

Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com



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ABSTRACT

As a new type of e-commerce, social commerce is an emerging marketing form in which business is conducted via social networking platforms. It is playing an increasingly important role in influencing consumers' purchase intentions. Social commerce uses friendships on social networking platforms, such as Facebook and Twitter, as the vehicle for social sharing about products or sellers to induce interest in a product, thereby increasing the purchase intention. In this paper, we develop and validate a conceptual model of how social factors, such as social support, seller uncertainty, and product uncertainty, influence users' purchasing behaviors in social commerce. This study aims to provide an understanding of the relationship between user behavior and social factors on social networking platforms. Using the largest social networking website in China, renren.com, this study finds that social support, seller uncertainty, and product uncertainty affect user behaviors. The results further show that social factors can significantly enhance users' purchase intentions in social shopping.

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1. Introduction

Following the rapid development of Web 2.0, online shopping has become an important part of modern life (Fagerström and Ghinea, 2010). When consumers shop on e-commerce platforms, such as Amazon, eBay, and Taobao, they often comment on products and/or services after consumption, which helps other consumers collect product information. Nevertheless, it is sometimes difficult for consumers to trust the reviews on shopping platforms because merchants may provide mendacious information, e.g., inaccurate descriptions or sham comments (Kim and Song, 2005). Fortunately, this constraint may be alleviated using social network shopping platforms, as users in social networks are friends or indirect acquaintances. They share and communicate their purchasing and consumption experiences to obtain relatively real and accurate product information.

Business activities conducted through social media are called social commerce (SC) or social shopping (Liang, Ho, & Li, 2012). Social commerce is a new expansion of e-commerce (Stephen and

Toubia, 2010). Some empirical studies have compared relationships in social commerce and e-commerce (Huang and Benyoucef, 2013). In contrast, to date, there has been little research attention paid to the phenomenon of purchase intention in social commerce with new social features, such as social media and social business behaviors. Because of the lack of knowledge of these emerging commerce technologies in social media, it may be presumptuous to apply previous findings concerning e-commerce to social commerce. Therefore, additional research efforts are needed to analyze and evaluate social commerce theoretically and empirically to advance our understanding of this important and expanding form of e-commerce.

To address this deficiency, the present study investigates the design of a social commerce survey by identifying its two primary feature types, namely social features and commerce features. More specifically, social features usually include a social networking platform, users, and user-generated content (UGC) (Liang and Turban, 2011). Commerce features refer to product factors and the certification/guarantee of product/services by third-party organizations (Dimoka, Hong, & Pavlou, 2012). These two features are related to the two fundamental processes of social commerce. In terms of social features, UGC not only reflects the interaction among users but also aggregates critical information as a result of users sharing product information through the social networking platform. Moreover, the factors of products in business activity features represent the attributes of the product and sellers, i.e., the

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uncertainty in the product itself or the uncertainty in the seller's services. Third-party organizations provide certification/guarantee services for business activities. The goal of this study is to investigate the influence of features like UGC and product characteristics on user purchasing behavior in social commerce.

This paper proceeds as follows. We next present a brief review of the literature on social commerce and the theoretical development of social support, the theory of consumer behavior and the conceptualization of user content, product uncertainty, seller uncertainty, and third-party uncertainty. This is followed by the description of the research model and hypotheses in Section 3. The development of the research instrument and processes used in the empirical study are provided in Section 4. Section 5 reports the findings of the data analysis. Finally, we conclude with a discussion, as well as a presentation of the limits of this paper and future research directions.

2. Literature review and theory development

2.1. Literature review on social commerce

In recent years, the popularity and growth of social commerce has quickly emerged as a new focused area for both practitioners and researchers. Firms are able to interact with consumers directly and sell products and services at lower prices to increase brand loyalty (Labrecque, 2014; Laroche, Habibi, & Richard, 2013). To analyze this commercial phenomenon, researchers have focused on finding factors that affect social commerce (Kim and Park, 2013; Wang and Zhang, 2012; Zhang, Zhang, & Hans-Dieter, 2013) and there have been many published studies seeking to understand the relationship between social commerce factors and consumer purchase intentions. Previous studies have shown that platform technological services (Curty and Zhang, 2013; Huang and Benyoucef, 2013; Wu and Wang, 2011), interaction/information communication (Gabriela, Hor-meyll, & de Paula Pessôa, 2014; Ng, 2013) and relationships (Liang et al., 2012; Palmatier, Dant, Grewal, & Evans, 2006) have a significant influence on consumers' purchase intention. For example, in terms of the service factor, Wu and Wang (2011) discovered that the services function of social media platforms allow users to interact with each other and maintain online relationships, which is a significant predictor of behavioral intentions. In terms of interaction/information, Gabriela et al. (2014) found that consumers will consider information and reviews shared by other shoppers when he/she has little experience with a product; this advice may influence his/her purchasing decision. Examining consumers' relationships, Liang et al. (2012) argued that relationship quality plays a mediating role among social support, website quality, and the outcome of commerce intention and continuance intention. In these studies, the role of the platform technology, user generated information and the users' relationships through social commerce were studied separately. Nevertheless, shopping on social media platforms must be analyzed in uniformity. In this paper, through introducing social support theory, the social factors surrounding social commerce are summarized as user support, UGC support and platform support, and the influence of user relationships, UGC, and platform services on consumers' purchase intention are highlighted.

Users gather social information in the process of purchasing a product on a social media platform. Meanwhile, they also collect other relevant information, such as the product quality, the seller's reputation, and the security of the third party. In e-commerce, studies have shown the factors surrounding the merchant (reputation, service quality, etc.) or product (specification, quality, etc.) significantly impact the consumer purchase intention. For example,

Pan, Kuo, Pan, and Tu (2013) discussed the impact of online sellers' reputation and product categories on the consumer purchase intention. Wang and Chang (2013) demonstrated that for high-risk products, the information and recommendations provided by strong-tie contacts have a greater effect on purchase intention than those provided by weak-tie contacts. In social commerce, however, there have been very few studies discussing the effect of merchant and product factors on the consumer purchase intention. In our research, we examined commercial factors, such as seller uncertainty, product uncertainty, and third-party infomediaries, each of which can play an important role in consumer purchase intention.

2.2. Theory development

2.2.1. Social support in social media platforms

Social support refers to the perception of a member of a group or organization of being helped, responded to, and cared for physically and psychologically by others in the group or organization (Jennifer Crocker, 2008).

In social commerce, social support has been found to be useful in building close relationships among users and enhancing users' well-being in organizations (Patricia Obst, 2010). On social media platforms, the user receiving shared information perceives others as being caring and helpful when they provide useful life or product information. After receiving such information, the user will be willing to acquire or share valuable shopping information with others. Friendship and trust among users can be enhanced by frequent sharing of supportive information, which may further increase the intention to conduct commercial activities (Liang and Turban, 2011).

Previous studies have also revealed that social support exists in three forms: emotional, tangible, and informational (Schaefer, Coyne, & Lazarus, 1981). Emotional support includes being able to confide in and rely on another person, contributing to the feeling that one is loved or cared about or even that one is a member of the group and not a stranger. In social commerce, emotional support is present when users perceive themselves as being cared for or empathized with based on the information provided by other users. Taylor and Heejung (2004) found that the emotional support provided by others in the group may reduce stress. Tangible support involves direct aid or services, such as using social media business functions. In social commerce, community members are contacted via the social network platform, which is a virtual community. This type of social support is quite different from that of direct aid or services. Therefore, tangible support in social commerce is an important form of social support. Previous studies, such as that of Liang et al. (2012), have not considered tangible support in their models. Informational support refers to providing information and advice that could help another person. The various forms of UGC, including recommendations, advice, and knowledge, are all manifestations of information support. Coulson (2005) found that information, particularly factual evaluation information, posted in response to queries by members may help to solve problems. These three types of messages are the major support mechanisms for social commerce. Caring or understanding of emotion improves the awareness of interactions among members and encourages users to more actively participate in sharing or recommending product information using tangible tools in social commerce.

