Interactions of the users in these platforms create the intention to purchase from SC sites (Celeste, 2012). The function of recommendations, referrals and ratings in SC provide reasons for sellers to be seen as trustworthy (Hajli, 2015). The tendencies of the consumers to often check online and read the comments of others before buying a product significantly reduces the risk of regretting the purchase after (Lee et al., 2014).

Website Quality: Website quality refers to the positive evaluation of users towards the usefulness and performance of the website, and whether it meets their needs and standards (Aladwani & Palvia, 2002). Website quality in this study comprise of two variables; System Quality and Service Quality. System Quality is defined by Liang et al. (2012) as the degree to which a website possesses features such as functionality, availability, reliability, and good response times. Service Quality is defined by Zheng, Zhao, and Stylianou (2012) as the extent to which a user is able to evaluate the support and services delivered by the provider.

SNS must have certain attractive elements in order to gain attention from the viewers and the potential customers and to increase the number of customers. In order to attract the viewers, the quality of the website's system and services such as the web content and design, user friendliness, payment and tracking systems, are the key to successful web-based business. Both system and service qualities are intangible and equally important since the customer's judge and make purchase decisions based on the quality of the website.

Characteristics of a high-quality websites enable easy navigation for categories and sub categories of specific product information required by the consumers (Kincl & Strach, 2012). In contrast, disorientation is one of the navigation issues of websites. According to Ahn, Ryu and Han (2007), consumers are encouraged to buy online when a website is systematic, and the informatics is of good service quality. Good quality websites have more chance of having more visitors who perform shopping online (Lai & Wang, 2012). Therefore, online businesses must focus and add value to the system design, and the information and services on the websites. Since website design has become a crucial success factor in online businesses SNS must carefully focus on the quality of a website design that the customers value (Kim, Shaw & Schneider, 2003). Website designs are basically equivalent to the physical store's layout (Kim et al., 2003). Therefore, online businesses must build attractive and enjoyable websites (Heijden, Verhagen & Creemers, 2003) with useful content and easy navigation as the necessary elements to gain attention from more customers. Providing useful information and product descriptions on websites helps customers to make well-informed decisions before purchasing and helps to retain their attention rather than them shifting to another online shop (Kim & Song, 2010). Some of the online products require more detailed description (Kim, Fiore & Lee, 2007), and high-quality photos shot from different angles and graphical

appearance (Cyr, 2013). Also, websites need advanced technology and continuous updating of design elements and appearance in order to increase the consumers' purchase intention and their perceived shopping enjoyment. The atmosphere of a website has a strong relationship with the attitude, behavior, and purchase intention of the consumers (Heijden et al, 2003).

Content is another essential part of a quality website (Kincl & Strach, 2012). Display and organization of the content and a variety of products, correct information and latest updates on the product information are important sub-components of the website content (Hernandez et al., 2011).

Personal Impressions: is a group of four variables (Perceived Risk, Word of Mouth, Perceived Usefulness, and Perceived Enjoyment). Perceived Risk represents the belief that there are expected losses associated with using SNS (Chen & Wang, 2016). Perceptions of risk reduce perceptions of usefulness and adoption intentions (Pavlou, 2003).

Perceived risk is related to uncertainty and problems in SNS business. Perceived risks may cause the customer to feel uncertain, experience pain due to discomfort or anxiety, face consumer conflicts, feel psychological discomfort, and encounter cognitive dissonance (Bettman, 1973). Perceived risks reduce perceived usefulness and adoption intentions and reduce a subject's intention to transact (Pavlou, 2003).

Consumers' personal information displayed on the websites, and online transactions are the tremendous barriers for the consumers (Pavlon, 2003). E-commerce businesses must ensure that a consumer's private information must be protected. A consumer's online transactions in purchasing goods must be secure and without potential risks (Hong & Cha, 2013). Increased website security in e-commerce increases the purchase intention of the customers (Kim, Ferrin & Rao, 2008). Word of Mouth (WOM) is the extent to which an individual communicates information about the positive aspects of SNS (Wang & Yu, 2015). WOM is powerful for maintaining a long-term relationship with customers. It is more important than advertising for raising customer awareness and attracting consumers (Swanson & Charlene Davis, 2003).

