Internet Research

Marketing mix, customer value, and customer loyalty in social commerce: A stimulus-organism-response perspective

Ya-Ling Wu, Eldon Y. Li,

Received 8 November 2016
Revised 17 August 2017
Accepted 18 August 2017

Marketing mix, customer value, and customer loyalty in social commerce

A stimulus-organism-response perspective

Ya-Ling Wu
Department of Information Management, Tamkang University, New Taipei City, Taiwan, and
Eldon Y. Li
Department of Management Information Systems, National Chengchi University, Taipei, Taiwan

Abstract

Purpose – Based on stimulus-organism-response model, the purpose of this paper is to develop an integrated model to explore the effects of six marketing-mix components (stimuli) on consumer loyalty (response) through consumer value (organism) in social commerce (SC).

Design/methodology/approach – In order to target online social buyers, a web-based survey was employed. Structural equation modeling with partial least squares (PLS) is used to analyze valid data from 599 consumers who have repurchase experience via Facebook.

Findings – The results from PLS analysis show that all components of SC marketing mix (SCMM) have significant effects on SC consumer value. Moreover, SC customer value positively influences SC customer loyalty (CL).

Research limitations/implications – The data for this study are collected from Facebook only and the sample size is limited; thus, replication studies are needed to improve generalizability and data representativeness of the study. Moreover, longitudinal studies are needed to verify the causality among the constructs in the proposed research model.

Practical implications – SC sellers should implement more effective SCMM strategies to foster SC CL through better SCMM decisions.

Social implications – The SCMM components represent the collective benefits of social interaction, exemplifying the importance of effective communication and interaction among SC customers.

Originality/value – This study develops a parsimonious model to explain the over-arching effects of SCMM components on CL in SC mediated by customer value. It confirms that utilitarian, hedonic, and social values can be applied to online SC and that SCMM can be leveraged to achieve these values.

Keywords Social media, Customer loyalty, Customer value, Marketing mix, Social commerce

Paper type Research paper

1. Introduction

Today's sellers are facing challenges in implementing customer-oriented marketing strategies to meet customer demand and create customer value (Hubber *et al.*, 2001). With the emergence of social media, virtual business opportunities have gradually transformed from internet-based trading platforms into a social commerce (SC) platform (Hoffman and Fodor, 2010; Chung, 2015). SC is a business model that uses social media, such as Facebook, to support not only business-to-consumer (B2C) but also consumer-to-consumer (C2C) electronic-commerce transactions. Such platforms offer effective interactive services to engage their customers with SC (Andrew and Olivier, 2010), e.g. online chat, dating, video sharing, and virtual groups, known as social shopping. Social shopping is about connecting customers to discover, share, recommend, rate products, and initiate or simplify purchase decisions (Olbrich and Holsing, 2011/2012). Besides using the fan pages on Facebook for social shopping (Leong *et al.*, 2017), more and more businesses have cooperated with

Internet Research
Vol. 28 No. 1, 2018
pp. 74-104

1066-2243
DOI 10.1108/IntR-08-2016-0250

individuals who are core members of the social network and have power of influence in the network. These core members can be social shopping initiators who posted some announcements on their personal pages or Facebook Groups and often uploaded a demonstration video or photos for sales items or added a link to their blogs for illustrating item details. Their fans often ask for the prices or other related questions. After the completion of purchase order forms, which may be the Group Docs in Facebook, external Google Forms, or official business websites, customers will remit payment to the sellers' accounts. Such a shopping process is common in Facebook Groups today.

Network closure among sellers and buyers in SC community is linking many customers closely and allowing sellers to face groups of customers from social media sites (Xiao *et al.*, 2015). Due to the real-time exchange of information among customers through social media, a new era of information transparency for consumption is arriving swiftly. Social media not only allow each user to communicate with a large number of customers whom they never met in their lives but also offer more buyer-generated information to them. Accordingly, the purchasing behaviors of customers are changing. In other words, they do not rely on the information provided by the sellers but prefer to believe in a wide range of referrals from customers, especially their friends, colleagues, relatives, professionals, peers, or net-pals in their social networks. They frequently assess product reviews provided by social media before consumption. Past research has shown that social support and social presence could increase customers' intention to shop on social media websites (Kim *et al.*, 2013). Hence, social media platforms with lower information asymmetry enable customers to find easily the most economic and affordable way of shopping.

Social media enable social interaction and information exchange among social network members (be it business or individual) and assist them in online buying and selling of products and services (Yang *et al.*, 2013/2014). Recently, Yadav *et al.* (2013, p. 312) defined SC as "exchange-related activities that occur in, or are influenced by, an individual's social network in computer-mediated social environments, where the activities correspond to the need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange." In this vein, SC is a type of electronic commerce that engages in two-way interactions among social network members and continues maintaining customer relationship as well as conducting various transaction behaviors through social media. Economically, SC increases the quantity of a single purchase order from a community of consumption whose members have the same demand; this result in an increase in the bargaining power of the community and the benefit for customers to lower their transaction costs. Meanwhile, the sellers are able to increase the profit margin of sales relatively by lowering the costs in marketing and new customer development. Such online SC extending from individual consumption to community consumption is beneficial to both the buyer and the seller; thus, more and more sellers have adopted SC business model and engaged in marketing mix on social media. Through this marketing mix, sellers can maintain real-time interactions and establish social relations with customers, and enhance long-term customer loyalty (CL) in SC.

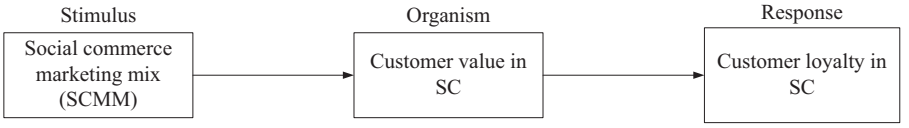
Peters *et al.* (2013, p. 281) indicated that "social media are fundamentally different from any traditional or other online media because of their social network structure and egalitarian nature." Yet, the challenge is how to connect these social media sites successfully with e-business sites (O'Malley, 2006). On the information side, Wang and Zhang (2012) stated that "social shopping sites support customers by combining research and purchasing into a one-stop activity." In the SC context, sellers cannot just apply the traditional enterprise-based 4P-mix: product, price, promotion, and place (McCarthy, 1960), or individual-based 4C-mix: communication, customer's needs, cost, and convenience (Lauterborn, 1990) as the marketing means. At this time, using social media can interact better with customers at different levels of ties, including their friends, relatives, peers,

and other potential customers, in order to strengthen two-way communication, enhance mutual understanding, and cultivate loyal customers. Sellers usually adopt a variety of marketing plan and marketing mix. Those whose products are not yet fully accepted by customers cannot achieve satisfactory results. In other words, each customer has an invisible surrounding social network and social sellers must implement marketing activities on social media to influence this network through interactive communications, known as "social media marketing (SMM)" (Hoffman and Fodor; 2010; De Vries *et al.*, 2012). However, unlike the traditional marketing mix, there is little understanding so far about the strategic SMM mix in SC.

Unlike the 4C's niche marketing, SMM is an interactive marketing that promotes customer coalition in purchasing beyond its objectives of brand awareness, brand engagement, and word-of-mouth (Hoffman and Fodor, 2010). It covers activities involving sharing information about events, products, services, brands, among others, via the social Web 2.0 sites such as blogs, microblogs, social networks, video sharing sites, etc. In the SC context, the traditional one-way linear communication model of marketing has evolved into a two-way interactive SMM model (Hoffman and Fodor, 2010). The prevalence of social media has led the sellers to face with many social networks and each comprises customers and their various ties, making SMM increasingly critical to the success of SC programs launched by the sellers. The strategic mix of SMM in SC is undoubtedly the bedrock of social commerce marketing mix (SCMM).

In this study, we explore the effectiveness of SCMM that differs from traditional online marketing mix. We probe into the customer value in SC and identify the antecedents of CL. A basic model based on the stimulus-organism-response (S-O-R) theory (Mehrabian and Russell, 1974) is constructed in Figure 1. In this model, SCMM is conceived as the stimulus, while SC customer is the organism and CL is the response. The S-O-R theory indicates that organism can mediate the effect of stimulus on response (Mehrabian and Russell, 1974). The core proposition (see Figure 1) is that the formation of CL begins with the input of SCMM stimulus, followed by the process of SC value organism, and finally results in the output of loyalty response. Prior research (Jones *et al.*, 2006) pointed out that customer value is one of the constructs that best explains customer decision making, and that the value perceptions (including utilitarian value (UV), hedonic value (HV), and social value (SV)) are considered as the cognitive, affective, and social states of customers. Thus, customer value can be a surrogate of process organism in SC. Furthermore, the stimuli of SCMM can be measured by SCMM components, but these components are rarely discussed in the literature. As SC is becoming a part of our lives, the paucity of related SCMM research prompts us to probe into SCMM, and how this mix, in conjunction with customer value in SC, affects CL.

The remaining sections are organized as follows. Section 2 reviews the extant literature and identifies the components of SCMM. Section 3 explains the relationships among research variables and develops pertinent hypotheses. Section 4 presents the research model, research method, and questionnaire design. Section 5 reports the data analysis and Section 6 discusses the results and conclusions. Finally, Section 7 describes theoretical and managerial implications as well as future research directions.



Note: The surrogate measure is in parentheses

Figure 1.
Basic model based on S-O-R theory

2. Theoretical background

2.1 S-O-R theory

The S-O-R theory, as outlined by Woodworth (1928), is known for delineating how the organism mediates the relationship between the stimulus and response by postulating different mediating mechanisms operating in the organism. These mediating mechanisms translate environmental stimuli into behavioral responses which are outputs of the process exhibited as consumer behaviors such as purchasing or not purchasing (Lichtenstein *et al.*, 1988). The organism is represented by affective and cognitive intermediary states and reflects the psychological processing of the cues such as perceived value, perceived quality, and perceived risk (Kim and Lennon, 2013). Such kind of S-O-R process exists in a neural network where a neuron receives signals from neighboring cells; it "adds up the incoming signals over time and at some level will respond to the inputs" (Li, 1994, p. 304). Taking from this S-O-R process, Mehrabian and Russell (1974) further proposed a paradigm to extend that stimuli from environments affect an individual's cognitive and affective reactions, which in turn influence his/her behavior. The S-O-R theory has been considered as a psychology theory which is popular in the studies of consumer behavior (Fiore and Kim, 2007; Chang *et al.*, 2011). Eroglu *et al.* (2003) used the S-O-R theory to verify that the atmospheric cues (stimuli) of the online store affect shoppers' cognitive and emotional states (organism), which then influence their shopping behavioral outcomes (responses). Accordingly, perceived value (organism) based on how much customers want or need it such as utilitarian and hedonic that are triggered by stimuli of website atmosphere plays a mediating role that significantly affects customers' loyalty outcomes such as recommendation, search, and retention (responses). Of interest to this study is to develop a model for explaining the formation of CL. We hereby propose a basic model based on S-O-R theory to examine how the SCMM (stimulus) affects customers' value perceptions (organism), which in turn influence CL behavior (response) in SC.

2.2 Mass marketing and niche marketing: from 4Ps to 4Cs

Marketing refers to a process of doing things in interaction with consumers to understand and satisfy consumer demands (Vargo and Lusch, 2004). Mass marketing is a market-coverage strategy in which a firm decides not to differentiate marketing segments and appeal the whole market with one offer or one strategy (Kotler and Armstrong, 1994). For mass marketing, marketers usually employ the 4P's marketing mix which was proposed by McCarthy (1960) as a means of translating marketing plan into practice for an enterprise. It is a business tool to determine a product mix (product), set a selling price for each product (price), persuade consumer to buy (promotion), and distribute products to consumers (place). Since the 1980s, this type of marketing means has gradually losing its edge because the rapid advance of information and communication technologies, especially internet in the mid-1990s, has brought about changing consumer demands, which have created a multitude of diverse and fractured markets in contrast to a simple mass market (Dalgic and Leeuw, 1994). Such phenomenon shifts the focus of marketers from mass marketing to niche marketing. The 4P's marketing mix utilized by traditional mass marketing strategy has been challenged by the mix of 4C's in consumer-oriented niche marketing strategy (Lauterborn, 1990): communication, consumer needs, cost, and convenience, which, respectively, corresponds to promotion, product, price, and place in 4Ps. All marketing decisions are based on what consumers need and want. In addition, the process of segmentation, targeting, and positioning, known as the STP process (Webster, 2005), is introduced into a firm's marketing plan. Following the STP process, marketers could formulate marketing strategies and select the 4Cs of marketing mix to create a dialogue with consumers (communication), identify what the consumer specifically wants to buy (consumer needs), minimize the total buying cost to satisfy what a consumer wants (cost), and provide the consumers with the ease of getting the products/services (convenience). Soon after the advent of social media in the early 2000s,

the power of control has swung from marketers to consumers (Hoffman and Fodor, 2010). Various online communities of consumption have emerged over the internet, creating a large economy in the consumer market worldwide and instigating a new form of business model in electronic commerce – social commerce. In this context, people prefer to believe in recommendations and word-of-mouth coming from relatives, friends, or other net-pals more than those from the promotion messages provided by marketers.

