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SOCIAL PRESENCE, TRUST, AND SOCIAL COMMERCE PURCHASE INTENTION: AN EMPIRICAL RESEARCH

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Abstract

Lacking the presence of human and social elements is claimed one major weakness that is hindering the growth of e-commerce. The emergence of social commerce (SC) might help ameliorate this situation. Social commerce is a new evolution of e-commerce that combines the commercial and social activities by deploying social technologies into e-commerce sites. Social commerce reintroduces the social aspect of shopping to e-commerce, increasing the degree of social presences in online environment. Drawing upon the social presence theory, this study theorizes the nature of social aspect in online SC marketplace by proposing a set of three social presence variables. These variables are then hypothesized to have positive impacts on trusting beliefs which in turn result in online purchase behaviors. The research model is examined via data collected from a typical e-commerce site in China. Our findings suggest that social presence factors grounded in social technologies contribute significantly to the building of the trustworthy online exchanging relationships. In doing so, this paper confirms the positive role of social aspect in shaping online purchase behaviors, providing a theoretical evidence for the fusion of social and commercial activities. Finally, this paper introduces a new perspective of e-commerce and calls more attention to this new phenomenon.

Keywords: Social commerce, Social presence, Social commerce marketplaces, Trust, Purchase intention.

INTRODUCTION

A notable difference between online and offline markets that is hindering the growth of e-commerce is the decreased presence of human and social elements in the online environment (Hassanein et al. 2009; Cyr et al. 2009). More recently, this situation has been greatly improved by incorporating Web 2.0 capabilities into the e-commerce website. This new evolution is commonly referred to as the birth of social commerce (SC) (Huang & Benyoucef 2013). New design features built upon social media and Web 2.0 technologies help enhance customer participation and allow them to collect socially rich information, resulted in a more trustworthy and sociable online transaction environment. Although these positive influences have been widely recognized, the social aspect of ecommerce has not been completely understood, nor their impacts on trust. In this study, Social Presence Theory (SPT) is employed to help understand the impacts of social shopping features in online SC marketplaces.

Social Presence (SP) is broadly defined as the extent to which a medium allows users to experience others as being psychologically present (Fulk et al. 1987). Generally SPT considers SP as an inherent property of a medium to convey a feeling of human contact, sociability, and sensitivity (Rice and Case 1983). Most of prior e-commerce research based on SPT has adopted this one-dimensional conceptualization of SP (e.g., Gefen & Straub 2004; Hassanein et al. 2009). However, this unidimensional conceptualization of SP has a few limitations (Shen & Khalifa 2009).

To account for the various feelings aroused by various IT artifacts, a multi-dimensional conceptualization of SP has been recommended (Biocca et al. 2001; Shen & Khalifa 2009). In this study, a multi-dimensional conceptualization of SP is proposed based on previous studies. Then their influences on online buyers' purchasing decisions with specific sellers are examined in a research model by using trust as the key mediating variable. Trust is a vital concept that drives online purchase activities in e-commerce literature. (e.g., McKnight et al. 2002; Pavlou & Gefen 2004) Trust is the product of both the institutional context and the social context, and therefore is impacted by SP (Gefen & Straub 2004; Hassanein et al. 2009).

In sum, this study tries to offer several potential contributions. First, it reveals the social antecedent factors of trust in online sellers by relying on the SPT perspective. Particularly, we focus on buyers' trust in a specific seller rather than the general sellers in most of e-commerce literature (e.g., Pavlou & Gefen 2004). Second, it re-conceptualizes SP as a multi-dimensional construct in SC context, and thus, overcomes the limitations of the unidimensional conceptualization in literature. Third, it offers a full understanding on buyer purchase behaviors by considering the influences of both social factors and structural factors. Finally, it discloses the importance of the social aspect on online purchase behaviors, calling more attention to this relatively new but important research area in future.

The rest of the paper is organized as follows. We begin with the theoretical development, including discussing the SC phenomenon and a conceptual development. Next, we present the research model and the hypotheses, followed by a description of the research methodology. The paper then presents the research results, followed by a discussion of key findings and contributions, as well as the implications. Finally, we discuss the limitations, the possible direction of future research, and the concluding remarks.

1 THEORETICAL BACKGROUND AND CONCEPTUAL DEVELOPMENT

1.1 Social Commerce

As a relatively new phenomenon, social commerce has evolved quickly in practice (Wang & Zhang 2012). A recent report by McKinsey (Chui et al. 2012) estimates that the use of social technologies can contribute $900 billion to $1.3 trillion in value, and that up to 1/3 of consumer spending is subject to influence from social commerce. The term of social commerce was coined by Yahoo in 2005 to denote online places where people can share experiences, get advices from one another, find goods and services and then purchase them (Marsden 2010). But its early applications can be found in the

late 1990s when Amazon introduced the rating and review systems. So SC is often viewed as the concept of word-of-mouth (WOM) applied to e-commerce in the early time (Dennison et al. 2009; Curty & Zhang 2011). However, the increased popularity of social technologies over last couple of years has spawned an expanded range of social commerce opportunities (Liang & Turban 2011; Marsden 2010). More recently SC is generally seen as the fusion of social media with e-commerce.

In practice, there are two major configurations of this combination (Liang & Turban 2011). First, social platforms can add commercial features to guide people to buy where they usually connect. Second, traditional e-commerce sites can add social applications and content to help people to connect where they usually buy. We focus on the latter in this study. To be more specific, we concentrate on how the social aspect of shopping shapes buyer beliefs and behaviors in a SC marketplace like Amazon, eBay and Taobao.