Perceived Usefulness is a belief that using SNS is useful for finding information, other people, and achieving goals (Al-Ghaith, 2015). Perceived Usefulness is one factor that determines behavioral intentions (Hernández et al., 2011; Hu, Sun, Zhang, J., Zhang, X., Luo & Huang 2009). Perceived Enjoyment is the extent to which an individual experiences pleasure from using SNS (Ernst, Pfeiffer & Rothlauf 2013). According to Lee et al. (2014) enjoyment can influence continuance of using an SNS as well as purchase intention in SC.

SC Trust is influenced directly by each of the nine variables in these three groups. It is the level of the consumers' confidence in the reliability and integrity of the SC site (Chen & Shen, 2015). In SC it is the most crucial factor that influences purchase decisions (Talat et al., 2013). Trust is an important factor in SC since all the transactions occur in a virtual place. The results from previous studies on trust in SC show that trust is the most crucial factor that leads to purchase decision. Han and Windsor (2011) state that consumers are likely to buy products or services from

the seller they trust. Moreover, they are also eager to share their personal information with the seller. If consumers feel that a SNS is trustworthy and secure, it means that their personal information will be fully safeguarded and rightfully used. Therefore they have more intention to buy products from that SNS (Celeste, 2012). Social activities at an SNS can increase intention to buy (Han & Windsor, 2011; Gefen, 2002). There is a strong positive relationship between purchase intention and trust on SNS (Talat et al., 2013).

SC Purchase Intention is the dependent variable. It is the extent to which an individual is willing to purchase products and services using SC (Hajli, 2015). Intention can be used as a predictor of actual behavior (Liang et al., 2012). In technology adoption models intention may be used as a substitute for actual action (Hajli, 2015).

Moderators: Moderation effects have not been examined adequately in studies of SC. However, they have received attention in studies of the adoption of other systems. In this study the moderators Gender, Age and SC Experience are examined. Gender refers to physical gender, Age refers to an individual's age in years and SC Experience refers to the length of time an individual has been using SC in months. Table 1 identifies studies which motivated the inclusion of three moderators in this study.

Table 1 Moderators in previous studies

Moderator	Reference
Gender	Chiu, Lee, & Chen, 2008; Venkatesh, Thong, & Xu, 2012; Hernández et al., 2011; Zhou, Jin, & Fang, 2014.
Age	Ho and Dempsey, 2009; Venkatesh et al., 2012; Hernández et al., 2011.
SC Experience	Venkatesh et al., 2012; Shi and Chow, 2015.

In Table 1 Hernández et al. (2011) is the only study directly related to purchasing with SC. Consequently, the investigastion of moderating effects is considered to be exploratory in nature. Figure 1 displays the theoretical model derived from the previous studies.
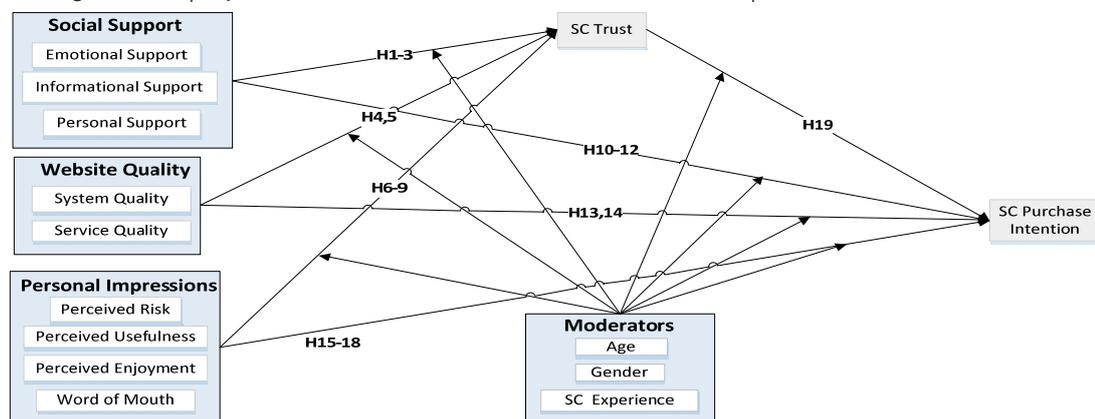
Figure 1 Theoretical model.

