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RESEARCH ARTICLE

SWIFT GUANXI IN ONLINE MARKETPLACES: THE ROLE OF COMPUTER-MEDIATED COMMUNICATION TECHNOLOGIES

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Appendix A

Research Context

Over the last decade, China's online marketplaces have experienced rapid evolution. The first, EachNet, was established in 1999. EachNet was acquired in 2002 by eBay and renamed "eBay China." The second, TaoBao, owned by Alibaba, China's largest business-to-business portal, went online in April 2003. TaoBao replaced eBay China as market leader in 2004. eBay China was eventually sold to TOM Online in December 2006, and then renamed back to EachNet. According to recent reports (CNNIC 2011), TaoBao is currently the leading online marketplace in China with a 95.5 percent market share compared to EachNet's current 0.1 percent. Other smaller players, such as PaiPai, account for the remainder of the market.

TaoBao allows two transaction models: buy it now and auctions. Products are initially displayed on TaoBao's website in a random order, but buyers can simultaneously sort both products and sellers using various criteria. Each seller can customize the website storefront with a unique name (Figure A1), which can be located by TaoBao's internal search engine. Although store designs vary widely with respect to background, pictures, colors, product listings, and text descriptions, all store fronts indicate the online IM status, feedback score, and buyers' average score on the seller's service performance.

TaoBao's features are similar to those of many online marketplaces. However, in stark contrast to eBay and most online marketplaces,[1] TaoBao deliberately developed and encouraged the use of a direct buyer–seller CMC tool, *WangWang*. While WangWang is functionally similar to other IM tools such as MSN, Skype, and Tencent's QQ, it is not a standalone application, but a platform-embedded tool that shares TaoBao's login IDs (Figures A1 and A2). When buyers see a product they want to purchase , they can simultaneously see if the product's seller is online in WangWang, as indicated by a bi-colored icon (blue = online; grey = offline). Products can also be sorted according to the seller's online status. The buyer can then initiate an IM communication with the seller with a single click from TaoBao's website. Finally, both buyers and sellers can view each other's credit numbers shown in WangWang, links to each other's TaoBao webpage, as well as transaction reminders and records in WangWang.

[1]CMC tools embedded in eBay include a message box (i.e., "Questions and answers about this item") and a feedback system. Instant communication between buyers and sellers using a tool like Skype is not available on eBay.

Notes: At the top of this web page, buyers can search products inside the seller's store using the embedded search engine. The rest of this web page shows detailed information about a particular product, including the seller's information (on the left-hand side), the product picture (in the middle), and detailed product descriptions, delivery and payment information (on the right-hand side).

Figure A1. Screen Shots of a Sample Seller's Storefront on TaoBao

Notes: The web page on the left-hand side of the screen shot shows the product listing from different sellers, including information about product names, seller names, and online/offline status of sellers. TaoBao's search engine is shown in the top left corner of this web page, which can sort the product listing by keywords, price range, fixed or bidding prices, and WangWang online status. On the right-hand side of the screen shot, the WangWang tool, which can be used by both buyers and sellers, is shown. The middle screen shot shows the contact list in WangWang and the right-hand side screen shot shows the "My TaoBao" functions.

Figure A2. Screen Shots of the Instant Messenger (IM) Tool on TaoBao

Notes: The left-hand side shows detailed product descriptions such as product name, price, size, pictures, and delivery/payment methods. The right-hand side displays the buyers' and the seller's discussions on one focal product via the message box.

Figure A3. Screen Shots of the Message Box on TaoBao

Notes: This webpage is a screen shot of a seller's feedback system that displays the seller's name, the buyers' name, the sold product, and the buyers' qualitative comments regarding the purchase experience. The comments as shown on this particular web page were all positive with warm feedback from the buyers.

Figure A4. Screen Shots of the Feedback System on TaoBao

Another CMC tool used in TaoBao is the internal *message box*, which enables buyers to leave a short text message to sellers under a product listing (Figure A3). In contrast to IM, the message box allows the message sender and receiver a time buffer. When a seller logs onto her online storefront, the message box indicates the existence of new messages from buyers. In addition to initiating dyadic buyer–seller conversations via the message box, all buyers can retrieve and view the past records of other buyers' inquiries and the corresponding seller's answers on the focal product. Thus, the message box function not only provides a chance for buyers to ask specific questions about a product, but it also provides other buyers with a complete list of frequently asked questions and answers about one specific product.

TaoBao also has a *feedback system* to collect and disseminate feedback for buyers and sellers (Figure A4). This CMC tool documents the transaction ratings of buyers and sellers in the marketplace (Dellarocas 2003; Pavlou and Gefen 2004). It is widely used in online marketplaces, including eBay. Both buyers and sellers can evaluate each other by posting a feedback score (-1, 0, +1) and writing text comments on the transaction. While text comments are optional, the TaoBao system will automatically record a +1 if no score is entered.