1.2 Social Aspect of Online Shopping

Shopping has always been a social activity. Consumers tend to be influenced by their social interactions with others when making purchase decisions (Godes et al. 2005). It wasn't until the arrival of e-commerce that the social aspect of shopping was removed. E-commerce focuses more on maximizing efficiency and the one-way interactions between customers and the system (Huang & Benyoucef 2013). The development of social technologies reintroduces the social side into online purchasing process, making online purchasing a more social experience. Via the embedded social applications, traditional e-commerce sites have become the online social space where buyers feel more connected with others or their friends. Customers can have access to social knowledge and experiences to support them in better understanding their online purchase purposes, and in making more informed and accurate purchase decisions (Dennison et al. 2009).

Previous studies have focused on the constructs of social interactions, such as, word-of-mouth, observational learning, and social support. While these studies offer insights on how social interactions shape buyer behaviors, they may have overlooked the overall effects of the social atmosphere/context (Gefen & Straub 2004) that has been created by the use of social applications in SC marketplaces. According to Kotler (1973), atmosphere refers to the conscious design of the shopping environment to induce certain emotional or cognitive states in a buyer that increase his purchasing probability. The implementation of social technologies in e-commerce makes online shopping experiences more similar to those in physical stores. Online buyers are able to get more social cues to support their purchasing decisions by collecting more information from the communities, by observing the actions of other buyer, or by interacting with online sellers. This suggests that the social atmosphere/context deserves special attention.

SPT has been indicated a suitable theoretical lens for understanding the social context in e-commerce. It suggests that SP is built upon signals transmitted in a communication medium, such as virtual agents (Hess et al. 2009), IT-enabled human-like interaction (Pavlou et al. 2007), socially-rich text, personalized greetings (Gefen & Straub 2004), chat (Qiu & Benbasat 2005) or message boards (Cyr et al. 2007). The various social design features should convey various types of SP.

1.3 Conceptualization of the Social Aspect with Social Presence Theory

1.3.1 Social Presence

The concept of SP is grounded in social presence theory that elaborates the ability of a communication medium to transmit social cues (Short et al. 1976). Defined as "the salience of the other in a mediated communication" (Short et al. 1976), SP is viewed as an inherent quality of a communication medium. From a psychological standpoint, SP also closely relates to intimacy and psychological closeness (Short et al. 1976). In this perspective, SP is often measured as the perceived warmth, conveying a feeling of human contact, sociability, and sensitivity embodied in a medium (Rice and Case, 1983; Gefen & Straub 2004). Most of prior e-commerce research has adopted this perspective of SP, focusing on the capability of website to convey a sense of human warmth and sociability.

However, this unidimensional conceptualization of SP might not be suitable for virtual communities, where people not only interact with the computer mediated medium, but also communicate with other members and immerse themselves into the environment. Thus, a multidimensional conceptualization of SP has been advocated (Shen & Khalifa 2009). Social commerce is a combination of e-commerce with online community. Therefore, SP in social commerce should also be conceptualized as a multi-dimensional construct.

1.3.2 *A Multi-dimensional Conceptualization of Social Presence*

We propose a three-dimension model of SP: SP of the web, perception of others, and SP of interaction with sellers. These three dimensions are proposed based on prior research (Gefen & Straub 2004; Shen & Khalifa 2009; Caspi & Blau 2008), as well as the interactions involved in actual online purchase processes. Online buyers need to browse information by interacting with the web (SP of web), make sense of other buyers (perception of others), and communicate with the sellers (interaction with sellers). Our framework of SP is akin to the conceptualization of SP as "perception of other given the subjective quality of a medium" by Caspi and Blau (2008). They constructed the Medium and Other Perception Scale (MOPS) to cover the SP concept of Short et al. (1976). Further factor analysis revealed three factors: SP as perception of the others, medium's impersonality, and medium as interaction enabling.

SP of the web refers to the capability of a website to convey a sense of human warmth and sociability (Gefen & Straub 2004; Hassanein et al. 2009). It might be the most adopted perspective in prior e-commerce research, reflecting the inherent "subjective quality" of website. A website, as the container of multimedia contents and socially rich text, can convey a sense of personal, sociable and sensitive human contact. Other IT artifacts embedded into a website, e.g. physically embodied agents (Lee et al. 2006), 3D avatar, and Text-To-Speech (TTS) voice (Qiu and Benbasat 2005), also help to enhance the perceived SP.

The second dimension is perception of others (Shen & Khalifa 2009; Caspi & Blau 2008). Perception of others, also named awareness, refers to the extent to which other social actors appear to exist and react to the users in online communities (Shen & Khalifa 2009). Awareness in an online community is achieved through status updating, self-presentation features and continuous participation in online discussion. In SC, a few social applications increase the awareness of other buyers who might feel interests in the same product or topic. For instance, social proof - a type of social application to resolve customer uncertainty about what to do or buy (e.g., the option of ''customers who bought this also bought") - will give buyers a hint on the existence of other buyers and their purchasing interest. WOM can also increase perception of other online buyers. WOM valence indicates the percentage of prior buyers who hold positive or negative opinions, and WOM volume plays an informative role by increasing the degree of buyer awareness (Chen et al. 2011).