Table 2 states the research hypotheses associated with direct effects (notated in Figure 1) and moderator effects. References identify studies which motivated the hypothesis.

Table 2 Research hypotheses

	Direct Effects	Reference
H1	Emotional Support has a significant positive direct effect on SC Trust	Chen & Shen (2015), Rad & Benyoucef (2010), Liang et al. (2012), Bhardwaj & Aggarwal (2016)
H2	Informational Support has a significant positive direct effect on SC Trust	
H3	Personal Support has a significant positive direct effect on SC Trust	
H4	System Quality has a significant positive direct effect on SC Trust	Liang et al. (2012), Chang, Kuo, Hsu & Cheng (2014)
H5	Service Quality has a significant positive direct effect on SC Trust	
H6	Perceived Risk has a significant negative direct effect on SC Trust	Chen & Wang (2016)
H7	Perceived Usefulness has a significant positive direct effect on SC Trust	Hajli (2015)
H8	Perceived Enjoyment has a significant positive direct effect on SC Trust	Lee et al. (2014), Xiang et al. (2016)
H9	Word of Mouth has a significant positive direct effect on SC Trust	Wang & Yu (2015), Beyari & Abareshi (2018)
H10	Emotional Support has a significant positive direct effect on SC Purchase Intention	Chen & Shen (2015), Rad & Benyoucef (2010), Liang et al. (2012)
H11	Informational Support has a significant positive direct effect on SC Purchase Intention	
H12	Personal Support has a significant positive direct effect on SC Purchase Intention	
H13	System Quality has a significant positive direct effect on SC Purchase Intention	Liang et al. (2012), Chang et al. (2014)
H14	Service Quality has a significant positive direct effect on SC Purchase Intention	
H15	Perceived Risk has a significant negative direct effect on SC Purchase Intention	Chen & Wang (2016)
H16	Perceived Usefulness has a significant positive direct effect on SC Purchase Intention	Hajli (2015)
H17	Perceived Enjoyment has a significant positive direct effect on SC Purchase Intention	Lee et al. (2014)
H18	Word of Mouth has a significant positive direct effect on SC Purchase Intention	Wang & Yu (2015)
H19	Social Commerce Trust has a significant positive direct effect on SC Purchase Intention	Lee et al. (2014)
Moderator Effects		
Gender, Age, and SC Experience have significant moderating effects on each of the direct effects in H1-H19.		See Table 1

Note: Significant refers to statistical significance at a level of 0.05 or less.

Table 3 references measuring instruments used for constructing questionnaire items. These 11 latent variables were measured on 5-point Likert scales treated as interval scale measures.

Table 3 Measuring instruments

| Variable (Number of Indicators)	Measuring Instrument	Variable (Number of Indicators)	Measuring Instrument	Variable (Number of Indicators)	Measuring Instrument	Variable (Number of Indicators)	Measuring Instrument
Emotional Support (6)	Liang et al. (2012)	System Quality (6)	Liang et al. (2012)	Word of Mouth (4)	Wang & Yu (2015)	SC Trust (6)	Hajli (2015)
Informational Support (4)	Liang et al. (2012)	Service Quality (8)	Liang et al. (2012)	Perceived Usefulness (5)	Al-Ghaith (2015)	SC Purchase Intention (4)	Bai, Yao, & Dou (2015)
Personal Support (4)	Liang et al. (2012)	Perceived Risk (3)	Chen & Wang (2016)	Perceived Enjoyment (3)	Ernst et al. (2013)	SC Experience was measured in months; Age was measured in years	

Results

In total 399 questionnaires were returned. No data entry errors were found. There were no missing values or outlier measures for any variable. Principal Component factor analysis showed that the construct validity of the latent variables was satisfactory. Each indicator had a significant factor loading with magnitudes ranging from 0.676 to 0.904 on only the factor representing the latent variable and associated eigenvalues ranged from 1.092 to 20.839 (Straub et al., 2004). Cronbach alpha coefficients ranged from 0.914 to 0.959 indicating excellent equivalence reliabilities (George & Mallery, 2003).