2.3 Marketing mix in SC: from 4Cs to 6Ss

In this study, we advocate that communication, as the first C in the 4Cs, is no longer one-to-one bilateral interactions between individual sellers and customers, but rather many-to-many interactions between one or more sellers and customers in the SC context. The scope of communication should be extended to comprise friends of customers and friends of friends. Commonly, there are two modes of communication in a social network: pull and push. The pull mode refers to the communication initiated by a network member through social interaction; it is endogenous in nature and enables a customer to accumulate social capital and develop social identification (SID). For the former, Ellison *et al.* (2011) stated that social connections between individuals and entities, which can be economically valuable, are enabled by a suite of SNS-related relational communication activities. According to social capital theory (Nahapiet and Ghoshal, 1998), there are three dimensions of social capital: structural, cognitive, and relational. Structural capital (STC) refers to the number and configuration of network ties, and the density of connections among individuals (Li *et al.*, 2013). Cognitive capital (CC) is the resource an individual develops over time as he or she interacts with others sharing understanding and expertise (Wasko and Faraj, 2005). Relational capital (RC) is the leverage an individual creates through trust, commitment, and reciprocity within the collective (Tsai and Ghoshal, 1998).

Regarding SID, Walther (1995, 1997) found that computer-mediated communication, such as social discussion, depth, and intimacy, can enable people self to categorize themselves as part of the in-group. According to social identity theory (Turner, 1975; Turner and Tajfel, 1982), SID occurs in a three-step process, starting with social categorization, followed by group polarization, and ending with self-stereotyping. Social categorization occurs when both the self and others are perceived, defined, or recognized as members of distinct social groups. Once categorization occurs, group polarization is triggered and "the common, typical, or representative attributes, behaviors, and norms that define and distinguish one group from others are ascertained" (Mackie, 1986, p. 720). As a consequence, groups are likely to be perceived as more homogeneous, more prototypical, or more stereotypically extreme. Finally, self-stereotyping commences when the perceived characteristics and norms of the group are attributed to the self (i.e. adopted or conformed to). In essence, SID with a reference group of individuals may make an attitude become important to a person if the group's rights or privileges are perceived to be at stake (Boninger *et al.*, 1995). For this study, we conceive that the communication activities of SCMM can accumulate a customer's social capital and shape his/her SID, which in turn affects the customer's value perception and loyalty behavior. In contrast, the push mode refers to the communication received by a network member from others in the social network. It is exogenous in nature and usually affects the value perception of an individual through social influence (SI) (Deutsch and Gerard, 1964) because members may affect the customer behavior of others through overt communication processes (Moschis, 1985). SI has been explained by theory of reasoned action (Fishbein and Ajzen, 1975) as subjective norm and applied to technology acceptance models (Venkatesh *et al.*, 2003). Normative SI conforms oneself to one's own judgment which may be thought of as an "internalized social process in which the individual holds expectations with regard to his own behavior; conforming to positive self-expectations leads to feeling of self-esteem or self-approval while nonconformity leads to feelings of anxiety or guilt"

(Deutsch and Gerard, 1964, p. 630). Moreover, SI could be informational which refers to an influence to accept information obtained from others as the evidence about reality (Deutsch and Gerard, 1964). In this study, we define SI as the explicit or implicit notion that the individual's behavior is influenced by the way in which he/she believes important others will view him/her as a result of the behavior (Venkatesh *et al.*, 2003).

Based on the above discourse, this study extends the communication component of 4Cs into three interaction components of SCMM: social capital, SID, and SI. Liang *et al.* (2011/2012) stated that the strength of the tie resulting from social support and relationship quality will affect a user's decision and the success of SC. While the first S concerns with what you could do as a social customer to other community members (e.g. building closer relationship, better understanding, or higher trust); the second S concerns how much you care which group you belong to (SID); and the last S pertains to what other members could do to you or what they advise you to do (SI). It is worth noting that all three Ss require collaborative effort of community members to flourish. However, the roles played by the customer and the other members may be opposite; while one is active, the other may be passive. For example, in the first S, the customer may actively engage in social interactions, but the other members may not reciprocate the customer's good intention to strengthen the ties. Likewise, in the last two Ss, the other members may actively exert identification and influence on the customer, but the customer may not be receptive to their opinions and thoughts. In this vein, social sellers should strive for enticing the customers to care more about what important others actually advise and think of them. Therefore, all the three aforementioned Ss are the key interaction components that shape the formulation of communication-related SCMM.

Next, customer-needs component is commonly driven by utilitarian and hedonic motivations; but in the SC context, it also involves social motivation (Rintamäki *et al.*, 2006). Therefore, we suggest that customer's needs in the SC context be extended to cover not only the two product/service-related (utilitarian and hedonic) needs but also community-related social need, that is, these three types of needs together constitute the SC needs (SCN). Regarding the cost in the 4Cs, it reflects the reality of the total cost of ownership (TCO) which includes monetary costs (e.g. product cost, shipping cost, etc.) and non-monetary costs (e.g. search cost, bargain cost, etc.). The TCO can be a financial estimate intended to help buyers determine the direct and indirect costs of a product or service. However, buying a product in a B2C commerce concerns more than just TCO; it involves risks. Taking the example of transaction cost, it is a cost incurred during economic exchange which accompanied with expenses and hidden risks of shopping, such as costs in bargaining and breach of contract (Oliver, 1975). In the SC context, the total ownership cost in C2C commerce tends to decrease, yet the risks (e.g. information asymmetry and fraud risk) are much higher than those in B2B or B2C commerce. Specifically, SC increases the quantity of a single purchase order from a community of consumption whose members have the same demand; this results in an increase in the bargaining power of the community and the benefit for customers to lower their transaction costs. However, buying goods in SC is riskier; whereas, customer risks are concerned with privacy infringement, system security, fraudulent behavior, credit card fault, and product risk (e.g. not getting what was expected). In addition, it involves an extra social risk – relationship conflict. For example, when a customer in the Apple community buys a Samsung product, he or she usually will be eyeballed by the community members, resulting in being alienated by the community. It is conceivable that risk is perceived as a more effective measure of customer's level of uncertainty regarding the outcome of a purchase decision in the unreliable SC context (Farivar *et al.*, 2017). Prior studies (Van der Heijden *et al.*, 2003; Chang *et al.*, 2005) confirmed that risk has a significantly negative impact on intention and actual online purchasing behavior. In contrast, Vijayasarathy (2002) found no effect of cost on purchase intention. Therefore, we propose extending the cost component in the 4Cs into SC risk (SCR) which

includes product, financial, and social risks. Finally, social media afford convenience to customers and allow each of them to quickly access different social networks in order to shop without leaving his/her favorite social network. This makes it easier for a customer to shop for all the products that he/she needs and makes it more convenient and fun. The customers can also conveniently interact with other customers for exchanging information about the product/service experience. Hence, we propose to extend the convenience component in the 4Cs with SC convenience (SCC) in this study. Based on the rationale described above, this study derives 6Ss from 4Cs (see Figure 2) to operationalize the SCMM for targeting customers in SC, including social capital, SID, SI, SCN, SCR, and SCC. Table I shows a comparison of marketing-mix components from 4Ps and 4Cs to 6Ss.

2.4 Customer value in SC

Customer value is commonly defined as a relativistic preference characterizing a customer's experience of interacting with some objects such as goods, thing, place, event,

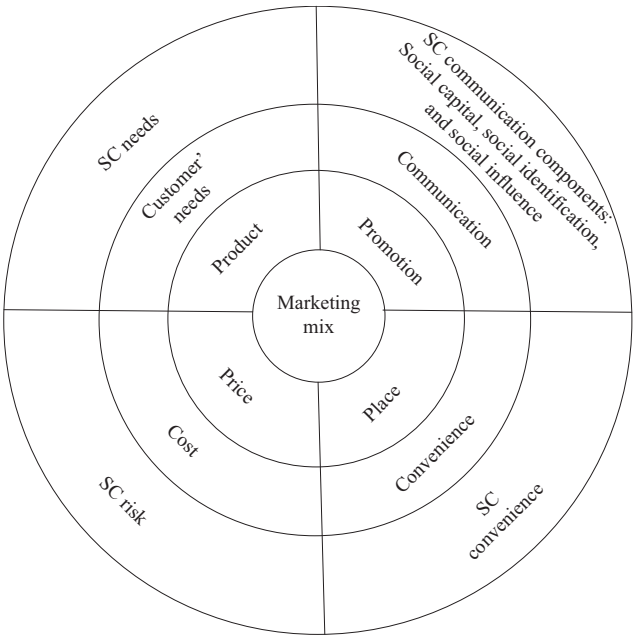


Figure 2.
The new 6Ss for social commerce marketing

4Ps	4Cs	6Ss
1. Product	1. Customer's needs	1. SC needs
2. Price	2. Cost	2. SC risk
3. Place	3. Convenience	3. SC convenience
4. Promotion	4. Communication	*Pull mode of SC communication:*
		4. Social capital
		5. Social identification
		Push mode of SC communication:
		6. Social influence

Table I.
The comparison of marketing-mix components from 4's and 4Cs to 6Ss

or idea (Holbrook, 1999). The total benefits are obtained from products or services for customers as the most important components of value (Zeithaml, 1988). It has been widely applied in the commercial marketing strategies and marketers have always hoped to grasp the various needs with emphasis on designing effective marketing activities. To increase profit, marketers must create higher customer value so that customers are willing to maintain long-term relationship with the seller, producing CL toward the online platform and thereby expanding market share (Chang *et al.*, 2008). Prior studies on customer shopping behavior focused on the utilitarian and HV of the overall shopping experiences with task-oriented emphasis and emotive behavior (Chiu *et al.*, 2012). In addition, Sheth *et al.* (1991) found another value dimension, SV, to be the key influence on customer choice; and it arises when situational factors affect perceived value-outcome process. For example, the choice of a product may be more for the social image it evokes than for its functional performance. In this study, we consider customer value in SC to go beyond product purchases and cover the whole SC experience. Following Rintamäki *et al.* (2006) as well as Gan and Wang (2017), we propose customer value in SC to contain three dimensions: utilitarian, hedonic, and social.

The UV of consumption can be defined as the economic or functional utility (e.g. convenience and saving of time) that a customer receives based on a task-related and rational shopping behavior (Babin *et al.*, 1994). Customers can evaluate the information related to the products before engaging in purchasing behavior, in order to efficiently make the purchase. Next, HV reflects worth (e.g. fun, relaxation, entertainment, gratification) received from the multisensory, fantastic, and affective aspects of the shopping experience (Babin and Attaway, 2000). This kind of consumption represents emotional shopping with an experience requirement that comprises cognitive pleasure, sensual enjoyment, and other sensory experiences (Park and Sullivan, 2009). This is the playfulness and happiness based on subjective-oriented aesthetics and experiences come from the customers' overall shopping experiences (Mort and Rose, 2004). Finally, from a symbolic interactionism perspective, the SV of consumption can be understood as social act of shopping which emphasizes the importance of products in setting the stage for the multitude of social roles that people play (Belk, 1988). Thus, SV reflects social or symbolic benefits and is viewed as the enhancement of a person's self-concepts (e.g. status and self-esteem) provided by the product or service (Rintamäki *et al.*, 2006).

2.5 CL in SC

According to Day (1969), loyalty has two dimensions: behavioral and attitudinal. However, the attitudinal component can be regarded as the attitude toward brands (Day, 1969) or preference toward brands (Jacoby and Kyner, 1973). Whatever the identified attitudinal component is, it is antecedent to the repeat purchasing behavior. In other words, these antecedents represent the motives of repurchase. Odin *et al.* (2001) argued that the behavioral aspect of loyalty seems clear but the attitudinal component remains relatively vague. Based on Kim *et al.* (2001) and Bhattacherjee (2001), this study regards loyalty as the behavior of repeat purchase and promotion.

Selnes (1993) conceived of CL with two elements: likelihood of future purchase of products (or renewal of service contracts) and positive word-of-mouth recommendation. Likewise, Boulding *et al.* (1993) also identified CL with a two-item measure of repurchase intention and willingness to recommend. Oliver (1999, p. 34) further noted loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same-brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior." Accordingly, CL is one of the critical success drivers in e-commerce because it results in increased long-term profitability. Through positive long-term loyalty propagated on social media, a seller can attract more customers with long-term loyalty once customers

and sellers establish a good social relation (Zhang *et al.*, 2016). Social commerce platform can help sellers to reach loyal customers and their social circles, where customers mutually share experience with products/services and recommend them to similar consumption groups. Therefore, we define CL in SC as a customer behavioral response to SC as characterized by a customer's recommending, approving, evangelizing, engaging in, and increasing social shopping over the social media.