The third dimension is SP of interaction with sellers. In traditional e-commerce, sellers rarely engage direct interactions with buyers. But online chat tools make these interactions possible. They can be used as an effective marketing channel for sales, customer support, and getting touch with customers. While prior studies indicate that SP is more often conveyed through the "imaginary interactions" with the web interface (Hassanein & Head 2007), computer mediated communication (CMC) tools such as customer support chat (Qui & Benbasat 2005) and message boards (Cyr et al. 2007) can also convey SP. This perspective of SP as direct interactions with other users have been suggested and explored in online community research. For instance, Cappi and Blau (2008) pointed out that "medium as interaction enabling" is one factor of SP, indicating that discussion board could be an ideal interaction medium for online community members. Qiu and Benbasat (2005) found that the implementation of Text-To-Speech voice communication and 3D avatars in the user interface of live help affects consumers' views of their own interactions with a service person. Considering the extensive usage of CMC tools in practice, we argue that interaction with sellers is one important dimension of SP and should be explored in this study.

1.4   Trust in Social Commerce Marketplace

Trust is a central aspect in many economic transactions that can involve social uncertainty and risk (Fukuyama 1995; Mayer et al. 1995). It is often considered the foundation of e-commerce (Keen 1999) and the most crucial factor for the success of e-commerce. Prior research leans heavily towards the effects of functionality and institutional structures on trust building, paying very little attention to social influences. Trust, indeed, is built through social interactions with other people and the surrounding environment (Gefen & Straub 2004). Social context has been an important but neglected characteristic of trust in prior e-commerce research.

Trust is a complex and multifaceted construct (Gefen et al. 2003), conceptualized in a variety of ways. This study adopts the conceptualization of trust as a set of specific beliefs including integrity, benevolence and ability (McKnight et al. 2002). This conceptualization of trust is akin to that of other studies adopting SPT (Gefen & Staub 2004; Hess et al. 2009). Then trusting beliefs is conceptualized as a second-order construct in this study. Two types of trustees exist for a SC marketplace from a buyer perspective (Lu et al. 2013): marketplace (e.g., Amazon and eBay) and sellers resided in the marketplace. Trust in online sellers is considered as the major construct in this study, while trust in marketplace is taken as control variable.

2   RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

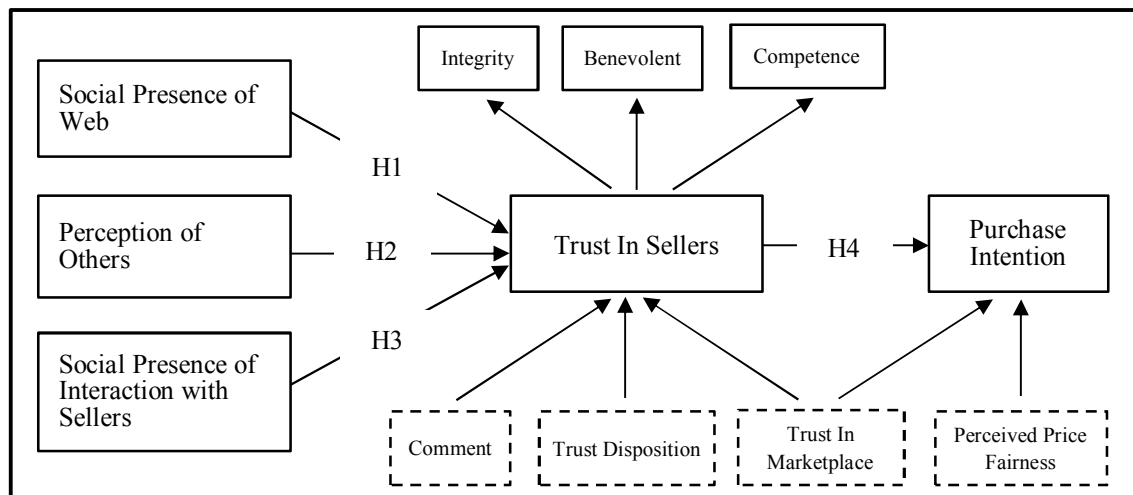The proposed research model is depicted in Figure 1. The hypotheses are explained in detail as below.

Figure 1.   Research Model

2.1   Social Presence of Web and Trust

E-commerce is, in essence, a type of information system. Buyers conduct online transactions mainly through interacting with the website. These buyer-web interactions could be viewed similar to interpersonal interactions (Pavlou et al. 2007) if the website were treated a social actor (Kumar and Benbasat 2002). Since human interaction is viewed as a precondition of trust (Blau 1964) the buyer-web interactions should also contribute to the building of trust online. A high SP website conveys more information and social cues, and thus, is perceived to be more transparent (Gefen & Straub 2004); whereas in a more transparent environment the untrustworthy behaviors will be inhibited. Therefore, the SP of a web should enhance buyers' trust towards the owners of the web – the online sellers. Hence, we have:

   H1: *The SP of web of a seller will have a positive impact on trust the specific seller.*