Indeed, social support improves users' relationships and promotes content generation among users of social media. Therefore, to provide the theoretical foundations for social commerce, two relevant theories of consumer behavior theory and online trust transfer theory are discussed below.

2.2.2. Consumer behavior theory in social commerce

Consumer behavior theory is used to characterize the external expression of customer psychology and is also described as encompassing all of the activities performed to satisfy customer demands by purchases (Solomon and Michael, 2010).

Indeed, in the process of collecting internal and external information on social media platforms, consumers understand their own consumption motivations and propensities and are also clearly aware of the price range at which the product may be purchased. In e-commerce, the price and online reputation system both influence consumers' purchase intention by searching the virtual information about the online product. In contrast to the sellers, however, customers generally have a poor understanding of the product quality and after-sales service. The consumers and sellers keep product information confidential, generating information asymmetry in social commerce.

Information asymmetry is the fundamental issue in information economics. Consumer behavior theory, which is studied in information economics, is described based on asymmetric and incomplete market information. In social commerce, sellers may not provide sufficient product information, such as product quality information, after-sales services, or merchant services. Ba (2001) found that information asymmetry is caused by merchant credit, and the credit question leads to the main reason for information asymmetry in the virtual market. Naturally, this phenomenon impacts consumers' information collection, and consumers will exhibit different purchase intentions than they would if complete product information were available. Similar conclusions have been reached by Liang and Lai (2002), who found that product information asymmetry between sellers and consumers influences purchase intention in the electronics market.

Based on these findings, it can be inferred that consumer behavior theory may be useful for explaining user behaviors in social commerce and that the problem of information asymmetry in information economics may be solved by friends sharing and recommending products on a social media platform.

2.2.3. The influence of online trust transfer theory

Trust may be transferred from different types of sources. Ba argued that although customers do not understand a website's operations or the quality of companies, they can use third-party site certification to judge the quality of the site (Ba, 2001). In social commerce, third-party infomediaries can transfer trust between sellers and consumers. The third-party infomediaries use certifications and payment guarantees to deliver trust.

The certification information provided by third-party infomediaries is an important aspect of a seller's site content. For example, BBBonline, TRUSTe, and Verisign are all third-party organizations. In social commerce, sellers' websites may display the logo of one of these third-party organizations after receiving certification to improve consumers' trust. Because of the virtual nature of e-commerce transactions, customers must usually rely on the authority of a third party to make trust judgments at the beginning of the trade. Third-party infomediaries can reduce the user's shopping risk by monitoring the behavior of registered groups in social commerce. For example, the TRUSTe certificate indicates the merchant's commitment to protecting user privacy. The third party is able to transfer trust from the merchant to customers.

Similarly, the use of third-party infomediary payment platforms in social commerce increases transaction trust between buyers and sellers. For example, PayPal Escrow Services ensures that buyers obtain the goods purchased and guarantees that the product is received according to the terms of the purchase agreement, after which the payment completed. Kim and Benbasat (2003) found that third-party payment platforms can provide transaction security for buyers and sellers. A neutral payment platform provides

security and a reliable payment protection system for the exchange of payment information and retains electronic evidence of the trade. Therefore, the third-party payment platform enhances trust among the transaction parties in social commerce.

2.3. Key factors of social commerce

With the emergence of social commerce, there has been renewed interest in shopping. Traditionally, customers have considered four aspects: product perception, shopping experience, customer service, and consumer risk (Jarvenpaa and Todd, 1996). Social commerce customers also consider leisure and information processing, however, as customers represent users who pay more attention to the chat and entertainment elements of social media. A good process design for social commerce must provide adequate functional support to satisfy customer needs. Following previous research, we found five key factors in social commerce: social support, product uncertainty, seller uncertainty, third-party infomediaries, and purchase intention.

According to social support theory, in the social commerce environment, social support can be evaluated based on three factors aspects: user support, UGC support, and platform support. User support refers to the relationships among users in social commerce. Previous research has indicated that quality of user relationships has a significant influence on product purchase intention (Liang et al., 2012; Palmatier et al., 2006). In contrast, UGC support, such as reviews and recommendations, not only represents the social perspective but also influences awareness, expectations, perceptions, attitudes, behavioral intentions, and behavior (Ng, 2013; Weinberg, de Ruyter, Dellarocas, Buck, & Keeling, 2013). Platform support provides a tool to support social commerce activities. How platform support can be a factor in social support is explained as follows. From the perspective of social support theory, House (1981) has defined social support as having four dimensions: emotional, instrumental, informational, and appraisal support, whereas Schaefer et al. (1981) defined social support with three dimensions: emotional, tangible, and informational support. The tangible support in Schaefer et al. (1981) is also called instrumental support (Langford, Bowsher, Maloney, & Lillis, 1997), i.e., the provision of financial assistance, material goods, or services. Here both theoretical literatures have used the instrumental dimension to measure the social support. In our paper, the social media platform is the instrument support in the social support dimensions. It is one example of the type of instrument embodied in the provided services for social commerce activities. With this tool, users can get quick responses and feedback information through a friendly interface, allowing them to make contact with friends and provide or share the product information. All of these items measure the platform support as an instrument of service in social commerce. From the practice of social commerce, the social media platform is one necessary condition for conducting social commerce.

Studies related to product uncertainty are rare. Dimoka et al. (2012) used car data on eBay Motors to describe information asymmetry in product uncertainty. Ghani, Ibrahim, Noor, Yusop, and Kasiran (2013) noted that the seller will improve the users' degree of trust and user purchase intention if reducing product information signals product uncertainty. Hong and Pavlou (2014) proposed the concept of product fit uncertainty and examined the distinct effect of the product information problem on product returns and consumer satisfaction. Product uncertainty has two facets: product information asymmetry and after-sales quality uncertainty (Dimoka et al., 2012). Sellers may be unwilling to disclose their product's true attributes and may exaggerate the advantages of the products in hopes of higher product sales. Customers, however, can

