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The Role of Social Media in Enhancing Guanxi and Perceived E-commerce Institutional Mechanisms Effectiveness in Online Marketplace

ABSTRACT

This study extends literature on e-commerce trust and re-purchase intentions by exploring the role of swift guanxi and perceived effectiveness of institutional mechanisms (PEEIM) in the context of a Chinese e- marketplace – Taobao. We explore how Taobao's social media technologies (online reviews and instant messenger) can improve swift guanxi and PEEIM by increasing online interactivity and presence. We find that buyers' PEEIM negatively moderates trust in online sellers and repurchase intentions. We show that swift guanxi, created by social media's interactivity and presence, enhances trust, which further increases repurchase intentions. Theoretical and managerial implications and future research directions are discussed.

Keywords: Online marketplace, Trust, Institutional Mechanisms, Swift Guanxi, interactivity, social presence

INTRODUCTION

On September 2014, Alibaba Group broke a record by becoming the largest Initial Public Offering (IPO) in the history of the United States. One of the key businesses of the Alibaba Group is TaoBao (www.taobao.com), a Chinese online marketplace which today hosts seven million merchants with 760 million product listings. Established in 2003, TaoBao is one of the main contributors of Alibaba Group's profits, and has more than 90 percent of China's online market for consumer-to-consumer transactions [1]. The success of TaoBao has

captured the attentions of researchers and practitioners alike, who aim to understand how this Chinese e-commerce company, within just over a decade of operations, managed to overcome competitors such as Amazon and eBay and became the most successful e-commerce platform in China.

Embedded into the web design of its social media framework is Taobao's unique feature, which distinguishes it from many other e-commerce sites [2,3]. The role of social media technologies on repurchase decisions have been examined by previous researchers [4,5]. However, studies on how companies can make an effective use of those technologies to interact with their customers and thus to encourage product repurchase and develop customer loyalty are limited [3,6,7].

Previous studies on e-commerce success have stated the importance of developing customer loyalty, that would ensure that customers continue to re-visit an e-commerce site and repurchase products [8–10]. Indeed, having re-visiting customers is important to e-business success as it often costs more, both in terms of time and effort, to acquire new customers than to retain existing ones [11]. Despite the efforts put into retaining customers, only 1 percent of online visitors return and repurchase products on the website they had previously visited [11]. Online repurchase intentions have been studied extensively in the past by Information Systems (IS) researchers [12,13]. Many of these studies examine factors that may influence consumers' repurchase intention. The examined factors include, but are not limited to trust [12], website quality [14], store attributes [15], and satisfaction [13,16,17]. Among the above-mentioned factors studied, trust is identified as one of the most significant elements influencing a customer's online repurchasing behavior [11,18]. Due to the effect of culture, trust is also the most challenging factor to establish in a Chinese e-marketplace [19–21]. Thus

far, many Chinese e-commerce companies, which are unable to establish trust and encourage product repurchase, have failed [19,2]. The success of TaoBao, however, implies that it is possible to overcome the challenge of trust development and to ensure e-commerce sustainability in China [22]. Exploring the case of TaoBao, we aim to examine how this platform supports trust formation. While doing so we aim to contribute to the literature, which although has shown increased interest in e-commerce, still lacks a comprehensive exploration of e-commerce trust [23].

Trust plays an important role in business transactions. It is defined as the belief that the seller will behave according to the buyers' expectations with integrity and benevolence [24]. Those beliefs are formed via personal relationships and face-to-face interactions between buyers and sellers [16], the importance of which cannot be overstated in the Chinese context [21,25,26]. The intangible nature, as well as the social and temporal separation of e-commerce platforms however affects personal relationship formation and thus trust development [27,28]. Notwithstanding, in the online environment, the lack of buyer-seller personal relationships can be compensated for by the buyer's perception of a swiftly formed interpersonal relationships with a seller [29]. The role of interpersonal relationships on online trust however is under-researched. Ou et al. [29] studied on interpersonal relationships and their influence on trust. The authors however acknowledge the limitations of their research, recognizing that their model does not account for the role of institutional mechanisms in online marketplace.

Institutional mechanisms are also important for conducting e-commerce transaction as they provide the buyer with an additional layer of security [30]. E-commerce institutional mechanism creates a less risky Internet transaction environment as it helps reduce contextual

uncertainties through regulatory assurance that is explicit [18]. Institutional mechanism is important because, as stated in Fang et al. [18], trust does not always determine the behavioral intention in an environment of little uncertainty. In such environment, e-commerce institutional mechanism is able to mitigate the contextual risks, and therefore reduce the need for buyers' trust in re-purchasing intentions. Thus, institutional mechanism contributes to trust development [31] and can encourage product purchase and repurchase [22,32]. However, the trust studied in Fang et al. [18]'s work may not be able to represent the trust buyers have on sellers when the sellers operate on third-party e-commerce platforms.

Therefore, this research aims to incorporate personal relationships and institutional mechanisms into the understanding on how trust in seller influence repurchase intention on third-party e-commerce platforms like Taobao. This study also intends to examine how social media technologies can be used to develop interpersonal relationships and enhance buyers' perception on institutional mechanisms being in placed. Combining the theories of trust, swift guanxi and perceived effectiveness of institutional mechanisms [18,29], this study develops a conceptual framework on repurchase intention. The conceptual model was tested using partial least squares structural equation modeling (PLS-SEM) with survey data.

This study makes several important contributions to theory and practice. First, it allows us to understand the phenomenon of TaoBao, and the impact of social media, as incorporated in its design, on PEEIM. Although previous studies have acknowledged the importance of PEEIM in e-commerce [18,3], few investigated the factors that are influential to PEEIM. By investigating the effects of interactivity and presence on PEEIM, this study extends the theoretical understanding on PEEIM in online marketplace. Second, this study complements previous literature by extending the understanding of PEEIM as a moderator. PEEIM has

been considered as the moderator on the relationship between trust in vendor and repurchase intention [18]; however, trust in seller and trust in vendor may be different in nature. As many sellers operate on third-party e-commerce platforms instead of running their own e-commerce web sites, how PEEIM interact with trust in seller to influence repurchase intention is an important issue for investigation. This study addresses this issue and find that PEEIM negatively moderates the relationship between trust in seller and repurchase intention. Third, this study understands the compatible impact of swift guanxi and PEEIM on trust in seller and repurchase intention, which provides novel insights. Building on those complementary theories, we develop a clearer understanding of the factors influencing repurchase intentions. Different from Ou et al. [29]s' research that considered swift guanxi as an outcome of trust in seller [29], we theorize swift guanxi as an influential factor that can lead to trust in seller, and through this path, the use of social media is found to be able to influence trust in seller. Furthermore, in addition to the theoretical contributions, this study derives practical implications for e-commerce businesses operating in and beyond China to handle the customer retention challenge.

This study is organized as follows. First, the concepts of swift guanxi and PEEIM are introduced. This is followed by the development of our hypotheses and research framework guiding the investigation. The framework is tested quantitatively and results are presented in a subsequent section. The study concludes with a discussion of research findings and theoretical as well as managerial contributions deriving from it.