2.2   Perception of Others and Trust

Shopping has always been social activities. Social psychology research indicates that human can learn from and be affected by the knowledge and experiences of others who they know or trust (Marsden 2010). And persuasion can be extremely effective when it comes from similar others (Cialdini 2001), even if they are random strangers. Marketing literature also suggests that consumers' beliefs, attitudes and behaviors tend to be influenced by their social interactions with others (Godes et al. 2005). In SC marketplaces, buyers not only can interact with the e-commerce system, but also are able to make sense of the existence of other buyers based on various cues resided in social applications such as reviews, pick lists, popularity lists and transactional history. If social cues send positive signals on both the product and the specific seller, a buyer will feel more confident in the seller's ability, benevolence and integrity in providing good services. Marketing literature also indicates that when people observe the purchase actions of all previous individuals, this publicly observed information outweighs their own private information in shaping their beliefs and behaviors (Chen et al. 2011). Accordingly, we have:

> H2: *Perception of others will have a positive impact on trust in a specific seller.*

2.3   Presence of Interaction and Trust

Online chat tools such as QQ and MSN have been used as a way for sellers to interact with their buyers. Through the direct interactions with sellers, more social information will be revealed to buyers to help form perceptions and beliefs about sellers. In order to sustain a good relationship with sellers, a few methods are often employed by sellers, such as, choosing special words and sending the emotional icons like smile. For instance, a special language style, termed "Taobao Style", has been developed by the community of Taobao sellers to communicate with their buyers. Buyers are greeted with the word of "Qin" (means "my dear" and rarely used in daily communication in Chinese culture but extensively used in online context). The uses of "Taobao Style", in together with other communication methods, make online sellers friendlier and warmer, and thereby, will help to shorten the perceived distance between them. Thus, the CMC chat tools convey a sense of SP. Buyers can make sense of the attitudes, benevolence, and integrity of sellers via these compute mediated interactions, thereby forming right beliefs about the sellers and the products they delivered. Hence, we have:

> H3: *SP of interaction with a seller will have a positive impact on trust in the specific seller.*

2.4   Trust and Purchase Intention

Taking part in online transactions requires buyers to deal with the social complexity associated with the opportunistic behaviors of sellers (Gefen et al. 2003). Trust can be viewed as a significant antecedent belief that creates a positive attitude toward the transaction behavior (Jarvenpaa et al. 2000), which in turn leads to transaction intentions. Trust helps reduce the social complexity and vulnerability that a buyer feels in e-commerce by allowing the buyer to subjectively rule out undesirable yet possible behaviors of the e-vendor (Gefen et al. 2003). Accordingly, we have:

> H4: *Trust in specific sellers (trusting beliefs) will increase purchase intention with those same sellers.*

2.5   Control Variables

The research model incorporates additional control variables known to affect trust and online behaviors, including online comment and ratings (Pavlou & Dimoka 2006), trusting disposition (Gefen & Staub 2004), trust in marketplace (Lu et al. 2013; Palou & Gefen 2004) and perceived price fairness (Kahneman et al. 1986).

3 RESEARCH METHODOLOGY

Following Gefen and Staub (2004), the free simulation experiment methodology is used in this study. In a free simulation experiment, subjects are exposed to the research setting that simulates or duplicates the real-world situation and respond naturally to tasks before answering questions about beliefs, attitudes, and observation (Fromkin & Streufert 1976). In selecting the sites to be included in this study, we deliberately chose online marketplaces that are well known and widely used. Eventually, Taobao is selected as the real-world setting. Taobao is the largest online marketplace in China with over 90% of the C2C market share and over 50% of the B2C market share. More recently Taobao has evolved into a SC marketplace. Hence, Taobao represents a typical SC marketplace and is qualified as the experiment site.

3.1 Instrument Development

Wherever possible, the measurement items were adapted from previous research. As the original items were in English, we used the following procedures to ensure the translation validity. First, a researcher whose native language is Chinese forward translated the items into Chinese. Next, another researcher independently backward translated the items into English. Subsequently, the two researchers compared and discussed the two English versions to develop the first Chinese version of the items. The preliminary instrument was pilot tested and reviewed by two faculty and three doctoral students in IS field for clarity and face validity. We measured all items using seven-point Likert scales ranging from strongly disagree (1) to strongly agree (7). A further pretest of the items was conducted with 105 subjects. Please see the Appendix A for the scales.

3.2 Experimental Procedure

The MBA and senior undergraduate students in business schools from two universities of China took part in the experiment. The classes in which the experiments were performed were randomly chosen with permission from the instructors. The activity was performed during class hours in two computer labs with similar lab settings in two universities. Prior to taking part in the experiment, subjects were given a brief introduction of the study and asking for their assistance on a set of e-commerce studies. After that, they were required to go through the process of buying from Taobao without actually completing the transaction by following the task guidance. To simulate the real world situation as closely as possible, subjects were allowed to freely select the products to purchase based on their real needs. Finally, out of the 640 questionnaires distributed, 546 valid responses were received after removing invalid responses, resulting in a valid rate of 85.3%.

Measure	Items	Frequency	Percentage
Gender	Male	290	53.1%
	Female	256	46.9%
Age	24 or below	246	45.1%
	>24 and <=30	176	32.2%
	>30 and <=35	81	14.8%
	>35 and <=40	39	7.1%
	41 or above	4	0.7%
Have purchased online	Yes	525	96.2%
	No	21	3.8%
Frequency of purchase Online	Several times a week	37	6.8%
	Several times a month	190	34.8%
	Once a month	267	48.9%
	Less than once a month	32	5.9%
	Never	20	3.7%
Types of product purchased online	Clothing and Footwear	236	43.2%
	Localized Service	73	13.4%
	Computers and accessories	67	12.3%

	Food and health products	35	6.4%
	Books	39	7.1%
	Skin care & cosmetics	21	3.8%
	Sporting gear	19	3.5%
	Others	56	10.3%

Table 1.   Sample Statistics (n = 546)

3.3   Sample Statistics

Table 1 summarizes the descriptive information of the dataset. About 53.1% of the respondents were male, and 46.9% were female. A majority of respondents had online purchasing experiences and were regular Internet consumers. A majority (77.3%) of the respondents were students aged between 18 and 30. Even though the subjects are mainly MBA and undergraduate students, they without a doubt are the main Internet consumers in China. About 60% of Internet consumers in China are aged between 18 and 30 years old (iClick 2013), and more than 60% of Taobao buyers have undergraduate education or above (Lu et al. 2010). Thus, we believe that our sample represents the major segment of Internet consumers in China and should be appropriate for this study.