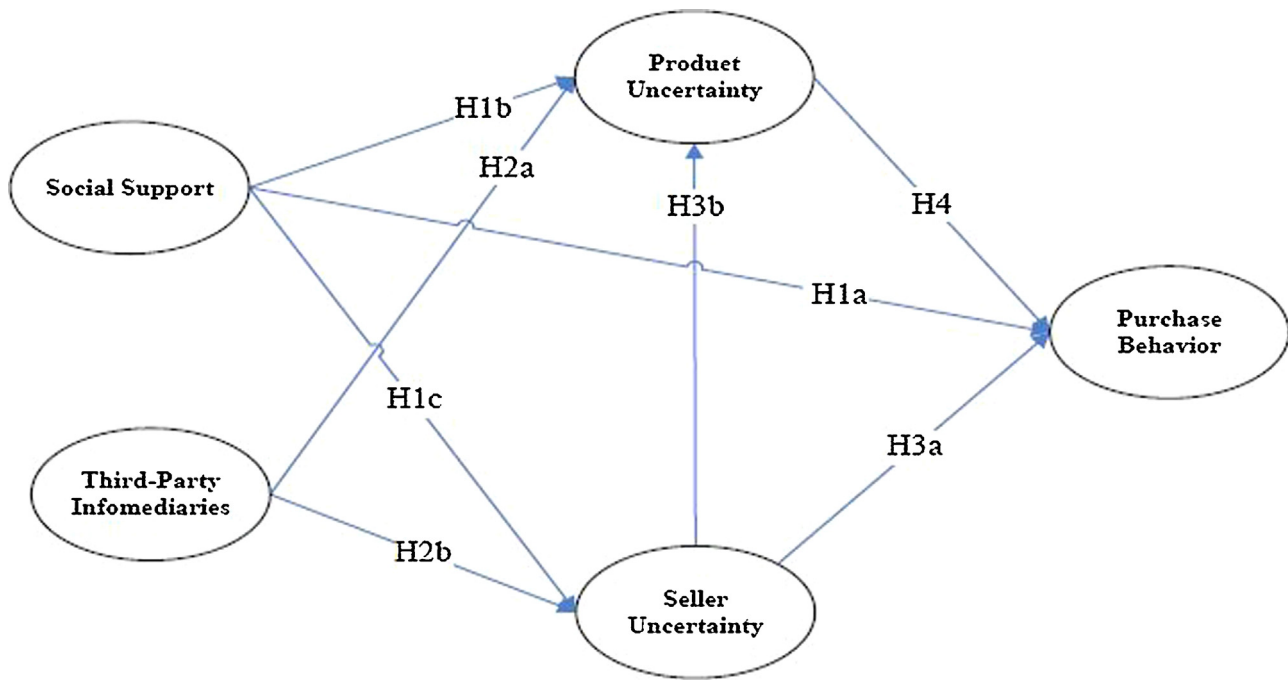


Fig. 1. Research model.

obtain information on products through social media. The information is not shared between sellers and customers, leading to product information asymmetry; thus, consumers cannot judge the accuracy of the product description information. Moreover, after-sales quality uncertainty refers to buyers' difficulties in predicting the quality of after-sales service in the future.

Most existing studies related to seller uncertainty are in the area of trust research. Some examine seller morality uncertainty and uncertainty of after-sale service provided by sellers to lower seller uncertainty and increase users' trust. Because a purchaser cannot effectively supervise a seller's behavior, B2C e-commerce uncertainty arises, especially the seller's adverse selection (hidden information) and moral hazard (hidden action) (morality risk). According to a study on sellers' service quality, services provided by sellers will directly influence competition among sellers and the degree of satisfaction and loyalty of purchasers (Parasuraman, Zeithaml, & Malhotra, 2005). Seller uncertainty (Pavlou, Liang, & Xue, 2007) can be evaluated based on two aspects: service quality uncertainty and seller morality. Seller uncertainty refers to the extent of seller service and goodwill in the sales process. Zeitham et al. found that sellers' service quality includes a variety of features, such as general perceptual attributes (e.g., perceived transaction speed), broad dimensions (e.g., responsiveness to customer needs), and higher-order abstractions (e.g., overall perceived quality and value) (Zeithaml, Parasuraman, & Malhotra, 2002). Based on these features, consumers will evaluate the quality of seller services after shopping. Seller morality refers to sellers' willingness to provide consumers with emotional support throughout the purchase process.

According to online trust transfer theory, users may trust third-party infomediaries and third-party infomediaries can provide certification or guarantee services to product or sellers. Third-party infomediaries usually include third-party certification and third-party guarantees. A neutral third-party certification provides a fair inspection of products or merchants. The third party also provides security to protect buyers and sellers during the transaction process.

3. Research model and hypotheses

We identified five major constructs related to the perspective of social commerce: social support, third-party infomediaries, product uncertainty, seller uncertainty, and purchase intention. Social support and third-party infomediaries are external factors, whereas seller uncertainty and product uncertainty are internal factors. Our research model is shown in Fig. 1. The corresponding hypotheses are listed and justified below.

Reflective indicators reflect an unmeasured latent construct that is invoked to account for observed or covariance and are always used in factor analysis models. Formative indicators, in contrast, are used to minimize residuals in the structural relationships and are not designed to account for observed variables.

According to Petter, Straub, and Rai (2007) and Jarvis, MacKenzie, and Podsakoff (2003), we measured consumer behavioral intentions as a second-order reflective construct. The reason for using a second-order reflective model is that the main distinction between social commerce and e-commerce is social support. Social support is a multiple variable, and different researchers utilize different multiple variables. House (1981) and Schaefer et al. (1981) all use a second-order reflective construct to measure social support. Liang et al. (2012) divide social support into two dimensions, namely emotional support and informational support, and also adopt a second-order reflective construct in their research and analysis.

3.1. Perceived effectiveness of social support

Communication is most important factor in determining whether a customer uses a network. In the context of online communities, social media sites are a platform for users to interact with friends. On these platforms, some users obtain information and may experience positive emotional responses (Lee, Pi, Kwok, & Huynh, 2003). These positive emotions promote interactions between the user and his or her friends. The interactions among the users on social network platforms, such as chatting and sharing pictures and

product information, can enhance the relationships and produce a socialization value among users. The socialization value obtained leads to the perception of social support among users. This social support encourages users to share shopping information, product knowledge, or purchasing experiences and to provide shopping information for friends. Therefore, the following hypothesis can be posited:

Hypothesis 1a. *The perception of social support in social commerce is positively associated with the user purchase intention.*

In social commerce, the information obtained through social support provides guidance to customers. The comments or purchasing experiences provided are accurate and credible depictions of sellers or products; however, reviews about sellers or products inevitably contain both positive and negative comments. Positive comments will increase trust in products or sellers, and negative comments lead friends to distrust sellers or products. Accordingly, social support information can reduce the perceived risk and uncertainty of sellers or products. Social support can therefore be considered to have an important effect on sellers or products in social commerce. Hence, the following two hypotheses are postulated:

Hypothesis 1b. *The perception of social support in social commerce is negatively associated with product uncertainty.*

Hypothesis 1c. *The perception of social support in social commerce is negatively associated with seller uncertainty.*

3.2. Perceived effectiveness of the third-party infomediaries

Third-party infomediaries, such as PayPal (www.paypal.com) and Escrow (www.escrow.com), provide a certification or guarantee for sellers or buyers. In social commerce, third-party infomediaries can encourage transactions by providing fair and accessible rules, forcing restrictions on sellers' unethical behavior (Gefen, Karahanna, & Straub, 2003). They can reduce seller uncertainty and provide a safe and secure social trading environment, protecting sellers and ensuring that buyers profit in the purchase process.

The third-party certification symbols, such as TRUSTe, BBBonline, and Verisign, increase consumers' trust and provide supplemental instructions regarding product quality in social commerce. To reduce product uncertainty, the third-party infomediaries, among other things, (a) accredit and evaluate sellers, restricting problematic sellers, and (b) encourage benevolent transaction norms. In summary, the seals of third-party infomediaries familiar to the user instill greater trust in the product description information. This leads to the following hypotheses:

Hypothesis 2a. *Third-party organizations in social commerce are negatively associated with product uncertainty.*

Hypothesis 2b. *Third-party organizations in social commerce are negatively associated with seller uncertainty.*

3.3. Perceived effectiveness of seller uncertainty

In traditional transactions, consumers can directly touch the product, interact face-to-face with relevant personnel, and communicate with the manufacturer (or sellers) about product maintenance. In contrast, in online shopping, consumers communicate with the seller via online chat or phone only, and maintenance relies solely on the shipment. Consequently, seller online service quality is a key factor in the consumer purchase intention in social commerce. The extant literature shows that sellers' service quality includes five dimensions: tangibles, reliability, responsiveness,

assurance, and empathy (Cronin and Taylor, 2015). In social commerce, seller reliability takes the form of not cheating customers and independently and accurately fulfilling the promises made during the customer purchase process. Responsiveness refers to sellers' willingness to offer timely services to satisfy customers' purchase demands. The seller service dimensions are key features for improving customer purchase satisfaction in social commerce. Therefore, it is reasonable to assume that users' purchase intention will be influenced by seller uncertainty.