3. Hypothesis development

3.1 STC and customer value in SC

STC refers to the connections between customers in the network which affect the information exchange and social activities between customers. It exists in social relationships and accumulates through the mutual interaction between customers (Nahapiet and Ghoshal, 1998). Its scale is based on the interaction frequency and relationship strength among individuals (Coleman, 1988), which explains the various social resources accessed in a social network. Each customer on a social media platform can create an individual social structure (be it large or small). The collective of individual STCs on the same social media platform forms a large STC of a social network. STC can be viewed as the role of networks in providing an efficient information and distribution process for members of those networks. That is, social connections constitute information channels that reduce the amount of time and effort required to gather information. Burts (1992) indicated that information benefits occur in three forms: access, timing, and referrals. Access means that customers receive novel and needed information. Timing refers to receiving information in time and/or faster than others. Referrals are product/service information recommended to others. Bontis (1998) further stated that STC can assist individuals in deploying their resources and expanding customer benefits. Yuan and Lin (2004) argued the more customers join the social network, the more bargaining power they have (UV). For each customer, buying an item which is a good product for the price can give him/her pleasure (HV), and engaging in SC process can help him/her to feel acceptable (SV). STC exists in social relationships and accumulates through the mutual interaction between members (Nahapiet and Ghoshal, 1998). The larger the scales of STC (i.e. the more customers participate in and interact with a social network), the more social resources can be accessed in a social network (i.e. the more information sharing and bargaining power), leading to the higher customer value it creates in SC (i.e. the better price for a good product). Thus, we propose the following hypothesis:

H1. STC positively influences customer value.

3.2 CC and customer value in SC

Based on social cognitive theory (Bandura, 1997), CC can be regarded as shared goals which express the future dreams, hopes, and aspirations among parties (Tsai and Ghoshal, 1998; Chiu *et al.*, 2006). When members mutually understand their shared goals (CC), they can avoid misunderstanding during interactive communications. In the SC context, if customers can better understand what others want, the products they buy will better meet others' expectations (UV). This social shopping experience will facilitate customers to explore/touch/try different products though SC (HV), and then stimulate more social interactions between each other (SV). In this vein, customers have more opportunities to exchange their ideas or benefits on social media, thereby fostering cohesiveness among community members. Furthermore, knowing the existence of common goals or interests could encourage the members to explore potential value of their resource exchange and combination (Tsai and Ghoshal, 1998). Past research stated that community members could accumulate CC through trusting relationship and in turn retain

more customers to create higher values (Zhou *et al.*, 2010). That is, more CC can lead to more customer value in SC; hence, we hypothesize:

H2. CC positively influences customer value.

3.3 RC and customer value in SC

Based on relationship marketing literature (Morgan and Hunt, 1994; Reinartz and Kumar, 2000), long-term relationship between buyers and sellers depends primarily on trust and commitment. Likewise, in social capital theory, RC is commonly operationalized as trust, commitment, and reciprocity within the collective social network (Tsai and Ghoshal, 1998; Wasko and Faraj, 2005). In this vein, we define RC in SC as the ongoing personal relationships a customer maintained with the community members who buy or sell products/services over social media platforms. The relationship is sustained through trust between members within the social media community; it can be used as a leverage of resources for the customer to create customer value (Lee *et al.*, 2001). For instance, trusting relationship within a social network enables a customer to buy a product which has a consistent quality and a reasonable price (UV) through a trustworthy social buyer. This experience brings one to enjoy SC (HV) and to establish one's social image as a purchasing expert perceived by others (SVs). Hence, a customer's RC can enhance his/her value in SC. In contrast to social buyers, social sellers could foster trusting relationship to lower customer churn rate through gathering those customers who have common needs and proactively lower the product/service prices, thus enhancing customer value in SC. Based on the above discourse, RC can enhance customer value in SC; thus, we propose the hypothesis below:

H3. RC positively influences customer value.

3.4 SID and customer value in SC

SID refers to the identity formed by a self-categorization process which is the degree a community member perceived as belonging to a community (Turner, 1975). A user who has higher SID is more likely to make value-added contributions to a community where he/she belongs (Tidwell, 2005). He or she tends to support the products/services endorsed or recommended by important others in a variety of ways while they identify with and become emotionally attached to the community associated with a particular online shopping context (Pai and Tsai, 2011), leading to higher HV and SV. In this community, the members would reciprocate the benefits received from others and ensure continuous supportive exchanges, promoting higher UV and SV. Apple customers, as an example of brand community, often have such a strong SID with the Apple's brand that they will not even consider non-Apple products or welcome non-Apple users into the community. In essence, customer value is as a trade-off between total benefits received and total sacrifices (Lam *et al.*, 2004); once customers identify with a community of high SV, they would identify with the community and choose products/services provided by this community even though they receive lower UV and HV, so long as the total customer value in SC is acceptable. That is, SID plays an important role in the perception of customer value in SC; when customers having higher SID, making SC through important others in the community could bring them higher values of consumption. Thus, we propose that:

H4. SID positively influences customer value.

3.5 SI and customer value in SC

SI refers to "the individual's internalization of the reference group's subjective culture, and specific interpersonal agreements that the individual has made with others, in specific

social situations" (Triandis, 1980, p. 210). This subjective norm becomes known to members in different ways (Dholakia *et al.*, 2004). In this study, SI is viewed as the degree to which a member perceived that others approved of his or her SC behavior. Customers usually perceive value of an alternative based on its association with one or more specific social groups. That is, their choices of products or services to be shared by others (e.g. gifts) are often driven by SV (Sheth *et al.*, 1991). SI is one of the main motivations for customers in choosing the goods to create their consumption values in a networked community (Dholakia *et al.*, 2004). Prior research revealed that a product may be bought or used by customers for the social image it evokes more than for its functional performance (Sweeney and Soutar, 2001). Therefore, customers facing higher degree of SI tend to buy what important others are buying or recommending in order to enhance their values of consumption. This leads us to hypothesize that:

H5. SI positively influences customer value.

3.6 SCN and customer value in SC

Customer's needs refer to the specific products/services customers want to buy (Lauterborn, 1990). In the SC context, focusing on the purchase activities of customers is very critical in deciding the marketing strategy of the products or services. Customer's needs involve the concept of customer motivation, which internally drives people to buy the products or services that fulfill conscious and unconscious wants. A social seller should understand these needs in order to attract the customers one by one with something they want to purchase, since needs can drive an individual's motivation and behavior (Chiang and Hsiao, 2015). In other words, every business must clearly identify its target customers and keep in mind that there are various groups of customers. Many companies segment their customer groups by their shared buying interests (needs) to achieve more customer value. Meanwhile, customers can use social networks to interact with each other and bond customer groups with various social shopping activities (Lin and Lu, 2015). Prior research defined customer's needs according to three motivations to buy, similar to the three values of consumption: utilitarian, hedonic, and social (Rintamäki *et al.*, 2006). To meet customers' needs in SC, social sellers should identify their customers' utilitarian, hedonic, and social motivations (needs) for purchase in order to promote customer value. The higher the motivations we met, the higher the values a customer perceived in SC. Therefore, we hypothesize that:

H6. The fulfillment of SCN positively influences customer value.

3.7 SCR and customer value in SC

Perceived risk refers to a psychological uncertainty occurred during consumption when customers are unable to identify the results of product that meet their requirements (expectations) or the results have adverse or harmful results (Dowling and Staelin, 1994). SC cost encompasses not only the TCO but also product, financial, and relationship risks. In contrast to traditional electronic commerce, the total ownership cost of SC is much lower, but the risk is much higher due to information asymmetry, unmet requirements, and financial fraud. A scrutiny of the related literature reveals that most prior studies on customer purchasing behaviors discussed the significant impact of customer value (Zeithaml, 1988), overlooking purchasing risk. Pavlou and Fygenson (2006) suggested that the lower the risks, the more likely the transaction can be completed. Miyazaki and Fernandez (2001) also advocated that customer perceived risk is one of the major obstacles for the development of online shopping. Sweeney *et al.* (1999) revealed that

the greater the perceived risk, the less the perceived value of the good. Therefore, we hypothesize that:

H7. SCR negatively influences customer value.

3.8 SCC and customer value in SC

Convenience refers to the customers' saving in time and effort from purchasing the products (Brown, 1990). Rust and Richened (1994) claimed that the services provided by online retailers should include not only to process quickly transaction orders (transaction convenience), reply immediately to customer questions (post-benefit convenience), but also facilitate easy information interactions among customers (access convenience). Prior research pointed out that convenience is the advantage of online shopping and customers only need to order online to avoid the time and effort of traveling back and forth (Jarvenpaa and Todd, 1996). Moreover, the options available for order payment are greater than the majority of traditional physical stores. Hurley (1998) verified that convenience of shopping appeals strongly to general customers; customers are reluctant to waste time on the shopping procedures. Morganosky and Cude (2000) believed that the sellers have the potential to create value through convenience. Moreover, Laukkanen (2007) compared customer value perceptions in banking actions between internet and mobile channels and showed that convenience has significant effects on the value perceptions. In this light, social sellers should offer more interactive customer service to improve SCC (e.g. decision, transaction, benefit, or access convenience), which in turn could enhance customer value in SC. Thus, we hypothesize that:

H8. SCC positively influences customer value.

3.9 Customer value and loyalty in SC

CL is a concept similar to the concept of customer's intention to reuse a shopping website (Wang, 2008). Higher CL can yield higher customer retention rate (Chaudhuri and Holbrook, 2001). It can drive customers to repurchase, make a commitment, recommend to others, and establish word-of-mouth (Babin *et al.*, 1994; Liao *et al.*, 2014). When customers have strong loyalty, the sellers can establish close links (strong ties) with a target customer group. Carrillat *et al.* (2009) claimed that if sellers could offer added value to customers, they could build long-term relationships with them. Past research supported that customer value is as the key factor in determining loyalty (Zeithaml, 1988; Jones *et al.*, 2006; Sirdeshmukh *et al.*, 2002). Yang and Peterson (2004) suggested sellers to offer the products or services truly needed by customers so as to attain considerable customer value and entice customers to project loyalty onto the sellers. Yüksel (2004) recommended sellers to offer products or services to customers that allow them to complete shopping experience with utility and enjoyment (i.e. UV and HV). Moreover, products are frequently selected because their SVs are higher than their functional utilities (Sheth *et al.*, 1991). Sirdeshmukh *et al.* (2002) further indicated that effective social interactions can create higher SV and affect the loyalty relationship between customers and sellers. Kim *et al.* (2013) confirmed that a higher level of HV at the SC website increases a customer's intention to reuse the website. In sum, customer value in SC (i.e. UV, HV, and SV) could promote CL; hence, we propose the following hypothesis:

H9. Customer value positively influences CL.

4. Research methodology

4.1 Research model

Based on the S-O-R theory, this study constructs a research model to explore how the components of SCMM (stimuli) influence CL in SC (response) through the value

perceptions of SC customers (organisms). On the basis of the online marketing mix of 4Cs for individual customers (Lauterborn, 1990), this study identifies SCMM components of 6Ss (social capital, SID, SI, SCN, SCR, and SCC) as the predictors of customer value in SC. This value, in turn, is postulated as the determinant of CL. Additionally, we specify three control variables for reducing their possible effects on CL in the research model: gender, age, and experience. The first two demographic variables (gender and age) are adapted from Venkatesh *et al.* (2003), while the third variable (experience) is adapted from Bolton's (1998) length of tenure, which relates closely to respondent' s SC experience. The proposed full research model is shown in Figure 3.

4.2 Measurement development

To empirically test the research model, a questionnaire was developed containing nine sections: social capital, SID, SI, SCN, SCR, SCC, customer value in SC, CL, and demographic information. Most measurement items in the questionnaire were adapted from the literature. Specifically, items for measuring social capital, including STC, CC, and RC were adapted from Tsai and Ghoshal (1998), Wasko and Faraj (2005), and Chiu *et al.* (2006) to fit the SC context. Next, items for measuring SID were designed based on Blanchard (2007) and McMillan and Chavis (1986). Items for measuring SI were adapted from Venkatesh *et al.* (2003). For measuring SCN, items were adapted from the operational definitions of Lauterborn (1990) and Rintamäki *et al.* (2006). Regarding SCR, the measurement items were designed based on the definitions proposed by Stone and Grønhaug (1993) and Kim *et al.* (2008). Items for measuring SCC were adapted from the service convenience proposed by Berry *et al.* (2002). Moreover, items for the second-order

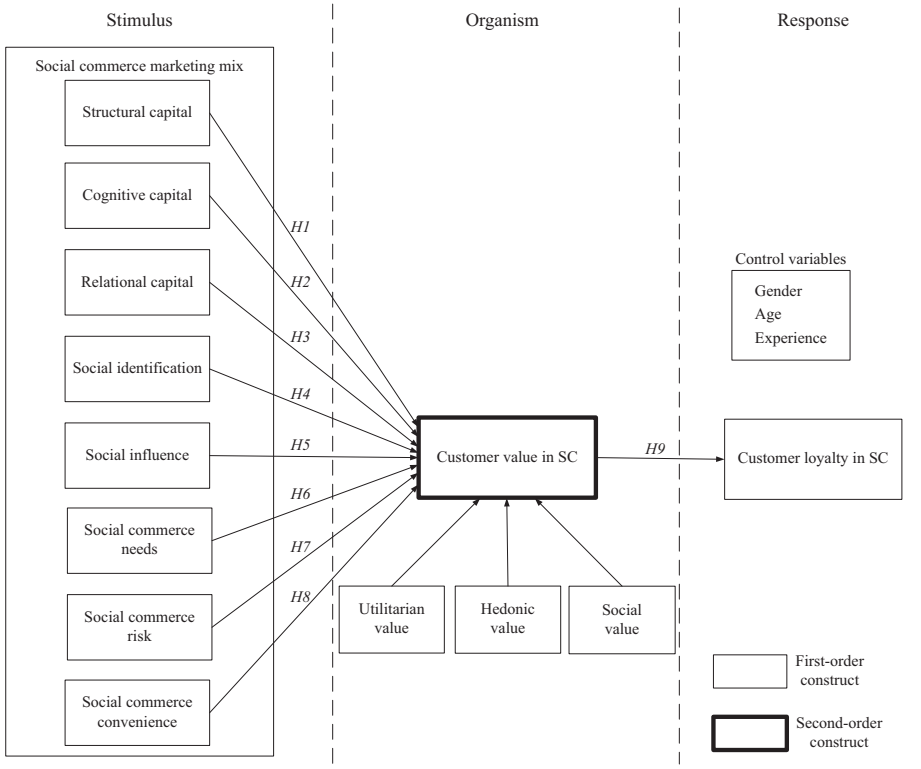


Figure 3.
Full research model

construct of customer value in SC, including UV, HV, and SV, were modified from Sweeney and Soutar (2001), Jones *et al.* (2006), and Rintamäki *et al.* (2006). Finally, items for measuring CL were adapted from Kim *et al.* (2001) and Bhattacherjee (2001). For all measures, a six-point Likert scale was adopted with anchors ranging from strongly disagree (1) to strongly agree (6). We used an even-number scale, since Asian respondents tend to value modesty and select a scale midpoint more often than western counterparts (Si and Cullen, 1998). Since the survey was administered in Chinese, we performed translation and back translation to ensure the semantic consistency of each item between English and Chinese (Brislin, 1970). An experienced IS researcher, fluent in both English and Chinese, translated the original question items in English to Chinese. Then, another IS researcher also fluent in both languages translated these items back to English. A panel of three experienced IS researchers and three senior IS managers knowledgeable about social commerce assessed each back-translated item to make sure the semantics of the original item were well preserved.