There were 192 males (48%). Ages ranged from 18 years to above 50 years with a mean of 32 years. The largest proportion of subjects (37%) has a monthly income between 15,000 and 35,000 baht per month with a mean of 41,000 baht. Half have more than one year of experience with SC and subjects have all made purchases using SC.

For the model variables the magnitudes of skewness ranged from 0.023 to 0.669 and for kurtosis from 0.019 to 0.819. These were within the acceptable limits of 3 and 7, respectively, required for the use of maximum likelihood estimation in SEM analyses (Kline, 2016).

T-tests showed that the mean values of the latent variables were significantly greater than the neutral value of 3 on their measurement scales except for SC Trust where the mean was not significantly different from 3 ($p < 0.05$). T-tests showed no significant differences between the mean values of variables for males and females except for SC Experience where the mean for males (10 months) was significantly less than the mean for females (13 months) ($p < 0.05$). Correlations among the variables showed that except for Perceived Risk→SC Trust all of the direct effects in the theoretical model (Figure 1) are associated with significant positive correlations ($p < 0.05$) and Perceived Risk and SC Trust are the only two variables that are not significantly correlated.

Figure 2 shows the results of a SEM analysis of the theoretical model. The direct effects are presented: the unstandardized effect is first followed by *, **, or *** to indicate statistical significance at a level of 0.05, 0.01, or 0.001, respectively. NS means not statistically significant at a level of 0.05 or less; and in parentheses, the standardized effect and its magnitude classified as according to Cohen (1988) as: small (S) (0.1 or less); medium (M) (between 0.1 and 0.5); or large
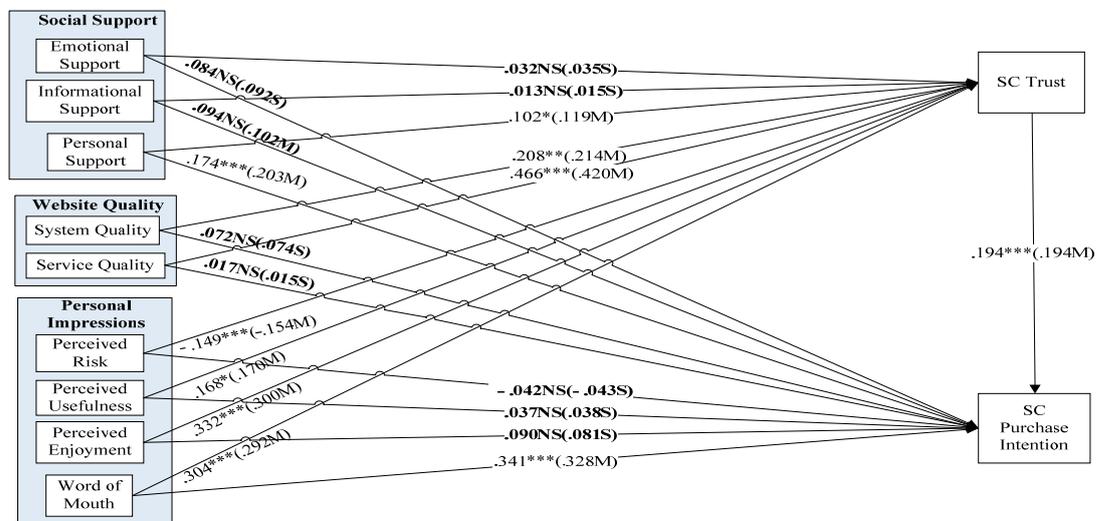
(L) (0.5 or greater). These notations are used throughout the results.

Figure 2 Direct effects in the theoretical model.

Table 4 shows that the values of fit statistics recommended by Kline (2016) are acceptable except for Goodness of Fit (GFI) and Adjusted Goodness of Fit (AGFI) which are expected to exceed 0.9. Also, there are nine direct effects highlighted in Figure 2 which are not statistically significant.