The product or service information provided by sellers will affect customers' cognition processes when they collect purchase information. For example, the description of relevant product quality information, images of the product, and the available product payment methods influence consumers' cognitive behavior toward the products or services (Song, 2005). Furthermore, the seller's after-sales services, such as delivery and return services, are important to customers placing a product order. Therefore, we predict the following hypotheses:

Hypothesis 3a. *Seller uncertainty in social commerce is negatively associated with user purchasing intention.*

Hypothesis 3b. *Seller uncertainty in social commerce is positively associated with product uncertainty.*

3.4. Perceived effectiveness of product uncertainty

Consumers buy products to satisfy their eventual needs; however, the social commerce purchasing process is very complicated because of product uncertainty. Furthermore, sellers cannot completely describe the characteristics and quality of the product, and consumers struggle to accurately identify the quality of products online (Figueirido, 2000). The quality of a particular product may have different meanings to different consumers, and consumers may even deem the same goods to be of different qualities. In social commerce, consumer shopping relies solely on text descriptions or product images, increasing the likelihood that consumers would suffer economic losses. Therefore, the product quality and the description of the product information will directly affect consumers' purchase intention. We thus hypothesize the following:

Hypothesis 4. *Product uncertainty in social commerce is negatively associated with user purchasing intention.*

4. Empirical study

4.1. The social commerce platform used

Renren (www.renren.com), formerly known as Xiaonei.com, is considered to be the Chinese equivalent of Facebook. It is the first and most influential social media platform in China. By the end of 2012, there were over 200 million registered users, representing college students from over 2000 universities. Renren is a communication and interaction platform with rich functionalities, including a posting diary, photo uploading, information sharing, and commenting capabilities. The platform was selected for this study for several reasons: its (1) real-name authentication, (2) user-centered design, (3) powerful RSS (Really Simple Syndication) feed and sharing mechanisms, and (4) integration with and utilization of Web 2.0 applications.

Xiaozhan is a very popular application in Renren, and users can directly browse the contents of Xiaozhan through Renren. Xiaozhan has several administrators who share information or pictures. Sharing information may generate interest among friends, who can share and recommend content.

4.2. Experimental design

A simulation experiment in Renren was used to test the proposed hypotheses because the business function of Renren is incomplete. There is no payment and financial guaranty insurance functions, compared with Facebook. To understand social commerce processes, we divided the experiment into four steps: (1) we created a new application of Xiaozhan in Renren.com named “Social Commerce” (<http://zhan.renren.com/buaa730>); (2) product information for products we purchased was uploaded to the Xiaozhan; (3) Xiaozhan content were recommended to and shared with friends; and (4) the friends who follow Xiaozhan were contacted to complete our survey. Additionally, when users had purchase intentions, they were able to buy the product from another e-commerce site by clicking the link in Xiaozhan.

In this experiment, product type selection was based on Zhu, Benbasat, and Jiang (2010), who found that products selected for social commerce studies should (1) be social products, in so much as they are used by college students; (2) contain a variety of attributes (e.g., functionality, look, and size) that can provoke discussion among users in social media; and (3) be gender-neutral. The products uploaded to Xiaozhan were all purchased online and used by the researchers. Additionally, in this Xiaozhan, the products were listed with detailed descriptions of their key characteristics, such as the seller service quality, evaluation and recommendations after use, and certifications from third-party infomediaries. Links to the external websites for each product were provided for the users who wanted to buy the product.

4.3. Instrument development

This research model includes five constructs. Social support, product uncertainty, seller uncertainty, and third-party infomediaries are the independent variables, and purchase intention is the dependent variable. A questionnaire developed to measure the constructs in the research model and all questionnaire items were measured on a 5-point Likert-scale, with 5 equivalent to “strongly agree” and 1 to “strongly disagree.”

The source of the social commerce construct and the entire set of items used in the analysis are shown in Appendix 1.

Social support includes three aspects: user support, UGC support, and platform support. User support is an expression of the emotional connection among users who build emotional ties through communicating or visiting friends’ homepages on social media. UGC support is the aggregation of positive, negative, and neutral opinions into a readily accessible online source. In addition, platform support provides various functions supporting social commerce. The measurement items for social support were adapted from Liang and Turban (2011).

Product uncertainty includes product information asymmetry and after-sales quality uncertainty. Product information asymmetry refers to the inaccuracy of the product description provided to users. After-sales quality uncertainty refers to the many issues that are important after the consumer places an order. Product uncertainty was measured by items adapted from Doll and Torkzadeh (1988).

Seller uncertainty can be evaluated using two aspects: service quality uncertainty and seller morality. Service quality uncertainty has been described as the reliability and response of seller services. Seller morality refers to sellers’ empathy. Service quality uncertainty items were adapted from Victor and Cullen (1988). The measurement items of seller uncertainty were adapted from Cronin and Taylor (1992).

The third-party infomediaries factor usually includes third-party certification and third-party guarantees. Third-party certification certifies sellers who meet certain criteria to reduce the risks

associated with online shopping. Third-party guarantees provide a reliable and secure environment for users after placing an order. Third-party certification was measured using items adapted from Pavlou and Gefen (2004), and third-party guarantee was measured using items adapted from Cheung and Lee (2001).

Purchase intention measures the degree to which a user is willing to share and request commercial information on social networking sites (Liang and Turban, 2011). Purchase intention refers to users’ interest in a product after they obtain information on social media. Measurement items were adapted from Shiao and Luo (2012).

4.4. Data collection

4.4.1. Participants

The questionnaire was posted online; participants could voluntarily visit the Xiaozhan Station, and a total of 257 individuals filled out questionnaires. Of those 257 people, 45 of them did not complete the questionnaire, yielding 212 usable questionnaires (an effective response rate of 82%). The participants are from 23 Chinese cities, and 69% of them are from China’s primary online shopping cities (Beijing, Shanghai, and Shenzhen). The respondents work in a variety of professions, such as foreign enterprise employee, domestic enterprise employee, public employee, students, freelancers, and so on. Participants aged from 16 to 57 years old, and their average age is 27; 78.59% of the samples are from participants aged from 19 to 35 years old, the major age group for online shoppers in China. Approximately 51% of the respondents are male (109 males and 103 females), 87% hold a bachelor degree or higher, and 78% have at least of three years online shopping experience. They spent an average of 13.75 h per week on Renren.com, and spent over 500 RMB (approximately US\$ 80.6) on online purchases per month.

4.4.2. Procedure

We built a social commerce platform on Renren.com, called “Xiaozhan,” that could be randomly recommended to Renren users’ friends. Friends who were interested in the station could visit and follow the Xiaozhan. After 6 months, a total of 304 Renren users were following our station. Of the 304 followers, 285 had direct or indirect friendship with others, and 19 Renren users had visited and followed our station after accessing it through a search engine or other channel. Moreover, 257 followers filled out the study questionnaire.

The questionnaires were written in Chinese. Early-stage tests were undertaken before issuing online questionnaires by distributing hard copies of the questionnaire to examine its consistency and effectiveness. The online questionnaire was modified on basis of the problems discovered in 79 of the collected hard copy questionnaires.