Following Armstrong and Overton (1977), nonresponse bias was assessed by verifying that respondent demographics (age, gender and education) were not significantly distinct from current Chinese Internet consumers (iClick 2014; iResearch 2013).

4   DATA ANALYSIS AND RESULT

LISREL was used for data analysis. LISREL is a covariance-based SEM technique and more suitable for theory testing (Gefen et al. 2000). LISREL also provides a more rigorous result and more accurate parameter estimation (Bollen 1989). Data analysis was carried out by following a two-stage methodology where the measurement model was first examined separately from the full structural equation model (Gerbing & Anderson 1988).

4.1   Measurement Model Assessment

We first assessed the second-order construct of trusting beliefs by comparing two separate models (Goo et al. 2009). Model 1 hypothesizes that a unidimensional first-order factor accounts for the variance among all measurement items of the second-order construct (trust in seller) in this study. Model 2 hypothesizes a second-order factor that accounts for the patterns of covariance among the first-order factors as conceptualized in this study. Comparison of Model 1 ($\chi 2$ = 381.4, d.f. = 35, RMR = 0.061) and Model 2 ($\chi 2$ = 109.6, d.f. = 32, RMR = 0.035), indicates that Model 2 is a better-fitting model with significant changes in chi-square ($\Delta\chi 2$ = 271.8, Δd.f. = 3; p < 0.0001). Items loaded significantly on their assigned first-order factors, which in turn highly loaded on the second-order construct. The LISREL statistics confirmed our hypothesis of trusting in sellers as a second-order construct.

The full measurement model including the second-order construct was examined with a LISREL confirmatory factor analysis (CFA). Refinements to the model were made by dropping items with high standardized residuals and high modification indices once at a time (Gerbing & Anderson 1988). The final model comprising 40 items for the 11 constructs is shown in Table 2. It showed acceptable model fit indexes (Hair et al.1998; Gefen et al. 2000) with x^2_{590} = 1331.09, GFI = 0.88, AGFI = 0.86, NFI = 0.97, CFI = 0.98, RMR = 0.046, RMSEA= 0.048. All items loaded significantly on their assigned latent constructs.

Internal reliability was verified with all composite reliability scores and Cronbach's Alpha of the latent variables exceeding the 0.70 threshold, as shown in Table 2. Convergent validity is often demonstrated by meeting the following criteria: significant item loadings (> .70) for each construct, adequate internal reliabilities (> .70), and high AVE (average variance extracted) scores (> .50). Evidence from Table 2 shows that all these criteria have been satisfied for each construct, indicating

convergent validity was established. Discriminant validity means the degree to which measures of two constructs are empirically distinct (Bagozzi et al. 1991). A low to moderate correlation coefficient ($< .60$) (in Table 3) is often considered evidence of discriminant validity. As shown in Table 3, the square root of the AVE for each construct (diagonal term) exceeds the correlations between the construct and other constructs (off-diagonal terms), providing strong evidence of discriminant validity. The adequacy of both convergent validity and discriminant validity also confirms our conceptualization of SP as a multi-dimensional concept.

The extent of common method bias was assessed with two tests. First, Harman's one-factor test (Podsakoff et al. 2003) was performed by including all items with both principal axis factoring and principal component factoring. In both cases more than one factor emerged. The variance explained by the largest factor was 37.2% for principal axis factoring, and 38.1% for principal component factoring. Both results are below the critical value of 50%. Second, the correlation matrix (Table 3) does not indicate any highly correlated factors (highest correlation is $r = .65$), whereas evidence of common method bias should have resulted in extremely high correlations ($r > .90$) (Pavlou et al. 2007).

Constructs	# of Items	Composite Reliability	Cronbach's Alpha	AVE	Std Loadings
Integrity	4	.88	.89	.65	IN1 (0.79) IN2 (0.79) IN3 (0.84) IN4 (0.80)
Benevolence	3	.81	.82	.58	BEN2 (0.74) BEN3 (0.72) BEN4 (0.82)
Competence	3	.79	.80	.55	COM1 (0.79) COM2 (0.74) COM4 (0.70)
Trust In Seller	3	.92	.92	.79	IN (.89) BEN (.89) COM (.89)
Purchase intention	3	.88	.88	.71	PI1 (0.82) PI2 (0.86) PI3 (0.85)
Trust in Marketplaces	4	.89	.89	.66	TIM1 (0.84) TIM2 (0.83) TIM3 (0.80) TIM4 (0.79)
SP of Web	4	.90	.90	.69	SPW1 (0.81) SPW2 (0.82) SPW3 (0.87) SPW5 (0.82)
SP of Others	3	.85	.85	.66	SPO1 (0.87) SPO2 (0.87) SPO3 (0.87)
SP of Interaction	2	.89	.89	.80	SPI3 (0.87) SPI4 (0.87)
Comment	4	.92	.92	.74	C1 (.78) C2 (.90) C3 (.89) C4 (.86)
Trust Disposition	3	.89	.89	.72	TD4 (.79) TD5 (.90) TD6 (.86)
Perceived Price Fairness	4	.91	.92	.72	PPF1 (.85) PPF2 (.80) PPF3 (.89) PPF4 (.86)
Note: All item loadings are significant at 0.01.					