To ensure content validity, we carefully selected survey subjects. Furthermore, a small-scale pretest of the questionnaire was conducted with six experts in electronic commerce field using their SC experience to ensure the questionnaire's correctness, ease of understanding, and contextual relevance. Next, a pilot test with 300 Facebook users was conducted to confirm the measurement properties of the final items. These individuals were asked to fill out the questionnaires and give their opinions on the content of the questionnaire. The results showed that Cronbach's α exceeding 0.7 for all constructs, and factor loadings of all items were over 0.5, supporting the reliability and validity of the final questionnaire (see Table AI).

4.3 Survey procedure

For the SC context in this study, we targeted the members of Facebook because it is the largest social network website in the world (Compete, 2016). Moreover, it provides a platform for users to interact and communicate based on different needs, such as social interaction, information sharing, etc. (Ellison *et al.*, 2007; Park *et al.*, 2009). According to Socialbakers (2016), registered users of Facebook currently exceed 1.4 billion worldwide with over 10 million of them residing in Taiwan. Those targeted members form a ring of ties with various strengths. In order to collect data extensively, we solicited the participants by posting a message with a hyperlink connecting to a web-based survey on a number of social media sites (e.g. Facebook Groups, bulletin board systems, chat rooms, and virtual communities) which were selected because they are popular websites in Taiwan. When we recruit the participants, we did make sure that each has SC shopping experience on Facebook. To ensure that the participants were buyers of C2C commerce on the SC platforms, they must have experience in SC shopping from individual sellers on Facebook. Those who had never bought anything were disqualified. The qualified participants were instructed to answer all of the questionnaire items based on their social shopping experience. To increase the response rate, 10 percent of the respondents were randomly selected to receive US$10 gift certificates. The web-based survey yielded a total of 599 complete and valid responses for subsequent data analysis. Table II lists the demographic information of the respondents.

5. Data analysis

Data analysis involves a two-step analysis of measurement model and structural model as recommended by Anderson and Gerbing (1988). The aim of the two-step approach is to establish the reliability and validity of the measures before assessing the structural relationship of the model. To test the hypotheses postulated in this study, we considered two approaches of structural equation modeling (SEM): the covariance-based approach and the component-based (or variance-based) approach (Hair *et al.*, 2011). The covariance-based

Measure	Items	Frequency	Percent
Gender	Male	268	44.7
	Female	331	55.3
Age	< 18	6	1.0
	19-24	440	73.5
	25-29	120	20.0
	30 and above	33	5.5
Education	High school or less	25	4.1
	Undergraduate	462	77.2
	Graduate/Post-graduate	112	18.7
Social commerce experience (in years)	< 1	314	52.4
	1-2	208	34.7
	2-3	65	10.9
	4 and above	12	2.0

Note: $n = 599$

Table II. Demographic information about the respondents

approach (such as LISREL or EQS software) uses the solution process for simultaneous equations to find the estimates. Meanwhile, the variance-based approach (such as partial least squares (PLS)) performs a multiple regression analysis independently for each endogenous variable with a bootstrapping estimation process (Hair *et al.*, 2012). Hair *et al.* (2011) suggested that covariance-based SEM should be used if the research objective is theory testing and confirmation. In contrast, variance-based SEM is appropriate if the research objective is prediction and theory development. Since the aim of this study is to predict the influence of SCMM on customer value and loyalty, we chose to use PLS approach for further analysis. Moreover, the PLS approach allows latent constructs to be modeled with formative or reflective indicators while keeping minimal restrictions on the measurement scales, sample size, and residual distribution under conditions of non-normality (Chin *et al.*, 2003). Because our research model contains formative constructs, we adapted PLS approach method to analyze our data with SmartPLS 2.0 software.

5.1 Measurement model

The rationale for operationalizing customer value in SC as a formative second-order construct was threefold (Petter *et al.*, 2007). First, according to the conceptual definitions of customer value in SC, first-order constructs of UV, HV, and SV should be regarded as the dimensions of customer value in SC. These first-order value constructs need not be orthogonal, since a successful purchase of a product could yield multiple values (Babin *et al.*, 1994). Second, all first-order value constructs were clearly unique, distinguishable, and not interchangeable. Third, all first-order value constructs were theoretically independent and not highly correlated. The second-order construct (i.e. customer value in SC) was approximated using the approach of repeated indicators observing the variables of the first-order constructs (Chin *et al.*, 2003). Thus, following Rintamäki *et al.* (2006) as well as Gan and Wang (2017), we propose that customer value in SC is a formative second-order construct driven by UV, HV, and SV. A caveat offered by Chin *et al.* (2003) is that the approach of repeated indicators would cause the R^2 for the second-order construct to end up as 1.0.

The adequacy of the measurement model was evaluated based on the criteria of reliability, convergent validity, and discriminant validity. Reliability was examined using the composite reliability values, which should be greater than the benchmark of 0.7 (Fornell and Larcker, 1981). Table III shows that all the values are above 0.7, indicating adequate reliability. Additionally, the convergent validity of the scales was verified by using two criteria suggested by Fornell and Larcker (1981): all cross-factor loadings should exceed

Construct	No. of items	Composite reliability	Mean (SD)	AVE	VIF
Structural capital (STC)	3	0.94	3.74 (1.15)	0.83	2.09
Cognitive capital (CC)	3	0.91	3.14 (1.04)	0.78	1.97
Relational capital (RC)	3	0.92	3.47 (1.12)	0.79	1.84
Social identification (SID)	4	0.93	3.67 (1.12)	0.77	2.87
Social influence (SI)	4	0.93	4.04 (1.11)	0.77	1.70
Social commerce needs (SCN)	3	0.82	3.03 (0.87)	0.61	2.89
Social commerce risk (SCR)	3	0.92	3.31 (1.36)	0.79	1.19
Social commerce convenience (SCC)	4	0.89	2.96 (0.95)	0.66	1.67
Utilitarian value (UV)	3	0.90	3.23 (1.00)	0.76	2.28
Hedonic value (HV)	3	0.94	2.99 (0.97)	0.84	2.35
Social value (SV)	3	0.92	3.65 (1.05)	0.78	2.27
Customer loyalty in SC (CL)	5	0.94	3.35 (1.05)	0.74	n/a

Note: n/a, "not applicable" because "CL" is the dependent variable

Table III. Descriptive statistics of constructs

0.7 and average variance extracted (AVE) by each construct should exceed the variance due to measurement error for that construct (i.e. AVE should exceed 0.5). As shown in Table IV, all items exhibited loading higher than 0.7 on their respective construct, and all AVE values range from 0.61 to 0.84, thereby satisfying the criteria of convergent validity.

Discriminant validity was confirmed using the following two tests. First, the cross-factor loadings exhibit the pattern that the loading of each measurement item on its assigned latent variable is larger than its loading on any other constructs (Chin, 1998) (see Table IV). Second, the square root of the AVE from a construct is larger than all correlations between the construct and other constructs in the model (Fornell and Larcker, 1981) (see Table V). In this study, these two test conditions for discriminant validity were met. In order to avoid multicollinearity, the correlations among all constructs should be below the 0.85 threshold (Kline, 1998) (see Table V), and the variance inflation factor (VIF) values for all independent variables should be less than 5 (Hair *et al.*, 2011) (see Table III). As the correlations and VIF values of this study were all below the threshold values, there is no issue of multicollinearity. Moreover, to access common method bias, a *post hoc* Harman's single factor test was conducted by running an exploratory factor with all variables included (Podsakoff *et al.*, 2003). A single factor did not emerge from the unrotated solution, suggesting that the bias was not high. The total variance of the single factor model accounted for 40.85 percent of total variance. Accordingly, we concluded that all the constructs in this study have acceptable reliability and validity.

5.2 Structural model

In the PLS analysis, we used SmartPLS 2.0 M3 to examine the structural paths and the R^2 scores of endogenous variables and assess the explanatory power of a structural model. Bootstrapping of the 599 cases was done with 700 samples for significance testing. Figure 4 shows the results of structural path analysis. The path coefficient between customer value and CL is 0.68 ($p < 0.001$). In sum, the value-loyalty base model accounted for 50 percent of the explained variance of CL on Facebook ($R^2 = 50$ percent), and the explained variance for customer value in SC ($R^2 = 75$ percent) accounted for by the SCMM components is acceptable as well. Thus, the fit of the overall model is acceptable. Finally, only one control variable, gender, significantly affected CL. Consistent with Forsythe and Shi (2003), our finding indicates that female buyers are more likely to be loyal customers than male buyers.

To further test the potential effect of customer value on CL on Facebook, we unfolded the overall model to examine the impact of each SCMM component on individual dimensions of customer value in SC, which in turn influences the CL. Of the possible 24 paths between

	STC	CC	RC	SID	SI	SCN	SCR	SCC	UV	HV	SV	CL
STC1	*0.91*	0.45	0.54	0.58	0.37	0.45	−0.23	0.35	0.47	0.44	0.53	0.52
STC2	*0.91*	0.44	0.47	0.60	0.45	0.39	−0.20	0.30	0.42	0.39	0.58	0.51
STC3	*0.91*	0.49	0.49	0.61	0.39	0.44	−0.20	0.31	0.47	0.42	0.54	0.52
CC1	0.47	*0.87*	0.43	0.54	0.43	0.53	−0.14	0.41	0.49	0.50	0.50	0.47
CC2	0.50	*0.91*	0.44	0.56	0.42	0.52	−0.19	0.42	0.49	0.46	0.48	0.50
CC3	0.37	*0.86*	0.39	0.52	0.32	0.52	−0.18	0.38	0.43	0.49	0.43	0.47
RC1	0.50	0.35	*0.86*	0.46	0.33	0.40	−0.30	0.31	0.47	0.35	0.47	0.42
RC2	0.48	0.42	*0.89*	0.49	0.31	0.47	−0.28	0.35	0.48	0.41	0.42	0.48
RC3	0.48	0.49	*0.91*	0.53	0.37	0.50	−0.29	0.37	0.54	0.48	0.48	0.50
SID1	0.63	0.54	0.53	*0.89*	0.54	0.51	−0.27	0.34	0.50	0.52	0.62	0.61
SID2	0.60	0.53	0.50	*0.91*	0.46	0.57	−0.27	0.37	0.50	0.58	0.57	0.63
SID3	0.55	0.51	0.42	*0.85*	0.44	0.52	−0.20	0.28	0.43	0.48	0.50	0.58
SID4	0.51	0.57	0.50	*0.86*	0.50	0.59	−0.22	0.40	0.52	0.58	0.53	0.62
SI1	0.38	0.39	0.29	0.48	*0.87*	0.39	−0.16	0.24	0.39	0.31	0.53	0.43
SI2	0.37	0.38	0.32	0.49	*0.92*	0.35	−0.18	0.23	0.35	0.31	0.54	0.40
SI3	0.36	0.38	0.31	0.45	*0.90*	0.36	−0.13	0.24	0.35	0.32	0.53	0.41
SI4	0.44	0.41	0.43	0.53	*0.82*	0.46	−0.20	0.34	0.44	0.44	0.47	0.51
SCN1	0.39	0.47	0.47	0.48	0.36	*0.84*	−0.29	0.50	0.68	0.55	0.44	0.51
SCN2	0.33	0.37	0.32	0.42	0.30	*0.72*	−0.20	0.45	0.37	0.57	0.33	0.52
SCN3	0.38	0.54	0.40	0.56	0.39	*0.78*	−0.19	0.42	0.51	0.52	0.39	0.54
SCR1	−0.21	−0.14	−0.27	−0.24	−0.18	−0.22	*0.90*	−0.16	−0.28	−0.19	−0.23	−0.27
SCR2	−0.22	−0.17	−0.29	−0.26	−0.20	−0.24	*0.91*	−0.15	−0.31	−0.20	−0.25	−0.30
SCR3	−0.18	−0.20	−0.30	−0.24	−0.14	−0.31	*0.85*	−0.27	−0.38	−0.28	−0.20	−0.30
SCC1	0.25	0.40	0.33	0.35	0.24	0.51	−0.22	*0.84*	0.43	0.47	0.24	0.43
SCC2	0.31	0.32	0.30	0.31	0.24	0.44	−0.14	*0.82*	0.36	0.41	0.26	0.37
SCC3	0.29	0.42	0.36	0.34	0.23	0.52	−0.20	*0.79*	0.45	0.50	0.31	0.43
SCC4	0.29	0.33	0.26	0.29	0.27	0.44	−0.16	*0.80*	0.40	0.38	0.29	0.33
UV1	0.41	0.47	0.46	0.47	0.33	0.59	−0.30	0.45	*0.85*	0.52	0.45	0.46
UV2	0.47	0.46	0.54	0.50	0.43	0.54	−0.34	0.40	*0.87*	0.45	0.49	0.46
UV3	0.42	0.47	0.47	0.49	0.37	0.64	−0.32	0.47	*0.89*	0.50	0.44	0.49
HV1	0.41	0.48	0.42	0.55	0.34	0.60	−0.21	0.47	0.48	*0.89*	0.46	0.56
HV2	0.44	0.50	0.42	0.56	0.37	0.66	−0.26	0.53	0.53	*0.93*	0.45	0.63
HV3	0.42	0.53	0.44	0.58	0.37	0.66	−0.24	0.49	0.54	*0.93*	0.46	0.60
SV1	0.53	0.52	0.50	0.60	0.45	0.50	−0.23	0.36	0.48	0.52	*0.85*	0.49
SV2	0.54	0.43	0.44	0.56	0.58	0.41	−0.22	0.27	0.47	0.38	*0.91*	0.44
SV3	0.53	0.46	0.43	0.53	0.53	0.41	−0.22	0.27	0.45	0.42	*0.90*	0.46
CL1	0.51	0.42	0.43	0.60	0.48	0.52	−0.27	0.36	0.43	0.54	0.49	*0.85*
CL2	0.49	0.48	0.42	0.57	0.42	0.55	−0.24	0.39	0.44	0.50	0.43	*0.87*
CL3	0.48	0.46	0.44	0.56	0.42	0.54	−0.26	0.39	0.45	0.52	0.43	*0.86*
CL4	0.47	0.49	0.50	0.61	0.39	0.65	−0.35	0.48	0.51	0.62	0.46	*0.86*
CL5	0.49	0.49	0.48	0.64	0.44	0.61	−0.29	0.46	0.50	0.61	0.46	*0.87*