5. Data analysis

5.1. Assessment of the hierarchical order model

Based on the discussion above, this study shows that the purchase intention model is designated as a second-order reflective construct that can be analyzed using the hierarchical order model (Martin, 2009; Teo, Wei, & Benbasat, 2003). The degree of explained variance of the second-order social support construct is reflected in its first-order components, namely user support (84%), UGC support (89%), and platform support (88%). Product uncertainty consists of two first-order reflective constructs (product information asymmetry, 82%, and after-sales quality uncertainty, 85%), and seller uncertainty consists of two first-order reflective constructs (service quality uncertainty, 81%, and seller morality, 90%). Third-party

Table 1
Reliability of second-order constructs.

Second-order	First-order	CR	AVE
User Support	USS	.907	.764
	UGC		
	PFS		
Product uncertainty	STU	.882	.789
	SAU		
Seller uncertainty	SQU	.905	.826
	SM		
Third-party infomediaries	TPC	.868	.767
	TPG		
Purchase intention		.917	.691

infomediaries consist of two first-order reflective constructs (third-party certification, 90%, and third-party guarantees, 83%). All of the path coefficients from second-order to first-order components are significant at $p < 0.01$ (Appendix 2). Additionally, in Table 1, the results show that the CRs and AVEs of the second model are equal to or greater than 0.80 and 0.50, respectively, which provides evidence of reliable second-order measures. In addition, as shown in Appendix 3, the loadings and cross-loading of the measurement model indicate that the survey instrument was adequate for measuring each variable individually.

5.2. Evaluating the measurement model

Measure validation was initially examined for reliability analysis by computing Cronbach's alpha coefficient for each construct. All measures had high levels of reliability; as shown in Table 2, the values for all constructs exceeded 0.70. The discriminant and convergent validity of the principal constructs were examined using a factor analysis procedure based on partial least squares (PLS). The congruent validity was assessed using the average variance extracted (AVE) and indicator loadings. The AVE values far exceeded the recommended level of 0.5 (Hair, Black, Babin, Anderson, & Tatham, 2010), and loading scores were all above the desired threshold of 0.7. As shown in Table 3, all AVE values met this criterion (greater than the off-diagonal numbers), showing acceptable discriminant validity.

5.3. Structural model: hypothesis and model testing

Confirmatory factor analysis was conducted to examine the goodness-of-fit of the measurement model for the factors. AMOS version 5.0 was used for the structural modeling analysis. Over the past several decades, there has been a great deal of research and debate on the cutoff criteria of fit indices for assessing model fitness (Kline, 2010; Loehlin, 2012). Based on the typical cutoff criteria for model fit, using the six common model-fit measures depicted in Table 4 (see the analysis description in Appendix 2), the goodness-of-fit measures indicated that the measurement model of factor fitness were all satisfactory (Ba and Pavlou, 2002; Browne and Cudeck, 1989).

All of the hypotheses were supported. Hypotheses 1b and 1c suggested a link among high levels of social support and product and seller uncertainty, respectively. Social support affected both seller uncertainty ($t = -2.75$, $p < 0.001$) and product uncertainty ($t = -2.72$, $p < 0.01$), supporting H1b and H1c, respectively. The results indicated the existence of a positive and significant link. Because users may talk to one another about the products and transfer information about the seller, social support has a significant impact on the product or seller. Additionally, hypotheses 2a

Table 2
Construct reliability and validity.

Constructs	Indicators	Loading	CR	AVE
USS	Uss1	.794***	.866	.617
	Uss2	.765***		
	Uss3	.759***		
	Uss4	.822***		
UGC	Ugc1	.786***	.879	.591
	Ugc2	.763***		
	Ugc3	.753***		
	Ugc4	.737***		
	Ugc5	.804***		
PFS	Pf1	.816***	.873	.634
	Pf2	.788***		
	Pf3	.741***		
	Pf4	.836***		
STU	St1	.800***	.841	.571
	St2	.722***		
	St3	.740***		
	St4	.758***		
SAU	Sa1	.811***	.838	.633
	Sa2	.780***		
	Sa3	.796***		
SQU	Sa1	.786***	.851	.590
	Sq2	.766***		
	Sq3	.726***		
	Sq4	.791***		
SM	Sm1	.789***	.857	.599
	Sm2	.752***		
	Sm3	.745***		
	Sm4	.808***		
TPC	Tpc1	.815***	.829	.621
	Tpc2	.814***		
	Tpc3	.746***		
	Tpc4	.775***		
TPG	Tpg1	.848***	.861	.675
	Tpg2	.783***		
	Tpg3	.832***		
PI	Pi1	.759***	.917	.691
	Pi2	.796***		
	Pi3	.855***		
	Pi4	.856***		
	Pi5	.884***		

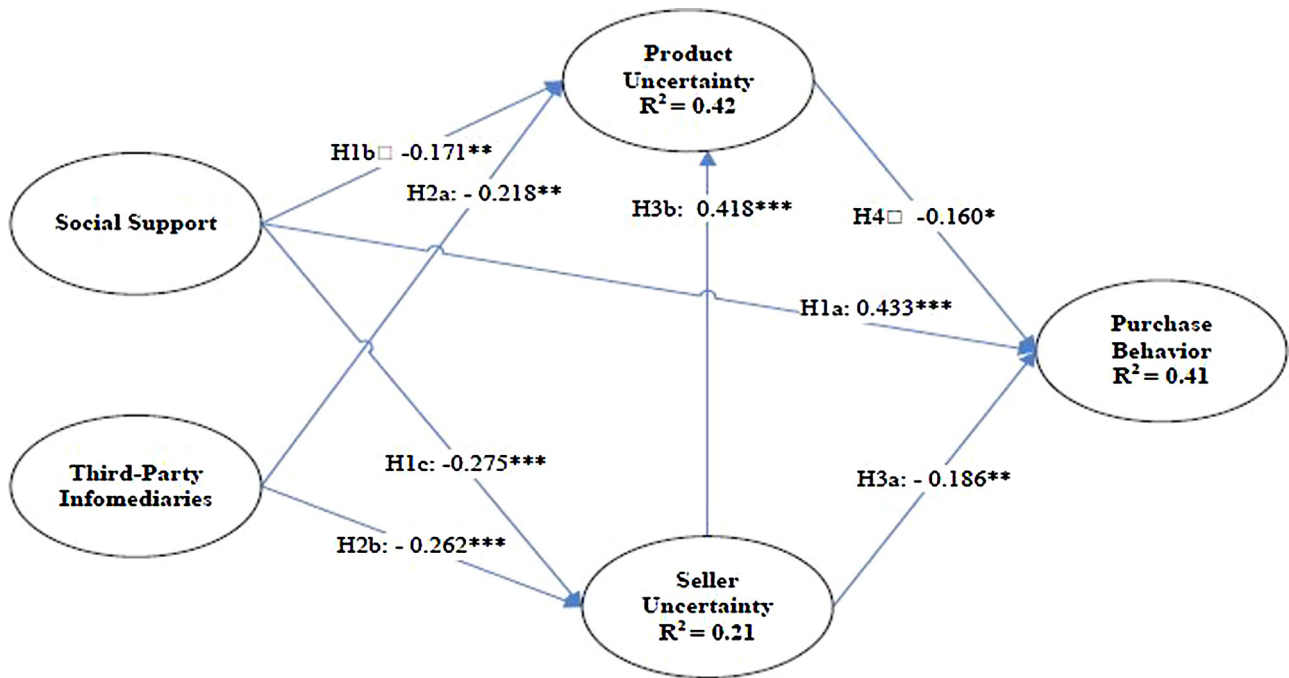
Notes: CR = composite reliability; AVE = average variance extracted. *** $p < 0.001$.

and 2b suggest a link among high levels of product uncertainty, seller uncertainty and third-party infomediaries. Seller uncertainty and product uncertainty were affected by third-party infomediaries ($t = -2.62$, $p < 0.001$; $t = -3.51$, $p < 0.01$), supporting H2a and H2b. Hypothesis 3b proposed a link between seller uncertainty and product uncertainty. Product uncertainty was affected by seller uncertainty ($t = 7.00$, $p < 0.001$), supporting H3b. The correlation was positive and significant, indicating that the cognitive core of social commerce, such as the product description, enhances seller services. Finally, purchase intention was directly and significantly affected by social support (H1a), product uncertainty (H4), and seller uncertainty (H3a). All three paths above were supported. A comparison of the standardized path coefficients (γ) shows that social support had a much stronger effect on purchase intention ($\gamma = 0.430$) than the other factors, possibly because the purpose of the respondents' use of the social network was to communicate or chat with one another.