Table 4 Fit statistics for the theoretical model

Sample Size 399	Normed Chi-square (= χ^2/df) 2283.634/1270 = 1.798	RMR	GFI	AGFI	NFI	IFI	CFI	RMSEA
		.026	.821	.798	.905	.955	.955	.045
	R^2: PI (.483) and SCT (.455)							

Note: R2 is the proportion of the variance of a variable that is explained by those affecting it. RMR stand for Root Mean Square Residual, GFI stand for Goodness of Fit, AGFI stand for Adjusted Goodness of Fit, NFI stand for Normed-Fit Index, IFI stand for Incremental Fit Index, CFI stand for Comparative Fit Index, RMSEA stand for Root Mean Square Error of Approximation.

Based on the distributions for Gender, Age, and Experience two groups were formed for each of the moderators: Gender (males and females); Age (27 years or less and 28 years or more); and Experience (12 months or less and 13 months or more).

Following Kline (2016) moderator effects were evaluated using multi-group analysis. A moderator effect is statistically significant if the change in the value of Chi-square between the constrained and unconstrained models is statistically significant (p < 0.05). There were only seven significant moderator effects described in Table 5.

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Table 5 Significant moderating effects

Direct Effect	Age
System Quality → SC Purchase Intention	The effect is: medium positive and significant for those aged 27 years or less; small positive and not significant for those aged 28 years or more; but significantly greater for the younger age group.
Personal Support → SC Purchase Intention	The effect is: medium positive and significant for individuals aged 27 years or less; small positive and not significant for those aged 28 years or more; but significantly greater for the younger age group.

Direct Effect	Gender
Informational Support → SC Trust	The effect is: medium positive and not significant for males and females; but significantly greater for males than females.
Perceived Usefulness → SC Purchase Intention	The effect is: medium positive and significant for males and medium positive and not significant females; but significantly greater for males than females.
Perceived Enjoyment → SC Purchase Intention	The effect is: medium positive and significant for males; small positive and not significant for females; but significantly greater for males than females.

Direct Effect	SC Experience
Word of Mouth → SC Trust	The effect is: medium positive and not significant for those with 12 months or less experience; medium positive and significant for those with 13 months or more experience; but significantly greater for the more experienced group.
SC Trust → SC Purchase Intention	The effect is: medium positive and significant for those with 12 months or less experience; small positive and not significant for those with 13 months or more experience; but significantly greater for the less experienced group.

In Figure 2 it is possible that some of nine direct effects that are not statistically significant (NS) may be removed to obtain a final model with improved fit statistics. These nine effects were made optional forming a hierarchy of 512 (= 2^9) models which were analyzed using the Specification Search facility in Amos. Following Kline (2016) the final model in Figure 3 with fit statistics in Table 6 was selected as the model in the hierarchy with the smallest value for Normed Chi-square.
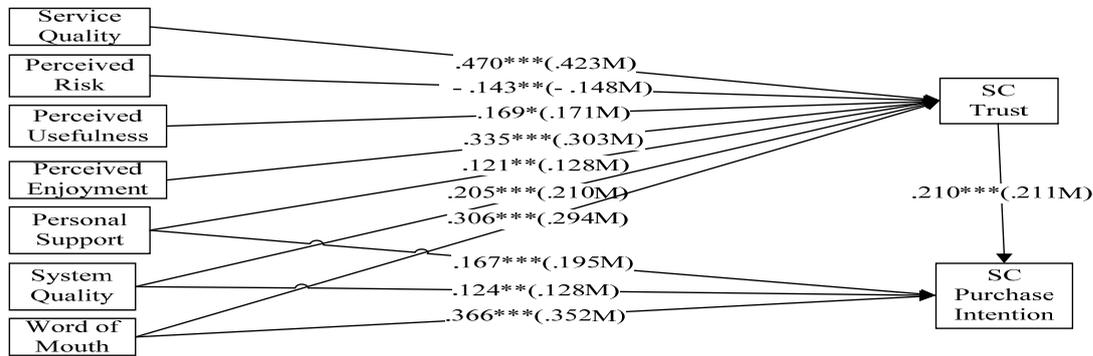
Figure 3 Direct effects in the final model.

Table 6 Fit statistics for the final model

Sample Size 399	Normed Chi-square (= χ^2/df)	RMR	GFI	AGFI	NFI	IFI	CFI	RMSEA
	2290.128/1278 = 1.792	.025	.911	.901	.913	.955	.955	.044
	R^2: PI (.474) and SCT (.455)							

The fit statistics in Table 6 are an improvement on those in Table 4 and the number of variables and direct effects in the final model is less than in the theoretical model (Figure 2). The final model is the preferred model and a full analysis of it is displayed in Table 7.