CONCEPTUAL DEVELOPMENT

Swift Guanxi

Although the concept of guanxi in Chinese businesses has been studied since the 1980s, there remain many different interpretation an understanding of the term guanxi [33]. In general, guanxi is defined as the relationships or social connections based on mutual interests and benefits [34,35]. Existing studies on guanxi can be summarized in Table 1.

Table 1. Definition of guanxi

Study	Definition of Guanxi	Context
Chen et al. [36]	An informal, particularistic personal connection between two individuals.	Business practice
Fan et al. [33]	The process of social interactions. 3 types of guanxi: family, helper and business.	Business practice
Gu et al. [37]	Durable social connections and networks a firm uses to exchange favors for organizational purposes.	Consumer products industries
Lee et al. [35]	A particularized and personalized relationship based on the reciprocal exchange of favours.	Consumer product businesses
Martinsons [19]	Relationships or connections between two or more people (or organizations) in which each can prevail on the other(s) for help.	E-commerce
Nie et al. [38]	Characterized as face, reciprocity and affect.	Chinese firms
Ou et al. [29]	Persistent and pervasive personal ties and social networks.	Online marketplace
Park and Luo [39]	Drawing on a web of connections to secure favor in personal and organizational relations.	Companies from multiple industries
Shou et al. [40]	Interpersonal bonds that establish expectations and obligations to facilitate the exchange of personal resources.	Retailer firms/ China
Standifird and Marshall [41]	A dynamic and transferable social relationship.	Business practice
Thatcher et al. [42]	The importance of whom one knows and the reciprocal interdepend relationships.	Electronics and textile companies
Wong and Chan [43]	Social interactions in network with repeated favor exchanges.	Relationship marketing/ businesses that trade with China

In the efforts to understand what guanxi is, Fan [33] carried out a piece of comprehensive research defining and classifying guanxi. In his study guanxi is categorized according to three

categories: family guanxi, helper guanxi and business guanxi. Family guanxi and helper guanxi are defined as having "expressive ties" and "instrumental ties". Business guanxi is defined as the process of finding business solutions through personal connections [33]. Unlike family guanxi or helper guanxi where the relationship timeframe is often a long term to one-off, business guanxi is often temporal [33]. Such temporal formation of guanxi in business, as described by Fan [33], is observed in the context of the electronic marketplace, where buyers and sellers form guanxi in order to conduct their online transactions. Such guanxi has often been very short term as the buyers and sellers often do not contact each once the transactions have been conducted. Ou et al. [29] term such a guanxi as the 'swift guanxi', which is defined as an online buyer's perception of swiftly-formed, informal interpersonal relationship with an online seller that comprises mutual understanding, reciprocal favors, and relationship harmony [29]. As the concept of swift guanxi has been developed in detail in Ou et al. [29], this paper will not provide a detailed explanation of how the concept was developed.

Previous studies in an offline environment have found that guanxi is an important antecedent of forming trust in a business relationship [36]. Similarly, in this study, it is proposed that although the guanxi developed is informal and swiftly formed, it has the ability to enhance a buyer's trust on the seller, thus facilitating the repurchase intentions.

Perceived Effectiveness of E-Commerce institutional Mechanisms (PEEIM)

Institution-based trust is defined as trust built upon third-party structures [30]. Such third party structures or institutional mechanisms include "feedback features, escrow services, and credit card guarantees" (pp.37), all of which can help facilitate online transactions conducted successfully [30]. Such mechanisms are particularly important in developing institutional-

based trust which is built upon third party structures such as PayPal and credit card companies. Institutional based trusts in an offline environment include medical and law licenses which guarantees that the professional conduct standards and regulate ethical practices, and this will result in trusting the bearer's integrity and intentions [44]. In TaoBao, institutional trust be created through Alipay, the online payment platform which acts as an intermediary whereby a buyer will deposit funds in Alipay when purchasing a product, and the fund will only be released to the seller once both parties agree that the terms of the deals have been met [45].

Similar to Fang et al. [18]'s study, this study adopts the term PEEIM which is the "online customer's general perception that safeguards exist in the e-commerce environment to protect him/her from potential risks in online transactions" (pp. 410). Perceived effectiveness is used, in accordance to the study by Fang et al. [18] and Pavlou and Gefen [30], whereby online users have different perceptions of the effectiveness of institutional mechanisms in offering legal protections in an online environment. For example, TaoBao offers strong legal protections to consumers via seven-day return policy and real-name registration, while trust perceptions of legal protection in an online environment remain low [46].

Social Media Technologies in improving interactivity and presence

Social media technologies have been used by businesses to improve interactions with online customers as well as creating a virtual presence [47,48]. One reason why companies aim to improve interactivity and presence in an online environment is to develop relationships with their users and to build trust [49]. An advantage offered by the Internet and e-commerce is the ability to build one to one relationships with the customers, and therefore increase customer loyalty in the long run. However, the challenges of creating a presence and interact

with customers online is often difficult to overcome due to the lack of human presence in the virtual environment. In an online marketplace, seller uncertainty occurred due to the lack of social presence becomes an important factor in influencing a consumer's purchasing decision [50]. Seller uncertainty, in turn, affects online marketplace such as TaoBao because many online sellers have limited offline presence.

Short et al. [51] proposed the social presence theory which stated that a medium's social effects are caused by the degree of social presence it affords to its users. Social presence defined as a communicator's sense of awareness of the presence of an interaction partner [51]. Such presence can be enhanced by social media which include user-generated contents and real time chatting tools. The ability to create social presence and offering interactions between users are features of social media technologies, and hence are now an important part of companies' marketing and sales strategies [52]. In this study, interactivity is defined as the extent to which an online buyer perceives that interaction with the seller is actively controlled and that the communication is synchronized [29]. Presence is the extent to which an online buyer perceives that immediacy and intimacy existing between him/her with the seller.

One reason why social media technologies have gained prevalence, in particular in businesses, is that they are able to enhance online interactivity and presence [53]. TaoBao has successfully integrated social networking in their e-commerce platform, and has included many social networking features such as having online feeds and allowing the formation of user groups with similar interests [54]. In this study, TaoBao's online review system and instant messenger are both selected as the social media technologies which online sellers used to develop interactivity and presence with their online buyers. In the study of Ou et al. [29], computer-mediated communication technologies are used to describe these tools. Although