Based on the data analysis, we can conclude that: first, social support as introduced by this study has a significant influence on users' purchase intention. From an empirical perspective, this study provides powerful support for the theoretical work on social support in the social commerce context put forward by Liang and

Table 3
Squares of the correlation between constructs.

	Mean	S.D.	USS	UGC	PFS	STU	SAU	SQU	SM	TPC	TPG	PI
USS	12.21	4.60	0.62									
UGC	15.13	5.86	0.54	0.59								
PFS	12.32	4.87	0.55	0.53	0.63							
STU	13.02	4.19	0.13	0.15	0.15	0.57						
SAU	9.84	3.06	0.15	0.17	0.17	0.46	0.63					
SQU	13.46	4.22	0.12	0.14	0.13	0.25	0.29	0.59				
SM	13.60	4.19	0.12	0.18	0.13	0.28	0.28	0.48	0.60			
TPC	12.98	4.83	0.16	0.17	0.17	0.17	0.18	0.13	0.14	0.62		
TPG	9.81	3.65	0.18	0.21	0.18	0.18	0.22	0.15	0.13	0.56	0.68	
PI	15.92	5.37	0.34	0.29	0.28	0.19	0.17	0.20	0.17	0.10	0.14	0.69



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

Fig. 2. PLS analysis results.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Turban (2011). The experimental results indicate that user support, UGC support, and platform support are three key factors for social commerce. In social commerce, users' evaluation and sharing of product information, serving as a source of reliable information, affects users' purchase intention. Evaluations and information sharing are the main forms of UGC. UGC support is also an important way for users to collect product information in social media. When someone wants to buy something, he seeks advice from those users

who have previously shared product information. Consequently, social support has great significance for purchasing behavior.

Second, the use of third-party infomediaries has an indirect effect on purchase intention. It directly influences product uncertainty and seller uncertainty, with path coefficients of -0.22 and -0.26 , as shown in Fig. 2. The higher the user's trust in the third-party infomediaries is, the lower the product and seller uncertainties are. In social commerce, users trust third-party infomediaries in addition to other users. This has practical significance for the contributions of third-party infomediaries to purchase intention. Third-party infomediaries provide merchants or products with certification and guarantee payment to reduce user online shopping risk, which can increase users' purchase intention. In traditional online shopping, third-party infomediaries always have a positive impact on purchase intention, as described by a mature model based on information systems; third-party infomediaries also strongly affect purchase intentions in social commerce. There are two reasons for not setting up the hypothesis to test the direct effect of the perceived effectiveness of third-party validation on purchase behavior. First, the study on third-party infomediaries is based on online trust transfer theory. According to this theory, a third party is an organization that is independent and provides

Table 4
Goodness-of-fit analysis results.

Goodness-of-fit measure	Acceptable values	Value
χ^2		38.064
df		27
χ^2/df	<3	1.410
RMR	<0.8	0.486
CFI	>0.9	0.992
GFI	>0.9	0.966
IFI	>0.9	0.992
AGFI	>0.9	0.930
RMSEA	<0.08	0.044

certification and guarantees for products or sellers. Third-party infomediaries are reliable intermediaries that help users increase their trust in sellers. Moreover, a third-party organization guarantees both the products and sellers, thus making users indirectly build trust on products and their sellers through the organization itself. Therefore, this research examines only the analysis of third parties against product and seller uncertainty. Second, in the study of e-commerce platforms, other than the current research regarding third-party influence on user trust, studies that analyze a third party's direct influence on purchasing behavior have not been found. The third party increases customers' trust in products by guaranteeing the products and certifying the sellers. Thus, this paper considers how to reduce product uncertainty and seller uncertainty through third-party certification and guarantees, but not how third parties influence users' purchasing behavior.

Third, product quality information has a weak effect on purchase intention. Based on the literature survey, we found that the relationship between quality information and purchase intention varies. For example, *Szymanski and Hise (2000)* declare that the quality information has a positive effect on consumers' intentions. Additionally, the Online User Panel research shows that 58% of online consumers agree with the importance of quality information in determining their purchase intention. At the same time, 57% of online consumers believe that updating product information plays a pivotal role in their decision. Heine et al.'s online research, however, illustrates that purchase intention is not strongly affected by quality information (*Heiner, Gopalkrishnan, Josef, & Dieter, 2004*).

Therefore, a possible explanation for the insignificant effect of quality information on consumers' purchase intention in social commerce is that social network users prefer to seek advice from other users concerning quality information. In social commerce, users pay more attention to communications with other users and collecting product information from UGC in social media, and therefore ignore the product quality description provided by the seller. Additionally, users trust the product or evaluation information provided by other users over that provided by sellers. They are also interested in the other aspects of the product, such as information security and price information.

Finally, the factors in the research model contribute to suggestions regarding supporting social commerce marketplaces. In social commerce, social support, sellers services, seller morality, and third-party intermediary guarantees play key roles in influencing purchase intentions.

Summarizing the proposed hypotheses, the resulting model (*Fig. 2*) shows that product uncertainty and seller uncertainty are mediators. Following previous studies (*Baron and Kenny, 1986; Frazier and Barron, 2004*), there are four steps to establishing that a variable mediates the relationship between a predictor variable and an outcome variable (*Tables 5 and 6*). The first step is to show that there is a significant relationship between the predictor (social support) and the outcome (purchase intention). The unstandardized regression coefficient ($B = 0.215$) associated with the effect of social support on purchase intention was significant ($p < 0.001$). Thus, the path from social support to purchase intention was significant. The second step is to show that the predictor is related to the mediator. The unstandardized regression coefficient ($B = -0.211$) associated with the effect of social support on product uncertainty was significant ($p < 0.001$). The third step is to show that the mediator is related to the outcome variable. The coefficient associated with the relationship between product uncertainty and purchase intention was also significant ($B = -0.353$, $p < 0.001$). The final step is to show that the strength of the relationship between the predictor, and the outcome is significantly reduced when the mediator is added to the model. The unstandardized regression coefficient ($B = 0.174$) is still significant ($p < 0.001$), although smaller than step 1 (which was 0.215).

Table 5
Testing mediator (product uncertainty) effects using multiple regression.

Testing steps in mediation model	B	SE B	95% CI	β
Testing Step 1: Outcome: purchase intention Predictor: social support	0.215	0.021	0.173 to 0.257	0.573***
Testing Step 2: Outcome: product uncertainty Predictor: social support	-0.211	0.030	-0.270 to -0.153	-0.443***
Testing Step 3: Outcome: purchase intention Predictor: product uncertainty	-0.353	0.048	-0.449 to -0.258	-0.450***
Testing Step 4: Outcome: purchase intention Predictor: social support	0.174	0.023	0.129 to 0.220	0.465***

Note. CI confidence interval; *** $p < 0.001$.