Note: Italic numbers indicate item loadings on the assigned constructs

Table IV.
Confirmatory factor analysis and cross-loadings

SCMM components and customer value dimensions, 12 paths are significant. All three customer value dimensions exhibit significant effects on CL. Figure 5 shows the significant paths of the final detailed path model. The result reveals the value-loyalty model accounted for 51 percent of the explained variance of CL on Facebook ($R^2 = 51$ percent). The levels of explained variance for UV ($R^2 = 57$ percent), HV ($R^2 = 57$ percent), and SV ($R^2 = 55$ percent) accounted for by SCMM components are acceptable as well.

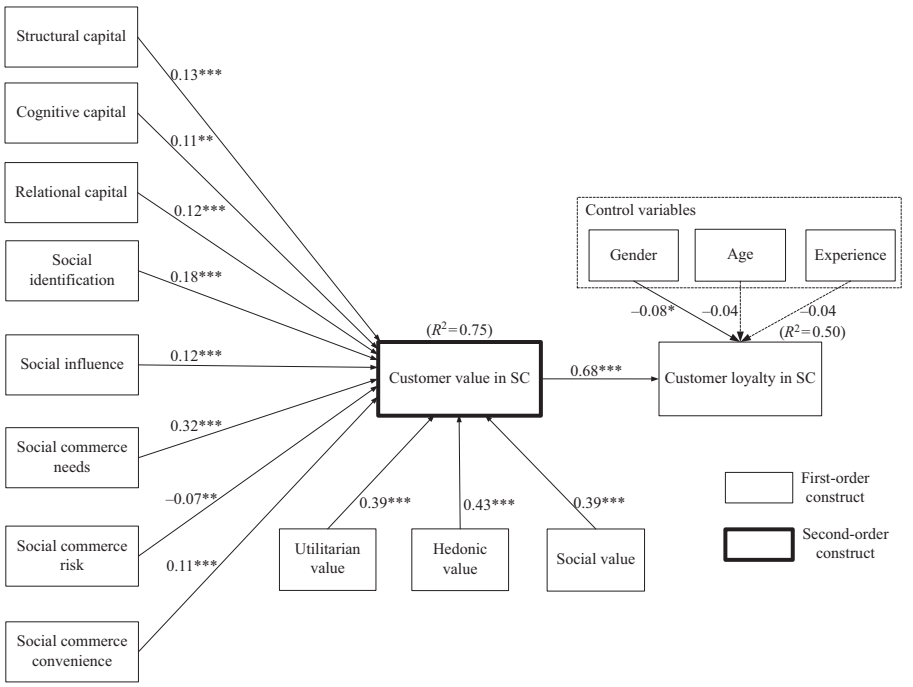
6. Conclusions and discussion

Based on the results in Figures 4 and 5, several conclusions can be drawn. First, STC ($\beta = 0.13$, $p < 0.001$), CC ($\beta = 0.11$, $p < 0.01$), and RC ($\beta = 0.12$, $p < 0.001$) positively affect

	STC	CC	RC	SID	SI	SCN	SCR	SCC	UV	HV	SV	CL
STC	*0.91*											
CC	0.51	*0.88*										
RC	0.55	0.48	*0.89*									
SID	0.65	0.61	0.56	*0.88*								
SI	0.44	0.45	0.38	0.55	*0.88*							
SCN	0.47	0.59	0.51	0.63	0.45	*0.78*						
SCR	−0.23	−0.19	−0.33	−0.27	−0.19	−0.30	*0.89*					
SCC	0.35	0.46	0.39	0.40	0.30	0.59	−0.22	*0.81*				
UV	0.50	0.53	0.56	0.56	0.44	0.68	−0.37	0.51	*0.87*			
HV	0.46	0.55	0.47	0.62	0.39	0.69	−0.26	0.54	0.56	*0.92*		
SV	0.60	0.53	0.52	0.63	0.59	0.50	−0.25	0.34	0.53	0.50	*0.88*	
CL	0.56	0.55	0.53	0.69	0.50	0.67	−0.33	0.48	0.54	0.65	0.53	*0.86*

Note: Diagonal elements (in italics) are the square root values of the average variance extracted (AVE)

Table V.
Correlation among constructs and the square root of the AVE



Notes: *p<0.05; *p<0.01; ***p<0.001

Figure 4.
SEM analysis of the research model

the customer value in SC (see Figure 4), supporting *H1-H3*, respectively. That is, the long-term interaction between social network members can make them closer, bear a sense of trust, and understand their common vision, thus generating customer relationship value (Palmatier, 2008). When the STC is larger, the better is the economy of scale, leading to higher bargaining power and better customer value. As for CC, the customers can have more discussion and communication through social media to increase shared understanding and reduce the gaps of value perceptions, resulting to enhanced customer value. Finally, with RC, customers trust between each other; while the higher the trust, the more the

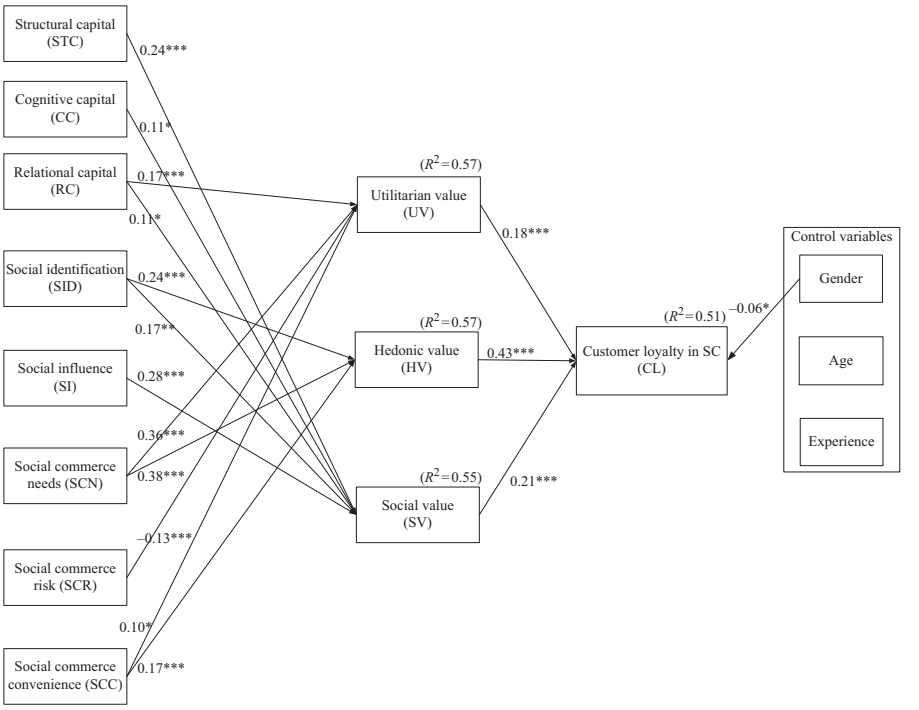


Figure 5.
The final detailed path model of customer loyalty in SC

Notes: *$p<0.05$; *$p<0.01$; ***$p<0.001$

reciprocity. Through the reciprocity, social customers can receive positive UV, HV, and SV from fellow customers. Thus, social sellers should foster STC, CC, and RC through social media to enhance customer value in SC.

Second, SID ($\beta = 0.18$, $p < 0.001$) and SI ($\beta = 0.12$, $p < 0.001$) having positive impacts on customer value in SC support *H4* and *H5*, respectively. This is consistent with the notion of "citizenship," as formulated in the organizational behavior and marketing literature, to build identification and influence of the community for enhancing collective value creation between and among customers and sellers (Algesheimer *et al.*, 2005). Sheth *et al.* (1991) confirmed that that a customer chooses a product/service driven by other influential individuals, and Bhattacharya and Sen (2002) also agreed that the bond of identification can be used in implementation strategies to enhance customer value. Accordingly, the social sellers should leverage SID and influence to enhance higher levels of customer value in SC.

Third, SCN have a positive effect on customer value in SC ($\beta = 0.32$, $p < 0.001$), supporting *H6*. This effect is the strongest in the research model among the eight SCMM components. Joo (2007) stated that customer value can be assessed against customers' motivation and derived from personalization services which satisfy customer's needs and enable them to share and acquire knowledge and experiences. Hence, social sellers should better understand the customers, and identify fundamental needs that motivate customer behavior in SC.

Fourth, SCR has a negative impact on customer value in SC ($\beta = -0.07$, $p < 0.01$), supporting *H7*. This is consistent with the finding of Snoj *et al.* (2004) in which the path coefficient between perceived risks and perceived value of mobile phone purchase is significantly negative ($\beta = -0.738$, $p < 0.001$). However, the value herein is much less which

may be due to the improvement of SC process over the traditional commerce. In the SC context, a variety of encryption mechanisms reduce the possible risks faced by customers' online shopping. Therefore, social sellers should provide clear product description and prevent social network members from buying and receiving unexpected products, leading to improved customer value in SC.

Fifth, SCC has a positive impact on customer value in SC ($\beta = 0.11$, $p < 0.001$), supporting *H8*. This empirically confirms the argument of Laukkanen (2007) that convenience is one of the critical factors affecting online customer value, since convenience reduces the shopping time and effort of customers and increases customers' desires for online shopping. Therefore, social sellers should offer convenient channels via social media to promote customer value in SC, e.g. saving time and effort to find products, tracking the progress of order processing more effectively, and making more like-minded friends easier to discuss common topics of interest, etc.

Sixth, customer value in SC has a positive effect on CL ($\beta = 0.68, p < 0.001$), supporting *H9*. This is consistent with the finding of Yang and Peterson (2004), which shows that perceived value is an important driver of CL in electronic commerce ($\beta = 0.60$, $p < 0.001$). According to the detailed model in Figure 5, HV has the highest impact on CL ($\beta = 0.43, p < 0.001$), followed by SV ($\beta = 0.21, p < 0.001$) and UV ($\beta = 0.18, p < 0.001$). SC makes social network platform of the same type emerge rapidly due to the popularity and low threshold of website technology. Under the intense competition between social sellers, CL becomes extremely important. However, customer preferences typically vary significantly between individuals; therefore, for social sellers, the key issue is to match the preferences with the benefits received from SC in order to attract customers to engage in continuously online SC. These benefits could promote customer value in SC and achieve higher CL. If customers can have good trading experience (HV) each time, they are less likely to switch to another source because choosing an alternative seller may make them lose values and face considerable risks.