the two tools are types of communication technologies, essentially they formed part of the social networking features of TaoBao [54,55]. This study chooses these two tools as they have been examined and verified in Ou et al. [29]'s study. Ou et al. [29] also used the term feedback system to describe the tool documenting the textual and numerical evaluations of the online buyers and sellers. The term feedback system is synonymous with online reviews used by previous researchers in studying similar online marketplace such as Amazon.com [56], and as the term online reviews are more commonly used [57–60], we used the term online review in this research.
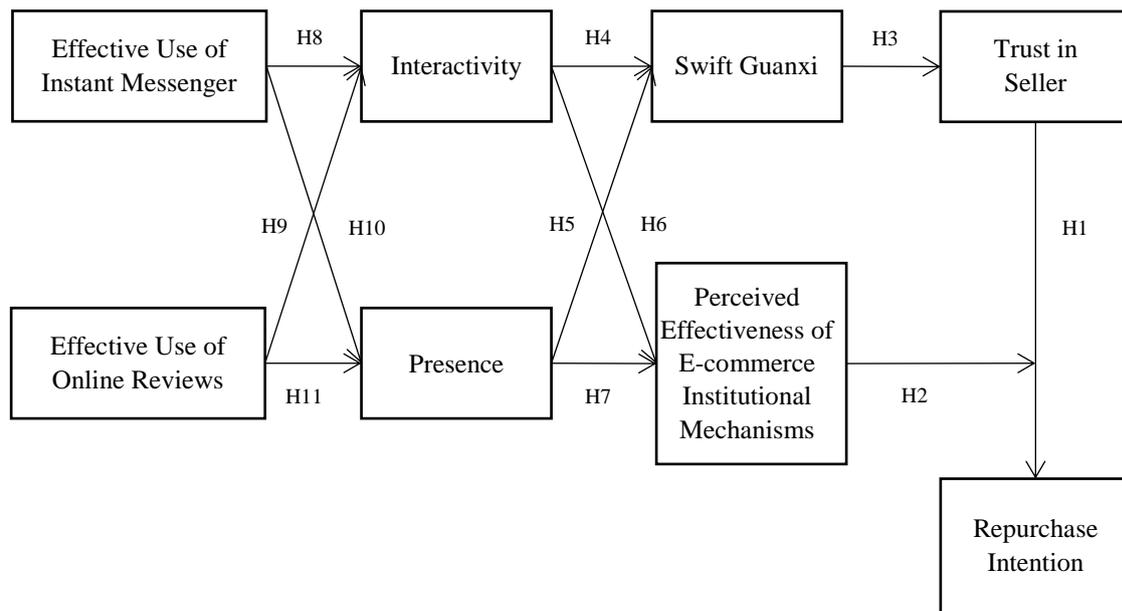
RESEARCH MODEL

Figure 1 Conceptual Model

Figure 1 presents the research model in this study. Our model proposes that effective use of social media technologies such as instant messenger and online reviews will enhance an TaoBao seller's interactivity and presence. Enhanced interactivity and presence will result in better PEEIM and swift guanxi, and improve trust and repurchase intentions. The next section discusses the hypotheses developed for this study.

HYPOTHESES DEVELOPMENT

Trust is the "preliminary condition to consumers' e-commerce participation" (pp. 204) [61]. For the purpose of this study, trust is based on a buyer's trust on a seller in an online environment. This is also known as the interpersonal trust determined by interaction between a buyer and a seller [62]. In the online marketplace, trust in the seller is the perceived belief that online transaction can perform successfully to meet two parties' expectation, and is integrated into a trusty reliable communication medium [63]. Many studies characterize trust by three factors- ability, integrity, and benevolence [29,64,65]. We also defined trust from these three dimensions, while ability refers to the competence and skills of online seller, integrity concerns online seller's acting in accordance to buyer-expected standard rules, and benevolence relates to the online seller's behaviors that not only for his or her self-interest but also the buyer's welfare [29,30,66].

Trust is an important mechanism in buyer-seller relationship because it reduces interaction uncertainty and enhances the expectation of a successful purchase. Online shopping, without face-to-face communication and physical contacts, creates a context of high transaction uncertainty and information asymmetry. The belief in seller's ability can diminish the fear of transaction failure caused by seller's incompetence, and the belief regarding integrity and benevolence can decrease buyer's expectation of online seller's opportunistic behavior [30]. Thus, trust in seller generates positive beliefs towards the seller. Based on the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior that extends TRA [67], the positive beliefs that buyer developed from their trust in online sellers can generate positive attitudes, which further motivate buyers and increase their repurchase intentions from the

same seller [12,24,28]. Previous researchers, such as Wen et al. [68] and Lee et al. [69], have proved the influence of trust, especially trust in seller, on repurchase intention. In line with previous studies [30,70,71], we postulate that trust in seller plays important role in influencing repurchase intentions.

H1. Trust in seller has positive impact on repurchase intention

Despite the vital role of trust in e-commerce acceptance and online repurchase intentions, development of trust is a complex process subject to a number of factors, among which culture and context in which commerce takes place are the most significant ones [72,73]. The effects of those two factors on e-commerce trust seem to be particularly important while investigating e-commerce acceptance and/ or online repurchase intention in China. Previous research proved that Chinese culture and its values have moderating effects on trust and thus consumers' intentions to accept e-commerce [20]. Moreover, Ou et al. [29] also suggests that Chinese context of commerce may have negative impact on trust development. Ou et al. [29] stated that poor institutional consumer protection in China may affect e-commerce trust. Thus, due to influence of culture and/ or context on commerce trust may not be developed and hence the disadvantages of e-commerce may not be diminished.

The impact of culture and context on trust, however, can be effectively managed through institutional mechanisms [18]. Institutional mechanisms are the third parties to provide an environment that support the success of transaction procedures, for example credit card guarantees and escrow account [30]. According to Fang et al. [18], e-commerce institutional mechanisms refer to 'risk-mitigating mechanisms' that reduce the need to rely on e-commerce trust. They aim to create less risky transaction environment by reducing uncertainty through regulatory assurances [74]. Institutional mechanisms thus decrease risk

and perception of uncertainty related to e-commerce, which in turn reduce the need to develop e-commerce trust while making purchase or repurchase decision.

The construct of customers' perception of the effectiveness of institutional mechanism (PEEIM) can be defined as the safeguards to help customers prevent against the potential risk and loss in online environment [30]. Base on the study of Fang et al. [18], online trust between seller and buyer is not the only guarantee to ensure the repurchase behavior in the context of certainty environment. When adding the moderating effect of PEEIM, the safety environment can help buyer conduct the repurchase intention with little trust. Accordingly, PEEIM can mitigate risk perception and result in online purchase and repurchase intentions without the need to build trust. Thus, following Fang et al. [18], we claim that PEEIM can serve as a moderator of the relationship between trust and repurchase intentions. We claim that such a moderating effect on trust and repurchase intention is negative.

H2. PEEIM negatively moderates the relationship between trust in seller and repurchase intention

Guanxi plays an important role in forming business relationships between buyers and sellers in China, and the same applies in the context of the online marketplace. Guanxi, in particular, has been found to be strongly related to trust, which is vital to the success of e-commerce transactions. Previous research on the relationship between guanxi and trust is rich, yet from contrasting perspectives. Some researchers treat trust as a factor that affects the quality of guanxi. For example, Shou et al. [40] propose that goodwill trust can increase the perceived likelihood of returning favor, and thus stimulates reciprocal favor which is a crucial element of guanxi. They also propose competence trust can enhance guanxi because people are more willing to exchange favor with powerful and competent partners. Accordingly, Ou et al. [29]

recognize the impact of trust on swift guanxi in the online marketplace, which they find to be significant.