Table 7 Full analysis of the final model

Variable	Effect	Intervening SC Trust	Dependent SC Purchase Intention	Variable	Effect	Intervening SC Trust	Dependent SC Purchase Intention
Personal Support	Direct	.121**(.128M)	.167***(.195M)	Perceived Risk	Direct	- .143**(- .148M)	Nil
	Indirect	Nil	PS-SCT-PI: .025**(.027S)		Indirect	Nil	PR-SCT-PI: - .030**(- .031S)
	Total	**.121**(.128M)**	**.192**(.222M)**		**Total**	**- .143**(- .148M)**	**- .030**(- .031S)**
System Quality	Direct	.205***(.210M)	.124**(.128M)	Perceived Usefulness	Direct	.169*(.171M)	Nil
	Indirect	Nil	STQ-STC-PI: .043***(.044S)		Indirect	Nil	PU-SCT-PI: .035*(.036S)
	Total	**.205***(.210M)**	**.167**(.172M)**		**Total**	**.169*(.171M)**	**.035*(.036S)**
Word of Mouth	Direct	.306***(.294M)	.366***(.352M)	Perceived Enjoyment	Direct	.335***(.303M)	Nil
	Indirect	Nil	MOU-SCT-PI:.064***(.062S)		Indirect	Nil	PE-SCT-PI:.070***(.064S)
	Total	**.306***(.294M)**	**.430***(.414M)**		**Total**	**.335***(.303M)**	**.070***(.064S)**
Service Quality	Direct	.470***(.423M)	Nil	SC Trust	Direct	Nil	.210***(.211M)
	Indirect	Nil	SVQ-SCT-PI: .010***(.089S)		Indirect	Nil	Nil
	Total	**.470***(.423M)**	**.010***(.089S)**		**Total**	**Nil**	**.210***(.211M)**

Notes: The statistical significance of: (a) indirect effects were determined following Cohen and Cohen (1983); **(b)** totals of effects were determined using nonparametric bootstrapping with 1,000 random samples.

Discussion

Subjects were neutral about the importance of trust, but they placed a high value on the importance of the other model variables. Perhaps trust was initially a serious concern for users, but its importance has diminished as a result of experience and making purchases with SC. On average there is no significant difference between males and females.

Significant correlations showed that older individuals have high incomes and extensive SC experience. They believe that there are risks associated with SC and relative to younger users they place a low emphasis on: (i) Tangible personal support from other users; (ii) Website features (functionality, availability, reliability, and response times); (iii) Being able to evaluate the service provided at the website; (iv) Enjoyment when using SC; (v) Trust in the products and services offered online; and (vi) Intention to purchase items using SC.

Relative to users with less experience individuals with extensive SC experience have high incomes and believe that there are risks associated with using SC. They emphasize the importance of: (i) Website features (functionality, availability, reliability, and response times); (ii) Being able to evaluate the service provided at the website; (iii) The use of SC for finding information, other people, and helping to achieve their goals.

Theoretical Perspectives: From Table 7 it is seen all of the direct, indirect, and total effects are statistically significant ($p < 0.05$). Based on total effects Word of Mouth has the greatest influence on SC Purchase Intention followed in decreasing order of effect by Personal Support, SC Trust, and System Quality. These are followed by small total effects due to Service Quality, Perceived Enjoyment, Perceived Usefulness, and Perceived Risk. These effects are all positive except for that due to Perceived Risk.

Positive effects on SC Trust in decreasing order of effect are due to: Service Quality; Perceived Enjoyment; Word of Mouth; System Quality; and Perceived Usefulness. Next is the negative effect of Perceived Risk followed by the positive effect of Personal Support. Among these seven exogenous variables Personal Support, Word of Mouth, and System Quality have medium positive effects on both SC Trust and SC Purchase Intention. The other four exogenous variables have medium direct effects on only SC Trust, but they do have small statistically significant indirect effects on SC Purchase Intention.