Furthermore, although the three value dimensions are significant formative indicators of customer value in SC, their importance is not the same as shown in Figure 4. HV ($\beta = 0.43$; $p < 0.001$) is the strongest source, followed by SV ($\beta = 0.39$; $p < 0.001$) and UV ($\beta = 0.39$; $p < 0.001$). According to Rintamäki *et al.* (2006), all three value dimensions are regarded as shopping dimensions; UV can be seen as the bedrock, but is usually unable to differentiate the company and its products; complementing UV with hedonic and social dimensions of customer value is where the real edge is. Social sellers should provide full and detailed product information and enhance the product portfolio and shopping experience to increase their competitive edge. They should understand the match between goals and value dimensions to offer value-added free services that are in demand. For example, enabling the members with pleasant shopping experience to give quick responses to each other can spread positive word-of-mouth among customers. Hence, members on social media sites can not only efficiently purchase the goods they need, but also derive happy feelings by using the platform and recommend others to engage in SC.

Finally, the detailed path model in Figure 5 allows us to draw three more conclusions. First, only four SCMM components have significant impacts on UV. The most influential determinant of UV is SCN ($\beta = 0.36$, $p < 0.001$), followed by RC ($\beta = 0.17$, $p < 0.001$), SCR ($\beta = -0.13, p < 0.001$), and SCC ($\beta = 0.10, p < 0.05$). Specifically, most businesses use customers' buying interests (needs) as a basis for effective customer segmentation to maximize the value of a product/service beyond its functional value. Through trust between sellers and customers within the social media community, social sellers having high RC are more likely to enhance UV of the product/service. Moreover, utilitarian buying motives also include convenience seeking, variety seeking, searching for quality of merchandise, reasonable price rate, etc. (Sarkar, 2011). Hence, with higher shopping convenience and lower risks in SC, customers can perceive more UV of the goods

during the shopping process. Second, only three SCMM components have significant impacts on HV. SCN ($\beta = 0.38$, $p < 0.001$) have the highest influence on HV, followed by SID ($\beta = 0.24$, $p < 0.001$) and SCC ($\beta = 0.17$, $p < 0.001$). The more social sellers satisfy a customer's need, the more they are delivering the perceived fun or playfulness of shopping experiences. Customers that feel greater identification with the sellers are likely to derive more hedonic benefits (Sindhav and Adidam, 2012). Moreover, service convenience component of SCMM could be further divided into five types: decision, access, transaction, benefit, and post-benefit (Berry *et al.*, 2002). The excitement of these five types of convenience has been confirmed to increase HV (Heinonen, 2006). Third, most SCMM components (except SCN, risk, and convenience) have significant impacts on SV. Specifically, SI ($\beta = 0.28$, $p < 0.001$) has the highest effect on SV, followed by STC ($\beta = 0.24$, $p < 0.001$), SID ($\beta = 0.17$, $p < 0.01$), CC ($\beta = 0.11$, $p < 0.05$), and RC ($\beta = 0.11$, $p < 0.05$). These five SCMM components are all derived from the communication component of the 4Cs, and represent the collective benefits (SV) of social interaction, exemplifying the importance of effective communication and interaction among social customers a social seller should offer.

7. Implications and future research

7.1 Theoretical contributions

In terms of theory building, this study develops SCMM components to examine the effects of 6S's components on customer value and, in turn, on the CL. The SCMM represents an additional key determinant of CL that has been overlooked in the extant literature. The literature is abundant with normative advices on 4Ps and 4Cs, yet very little theory building on them is available. While the traditional 4P Matrix (McCarthy, 1960) is a seller-oriented marketing concept, the popular 4C Matrix (Lauterborn, 1990) is buyer-oriented. Goi (2009) pointed out that marketing mix was particularly useful in the early days of the marketing concept when physical products represented a larger portion of the economy. Today, with SMM integrated more into organizations and with a wider variety of products and markets, this study extends the concept of 4C's marketing mix by proposing 6S's. Stephen and Toubia (2010) found that the sellers who profit the most from SC network may not be those who are central to the network, but rather those whose accessibility is most enhanced by the network. Trusov *et al.* (2010) further confirmed that only one-fifth of a customer's friends actually influence his/her behavior on the social media site. In other words, having many connections does not make a customer influential in a social network. Hence, for the social capital component, one could further consider various circles of ties (i.e. strong ties, weak ties, and potential ties) to which customers belong and examine how the individual circle influences the customer's purchase decision. Future research need to design SCMM targeting the members of the circles of ties so as to foster their value perceptions and loyalty behaviors.

Another contribution is the re-confirmation of tripartite customer values that incorporates UV, HV, and SV in the SC context. Customer value is known to enable offline sellers to pursue differentiation strategies, complementing UV with HV and SV in an effort to increase customer patronage (Rintamäki *et al.*, 2006). Thus, this study confirms that these three values together can be applied to online SC and that SCMM can be leveraged to achieve these values.

Instead of being theory driven, research on CL in electronic commerce has been descriptive, focusing on benefit-intention linkage. This study, based on the S-O-R theory, proposed the salient links between stimulus (SCMM), organism (value perception), and response (loyalty behavior). We propose a model of CL, in which SCMM components serve as the inputs to the process of value perception (i.e. UV, HV, and SV), for driving the outcome of CL. Accordingly, the study establishes the S-O-R linkage theoretically and

confirms empirically the validity of the concept regarding SCMM and its effect on customer value in SC. Future research should examine the possible impacts of SCMM on other customer behaviors in SC.

7.2 Practical implications

This study has several practical implications for social sellers. First, the results reveal that all SCMM components significantly affect HV, UV, and SV of consumption. Specifically, based on Figure 5, we found the significant antecedents of these values obtained from customers in SC. Morganosky and Cude (2000) pointed out developing distinct convenience strategies from the customer preference of convenience is one way to enhance customer value, such as improving time efficiency, easy access, portability, applicability, ingenuous flexibility, and avoidance of unpleasantness. For maximizing UV, social sellers need to meet customer's needs, gain high relational trust from customers, reduce transaction risk, and improve convenience of shopping. For improving HV, the sellers should satisfy customers' shopping motives (needs), enhance their community bond (identification) and buying experience (convenience). For enhancing SV, the sellers should provide effective pull and push communication modes of social interaction, including social capital, SID, and SI. Accordingly, there is a need to develop an implementation plan of SCMM that could optimize the 6Ss for enhancing customer value and loyalty in SC.

Second, our findings further reveal that SC is still considered a risky proposition despite its UV, HV, and SV. This implies that social sellers should deliver various assurances (e.g. privacy, order fulfillment, and security) to instigate customers' confidence in SC and offer competitive price, convenience, rich product information, and social interaction to foster customer value. Moreover, social sellers need to provide more quality services, e.g. effective problem solving and product returns, easily available assistance, and stronger customer-buyer-seller social relationships.

Third, the impact of HV is more prominent than that of SV and UV. HV derived from stress relief, sensory stimulation, and keeping up with new trends, involves the value experience from the shopping process which produces the shopping value. It places more importance on personal subjective assessment and emotional value than performance-related value of product/service, which drive customers to shop. In addition, to create and deliver SV, our insight suggests that expending effort in boosting one's social status, image, self-esteem, and relationship could be a viable differentiation strategy. For creating UV, it should be complemented by hedonic and social dimensions of customer value because it is often by itself unable to differentiate a social seller's products or services from the competitors.

7.3 Limitations and further research

Even though we have tried our best to design and perform this research, there are still several limitations. First, the data were collected from a single social network platform (Facebook). Although using a single platform allows us to control the contextual effects from different platforms (e.g. system quality, network size, functional capability, etc.), the generalizability of the conclusions in this study may not be acceptable and requires additional research into other online SC platforms.

Second, sample size is always an issue in a survey study. Although the data from 599 usable social customers are large enough for model validation in this study, they might not be able to represent the entire SC population. Replicating this study with more social customer data from is needed to improve the data representativeness.

Third, the cross-sectional nature of the data prevents our study from inferring that the posited causal relationships actually exist among the underlying constructs. Future research is needed to assess longitudinally the proposed model and verify the causality among its constructs in the SC context.

References

Algesheimer, R., Dholakia, U.M. and Herrmann, A. (2005), "The social influence of brand community: evidence from European car clubs", *Journal of Consumer Research*, Vol. 69 No. 3, pp. 19-34.

Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423.

Andrew, T.S. and Olivier, T. (2010), "Deriving value from social commerce networks", *Journal of Marketing Research*, Vol. 47 No. 2, pp. 215-228.

Babin, B.J. and Attaway, J.S. (2000), "Atmospheric affect as a tool for creating value and gaining share of customer", *Journal of Business Research*, Vol. 49 No. 2, pp. 91-99.

Babin, B.J., Darden, W.R. and Griffin, M. (1994), "Work and/or fun: measuring hedonic and utilitarian shopping value", *Journal of Consumer Research*, Vol. 20 No. 4, pp. 644-656.

Bandura, A. (1997), *Self-Efficacy: The Exercise of Control*, Freeman, New York, NY.

Belk, R.W. (1988), "Possessions and the extended self", *Journal of Consumer Research*, Vol. 15 No. 2, pp. 139-168.

Berry, L.L., Seiders, K. and Grewal, D. (2002), "Understanding service convenience", *Journal of Marketing*, Vol. 66 No. 3, pp. 1-17.

Bhattacharya, C.B. and Sen, S. (2002), "Consumer-company identification: a framework for understanding consumers' relationships with companies", *Journal of Marketing*, Vol. 67 No. 2, pp. 76-88.

Bhattacherjee, A. (2001), "Understanding information systems continuance: an expectation-confirmation model", *MIS Quarterly*, Vol. 25 No. 3, pp. 351-370.

Blanchard, A.L. (2007), "Developing a sense of virtual community measure", *CyberPsychology and Behavior*, Vol. 10 No. 6, pp. 827-830.

Bolton, R.N. (1998), "A dynamic model of the duration of the customer's relationship with a continuous service provider: the role of satisfaction", *Marketing Science*, Vol. 17 No. 1, pp. 45-65.

Boninger, D.S., Krosnick, J.A. and Berent, M.K. (1995), "Origins of attitude importance: self-interest, social identification, and value relevance", *Journal of Personality and Social Psychology*, Vol. 68 No. 1, pp. 61-80.

Bontis, N. (1998), "Intellectual capital: an explanatory study that develops measures and models", *Management Decision*, Vol. 36 No. 2, pp. 63-76.

Boulding, W., Kalra, A., Staelin, R. and Zeithaml, V.A. (1993), "A dynamic process model of service quality: from expectations to behavioral intentions", *Journal of Marketing Research*, Vol. 30 No. 1, pp. 7-27.

Brislin, R.W. (1970), "Back-translation for cross-cultural research", *Journal of Cross-Cultural Psychology*, Vol. 1 No. 3, pp. 185-216.

Brown, L.G. (1990), "Convenience in services marketing", *Journal of Service Marketing*, Vol. 7 No. 4, pp. 53-59.

Burt, R.S. (1992), *Structural Holes: The Social Structure of Competition*, Harvard University Press, Cambridge, MA.

Carrillat, F.A., Jaramillo, F. and Mulki, J.P. (2009), "Examining the impact of service quality: a meta-analysis of empirical evidence", *Journal of Marketing Theory and Practice*, Vol. 17 No. 2, pp. 95-110.

Chang, H.J., Eckman, M. and Yan, R.N. (2011), "Application of the stimulus-organism-response model to the retail environment: the role of hedonic motivation in impulse buying behavior", *International Review of Retail, Distribution and Consumer Research*, Vol. 21 No. 3, pp. 233-249.

Chang, M.K., Cheung, W. and Lai, V.S. (2005), "Literature derived reference models for the adoption of online shopping", *Information & Management*, Vol. 42 No. 4, pp. 543-559.

Chang, T., Lee, J. and Chen, R. (2008), "The effects of customer value on loyalty and profits in a dynamic competitive market", *Computational Economics*, Vol. 32 No. 3, pp. 317-339.

Chaudhuri, A. and Holbrook, M.B. (2001), "The chain of effects from brand trust and brand affect to brand performance: the role of brand loyalty", *Journal of Marketing*, Vol. 65 No. 2, pp. 81-93.

Chiang, H.-S. and Hsiao, K.-L. (2015), "YouTube stickiness: the needs, personal, and environmental perspective", *Internet Research*, Vol. 25 No. 1, pp. 85-106.

Chin, W.W. (1998), "Issues and opinions on structural equation modeling", *MIS Quarterly*, Vol. 22 No. 1, pp. 7-16.

Chin, W.W., Marcolin, B.L. and Newsted, P.R. (2003), "A partial least squares latent variable modeling approach for measuring interaction effects: results from a Monte Carlo simulation study and voice mail emotion/adoption study", *Information Systems Research*, Vol. 14 No. 2, pp. 189-217.

Chiu, C.M., Hsu, M.H. and Wang, E.T.G. (2006), "Understanding knowledge sharing in virtual communities: an integration of social capital and social cognitive theories", *Decision Support Systems*, Vol. 42 No. 3, pp. 1872-1888.

Chiu, C.M., Hsu, M.H., Lai, H.C. and Chang, C.M. (2012), "Re-examining the influence of trust on online repeat purchase intention: the moderating role of habit and its antecedents", *Decision Support Systems*, Vol. 53 No. 4, pp. 835-845.