Early research on buyer-seller relationships however stresses that trust is established in exchange of relationships [75–77]. Accordingly, Doney and Cannon [78] assesses the impact of buyer-seller relationships on trust. The importance of relationships prior to trust is particularly important in China, where guanxi is a foundation for trust development [26,79]. Following this line of thought, previous research on guanxi argue that trust is built up by guanxi [35,80]. For example, Lee and Dawes [81] posit that trust is the outcome of guanxi, and Nie et al. [38] in their study show that preserving face in guanxi promotes trust, favor exchange in guanxi guarantees the competence of the trustee and reduces uncertainty, and affect in guanxi develops commitment and leads to integrity in trust. Established guanxi thus provides the foundation of competence, commitment and goodwill [38]. In addition, because good guanxi requires both parties to do each other favours and avoid conflicts, uncertainty and opportunistic behavior is likely to be avoided by both parties. Such preclusion of opportunism increases the reliability of sellers [35,43], and it contributes to trust development. Accordingly, we advocate that trust is influenced by guanxi, which while the opposite to Ou et al's [29] view, allows us to contribute further to the literature on e-commerce trust.

In our study, we focus on one special type of guanxi emerging in online transactions – swift guanxi. Buyer-seller interactions on the Internet, compared to traditional marketplaces, are more constrained in terms of time and space, and give birth to swift guanxi [29]. According to Ou et al. [29], swift guanxi refers to the 'perception of swiftly formed interpersonal relationship with a seller' (pp.209) [29]. Such a relationship consists of mutual understanding, reciprocal favors and relationship harmony. However, in general, apart from

the prompt formation, swift guanxi share many similar characteristics as traditional guanxi, including understanding of each other, reciprocal exchange of favors, and maintaining relationship harmony to avoid losing face (mianzi) [29]. Therefore, similar to traditional guanxi, we postulate that swift guanxi supports trust development [35,38,43]. Thus, we assume positive impact of swift guanxi on trust.

H3. Swift guanxi has positive impact on trust in seller.

According to Ou et al. [29], swift guanxi is facilitated by interactivity and presence. Interactivity refers to buyer's engagement with seller in order to gain effective information for purchase decision making. Such an interaction in turn enables effective communication and relationship formation between consumer and seller [82]. In e-commerce environment, social networking tools such as Ali WangWang in taobao.com, can be used by buyers to contact with sellers to obtain some useful resources and information, thus to establish a temporary guanxi to sellers [2]. Thus it is claimed that interactivity is necessary to build guanxi [83] as once present in a communication process it enables formation of two key elements of guanxi: mutual understanding and relationship harmony [29]. Accordingly, we postulate that interactivity has positive impact on swift guanxi.

H4. Interactivity has positive impact on swift guanxi

"Presence" is defined as the "perception of intimacy or being close to another person" [84]. In the context of online environment, presence can be seen as consisting of two dimensions, namely telepresence and social presence [85]. Social presence, the sensation of "being close with others" [86], makes the virtual interactions more sociable and personal, while telepresence is the illusion of "being physically present" in transaction harmony [29]. Social

Presence Theory explains that the intimacy and immediacy generated by perceived presence will build psychological closeness between buyers and sellers, and enhances their interpersonal relationships and guanxi [29,86]. In addition to interactivity, Ou et al. [29] argue that presence impacts guanxi. This is due to the fact that presence, while enhancing sense of psychological intimacy and proximity, results in high quality communication replicated by swift guanxi. Thus, following Ou et al. [29], we argue that in addition to interactivity, presence also has positive impact on swift guanxi.

H5. Presence has positive impact on swift guanxi

Although guanxi is necessary in business relationships in China, it may be not sufficient for e-business success [19]. As imposed on sellers institutional mechanisms aim to improve the effectiveness of electronic markets, and thus ensure e-transaction completion. In China however, institutional mechanisms are not yet fully-fledged or even widely available [19,31]. In this respect, TaoBao appears to be a unique e-commerce platform as it uses Alipay as a secured means of payment. Alipay logo displayed on sellers' website signals to buyers that the transaction is safe and secured, which has been found to hold a significant value in the Chinese e-marketplace [31]. However, in China, due to overall weak institutional protection, some consumers may find those mechanisms to be insufficient [22]. In order to further enhance perception of institutional mechanisms being in place, TaoBao introduced social media tools [22]. Incorporated in Taobao's web design, the tools allow buyers to contact the seller and verify the presence of institutional mechanisms [27], which further cultivates the appearance of a safe transition environment [7]. Ou and Chan [22] have confirmed the role of WangWang – TaoBao's instant messenger tool in influencing PEEIM. They find that sellers who utilize social media to develop their presence and maintain interaction with buyers can influence buyers' perceptions that there are mechanisms in place to ensure online transaction

success. Social media tools thus help not only in swift buyer-seller relationship development [19], but they also enhance PEEIM [29,30,87].

Online buyers' PEEIM plays an important role in their development of online trust. Despite recent study by Fang et al. [18] which examines the moderating role of PEEIM on trust, there is little study to examine how PEEIM can be enhanced. This is particularly important as PEEIM is based on online consumer perceptions, thus knowing the strategies to enhance such perceptions will have an influence on an online buyer's repurchase intention. Two important characteristics of social media technologies are presence and interactivity. Lu and Fan [88] in their study on e-commerce applications, find that social presence created by social media applications can increase the trustworthiness of an online environment, and Ou and Chan [22] recognize the impact of social media on PEEIM. One key feature of social media applications is user-generated online reviews. Online reviews are able to offer both presence and interactivity [29]. As the presence of online reviews display comments on the sellers and their products/services, it is depicted as a structural assurances that discourage opportunistic behavior in an online marketplace, thus enhances PEEIM [27]. Having instant messenger will also improve the presence and interactivity of the online marketplace. Although institutional mechanism is in place such as when there is a failure in the transaction (e.g. online seller who refuses to give refunds for defective products), online buyers need to be able to know that the seller can be reached when such situation occurs so that corresponding actions can be taken. In an offline environment, a buyer knows the location of the shop, and he or she may have also spoken to the seller and have the seller's details such as name and mobile contact. In an online environment, such perception can be enhanced by having an interaction with the seller. Thus, buyers know that the seller can be reached; in the case of TaoBao, via

an instant messenger [22]. Based on the above discussion and Ou and Chan [22] research, this research hypothesizes that:

H6. Interactivity has positive impact on PEEIM

H7. Presence has positive impact on PEEIM

To facilitate interactivity and presence in online shopping environment, social media technologies can be used to replicate personal communication between buyer and seller, and to create perception of presence. Live, asynchronous communications offered by chat feature in social media technologies can offer higher social presence compared to synchronous technologies such as email [89]. In TaoBao, sellers can chat with potential buyers via instant messenger. Instant messenger allows buyers to contact the seller and initiate exchange of information online (e.g. make enquiries and negotiate conditions of purchase etc.). Such information exchange is two-way and synchronous [2]. Through this information exchange process buyer and seller can form the basis of the engagement, and thus improves the sensation of interactivity.

Another advantage offered by social media tool such as instant messenger is the availability for the buyers and sellers to use avatars, emoticons and icons, which allow communication process to be more personal. For example, a seller can choose the avatar that reflects his or her facial features, or use smileys to show emotions and exchange transaction problem solutions. Moreover, instant messengers allow consumers to see sellers being available online (e.g. through WangWang tool at TaoBao e-commerce platform) and to 'talk' with sellers as in a face-to-face context [22]. As a result, the instant messenger increases the intimacy and

immediacy, and thus increases the perception of presence. Therefore, the effective use of instant messengers can influence consumers' perception of interactivity and presence.