From Table 7 it is seen that among the 19 hypotheses in Table 2 concerned with direct effects 11 are fully supported by the findings (H3 to H9, H12, H13, H18, and H19) and this confirms the same findings in studies identified in Table 2. There are eight hypotheses in Table 2 that are not supported (H1, H2, H10, H11, and H14 to H17) and these may be considered as new findings. Notably, there is a significant correlation between the two variables in each of these 19 hypotheses except for H6 involving Perceived Risk and SC Trust.

In particular, hypotheses H1, H2, H3, H10, and H11 involve three forms of social support (Emotional, Informational, and Personal). T-tests showed that subjects place a high value on the importance of each form of support but changes in Emotional and Informational Support have

negative effects on SC Trust and SC Purchase Intention. These are both affected significantly by the more tangible aspects of Personal Support and the specific information about products and services from Word of Mouth which have more direct relevance to SC purchase decisions.

Hypotheses H14 to H17 which involve direct effects on SC Purchase Intention due to Service Quality, Perceived Risk, Perceived Usefulness, and Perceived Enjoyment are not supported. These small direct effects which are not statistically significant were removed in the development of the final model. However, as in previous studies these four variables have significant direct influences on SC Trust and notably they do have small but statistically significant indirect effects on SC Purchase Intention via SC Trust as a mediator. These indirect effects on SC Purchase Intention are considered to be new findings which illustrate the additional insights gained by considering total effects and not only direct effects.

As described in Table 5 there are seven significant moderator effects due to Age, Gender, and SC Experience. However, in the context of SC these are considered as exploratory findings which require confirmation in further studies.

Practical Perspectives: Based on total effects (Table 7) practical objectives and associated actions designed to increase SC Purchase Intention are described in Table 8. The actions are presented in decreasing order of their effect on the objective. The model variable associated with each action is identified. Based on significant moderator effects (Table 5) particular groups of subjects are identified as targets for some of the actions. Actions with only small total effects are excluded.

Table 8 Practical objectives, actions, and target groups

Objective	Primary Actions	Variable	Target Group
Primary Objective: Increase SC Purchase Intention	1. Ensure that it is easy and convenient for users to communicate information about the positive aspects of the sites used for the purpose of SC.	Word of Mouth	All individuals
	2. Ensure that individuals feel that there are others in the network that can share and discuss their interests and provide them with tangible reliable support.	Personal Support	Those of age 28 years or more
	3. See actions associated with the Secondary Objective.	SC Trust	Those with 13 months or more SC experience
	4. Ensure the website possesses desired features (e.g. functionality, availability, reliability, and response time.	System Quality	Those of age 28 years or more

Table 8 (Continue)

Objective	Primary Actions	Variable	Target Group
Secondary Objective: Increase SC Trust.	1. Ensure that support services provided to users are excellent.	Service Quality	All individuals
	2. Ensure that consider their experiences to be enjoyable.	Perceived Enjoyment	All individuals
	3. Ensure that it is easy and convenient for users to communicate information about the positive aspects of the sites used for the purpose of SC	Word of Mouth	Those with 12 months or less SC experience
	4. Ensure the website possesses desired features (e.g. functionality, availability, reliability, and response time.	System Quality	All individuals
	5. Ensure that the site is useful for finding information, other people, and achieving objectives.	Perceived Usefulness	All individuals
	6. Minimize risks associated with use (e.g. users' data and personal information).	Perceived Risk	All individuals
	7. Ensure that individuals feel that there are others in the network that can share and discuss their interests and provide them with tangible reliable support.	Personal Support	Those of age 28 years or more

Table 9 presents suggestions for executing the primary actions associated with a model variable in Table 8.