Table 2.   Assessment of Measurement Model

		1	2	3	4	5	6	7	8	9
Trust In Seller	1	**.89**								
Purchase intention	2	.65	**.84**							
Trust in Marketplaces	3	.48	.50	**.81**						
Social Presence of Web	4	.61	.43	.33	**.82**					
Social Presence of Others	5	.44	.40	.31	.42	**.81**				
Social Presence of Interaction	6	.64	.38	.33	.67	.31	**.89**			
Comment	7	.51	.52	.45	.28	.43	.27	**.86**		
Trust Disposition	8	.50	.41	.39	.41	.31	.46	.28	**.85**	
Perceived Price Fairness	9	.46	.59	.36	.36	.39	.35	.29	.23	**.85**
Note: Bolded diagonal elements are the square root of average variance extracted (AVE).										

Table 3.   Correlations of Latent Variables

4.2   Structural Model and Hypothesis Testing

The model was analyzed using LISREL. The results are shown in Figure 2. All item loadings were significant. Most of the fit indexes were within the accepted threshold except for GFI and RMR: x^2_{596} = 1372.90 with a ratio of less than 1:3 of df to $\chi2$, GFI = 0.88, AGFI = 0.86, NFI = 0.97, CFI = 0.98, RMR = 0.052, RMSEA= 0.049. GFI was slightly below its threshold (.90) and RMR was slightly above its threshold (.05). It is common that not all fit indexes are perfect in LISREL (Boudreau et al. 2001; Gefen et al. 2000). Model fit statistics indicate that the overall structural model was supported. All the hypothesized paths were significant (P < 0.01), except for H2 (β = 0.08, 0.05 < P < 0.10). Thus, these results strongly support H1, H3, and H4, but not H2. The explained degrees of variance for the principle dependent variables were trust in seller 51% and purchasing intention 44% explained by the principle varialbe. The results show that even when even allowing for the effects of the control variables, SP variables (except for SP of Others) still significantly contribute to buyer trusting beliefs towards online sellers and trust in seller is still a strong predicator for buyer purchase intention.
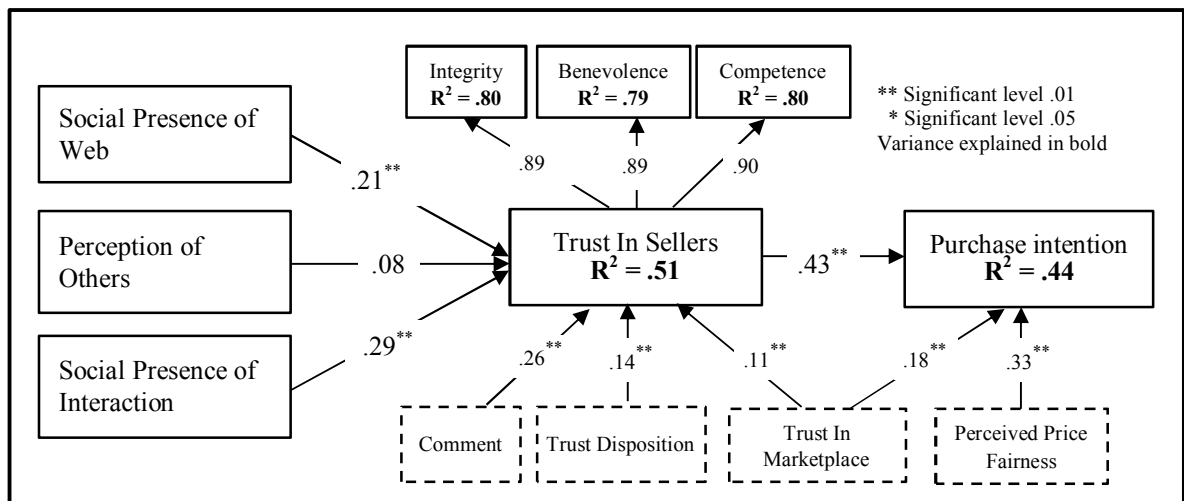

Figure 2.   LISREL Results of Structural Model

5   DISCUSSION

5.1   Key Findings and Contributions

This study has several key findings. First, the results confirm the significant positive impact of trusting beliefs on purchase intention in the context of online SC marketplace even allowing the effects of controlling variables. Second, the results support our hypothesis of trusting beliefs as a second-order construct composing of integrity, benevolence and competence, providing a more parsimonious conceptualization of trusting beliefs. Third, drawing upon the perspective of social presence theory, this study sheds light on the nature of social atmosphere of the social commerce marketplace by proposing and testing a set of three antecedents of trusting beliefs: SP of web, perception of others, and SP of interaction with sellers. Although the weak impact of perception of others on trusting beliefs needs further exploration, these three SPT-based variables jointly account for a substantial degree of the variance in trust in seller. Finally, the entire structural model with the controlled variables helps delineate the full picture in which both social and structural factors shape buyer beliefs and purchase behaviors.