H8. Effective use of Instant Messenger has positive impact on Interactivity

H9. Effective use of Instant Messenger has positive impact on Presence

Social media provide a platform for consumers to publicize their personal evaluations of purchased products and services, and thus facilitate word-of-mouth communication [90]. In many e-marketplaces such as TaoBao, a social media feature offered to potential buyers/ sellers is the online reviews system. Online reviews offer a form of textual or numerical evaluation of both buyer and seller online behavior. Such an online evaluation of buyer's and seller's past activities is also perceived as a form of communication: buyers are offered to leave the feedback, sellers have an opportunity to respond to it, and so on.

An increasing number of scholars have examined the implications of online consumer reviews' impact on product sales [90]. Through online reviews, buyers and potential buyers can 'hear' each other's word-of-mouth just like in real life, and such word-of-mouth practice and evaluation communication can form seller's reputation as in the physical world [2,91], thus creating a sense of presence of the seller. Online reviews also facilitate interactive communications between buyers and potential buyers, as well as with the sellers. Online reviews are often left on the system for a period of time, and users can read and provide further comments on these reviews. Thus, although the communication via online review is not synchronous, it still improves the interactivity and presence of the online marketplace. Therefore, the following hypotheses are proposed:

H10. Effective use of online reviews has positive impact on Interactivity

H11. Effective use of online reviews has positive impact on Presence

DATA COLLECTION AND ANALYSIS

Measurement Development and Data Collection

To test the research hypotheses, a self-administrated questionnaire was developed in English. The questionnaire was generated by adopting items from the studies by Ou et al. [29] and Fang et al. [18] (see Table 2). In addition to the variables listed in Table 2, we also included consumer's expertise in shopping in Taobao, consumer's satisfaction with Taobao, and consumer's trust in Taobao as control variables. Each item of the constructs was measured by a 7-point Likert scale, where 1 represents strongly disagree and 7 represents strongly agree. The English questionnaire was translated into Chinese by a researcher (Chinese native speaker), and the Chinese version of questionnaire was then translated back into English by another researcher to make sure the meanings of the items are not changed during the translation. After this, the questionnaire was sent to four experienced bilingual online-shopping consumers to further check the accuracy of the translation and the clarity of the questionnaire and some wordings were adjusted based on their feedback.

Table 2. Measurement sources

Study	Item	Description	Item Code
Ou et al. [29]	Repurchase Intentions	The intention to buy from the same seller again	RI
	Swift Guanxi	Second-order construct, measured by three first-order constructs: mutual understanding (SG_MU), reciprocal favour (SG_RF) and relationship harmony (SG_RH)	SG
	Trust in Seller	Second-order construct, measured by three first-order constructs: integrity (TS_IN), benevolence (TS_B) and ability (TS_A)	TS

	Interactivity	Second-order construct, measured by three first-order constructs: active control (I_AC), two-way communication (I_TC) and synchronicity (I_SN)	I
	Presence	Second-order construct, measured by two first-order constructs: telepresence (P_TP) and social presence (P_SP)	P
	Effective Use of Instant Messenger	Effectiveness of instant messenger evaluated by the buyer	EUIM
	Effective Use of Online Reviews	Effectiveness of online reviews evaluated by the buyer	EUFS
Fang et al. [18]	Perceived Effectiveness of E-commerce Institutional Mechanisms	Buyer's evaluation to the e-commerce institutional mechanisms	PEEIM

Data was collected from Chinese consumers shopping for products at TaoBao using online survey. The survey was launched in an online survey platform, and we offer RMB10 to each participant if they complete the survey to increase the response rate. A screening question asking whether the participant had purchased from Taobao was used to select appropriate sample. In total 262 participants took part in the study, and all of them confirmed that they had engaged in shopping activities at TaoBao. Therefore, all these 262 responses are usable. Of 262 responses 51.53% are female and 48.47% are male. The majority of the participants are between 18 and 25 years old (46.95%), 72 are in 26- 30 age group (27.48%), 50 (19.08%) are above 30 years of age while 17 (6.49%) were above 40 years old. Most participants hold bachelor's degree (49.9%). Demographic characteristics of respondents are presented in Table 3 below.

Table 3. Demographic characteristics

Gender	Male	127	48.47%
	Female	135	51.53%
Age	18-25	123	46.95%
	26- 30	72	27.48%
	31- 40	50	19.08%
	41- 50	14	5.34%

	50+	3	1.15%
	High school or below	49	18.70%
	College Diploma	74	28.24%
Education	Bachelor's degree	123	46.95%
	Master's degree	15	5.73%
	Doctoral degree or higher	1	0.38%

Assessment of Measurement Model

Before the data was used to test the hypotheses, its validity and reliability were assessed. Because our model has reflective-formative higher-order constructs, we examined the formative constructs. we followed Hair et al. [92] and Ou et al. [29] to combine the repeated indicator approach with the use of latent variable scores in a two-stage approach. First, we modeled the paths from the lower-order (i.e. first-order) constructs to the higher-order (i.e. second-order) constructs using the reflective repeated indicator approach to obtain the latent variable scores for the lower-order constructs. Then, the latent variable scores for the lower-order constructs were used as formative measures for the higher-order constructs. This approach was applied for all reflective-formative higher-order constructs, including interactivity, presence, swift guanxi and trust in seller. For these formatively measured second-order constructs, collinearity between the first-order measures could threat the validity of formative measures [29]. Thus, correlations between formative measures (i.e. the first-order constructs that formed the formatively measured second-order constructs) were tested using variance inflation factors (VIF). The values of VIF ranged from 3.058 to 4.717, and the VIF values for two-way communication, mutual understanding, benevolence and integrity were larger than the acceptable threshold 3.3 [93,94]. To solve the high VIF issue, for each formative measure with high VIF value, we conducted bivariate regression analyses on its reflective indicators, and removed the indicators that are highly correlated with others. In total 7 measurement items were removed. After removing the 7 reflective measurement items, VIF values for all the formative measures are below the 3.3 threshold (see Table 4),

indicating that the collinearity is not a significant issue here. In addition, all weights for formative measures are significant at the p<0.05 level. Thus, the validity of formative measures for the second-order constructs are confirmed [95].

Table 4. VIF Values for Formative Measures

Variable	VIF Value
Formative measures for Interactivity	
Active Control	2.483
Synchronicity	2.848
Two-Way Communication	2.589
Formative measures for Presence	
Social Presence	3.069
Telepresence	3.069
Formative measures for Swift Guanxi	
Mutual Understanding	3.193
Reciprocal Favors	2.345
Relationship Harmony	2.614
Formative measures for Trust in Seller	
Ability	2.908
Benevolence	3.134
Integrity	2.753

Based on the adjusted measurement model, reliability and validity of the first-order constructs were checked. Cronbach's Alpha test and composite reliability (CR) were run to test reliability. According to Nunnally and Bernstein [96], reliability is confirmed if Cronbach's Alpha of each indicator is equal or above 0.70. The value of CR should also exceed 0.70 [97]. As shown in Table 5, the Cronbach's Alpha values of all constructs exceed required 0.70, and the CR of each construct also exceeds the required threshold, confirming data reliability. Moreover, Average Variance Extracted (AVE) and Fornell-Larcker test were carried out to verify convergent and discriminant validity. The AVE of each construct exceeds the acceptable standard of 0.5 [98] (see Table 5), and the values of variables' correlations are below the values of variable's square root (see Table 6). The item loadings

were all above the required 0.707. Thus, the convergent and discriminant validity were confirmed.