Chung, S. (2015), "Solving strategy for unintended criticism in online space", *Internet Research*, Vol. 25 No. 1, pp. 52-66.

Coleman, J.S. (1988), "Social capital in the creation of human capital", *American Journal of Sociology*, Vol. 94, Supplement, pp. S95-S120.

Compete (2016), "Data overview for Facebook.com", available at: https://siteanalytics.compete.com/facebook.com#.U6ZyIJSSzTr (accessed June 22, 2014).

Dalgic, T. and Leeuw, M. (1994), "Niche marketing revisited: concept, applications and some European cases", *European Journal of Marketing*, Vol. 28 No. 4, pp. 39-55.

Day, G.S. (1969), "A two-dimensional concept of brand loyalty", *Journal of Advertising Research*, Vol. 9 No. 3, pp. 29-35.

Deutsch, M. and Gerard, H.B. (1964), "A study of normative and informational social influences upon individual judgment", *Journal of Abnormal and Social Psychology*, Vol. 51 No. 3, pp. 629-636.

De Vries, L., Gensler, S. and Leeflang, P.S. (2012), "Popularity of brand posts on brand fan pages: an investigation of the effects of social media marketing", *Journal of Interactive Marketing*, Vol. 26 No. 2, pp. 83-91.

Dholakia, U.M., Bagozzi, R.P. and Pearo, L.K. (2004), "A social influence model of consumer participation in network- and small-group-based virtual communities", *International Journal of Research in Marketing*, Vol. 21 No. 3, pp. 241-263.

Dowling, G.R. and Staelin, R. (1994), "A model of perceived risk and intended risk-handling activity", *Journal of Consumer Research*, Vol. 21 No. 1, pp. 119-134.

Ellison, N.B., Steinfield, C. and Lampe, C. (2007), "The benefits of Facebook 'friends': social capital and college students' use of online social network sites,", *Journal of Computer-Mediated Communication*, Vol. 12 No. 4, pp. 1143-1168.

Ellison, N.B., Steinfield, C. and Lampe, C. (2011), "Connection strategies: social capital implications of Facebook-enabled communication practices", *New Media & Society*, Vol. 13 No. 6, pp. 873-892.

Eroglu, S.A., Machleit, K.A. and Davis, L.M. (2003), "Empirical testing of a model of online store atmospherics and shopper responses", *Psychology and Marketing*, Vol. 20 No. 2, pp. 139-150.

Farivar, S., Turel, O. and Yuan, Y. (2017), "A trust-risk perspective on social commerce use: an examination of the biasing role of habit", *Internet Research*, Vol. 27 No. 3, pp. 586-607.

Fiore, A.M. and Kim, J. (2007), "An integrative framework capturing experiential and utilitarian shopping experience", *International Journal of Retail and Distribution Management*, Vol. 35 No. 6, pp. 421-442.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Forsythe, S.M. and Shi, B. (2003), "Consumer patronage and risk perceptions in Internet shopping", *Journal of Business Research*, Vol. 56 No. 11, pp. 867-875.

Gan, C. and Wang, W. (2017), "The influence of perceived value on purchase intention in social commerce context", *Internet Research*, Vol. 27 No. 4, pp. 772-785.

Goi, C.L. (2009), "A review of marketing mix: 4Ps or more?", *International Journal of Marketing Studies*, Vol. 1 No. 1, pp. 2-15.

Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-151.

Hair, J.F., Sarstedt, M., Ringle, C.M. and Mena, J.A. (2012), "An assessment of the use of partial least squares structural equation modeling in marketing research", *Journal of the Academy of Marketing Science*, Vol. 40 No. 3, pp. 414-433.

Heinonen, K. (2006), "Temporal and spatial e-service value", *International Journal of Service Industry Management*, Vol. 17 No. 4, pp. 380-400.

Hoffman, D.L. and Fodor, M. (2010), "Can you measure the ROI of your social media marketing", *MIT Sloan Management Review*, Vol. 52 No. 1, pp. 41-49.

Holbrook, M.B. (1999), "Introduction to consumer value", in Holbrook, M. (Ed.), *Consumer Value: A Framework for Analysis and Research*, Routledge, New York, NY, pp. 1-28.

Hubber, F., Herrmann, A. and Morgan, R.E. (2001), "Gaining competitive advantage through customer value oriented management", *Journal of Consumer Marketing*, Vol. 18 No. 1, pp. 41-53.

Hurley, R.F. (1998), "Customer service behavior in retail settings: a study of the effect of service provider personality", *Journal of the Academy of Marketing Science*, Vol. 26 No. 2, pp. 115-127.

Jacoby, J. and Kyner, D.B. (1973), "Brand loyalty vs repeat purchasing behavior", *Journal of Marketing Research*, Vol. 10 No. 1, pp. 1-9.

Jarvenpaa, S. and Todd, P. (1996), "Consumer reactions to electronic shopping on the World Wide Web", *International Journal of Electronic Commerce*, Vol. 1 No. 2, pp. 59-88.

Jones, M.A., Reynolds, K.E. and Arnold, M.J. (2006), "Hedonic and utilitarian shopping value: investigating differential effects on retail outcomes", *Journal of Business Research*, Vol. 59 No. 9, pp. 974-981.

Joo, J. (2007), "An empirical study on the relationship between customer value and repurchase intention in Korean internet shopping malls", *Journal of Computer Information Systems*, Vol. 48 No. 1, pp. 53-62.

Kim, D.J., Ferrin, D.L. and Rao, H.R. (2008), "A trust-based consumer decision-making model in electronic commerce: the role of trust, perceived risk, and their antecedents", *Decision Support Systems*, Vol. 44 No. 2, pp. 544-564.

Kim, H., Suh, K.S. and Lee, U.K. (2013), "Effects of collaborative online shopping on shopping experience through social and relational perspectives", *Information and Management*, Vol. 50 No. 4, pp. 169-180.

Kim, J. and Lennon, S.J. (2013), "Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention: based on the stimulus-organism-response model", *Journal of Research in Interactive Marketing*, Vol. 7 No. 1, pp. 33-56.

Kim, W.G., Han, J.S. and Lee, E. (2001), "Effects of relationship marketing on repeat purchase and word-of-mouth", *Journal of Hospitality and Tourism Research*, Vol. 25 No. 3, pp. 272-288.

Kline, R.B. (1998), *Principles and Practice of Structural Equation Modeling*, Guilford Press, New York, NY.

Kotler, P. and Armstrong, G. (1994), *Principles of Marketing*, 6th ed., Prentice Hall, Englewood Cliffs, NJ.

Lam, S.Y., Shankar, V., Erramilli, M.K. and Murthy, B. (2004), "Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context", *Journal of the Academy of Marketing Science*, Vol. 32 No. 3, pp. 293-311.

Laukkanen, T. (2007), "Internet vs mobile banking: comparing customer value perceptions", *Business Process Management Journal*, Vol. 13 No. 6, pp. 788-797.

Lauterborn, B. (1990), "New marketing litany: four Ps passé: C-words take over", *Advertising Age*, Vol. 61 No. 41, pp. 1-26.

Lee, J., Lee, J. and Feick, L. (2001), "The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France", *Journal of Services Marketing*, Vol. 15 No. 1, pp. 35-48.

Leong, L.-Y., Jaafar, N.I. and Sulaiman, A. (2017), "Understanding impulse purchase in Facebook commerce: does big five matter?", *Internet Research*, Vol. 27 No. 4, pp. 786-818.

Li, E.Y. (1994), "Artificial neural networks and their business applications", *Information and Management*, Vol. 27 No. 5, pp. 303-313.

Li, E.Y., Liao, C.H. and Yen, H.J.R. (2013), "Co-authorship networks and research impact: a social capital perspective", *Research Policy*, Vol. 42 No. 9, pp. 1515-1530.

Liang, T.P., Ho, Y.T., Li, Y.W. and Turban, E. (2011), "What drives social commerce: the role of social support and relationship quality", *International Journal of Electronic Commerce*, Vol. 16 No. 2, pp. 69-90.

Liao, Y.-W., Wang, Y.-S. and Yeh, C.-H. (2014), "Exploring the relationship between intentional and behavioral loyalty in the context of e-tailing", *Internet Research*, Vol. 24 No. 5, pp. 668-686.

Lichtenstein, D.R., Bloch, P.H. and Black, W.C. (1988), "Correlates of price acceptability", *Journal of Consumer Research*, Vol. 15 No. 2, pp. 243-252.

Lin, K.-Y. and Lu, H.-P. (2015), "Predicting mobile social network acceptance based on mobile value and social influence", *Internet Research*, Vol. 25 No. 1, pp. 107-130.

McCarthy, E.J. (1960), *Basic Marketing: A Managerial Approach*, Irwin, Homewood, IL.

McMillan, D.W. and Chavis, D.M. (1986), "Sense of community: a definition and theory", *Journal of Community Psychology*, Vol. 14 No. 1, pp. 6-23.

Mackie, D.M. (1986), "Social identification effects in group polarization", *Journal of Personality and Social Psychology*, Vol. 50 No. 4, pp. 720-728.

Mehrabian, A. and Russell, A. (1974), *An Approach to Environmental Psychology*, MIT Press, Cambridge, MA.

Miyazaki, K. and Fernandez, S. (2001), "Consumer perception of privacy and security risks for online shopping", *Journal of Consumer Affairs*, Vol. 35 No. 1, pp. 27-44.

Morgan, R.M. and Hunt, S.D. (1994), "The commitment-trust theory of relationship marketing", *Journal of Marketing*, Vol. 58 No. 3, pp. 20-38.

Morganosky, M.A. and Cude, B.J. (2000), "Consumer response to online grocery shopping", *International Journal of Retail and Distribution Management*, Vol. 28 No. 1, pp. 17-26.

Mort, G.S. and Rose, T. (2004), "The effect of products type on value linkages in the means-end chain: implications for theory and method", *Journal of Consumer Behavior*, Vol. 13 No. 3, pp. 221-234.

Moschis, G.P. (1985), "The role of family communication in consumer socialization of children and adolescents", *Journal of Consumer Research*, Vol. 11 No. 4, pp. 898-913.

Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of Management Review*, Vol. 23 No. 2, pp. 242-266.

Odin, Y., Odin, N. and Valette-Florence, P. (2001), "Conceptual and operational aspects of brand loyalty: an empirical investigation", *Journal of Business Research*, Vol. 53 No. 2, pp. 75-84.

Olbrich, R. and Holsing, C. (2011/2012), "Modeling consumer purchasing behavior in social shopping communities with clickstream data", *International Journal of Electronic Commerce*, Vol. 16 No. 2, pp. 15-40.

Oliver, E.W. (1975), *Markets and Hierarchies: Analysis and Antitrust Implications*, Free Press, New York, NY.

Oliver, R.L. (1999), "Whence consumer loyalty", *Journal of Marketing*, Vol. 63 No. 4, pp. 33-44.

O'Malley, G. (2006), "MySpace vs eBay? Site leaps into e-commerce", *Advertising Age*, Vol. 77 No. 6, p. 1.

Pai, P.Y. and Tsai, H.T. (2011), "How virtual community participation influences consumer loyalty intentions in online shopping contexts: an investigation of mediating factors", *Behaviour and Information Technology*, Vol. 30 No. 5, pp. 603-615.

Palmatier, R.W. (2008), "Interfirm relational drivers of customer value", *Journal of Marketing*, Vol. 72 No. 4, pp. 76-89.

Park, H.H. and Sullivan, P. (2009), "Market segmentation with respect to university students' clothing benefits sought: shopping orientation, clothing attribute evaluation, and brand repatronage", *International Journal of Retail and Distribution Management*, Vol. 37 No. 2, pp. 182-201.

Park, N., Kee, K.F. and Valenzuela, S. (2009), "Being immersed in social networking environment: Facebook Groups, uses and gratifications, and social outcomes", *CyberPsychology and Behavior*, Vol. 12 No. 6, pp. 729-733.

Pavlou, P.A. and Fygenson, M. (2006), "Understanding and predicting electronic commerce adoption: an extension of the theory of planned behavior", *MIS Quarterly*, Vol. 30 No. 1, pp. 114-143.

Peters, K., Chen, Y., Kaplan, A.M., Ognibeni, B. and Pauwels, K. (2013), "Social media metrics: a framework and guidelines for managing social media", *Journal of Interactive Marketing*, Vol. 27 No. 4, pp. 281-298.

Petter, S., Straub, D. and Rai, A. (2007), "Specifying formative constructs in information systems research", *MIS Quarterly*, Vol. 31 No. 4, pp. 623-656.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003), "Common method bias in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Reinartz, W.J. and Kumar, V. (2000), "On the profitability of long-life customers in a non-contractual setting: an empirical investigation and implications of marketing", *Journal of Marketing*, Vol. 64 No. 4, pp. 17-35.

Rintamäki, T., Kanto, A., Kuusela, H. and Spence, M.T. (2006), "Decomposing the value of department store shopping into utilitarian, hedonic and social dimensions: evidence from Finland", *International Journal of Retail and Distribution Management*, Vol. 34 No. 1, pp. 6-24.

Rust, R.T. and Richened, L.O. (1994), *Service Quality: Insights and Managerial Implication from the Frontier*, Sage Publications, New York, NY.