Based on the findings above, user relationships are the primary means for social commerce, and this study shows that social support can be as prominent in social network contexts. Furthermore, there are positive effects among seller uncertainty, product uncertainty, third-party infomediaries and purchase intention. Future research is needed to address factors influencing user intentions to continue shopping, such as the role of the business in social networks and the diversity of communication among users.

6. Implications and limitations

6.1. Implications

6.1.1. Theoretical implications

This study focuses on analysis factors characteristic of social commerce and contributes to existing theory by demonstrating that these perceptions play an important role in the purchase process. Our results show the importance of these factors in consumers' purchase behavior and their import for theories of social commerce.

First, the research model provided by five core factors gives new theoretical insight into studying user purchase behavior in a social commerce environment. Although our research does not include all of the steps in shopping, it provides a theoretical foundation for understanding the purchasing process in social commerce.

Table 6
Testing mediator (seller uncertainty) effects using multiple regression.

Testing steps in mediation model	B	SE B	95% CI	β
Testing Step 1: Outcome: purchase intention Predictor: social support	0.215	0.021	0.173 to 0.257	0.573***
Testing Step 2: Outcome: seller uncertainty Predictor: social support	-0.224	0.035	-0.294 to -0.154	-0.401***
Testing Step 3: Outcome: purchase intention Predictor: seller uncertainty	-0.302	0.041	-0.384 to -0.221	-0.451***
Testing Step 4: Outcome: purchase intention Predictor: social support	0.175	0.022	0.132 to 0.219	0.468***

Note. CI = confidence interval; *** $p < 0.001$.

A second theoretical contribution of this research is the introduction of platform support as a factor of social support theory to the study of the social commerce phenomenon. Within the popularity of social media, social commerce is rising as a new e-commerce pattern; however, the fresh and popular social commerce is not yet supported by theory. In our study, we extend Liang et al.'s (2012) work by using social support to test users' purchase intention over social commerce. In addition to using user support and UGC support as the social support items, however, we have added platform support as another item to test the impact of social support on the purchase intention. Our results are noteworthy in terms of the relationship between social support and users' purchase intention. In summary, social support is an important factor in the study of social commerce, and it provides appropriate theoretical support for social commerce as well.

A third contribution to theory is that we have adopted consumer behavior theory and online trust transfer theory to support our research model. Previous empirical research has not involved testing the effect of third-party infomediaries, product uncertainty, and seller uncertainty in a social commerce environment. The results of this study add to the literature by extending consumer behavior theory and online trust transfer theory, and by incorporating them into the study of consumer purchase intention.

6.1.2. Practical implications

In general, more and more consumers select products that have been reviewed by their friends, and they are using new shopping channels over social commerce. Within the popularity of social media, companies and consumers both use social media as a platform to share intelligent shopping experiences. Social commerce brings new opportunities and challenges to sellers and companies.

First, the core operation of social commerce is people-oriented, whereas traditional e-commerce is product-oriented. Social commerce places more emphasis on people's information (users' basic information, information generated by users, etc.). Sellers can accurately push product information after analyzing people's data to significantly improve users' purchasing efficiency.

Second, within the context of social commerce, customers communicate online with other customers. Users can not only obtain product information from sellers but also learn more detailed product information through their friends via a type of social network. Sellers can spread and improve customers' trust in their products through public appraisal provided by social network users who have had experience purchasing their products, thus attracting more potential users to purchase their products.

Third, within the context of social commerce, users emphasize the enjoyment of communication and entertainment among users. This is also an essential reason why users visit social networking websites. Therefore, sellers must respect users' choices and experiences when marketing their products on social media, which, in turn, requires sellers to correctly guide users in understanding products when they are developing their advertising and promotion strategies, rather than directly pushing product information to users, thus disturbing their leisure time.

Finally, there are many social media outlets in China, including Renren.com, kaixin001, MicroBlog, and WeChat. Sellers should investigate users' experiences provided by social media when they are choosing social media partners, as it is very helpful for creating marketing strategies and discovering potential shoppers.

6.2. Limitations and suggestions for future research

Although the data generally support the proposed model, we must note some characteristics of our study that may limit our ability to generalize these results.

First, one potential limitation of this study comes from the sample selection. Our sample comprises users who shared product information or purchased products online. In social media, lurkers and simple-comment-only users who had ceased to frequent and share information on Xiaozhan of Renren.com may have different perceptions about social commerce and may have been differently affected by the proposed social shopping. This limitation may have inflated the degrees of explained variance and produced bias in the results. Therefore, the results should be interpreted as only explaining the behavior of active users. Inactive users will be included in a future study on purchase intentions.

Second, the data were collected from a social networking site (Renren.com). The Renren platform, however, has not yet completed business functions, and only has group buying. Other well-known social networking sites, such as Facebook, have already processed the forms for commercial activities. In other words, in this study, Xiaozhan on Renren, which allows users to share product information and interact with one another, may not implement all necessary or possible business processes. For this reason, the generalization of the model to other social networking sites will require additional research.

Third, like f-commerce (Facebook commerce) and t-commerce (Twitter-commerce), Xiaozhan (Renren.com) already provides product information to the consumer, but products such as food and clothing are all life necessities, and online customers are often interested in them. This may increase the effect of the perceived willingness to purchase intention. More research using the same variable of perceived willingness in different contexts is necessary to determine its generalizability.

Finally, another potential problem involves the survey type. Although the proposed model was supported by the questionnaire survey in this paper, survey method bias cannot be absolutely excluded. It is recommended that future studies utilize the NeuroIS (Neuro Information System) method to check the validity of the results and reduce bias.

7. Conclusions

This study investigates the factors influencing purchase intentions in social commerce and develops a research model to study this type of commerce. The model presents the major relationships between purchase intention in social commerce and four groups of major potential antecedents: third-party infomediaries, product uncertainty, seller uncertainty, and social support. More specifically, social support directly affects purchase intention, and UGC is a key factor in social support. The results of this study also indicated that third-party infomediaries directly impact seller uncertainty and product uncertainty. Furthermore, product uncertainty has a weak negative effect on purchase intention.

The proposed hypotheses, which are all supported in this study, provide directions for further empirical testing. The purchase intention model presented in Section 4 provides a coherent framework for empirical research on the phenomenon of social commerce. Further study of this model and empirical testing will lead to a better understanding of the role of purchases in social commerce. The results will clarify and enrich the relevant theories and extend their boundaries.

While numerous studies address the factors affecting purchase intention, there is little empirical evidence regarding the interplay among social support, product uncertainty, seller uncertainty, third-party infomediaries, and purchase intention for social commerce. In addition, the findings of this study provide valuable insights into how purchase intentions can be identified and the development of social commerce promoted. For example, using these findings, sellers may be able to increase consumer purchase

intention in social commerce and improve the chances of consumers purchasing from them.

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Appendix 1.

The table below lists the entire set of items used in the analysis.