Table 5. Cronbach's Alpha, Corporate Reliability and Average Variance Extracted

	Cronbach's Alpha (recommended minimum value > 0.70)	Composite Reliability (CR) (recommended minimum value > 0.70)	Average Variance Extracted (AVE) (recommended minimum value > 0.50)
EUFS	0.957	0.969	0.887
EUIM	0.935	0.954	0.838
I*	0.918	0.938	0.754
I_AC	0.817	0.916	0.845
I_SN	0.926	0.965	0.931
I_TC	1.000	1.000	1.000
PEEIM	0.847	0.907	0.765
P*	0.964	0.969	0.798
P_SP	0.953	0.966	0.877
P_TP	0.953	0.966	0.876
RI	0.949	0.967	0.907
SG*	0.955	0.962	0.762
SG_MU	0.967	0.976	0.910
SG_RF	0.739	0.885	0.793
SG_RH	0.939	0.970	0.943
TS*	0.960	0.966	0.757
TS_A	0.953	0.966	0.876
TS_B	1.000	1.000	1.000
TS_IN	0.953	0.966	0.877

Note: * reflective-formative second-order construct

Table 6. Fornell-Larcker Criterion

Principal Constructs	EUFS	EUIM	I	I_AC	I_SN	I_TC	P	P_SP	P_TP	PEEIM	RI	SG	SG_MU	SG_RF	SG_RH	TS	TS_A	TS_B	TS_IN
EUFS	0.942																		
EUIM	0.552	0.916																	
I	0.726	0.701	--*																
I_AC	0.696	0.668	0.911	0.919															
I_SN	0.668	0.622	0.932	0.738	0.965														
I_TC	0.585	0.614	0.864	0.706	0.750	1.000													
P	0.672	0.590	0.819	0.765	0.760	0.682	--*												
P_SP	0.671	0.568	0.808	0.717	0.765	0.709	0.958	0.936											
P_TP	0.609	0.557	0.754	0.744	0.683	0.590	0.951	0.821	0.936										
PEEIM	0.588	0.513	0.630	0.594	0.567	0.550	0.618	0.610	0.568	0.875									
RI	0.637	0.612	0.768	0.773	0.675	0.613	0.726	0.700	0.685	0.505	0.953								
SG	0.667	0.621	0.839	0.767	0.781	0.726	0.790	0.806	0.699	0.580	0.819	--*							
SG_MU	0.659	0.581	0.813	0.746	0.755	0.699	0.807	0.821	0.716	0.568	0.789	0.967	0.954						
SG_RF	0.556	0.543	0.719	0.641	0.678	0.634	0.701	0.707	0.629	0.539	0.706	0.904	0.793	0.891					
SG_RH	0.583	0.592	0.754	0.694	0.697	0.652	0.600	0.622	0.520	0.472	0.740	0.903	0.772	0.706	0.971				
TS	0.708	0.581	0.835	0.774	0.783	0.686	0.848	0.850	0.766	0.599	0.791	0.891	0.890	0.746	0.758	--*			
TS_A	0.633	0.538	0.798	0.737	0.761	0.639	0.827	0.816	0.761	0.574	0.737	0.811	0.816	0.656	0.699	0.931	0.936		
TS_B	0.652	0.434	0.710	0.670	0.664	0.566	0.766	0.763	0.697	0.519	0.652	0.724	0.744	0.613	0.563	0.864	0.777	1.000	
TS_IN	0.673	0.562	0.758	0.704	0.700	0.645	0.741	0.758	0.655	0.541	0.742	0.859	0.847	0.741	0.735	0.930	0.741	0.762	0.936

Note: * reflective-formative second-order construct, and the correlations between the second-order constructs and their first-order constructs are highlighted in gray and are beyond the scope of the criterion.

In addition to the above statistical tests, we also conducted the "full collinearity test" to check for lateral collinearity- the collinearity between the predictor and the criterion [99]. In the test, a dummy variable (gender) was added and all the latent constructs were pointed to the dummy variable. The results show that (see Table 7), all VIF values for the latent constructs and the VIF values for first-order formative measures of second-order constructs are smaller than acceptable threshold 3.3 [93,94]. Thus, lateral collinearity is not a serious issue of this study.

Table 7. Results of Full Collinearity Test

Variable	VIF Value
Effective Use of Feedback System (EUFS)	2.262
Effective Use of Instant Messenger (EUIM)	1.886
Interactivity	1.445
Perceived Effectiveness of Institutional Mechanisms (PEEIM)	1.724
Presence	1.059
Repurchase Intention	2.332
Swift Guanxi	1.066
Trust in Seller	1.512

In this study, procedural and statistical remedies were employed to handle common method bias, which is common in behavioral research [100]. To minimize common method bias threat, the respondents were allowed to respond anonymously. In the questionnaire, it was also highlighted that there were no right or wrong answers, and the order of items are counterbalanced. By doing so, the respondents' evaluation apprehension can be reduced so that the respondents are less likely to edit their responses based on what they think the researchers expect them to answer. Moreover, the questionnaire was designed to be short and the demographic items that require little cognitive processing were placed at the end of the questionnaire. Such design can avoid boredom, fatigue or other transient mood states and minimize their effects, if any, on items of key constructs [101]. In addition, statistical tests were conducted to detect common method bias. First, the common method variance was

tested through Harman's single-factor test. Harman's single-factor test is one of the most commonly used methods to check common method bias [77]. The test revealed that more than one factor emerged from the unrotated solution and the first factor accounted for no more than 50% of the variance in our data. This indicates that common method variance was below the biasing level. Second, Kock [102] suggested that in PLS-SEM a full collinearity test can be used to assess common method bias. Considering that the VIF values of all latent constructs from the full collinearity test are lower than 3.3, common method bias was not a significant issue in our model. Therefore, it is concluded that common method bias is not a necessary concern in this study.

Assessment of Structural Model

SmartPLS 3.0 was used to test the study hypotheses. As the moderation relationships in the structural model involve a formative construct (i.e. trust in seller), the product indicators will not accurately represent the interaction effect. Therefore, as recommended by Henseler and Chin[103], the two-stage approach was used to test moderating effect. The results are presented in Table 8 and Figure 2. As can be seen from Table 8, the relationship between trust in seller and repurchase intentions is significant (β=0.649, p<0.001), thus H1 is supported. Interestingly, the moderating effect of PEEIM on the relationship between trust in seller and repurchase intentions is significant (β=-0.074, p<0.05). To have a better understanding on PEEIM's moderating effect, the interaction of PEEIM and trust in seller on repurchase intentions were plotted. As shown in Figure 3, repurchase intention increases more rapidly when trust in seller increases if PEEIM is at low level (mean - standard deviation); instead, repurchase intention increases less rapidly when trust in seller increases if PEEIM is at high level (mean + standard deviation). That is, the trust in seller has a greater impact on repurchase intentions when PEEIM is lower, supporting H2. The pattern in Figure

3 also shows that, when customers have very low level of trust in seller, having high level of PEEIM can lead to high repurchase intentions, and thus can benefit the seller more than having low level of PEEIM.