Sarkar, A. (2011), "Impact of utilitarian and hedonic shopping values on individual's perceived benefits and risks in online shopping", *International Management Review*, Vol. 7 No. 1, pp. 58-65.

Selnes, F. (1993), "An examination of the effect of product performance on brand reputation, satisfaction and loyalty", *European Journal of Marketing*, Vol. 27 No. 9, pp. 19-35.

Sheth, J.N., Newman, B.I. and Gross, B.L. (1991), "Why we buy what we buy: a theory of consumption values", *Journal of Business Research*, Vol. 22 No. 1, pp. 159-170.

Si, S.X. and Cullen, J.B. (1998), "Response categories and potential cultural bias: effects of an explicit middle point in cross-cultural surveys", *International Journal of Organizational Analysis*, Vol. 6 No. 3, pp. 218-230.

Sindhav, B. and Adidam, P.T. (2012), "Hedonic and utilitarian values of a service experience with a nonprofit: the role of identification", *International Management Review*, Vol. 8 No. 1, pp. 37-43.

Sirdeshmukh, D., Singh, J. and Sabol, B. (2002), "Consumer trust, value, and loyalty in relational exchanges", *Journal of Marketing*, Vol. 66 No. 1, pp. 15-37.

Snoj, B., Aleksandra, P.K. and Mumel, D. (2004), "The relationships among perceived quality, perceived risk and perceived product value", *Journal of Product and Brand Management*, Vol. 13 No. 3, pp. 156-167.

Socialbakers (2016), "Facebook statistics by country", available at: www.socialbakers.com/statistics/facebook/ (accessed June 22, 2014).

Stephen, A.T. and Toubia, O. (2010), "Deriving value from social commerce networks", *Journal of Marketing Research*, Vol. 47 No. 2, pp. 215-228.

Stone, R.N. and Grønhaug, K. (1993), "Perceived risk: further considerations for the marketing discipline", *European Journal of Marketing*, Vol. 27 No. 3, pp. 39-50.

Sweeney, J.C. and Soutar, G.N. (2001), "Consumer perceived value: the development of a multiple item scale", *Journal of Retailing*, Vol. 77 No. 2, pp. 203-220.

Sweeney, J.C., Soutar, G.N. and Johnson, L.W. (1999), "The role of perceived risk in the quality-value relationship: a study in a retail environment", *Journal of Retailing*, Vol. 75 No. 1, pp. 77-105.

Tidwell, M.V. (2005), "A social identity model of prosocial behaviors within nonprofit organizations", *Nonprofit Management and Leadership*, Vol. 15 No. 4, pp. 449-467.

Triandis, H.C. (1980), "Values, attitudes, and interpersonal behavior", in Page, M.M. (Ed.), *Nebraska Symposium on Motivation*, University of Nebraska Press, Lincoln, NE, pp. 195-259.

Trusov, M., Bodapati, A.V. and Bucklin, R.E. (2010), "Determining influential users in internet social networks", *Journal of Marketing Research*, Vol. 47 No. 4, pp. 643-658.

Tsai, W. and Ghoshal, S. (1998), "Social capital and value creation: the role of intrafirm networks", *Academy of Management Journal*, Vol. 41 No. 4, pp. 464-476.

Turner, J.C. (1975), "Social comparison and social identity: some prospects for intergroup behavior", *European Journal of Social Psychology*, Vol. 5 No. 1, pp. 5-34.

Turner, J.C. and Tajfel, H. (1982), *Social Identity and Intergroup Relations*, Cambridge University Press, Cambridge.

Van der Heijden, H., Verhagen, T. and Creemers, M. (2003), "Understanding online purchase intentions: contributions from technology and trust perspectives", *European Journal of Information Systems*, Vol. 12 No. 1, pp. 41-48.

Vargo, S.L. and Lusch, R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of Marketing*, Vol. 68 No. 1, pp. 1-17.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, Vol. 27 No. 3, pp. 425-478.

Vijayasarathy, L.R. (2002), "Product characteristics and Internet shopping intentions", *Internet Research*, Vol. 12 No. 5, pp. 411-426.

Walther, J.B. (1995), "Relational aspects of computer-mediated communication: experimental observations over time", *Organization Science*, Vol. 6 No. 2, pp. 186-203.

Walther, J.B. (1997), "Group and interpersonal effects in international computer-mediated collaboration", *Human Communication Research*, Vol. 23 No. 3, pp. 342-369.

Wang, C. and Zhang, P. (2012), "The evolution of social commerce: the people, management, technology, and information dimensions", *Communications of the Association for Information Systems*, Vol. 31 No. 5, pp. 1-23.

Wang, Y. (2008), "Assessing e-commerce systems success: a respecification and validation of the DeLone and McLean model of IS success", *Information Systems Journal*, Vol. 18 No. 5, pp. 529-557.

Wasko, M.M. and Faraj, S. (2005), "Why should I share? Examining social capital and knowledge contribution in electronic networks of practice", *MIS Quarterly*, Vol. 29 No. 1, pp. 35-57.

Webster, F.E. Jr (2005), "Back to the future: integrating marketing as tactics, strategy, and organizational culture", *Journal of Marketing*, Vol. 69 No. 4, pp. 4-6.

Woodworth, R.S. (1928), "Dynamic psychology", in Murchison, C. (Ed.), *Psychologies of 1925*, Clark University Press, MA, pp. 111-126.

Xiao, B., Huang, M. and Barnes, A.J. (2015), "Network closure among sellers and buyers in social commerce community", *Electronic Commerce Research and Applications*, Vol. 14 No. 6, pp. 641-653.

Yadav, M.S., De Valck, K., Hennig-Thurau, T., Hoffman, D.L. and Spann, M. (2013), "Social commerce: a contingency framework for assessing marketing potential", *Journal of Interactive Marketing*, Vol. 27 No. 4, pp. 311-323.

Yang, C.C., Tang, X., Dai, Q., Yang, H. and Jiang, L. (2013/2014), "Identifying implicit and explicit relationships through user activities in social media", *International Journal of Electronic Commerce*, Vol. 18 No. 2, pp. 73-96.

Yang, Z. and Peterson, R.T. (2004), "Customer perceived value, satisfaction, and loyalty: the role of switching costs", *Psychology and Marketing*, Vol. 21 No. 10, pp. 799-822.

Yuan, S.T. and Lin, Y.H. (2004), "Credit based group negotiation for aggregate sell/buy in e-markets", *Electronic Commerce Research and Applications*, Vol. 3 No. 1, pp. 74-94.

Yüksel, A. (2004), "Shopping experience evaluation: a case of domestic and international visitors", *Tourism Management*, Vol. 25 No. 6, pp. 751-764.

Zeithaml, V. (1988), "Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22.

Zhang, K.Z., Benyoucef, M. and Zhao, S.J. (2016), "Building brand loyalty in social commerce: the case of brand microblogs", *Electronic Commerce Research and Applications*, Vol. 15, January-February, pp. 14-25.

Zhou, T., Lu, Y.B., Wang, B. and Wei, K.K. (2010), "Explaining mobile community user participation from a social capital perspective", *International Journal of Mobile Communications*, Vol. 8 No. 3, pp. 278-296.

Further reading

Trusov, M., Bucklin, R.E. and Pauwels, K. (2009), "Effects of word-of-mouth versus traditional marketing: findings from an internet social networking site", *Journal of Marketing*, Vol. 73 No. 5, pp. 90-102.

Appendix

Scale	Item description	Source
Social capital	*Factor 1: structural capital (STC)*	
	STC1. In general, I have connections with many social commerce members on Facebook	Tsai and Ghoshal (1998), Wasko and Faraj (2005) and Chiu *et al.* (2006)
	STC2. In general, I am close to many social commerce members on Facebook	
	STC3. In general, I interact and discuss issues with many social commerce members on Facebook	
	Factor 2: cognitive capital (CC)	
	CC1. Social commerce members on Facebook and I always agree on what is important at something (e.g. solving shopping problems)	Tsai and Ghoshal (1998), Wasko and Faraj (2005) and Chiu *et al.* (2006)
	CC2. Social commerce members on Facebook and I always share the same ambitions and vision at something (e.g. improving social commerce efficiency)	
	CC3. Social commerce members on Facebook and I are always enthusiastic about sharing the collective goals and missions (e.g. maximizing shopping profit)	
	Factor 3: relational capital (RC)	
	RC1. Social commerce members on Facebook are truthful in dealing with one another	Tsai and Ghoshal (1998), Wasko and Faraj (2005) and Chiu *et al.* (2006)
	RC2. I know social commerce members on Facebook always try and help me out if I get into difficulties with shopping problems	
	RC3. I can trust social commerce members on Facebook to help me complete social commerce effectively	
Social identification (SID)	SID1. I make good friends with the members of the social commerce community on Facebook	Blanchard (2007) and McMillan and Chavis (1986)
	SID2. I like the members of the social commerce community on Facebook	
	SID3. I care about the opinions about me from the members of the social commerce community on Facebook	
	SID4. The time I spent with the social commerce community on Facebook is worthwhile	
Social influence (SI)	SI1. People who influence my behavior think that I should join social shopping on Facebook	Venkatesh *et al.* (2003)
	SI2. People who are important to me think that I should join social shopping on Facebook	
	SI3. People around me think that I should join social shopping on Facebook	
	SI4. In general, people around me are supportive about my social shopping on Facebook	
Social commerce needs (SCN)	SCN1. I look for items that are economical through social shopping on Facebook	Lauterborn (1990) and Rintamäki *et al.* (2006)
	SCN2. I would like to try different products through social shopping on Facebook	
	SCN3. I look for friends who have common buying interests through social shopping on Facebook	
Social commerce risk (SCR)	SCR1. Social shopping on Facebook would involve more financial risk (i.e. fraud, hard to return) when compared with more traditional ways of shopping	Stone and Grønhaug (1993) and Kim *et al.* (2008)
	SCR2. Social shopping on Facebook would involve more product risk (i.e. not working, defective product) when compared with more traditional ways of shopping	
	SCR3. Overall, I really feel that social shopping on Facebook poses problems for me that I just don't need (e.g. relationship risk)	

(*continued*)

Table AI.
Survey instrument

Scale	Item description	Source
Social commerce convenience (SCC)	SCC1. I was able to decide on my social shopping easily on Facebook SCC2. I was able to complete my social shopping quickly on Facebook SCC3. I was able to get the benefits of social shopping with minimal effort on Facebook (e.g. social interaction with other buyers) SCC4. I was able to complete my social shopping at any time and any place on Facebook	Berry *et al.* (2002)
Customer value in SC	*Factor 1: utilitarian value (UV)* UV1. The item(s) is reasonably priced while social shopping on Facebook UV2. The item(s) has consistent quality while social shopping on Facebook UV3. The item(s) is a good product for the price while social shopping on Facebook *Factor 2: hedonic value (HV)* HV1. Social shopping on Facebook is one that I would enjoy HV2. Social shopping on Facebook would make me feel good HV3. Social shopping on Facebook would give me pleasure *Factor 3: social value (SV)* SV1. Social shopping on Facebook helps me feel acceptable SV2. Social shopping on Facebook improves the way I am perceived SV3. Social shopping on Facebook makes a good impression on other people for me	Sweeney and Soutar (2001), Jones *et al.* (2006) and Rintamäki *et al.* (2006)
Customer loyalty in SC (CL)	CL1. I will recommend social shopping on Facebook to others CL2. I will speak favorably about social shopping on Facebook to others CL3. I will tell others my positive experience about social shopping on Facebook CL4.I will continue social shopping on Facebook in the future CL5. I will involve more in social shopping on Facebook in the future	Bhattacherjee (2001) and Kim *et al.* (2001)

Table AI.

About the authors

Ya-Ling Wu is an Associate Professor in the Department of Information Management at Tamkang University in Taiwan. She received PhD in Management Information Systems from National Chengchi University in 2010. Ya-Ling's major research areas are service management and innovation, knowledge management, online behavior, and e-business. Her research has been published in the *International Journal of Human Resource Management*, *Information & Management*, *Computers & Education*, *Innovations in Education and Teaching International, Information Technology & People*, *Service Industries Journal*, and *Internet Research*, among other journals.

Eldon Y. Li is a University Chair Professor and former Department Chair of MIS at National Chengchi University, an Adjunct Chair Professor of Asia University in Taiwan, and a former Professor and Coordinator of the MIS Program at College of Business, California Polytechnic State University, San Luis Obispo, California, USA. He was the Dean of College of Informatics and the Director of Graduate Institute of Social Informatics at Yuan Ze University in Taiwan, as well as a Professor and the Founding Director at the Graduate Institute of Information Management at the National Chung Cheng University in Chia-Yi, Taiwan. He received PhD from Texas Tech University in 1982. He is the Editor-in-Chief of several international journals. He has published more than 200 papers in various topics related to innovation and technology management, human factors in information technology (IT), strategic IT planning, software quality management, and information systems management. His papers appear in *Journal of Management Information Systems*, *Research Policy*, *Communications of the ACM*, *Internet Research*, *Expert Systems with Applications*, *Computers & Education*, *Decision Support Systems*, *Information & Management*, *International Journal of Medical Informatics*, *Organization*, among others. Eldon Y. Li is the corresponding author and can be contacted at: eli@nccu.edu.tw