Item	Caption	Source
User support		
Uss1	When I publish fresh news, people on Renren always follow me.	Liang et al. (2012)
Uss2	When I encounter difficulties, people on Renren comfort and encourage me.	
Uss3	When I encounter difficulties, people on Renren listen to me talk about my private feelings.	
Uss4	When I encounter difficulties, people on Renren express interest and concern for my well-being.	
UGC support		
Ugc1	On Renren, people offer suggestions when I need help.	Liang et al. (2012)
Ugc2	When I am faced with a problem, people on Renren provide me with information to help me overcome my problem.	
Ugc3	When I encounter difficulties, people on Renren help me discover the cause and provide suggestions.	
Ugc4	Communication with friends can help me to obtain product information on Renren.	
Ugc5	On Renren, people share product information that could help me make a good purchase decision.	
Platform support		
Pf1	Renren has a function that allows users to provide quick responses and feedback.	Doll and Torkzadeh (1988)
Pf2	Renren provides a user-friendly interface.	
Pf3	Renren makes it easy to contact my friends.	
Pf4	Renren makes it easy to provide/share product information with my friends.	
Asymmetric product information		
St1	Renren provides sufficient information about products I'm interested in.	Doll and Torkzadeh (1988)
St2	Renren provide precise information to satisfy my needs.	
St3	The quality of the product I bought from Renren is consistent with the seller's description.	
St4	Renren provides up-to-date product information.	
After-sales quality uncertainty		
Sa1	Most products have after-sales service descriptions on Renren.	
Sa2	Most products have instructions and notes on Renren.	
Sa3	Most products have freight descriptions on Renren.	
Service quality uncertainty		
Sq1	When sellers on Renren promise to do something by a certain time, they should follow through.	Victor and Cullen (1988)
Sq2	Sellers on Renren must always be willing to help customers.	
Sq3	It is okay if sellers are too busy to respond to customer requests promptly.	
Sq4	Sellers on Renren who provide free shipping, 7-day returns, and similar services are trustworthy.	
Seller morality		
Sm2	On Renren, it is expected that sellers will always protect customers' rights and interests.	Cronin and Taylor (1992)
Sm3	On Renren, sellers care about ensuring that products satisfy customer needs.	
Sm4	Sellers on Renren will provide customers with individual attention.	
	On Renren, sellers are concerned about customers' feelings.	
Third-party certification		
Tpc1	The third-party certification of sellers is important to customers shopping on Renren.	Pavlou and Gefen (2004)
Tpc2	On Renren, the third-party certification of sellers reduces customers' shopping risk.	
Tpc3	On Renren, sellers certified by a third party cannot easily commit fraud or scams.	
Tpc4	The certified rating of a seller or product by a third party has a very important reference value to customers.	
Third-party guarantee		
Tpg1	On Renren, third-party guarantees, such as that of Alipay, guarantee that customers will not suffer property loss.	Cheung and Lee (2001)
Tpg2	On Renren, third parties can guarantee that customers will get what they pay for.	
Tpg3	In Xiaozhan, third parties can protect customers from inappropriate seller behavior.	
Purchase intention		
Pi1	I ask my friends on Renren for suggestions before I go shopping.	Liang et al. (2012) Shiau and Luo (2012)
Pi2	I am willing to buy the products recommended by my friends on Renren.	
Pi3	I immediately buy the product after obtaining product information from Renren.	
Pi4	I do not immediately buy the product after obtaining product information from Renren.	
Pi5	I buy the product at some point in the future after obtaining product information from Renren.	

Appendix 2.

Fig. A.3.

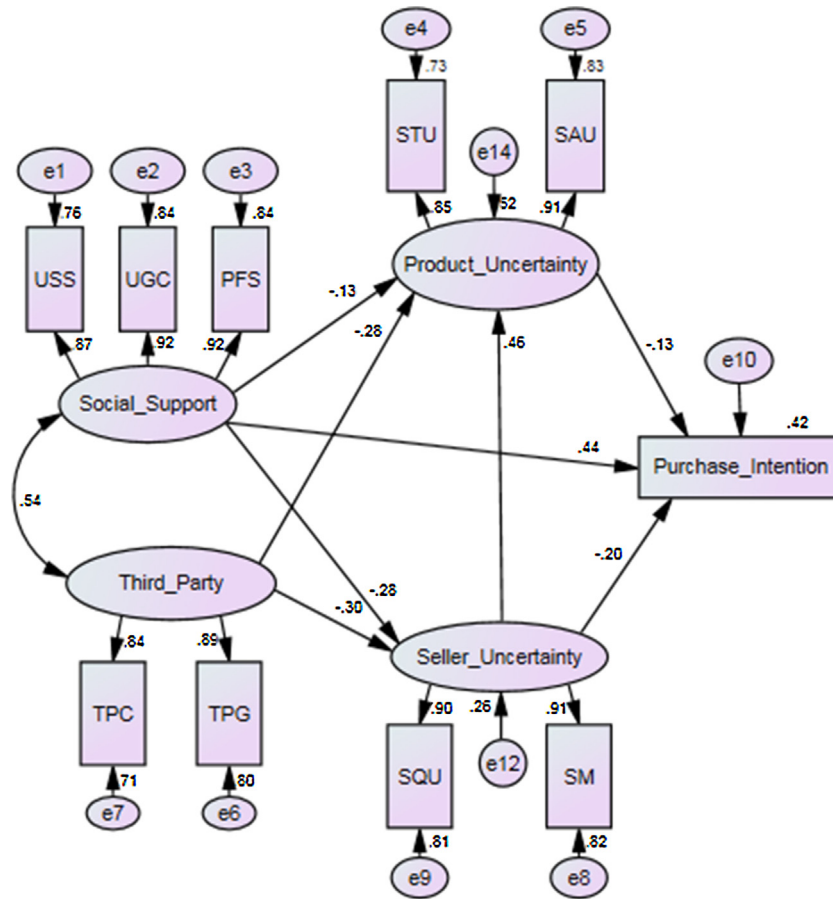


Fig. A.3. AMOS analysis results.

Appendix 3.

Loadings and cross-loading of the measurement model

Items	1	2	3	4	5
USS1	.793	-.098	-.103	.186	.166
USS2	.764	-.151	-.076	.112	.162
USS3	.734	-.156	-.081	.065	.156
USS4	.785	-.168	-.074	.107	.235
UGC1	.748	-.162	-.168	.217	.104
UGC2	.775	-.176	-.128	.204	.051
UGC3	.733	-.193	-.157	.274	.188
UGC4	.736	-.162	-.154	.173	.161
UGC5	.814	-.163	-.117	.192	.114
PF1	.823	-.087	-.120	.154	.164
PF2	.801	-.043	-.147	.144	.179
PF3	.762	-.047	-.175	.118	.152
PF4	.818	-.078	-.142	.135	.144
ST1	-.132	.806	.189	-.085	-.150
ST2	-.218	.756	.216	-.139	-.049
ST3	-.217	.748	.238	-.102	-.143
ST4	-.102	.755	.267	-.139	-.212
SA1	-.163	.740	.257	-.279	-.084
SA2	-.169	.717	.241	-.256	-.093
SA3	-.194	.691	.277	-.194	-.109
SQ1	-.157	.193	.794	-.164	-.094
SQ2	-.161	.153	.779	-.099	-.205
SQ3	-.117	.244	.744	-.117	-.151
SQ4	-.197	.189	.780	-.107	-.094
SM1	-.180	.229	.780	-.145	-.126

Items	1	2	3	4	5
SM2	-.101	.223	.767	-.149	-.065
SM3	-.116	.153	.800	-.123	-.127
SM4	-.147	.229	.784	-.116	-.095
TPC1	.187	-.157	-.159	.798	.040
TPC2	.184	-.121	-.111	.843	.008
TPC3	.160	-.046	-.139	.778	.052
TPC4	.246	-.217	-.131	.795	.118
TPG1	.250	-.184	-.170	.756	.093
TPG2	.212	-.153	-.108	.734	.172
TPG3	.186	-.199	-.130	.771	.134
PI1	.226	-.240	-.157	.077	.667
PI2	.282	-.140	-.069	.141	.724
PI3	.324	-.093	-.254	.171	.727
PI4	.288	-.166	-.197	.029	.769
PI5	.313	-.099	-.221	.150	.775

Note: 1 – social support; 2 – product uncertainty; 3 – seller uncertainty; 4 – third-party infomediaries; 5 – purchase intention

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