Table 9 Suggested means of executing actions

Actions (Variable)	Suggested Means of Executing Actions
1. Ensure that it is easy and convenient for users to communicate information about the positive aspects of the sites used for the purpose of SC. (Word of Mouth)	Ensure the overall design of the site looks pleasant and easy to use. Set up a referral or invite friend system on the site.
2. Ensure that individuals feel that there are other people in the network that can share and discuss their interests and provide them with tangible reliable support. (Personal Support)	Provide a system to enable users to establish their own online community. Develop a reliable, fast, and easy to use communication system.
3. Provide good governance for users ensuring trust in the products and services in an accountable and transparent manner. (SC Trust)	Provide clear and consistent site conditions and policies. Provide responses to user's issues.
4. Ensure the website possesses desired features (e.g. functionality, availability, reliability, and response time. (System Quality)	Allow users to provide quick responses and feedback.
5. Ensure that support services provided to users are excellent. (Service Quality)	Provide error-free message services. Advise users about the operation of the system. Pay attention to individual needs.
6. Ensure that consider their experiences to be enjoyable. (Perceived Enjoyment)	Provide a friendly interface.

Table 9 (Continue)

Actions (Variable)	Suggested Means of Executing Actions
7. Ensure that users find the site useful to them for finding information, other people, and achieving their objectives. (Perceived Usefulness)	Make it easier for users to find their friends or useful information.
8. Minimize risks associated with use (e.g. users' data and personal information). (Perceived Risk)	Provide security options for users.

Conclusion

The findings contribute to theory in three ways: analyses of indirect and total effects instead of only direct effects; the roles of social support constructs; and exploration of moderator effects.

Based on total effects on SC Purchase Intention the greatest influence was due to Word of Mouth followed by Personal Support, both of which had statistically significant positive direct and indirect effects. Next was SC Trust which had a statistically significant direct effect only followed by System Quality with statistically significant direct and indirect effects. These medium total effects were followed by small but statistically significant indirect effects due to Perceived Enjoyment, Service Quality, Perceived Usefulness, and Perceived Risk. All of indirect effects on SC Purchase Intention involved in these findings operated through the mediation effect of SC Trust. They are considered to be new findings and none of them would be reported if only direct effects were studied.

In order of decreasing magnitude, Service Quality, Perceived Enjoyment, Word of Mouth, System Quality, Perceived Usefulness, Perceived Risk, and Personal Support had direct medium effects only on SC Trust. All these effects were positive except for the effect of Perceived Risk.

The study included three forms of social support (Emotional, Informational, and Personal). Although subjects placed a high value on the importance of each, Personal Support was the only one retained in the final model. The effects of Emotional and Informational Support on SC Trust and SC Purchase Intentions in the theoretical model were small and not statistically significant and they were excluded from the final model. Compared to Informational and Emotional Support, the inclusion of Word of Mouth and Personal Support represented more tangible forms of useful information and personal assistance directly relevant to making purchases with SC and developing trust in SC.

There were seven significant moderator effects due to Age, Gender, and SC Experience. These are considered exploratory findings which require validation in further studies.

The theoretical findings have practical implications and benefits for: individuals and organizations who wish to sell products and services using SC and organizations that operate SNS platforms where SC activities are conducted. In addition, the findings provide an understanding of issues that motivate customers to trust and make purchases with SC. These understandings may encourage potential or existing customers to participate in SC. Also, the findings enable the

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development of a sequence of actions and suggestions for implementation designed to enhance SC trust and purchase intentions. Based on the significant moderator effects this practical advice includes the identification of groups of individuals who should be targeted by these actions.

Recommendation

Although the research has achieved its aims, there are some unavoidable limitations. First, because of the time limit, this research collected data only in one SNS; Facebook. Therefore, to generalize the results for larger groups of SC users, the study should involve more participants from other SNS. Second, since the data was collected online, a slow network connection may have discouraged a participant's interest and motivation in completing the survey.

Suggestions for future studies are based on the new findings which resulted from considering total effects and not only direct effects. In terms of total effects, Trust is the third most influential factor on SC Purchase Intention: the top two were Word of Mouth and Personal Support. This interesting finding shows something different compared to previous studies of SC Purchase Intention where Trust as the most crucial factor (e.g. Han & Windsor, 2011). This finding may be due to a decreased emphasis on trust developing among SC users as the extent of their use of SC increases. It is common for trust to be a strong concern for a user when they first start using a new technology, but as successful experience accumulates initial concerns about trust decline. It is strongly recommended that this aspect of the findings be examined in future studies.

Future studies may also: explore different moderators (e.g. level of education); include different model variables and relationships with purchase intentions; and examine and compare subjects from different backgrounds (e.g. different economic status or cultural background).

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