Table 8. Hypothesis Testing

	Path Coefficent	Sample Mean	Standard Error	T Value	P Value	Hypothesis
H1: TS -> RI	0.649	0.653	0.067	9.705	0.000	Supported
H2: PEEIMxTS -> RI	-0.074	-0.071	0.037	2.012	0.045	Supported
H3: SG -> TS	0.903	0.905	0.013	67.423	0.000	Supported
H4: I -> SG	0.505	0.505	0.056	8.939	0.000	Supported
H5: P -> SG	0.406	0.407	0.056	7.269	0.000	Supported
H6: I -> PEEIM	0.376	0.373	0.079	4.775	0.000	Supported
H7: P -> PEEIM	0.312	0.316	0.078	4.017	0.000	Supported
H8: EUIM -> I	0.434	0.429	0.070	6.201	0.000	Supported
H9: EUIM -> P	0.305	0.301	0.063	4.802	0.000	Supported
H10: EUFS -> I	0.490	0.495	0.072	6.807	0.000	Supported
H11: EUFS -> P	0.511	0.514	0.071	7.177	0.000	Supported

Furthermore, the results also revealed that swift guanxi plays an important role in trust formation process as the relationship between swift guanxi and trust in seller is highly significant (H3 is supported, $\beta=0.903$, $p<0.001$). As predicted, both interactivity and presence have significant impacts on swift guanxi; thus, H4 ($\beta=0.505$, $p<0.001$) and H5 ($\beta=0.406$, $p<0.001$) are supported. Similarly, interactivity and presence are also found to have significant impacts on PEEIM, although the impact of interactivity on PEEIM ($\beta=0.376$, $p<0.001$) is noticeably stronger than the impact of presence on PEEIM ($\beta=0.312$, $p<0.01$). Accordingly, H6 and H7 are supported. Finally, the impacts of the computer mediated communication tools- Instant Messenger and Online Reviews- on both interactivity and presence are found to be highly significant, and thus H8, H9, H10 and H11 are all supported. As to the control variables, none of them shows significant effect. The discussion of the implications of the above study findings is provided below.
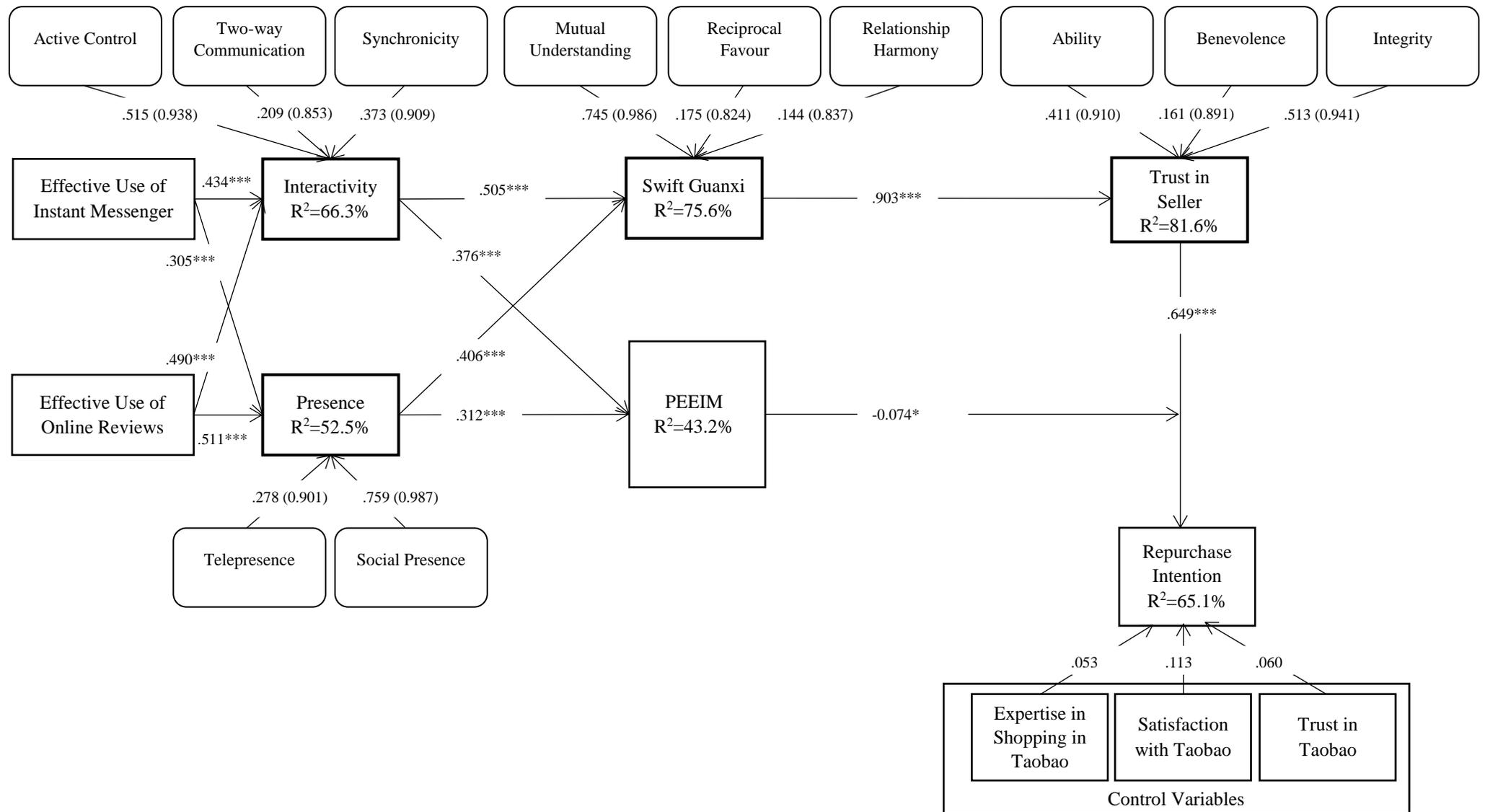
Note: (1) *** p<.001, ** p<.010, * p<.050; (2) number in the bracket: the loading of first-order latent variable; (3) number outside the bracket: the weight of first-order latent variable.
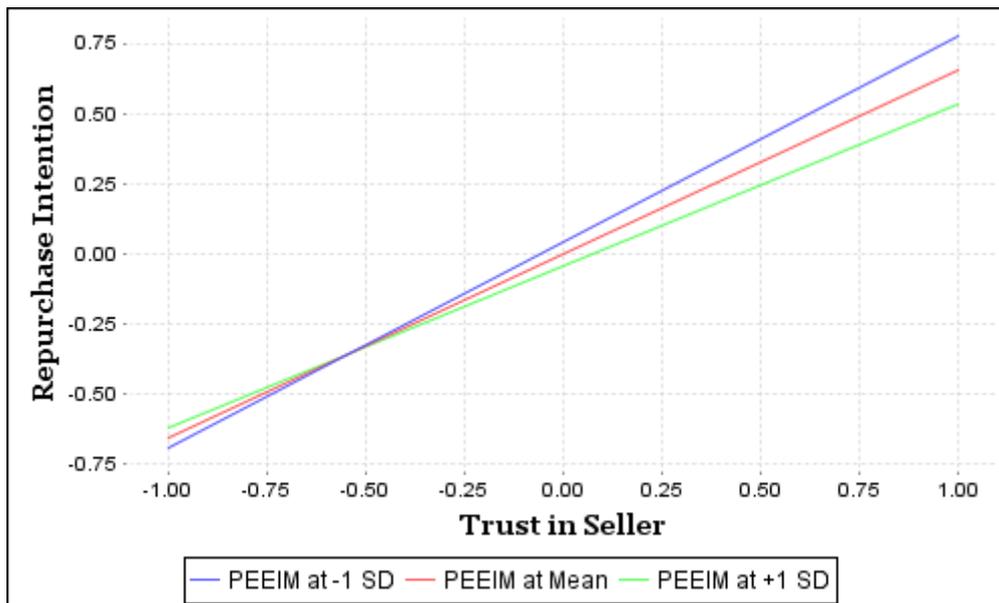
Figure 2 Research Model Results