The primary contribution of this study is to introduce a new set of social antecedent factors of trusting beliefs into a model that explains the buyer purchase behaviour in the online SC marketplaces. Prior research concentrates more on the impacts of institutional context and technological factors for trust building in e-commerce (e.g., Pavlou & Gefen 2004; Gefen et al. 2003), neglecting the influences of the social context. However, social context is an important source of trust (Luhmann 1979). Thus, this study extends current trust research by focusing on social factors. Second, drawing upon the social

presence theory, this study theorizes the nature of social aspect of shopping by surfacing three SPT-based constructs: SP of web, perception of others and SP of interaction with online sellers. While SP was often treated as one-dimensional construct that represents the static characteristic of web interface (Shen & Khalifa 2009; Gefen & Straub 2004); this study has proposed and validated it as a multi-dimensional concept in the SC context. Third, via the SP constructs, we disclose how the use of social applications and functions in e-commerce websites helps build the trustworthy online environment and shape buyer perceptions and behaviors. While most previous e-commerce research focuses on trust in general sellers, this study concentrates on trust in a specific seller, and thus, extends current e-commerce research. Finally, by looking into buyer behaviors in online SC marketplaces, we introduce a new phenomenon – social commerce.

5.2 Implications for Research and Practice

5.2.1 Implications for Research and Practice

Most e-commerce studies focused on a single website and viewed trust as a dyadic (one-to-one) relationship between a buyer and a specific vendor. There are very few studies on trust in online marketplaces (except for Pavlou & Gefen 2004 and Pavlou & Dimoka 2006). Since the proliferation of online marketplace, this study also examines trust in online marketplace and extends it to the SC context. From a relationship perspective, two types of relationships exist in online marketplaces: the online buyer-seller relationship (trust in seller) and the buyer-marketplace relationship (trust in marketplace). Though trust in marketplace is controlled for this study, the results support its significant positive effects on both trust in seller and purchase intention. This study contributes to e-commerce literature in delineating the relationships in online marketplaces.

Since trust (as a set of beliefs) is a key mediating variable in online relationship models (Morgan & Hunt), a lot effort has been put into finding the underlying sources of online trust in e-commerce literature. Trust are found to root in institutional mechanisms (Pavlou & Gefen 2004; McKnight et al. 2002), individual characteristics such as trust disposition and familiarity (Gefen & Staub 2004), and website design features (Gefen et al. 2003; Kim et al. 2009; Ou & Sia 2009). There have been very few (e.g. Gefen & Straub 2004; Liang et al. 2011) studies that tried to identify antecedents of trust from the social perspective. However, the fast development of social commerce reintroduces the social aspect of shopping to e-commerce, making it possible for online buyers to rely on social cues in assisting their purchase decisions. This study confirms the positive impacts of social factors on trust (beliefs) by theorizing the nature of social aspect in online marketplaces based on the SPT perspective. In doing so, this study not only suggests that SPT is a relevant theoretical perspective, but also indicates that the social aspect of e-commerce deserve further exploration with a variety of theoretical lenses such as social capital theory.

To overcome the limitations of viewing as a one-dimensional construct (Shen & Khalifa 2009) and to better conceptualize the nature of social aspect of e-commerce, this study proposes and validates SP as a multi-dimensional construct composing a set of three variables. Jointly they account for a substantial degree of variance explained in trusting beliefs. A multi-dimensional conceptualization of SP offers at least two strengths. First, it can show which dimensions of SP have significant influences on online behaviors. Second, it helps us uncover antecedent factors for each dimension of SP. Perceptions of SP are grounded in the use of social artifacts. A multi-dimensional conceptualization of SP can disclose how various social artifacts affect different SP dimensions (Shen & Khalifa 2009). Therefore, we contribute a set of three SPT-based variables that can be explored in future research.

In terms of the three SP variables, perception of others seems to be a weak predicator of trusting beliefs. The result seems confounded. Two plausible interpretations are stated as bellows. First, it is the interpretation of the motive behind the observed cues and behaviors that might determine what people do, rather than the perceived cues or behaviors themselves (Gefen & Straub 2004). Online buyers might suspect the motives of revealing the social cues about other buyers or even question the authenticity of those social cues. In such circumstance, buyers tend to not rely on these social cues to make purchase decisions. This suggests that online marketplace providers should increase their capabilities in managing online sellers by designing more effective systems and mechanisms. Second,

providing information about a seller does not necessarily lead to trust. This may only be true in case of positive information. Thus, the sentiment of the information, i.e., if it relates to positive or negative feelings should be controlled for. This provides the direction of improvement for this construct in future research.

Finally, from a descriptive perspective, this study describes the process by which a set of social factors facilitate online exchange relationships through the key mediating role of trusting beliefs after controlling the effects of a few key variables.