Figure 3 Interaction Plot of PEEIM and Trust in Seller on Repurchase Intention

DISCUSSION AND CONCLUSION

Through the course of this study we empirically tested the model developed by integrating two influential theories; (1) swift guanxi and the influence of inter-personal relationships on trust [29] and (2) the effect of institutional mechanisms of e-commerce on online trust and repurchasing behavior [18]. While doing so we addressed Ou et al. [29] call for studies that will extend their theory of swift guanxi with the impact of perceived effectiveness of e-commerce institutional mechanisms. Thus, we filled the gap existing in the literature. To test the integrated model, the data was collected from Chinese TaoBao buyers. This aimed to reveal success factors of this increasingly growing e-commerce platform. The results revealed several important and interesting findings.

First, the study reveals that Ou et al. [29] theory of swift guanxi and Fang et al. [18] of PEEIM are not separate but they are complementing each other. By combining those two theories, we were able to identify factors, which drive consumers' repurchase intensions

when trust in seller exists and when development of trust is rather difficult. The combination of those two theories thus allows us to better understand factors driving repurchase intensions in either of the scenarios.

The research findings reveal that the buyers are able to develop trust and thus repurchase products from Taobao platform once they develop relationships with the seller. Such a buyer-seller relationship can be effectively replicated in an online environment through swift guanxi and effective use of online communication tools. Thus, this study echoes Ou et al. [29] highlighting the importance of personal communication between buyer and seller in an online environment and its impact on online trust. If, however, trust is difficult or not possible to develop (for example due to effect of culture on trust or unfavorable context in which commence takes place) it was revealed that buyers can reduce risk perception and engage in shopping on e-commerce platform while developing PEEIM. The research findings confirm results obtained by Fang et al. [18], PEEIM have some moderating impact on the relationship between trust and repurchase intentions. Such a moderating effect is negative.

Interestingly, it was proven that both online trust and buyers' PEEIM are enhanced though social media technology tools such as instant messenger and online review system. It was shown that effective use of both instant messenger and online review system create perceptions of interactivity and presence, both of which have positive impacts on trust and institutional mechanism tools. This is probably because social media tools offer buyers opportunity to verify the presence of institutional mechanisms being in place.

Consequently, the study results show that social media technologies help buyers build swift guanxi as well as enhance their perception of institutional mechanisms. It was proven that

social media tools increase buyers' perception of interactivity and presence, which play significant role in swift guanxi, and perception of institutional mechanisms formation, which mitigate risk perception. It can be concluded therefore that TaoBao success lies in effective use of social media technologies which while facilitating interactivity and perception of presence enhance swift guanxi and perception of institutional mechanisms.

THEORETICAL AND MANAGERIAL CONTRIBUTIONS

Our study provides important implications for both theory and practice. Theoretically, we incorporate the two theoretical views of Ou et al. [29] and Fang et al. [18], and extend their works to enhance the understanding of trust and PEEIM in repurchase intentions in online marketplace. First, this study examines the antecedents of PEEIM. While studies about institutional mechanisms' roles on e-commerce are not uncommon, limited attention has been paid to the factors that help build PEEIM. This study fills in the gap by examining how PEEIM can be influenced by presence and interactivity, which in turn are facilitated by social media tools such as instant messenger and online review system. This study also helps understand the context of Taobao by studying the effects of Taobao's institutional mechanism and social media tools.

Second, this study extends the understanding on PEEIM's moderating effect. Although the moderating role of PEEIM have been examined by Fang et al [18], in their study, PEEIM was tested as the moderator on trust in vendor and repurchase intention. The vendors in their study own and operate their e-commerce web sites independently, and tend to have strong control over their operations and designs; however, with the prevalence of third-party e-commerce platform, an increasing number of sellers choose to operate on such e-commerce platforms. Therefore, the nature of consumer's trust in a seller who operates on e-commerce

platform may be different from that of trust in online vendor. Our study focuses on the sellers that operate on the same e-commerce platform Taobao. In such case, examining PEEIM's moderating effect on trust in seller and repurchase intention can complement previous studies and answer their calls for extensive research on trust and institutional mechanism [22,29].

Third, we offer a new theoretical view on the relationship between guanxi and trust in seller. Different from Ou et al [29]'s point of view, we contend that the development of trust in seller can be facilitated by swift guanxi, the promptly formed interpersonal relationship between the buyer and the seller. Via the path from swift guanxi to trust, this study suggests that the use of social media can have influence on trust. The new perspective on guanxi and trust provides contribution to e-commerce trust theories.

The study results therefore suggest that if e-businesses want to repeat Taobao's success, they have to increase buyer's perception of sellers presence online and facilitate interactive communication between buyers and sellers. This can be effectively done using social media technologies. Once implemented, these technologies will support the development of swift guanxi and thus trust or, in case trust is not developed, they will increase buyers' perception of institutional mechanisms being in place, either of which will result in consumers re-visiting the e-commerce platform. Social media incorporated in Taobao's web design is therefore found to be critical to the firm's success.

LIMITATIONS

This study suffers from some limitations, which open avenues for future research. The main limitation of this study derives from the context in which the research was conducted. We examined the impact of interpersonal relationships and institutional mechanisms on

repurchase intensions of TaoBao buyers. We decided to carry out our research on TaoBao as this e-commerce platform, unlike any other e-commerce marketplace, is equipped with WangWang tool facilitating features of instant messenger. We welcome studies that examine the repurchase intensions of buyers' shopping at other platforms. We also restricted our investigation to two types of social media technologies: instant messenger and online review system. We encourage researchers to investigate the impact of other social media tools, such as message box, on interactivity and perception of presence in online environment. Finally, we believe that trust perception of institutional mechanisms is subject to the impact of culture and context in which commerce takes place, such an effect however was not empirically assessed. Future studies are welcomed, which would measure the moderating effect of culture and context on swift guanxi and institutional mechanism.

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