5.2.2 Implications for Practice

Our research also has several practical implications. First, it shows that the perceived SPs conveyed by the use of social technologies can increase buyer trusting beliefs towards sellers, which is a necessary precursor of online purchase. Thus, to some extent, the combination of social technologies with e-commerce applications is effective, though the effectiveness of some social applications need to be further examined. Second, our results indicate that the SPs conveyed by the web content and the interaction with sellers can significantly increase buyer trusting beliefs. It suggests that online sellers might wish to invest in creating and maintaining these two effective SP channels with potential buyers. Perception of others seems to be a weak predicator of trusting beliefs. However, this does not simply mean that there is no need for seller to reveal social informations about other sellers online. A more deep analysis suggests that authentic or accurate information about other sellers need to be guaranteed first. This calls more managerial responsibilities for online marketplaces providers such as Taobao and Amazon. Finally, our findings suggest that both social factors and structural factors are necessary for trust building in online SC marketplaces. Since most e-commerce websites have completed the building of reliable institutional environment, it is more urgent and important for e-commerce companies and marketplaces providers to establish a more social environment for the next step.

5.3 Limitations and Suggestions for Future Research

This paper has a number of limitations. First, students sample was used in this study. So the results might be biased. Second, the model was tested only with the data collected from Chinese culture. The results might not be generalized to other cultural context. Third, the common method bias cannot be absolutely ruled out. Finally, this paper cannot address all these possible antecedents of trust, such as, reputation, branding, and previous purchase experiences.

This paper suggests several more research directions as follows. First, we have proposed and tested social presence as a multi-dimensional construct in this study. Future research can further examine our conceptualization in different cultural context. Second, social presences are conveyed by the use of social applications and technologies. Then future research can study how various social artifacts influence different types of SP. Third, online buyer community has been found to positively affect e-commerce adoption (Lu et al. 2010). Social presence theory is also a suitable perspective for online community research (Shen & Khalifa 2009). Thus, future research can explore the user behaviors in online buyer communities by using the SPT perspective. Finally, we have shown that the use of social technologies is effective for online trusting building. Future research can theorize the nature of social aspect by employing social theoretical perspectives.

6 CONCLUSION

Drawing upon the social presence theory, this paper looks into the nature of social aspect in online social commerce marketplaces by proposing a set of three SP variables, SP of the web, perception of others and SP of interaction, respectively. A research model that describes buyer purchase behaviors in online social marketplaces is proposed by including the three SP variables as social antecedents of trusting beliefs. In sum, this study sheds new light on both social commerce research and social presence theory as follows. First, it re-conceptualizes and validates the concept of SP as a multi-dimensional construct in social commerce, overcoming the limitations of one-dimensional conceptualization in previous research. Next, it contributes a new set of SP variables that can be

explored in future research. Then this paper discloses the positive effects of SP variables on trusting beliefs, suggesting an effective way for trust building in online social commerce marketplaces, that is, the combination of IT-enabled structural factors and the social factors based on the use of social technologies. Finally, we introduce a new phenomenon of social commerce for future investigations.

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Appendix A - Instrument and Measurement Properties for the Principle Constructs

Principle Variables		Mean	Std dev	Loading
Social Presence of Web (Gefen & Straub 2004)				
SPW1	There is a sense of human contact in the web of the seller.	4.38	1.13	0.81
SPW2	There is a sense of personalness in the web of the seller.	4.25	1.12	0.82
SPW3	There is a sense of sociability in the web of the seller.	4.42	4.12	0.87
SPW4*	There is a sense of human warmth in the web of the seller.			
SPW5	There is a sense of human sensitivity in the web of the seller.	4.14	1.17	0.82
Social Presence of Others (Gaspi & Blau 2008)				
SPO1	I can sense others who feel interest with the product.	4.88	1.21	0.87
SPO2	I can sense others who provide information about the seller.	4.53	1.19	0.87
SPO3	I can sense others who provide information about the product.	4.67	1.17	0.87
SPO4*	I can sense others who have browsed this web.			
Social Presence of Interaction (Gaspi & Blau 2008; Hess et al. 2009)				
SPI1*	I can make sense of the attitude of sellers by interacting with them via Aliwangwang.			
SPI2*	I can imagine how they may look like by interacting with them via Aliwangwang.			
SPI3	There is a sense of human touch to communicate with sellers via Aliwangwang.	4.49	1.06	0.87
SPI4	Communication via Aliwangwang was warm.	4.35	1.09	0.87
Trusting Beliefs (Gefen & Straub 2004; McKnight et al., 2002)				
Benevolence				
BEN1*	I believe that the seller would act in my best interest.			
BEN2	If I required help, the seller would do his/her best to help me.	4.51	1.12	0.74
BEN3	The seller is interested in my well-being.	4.04	1.19	0.72
BEN4	I expect that the seller's intentions are benevolent	4.59	1.03	0.82
Integrity				
IN1	Promises made by the vendor are likely to be reliable.	4.53	1.02	0.79
IN2	I do not doubt the honesty of the vendor.	4.58	1.07	0.79
IN3	The vendor is sincere and genuine.	4.60	0.97	0.84
IN4	I expect that the vendor will keep promises he/she make.	4.80	0.95	0.80
Competence				
COM1	The vendor is competent and effective.	4.71	0.90	0.79
COM2	The vendor performs his/her role very well.	4.90	0.91	0.74
COM3*	The vendor knows about the product.	5.12	1.01	
COM4	The vendor knows how to provide excellent service.	4.82	1.00	0.70
Purchase Intention (Gefen & Straub 2004)				
PI1	I am very likely to buy the product from seller.	4.95	1.14	0.82
PI2	I would consider buying the product from the seller in the future.	4.91	1.07	0.86
PI3	I intend to buy the product from the seller.	4.81	1.15	0.85
* Item dropped from final analysis. All scales anchored by: 1-Strongly disagree, 7-Strongly agree.				

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