Appendix B

Underlying Differences Between Guanxi and Related Concepts

Differences	Guanxi	Social Capital	Relationship Marketing
Fundamental Purpose	For the sake of self interest, guanxi can be characterized by the absence of social goals (Zhai 2009).	Providing resources to people involved in the social structure to achieve their interests, where actors are constrained by a normative structure (Coleman 1988) and the collective value of the whole social network (Coleman 1988; Zhai 2009).	Business orientation and long-term profitability (Wang 2007).
Underlying Drivers	Mistrust of the legal and political system leads to defensive mechanisms, such as guanxi. The exchange of favors is a key driver of guanxi (Arias 1998; Wong and Chan 1999).	Social capital is derived from effective social norms, structure, and sanctions that encourage people to benefit from the public good versus benefitting their own interests (Coleman 1988).	"Guiding principles of a relational exchange in most Western cultures are driven by legality and rules" (Wang 2007, p. 82).
Development Process	An individual-level personal connection is required to build guanxi (Arias 1998; Zhai 2009). Guanxi is developed following Confucian cultural norms that are different from those of other cultures (Chen and Chen 2004).	Effective social structure is established with obligations and expectations, and then the actors involved benefit from the established social structure (Coleman 1988).	A formal business relationship comes first and is strengthened by informal personal relationships, yet is constrained by business practices (Wang 2007).
Relationship to Rules	China lacks a formal rule of law (Arias 1998; Martinsons 2008). Thus, guanxi is often regarded as "a substitute for formal institutional and legal support" (Xin and Pearce 1996, p. 641).	Social capital relies on the rules of the environment (Coleman 1988). It neither negates nor is it a substitute for legal rules. A strong rule of law and basic political institutions facilitates the extension of social capital to the society level (Fukuyama 2002).	Business (marketing) relationships are grounded on universal institutional rules, contracts and impartial courts (Wong and Chan 1999; Wang 2007).
Relationship to Trust	Trust in "the system" is lacking and interpersonal-level trust persists in guanxi relations (Martinsons 2008).	"A culture of trust and tolerance" in a social network is emphasized (Inglehart 1997, p. 188). Trustworthiness sustains the social structure where social capital is embedded (Coleman 1998).	Impersonal-level trust (Wang 2007).
Outcome Benefits	Individual-level benefits are the expected outcomes. Firm-level business guanxi can be built through individual-level guanxi in a network (Wang 2007). Therefore, guanxi emphasizes individual-based capital and personal gain (Fan 2002).	Although people are the individual beneficiaries, collective benefit is often the emphasis of social capital (Nahapiet and Ghoshal 1998; Wasko and Faraj 2005), grounded on the public goods aspects of social capital (Coleman 1998). Social capital explains a variety of pro-social behaviors that cannot be explained with the concept of individual capital (Coleman 1998). A typical example is altruistic knowledge contribution in electronic networks of communities (e.g., Wasko and Faraj 2005; Kankanhalli et al. 2005).	A business relationship is the ultimate expected outcome of relationship marketing. Therefore, firm-level interests—long term profitability—are the ultimate outcome of relationship marketing, even when inter-firm relationships are established through individuals.
Impacts on Business	Guanxi is considered as lubrication for business relationships, and potentially results in high margins on profits as returns to guanxi, but often at a social cost (Fan 2002).	Social capital creates business and career opportunities in a positive sense (Coleman 1998), especially from a level of building a social structure (Nahapiet and Ghoshal 1998).	High setup and maintenance cost for relationship marketing (Wang 2007).

Appendix C

Similarities of Traditional Guanxi and Swift Guanxi in Online Marketplaces

Similarities	Traditional Guanxi	Swift Guanxi in Online Marketplaces
Mutual Understanding	Mutual understanding is the foundation of guanxi (Lee et al. 2001; Wang 2007). In order to build guanxi, guanxi participants need to understand and follow the implicit rule of a guanxi-grounded relationship or network covering such issues as the business culture, exchanging favors, the operation of business (Lee et al. 2001; Wong and Chan 1999).	For non-face-to-face, online transactions, it is critical for a buyer and a seller to reach a consensus on what and how to buy/sell, as well as on some other specific transactional requirements. Similar to traditional guanxi, mutual understanding of each other's needs is the foundation of a quickly formed guanxi between a buyer and a seller.
Reciprocal Favors	Exchange of favors as a form of reciprocal obligation is a prerequisite to establishing guanxi (Arias 1998; Wang 2007; Wong and Chan 1999). Guanxi partners who receive favors will be very likely to respond positively by exchanging resources, which in a relational sense is conducive to a formal relationship or friendship (Su et al. 2003). Guanxi is maintained via such reciprocity of benefits.	Small favors may be exchanged by swift guanxi participants, such as offering preferential pricing to buyers or price premiums to online sellers for superlative service. Such small favors are similar to the marketing approach used to attract new and cultivate loyal customers. As a consequence of the seller's personal care, the buyer may provide positive ratings and online comments.
Relationship Harmony	In China, "harmonious consensus is maintained in formal sessions and agreements among participants are usually pursued by informal negotiation in an indirect way" (Leung et al. 2002, p. 203). Accordingly, harmony is regarded as a core ingredient of and a means to obtain guanxi relationships. Establishing a harmonious relationship is described as "the main focus of Chinese communication" (Leung et al. 2002, p. 204).	Harmony, manifested as mutual respect, friendliness and conflict avoidance, is the means to establish and maintain guanxi. In the online environment, harmony consensus can be quickly achieved during the CMC between a buyer and a seller, which is instrumental to facilitate online transactions. In contrast, conflicts and arguments are obstacles to the pursuit of a smooth relationship, as with the traditional guanxi.

Appendix D

Differences Between Traditional Guanxi and Swift Guanxi in Online Marketplaces

Differences	Traditional Guanxi	Swift Guanxi in Online Marketplaces
Relationship Duration	Traditional guanxi is established mostly for long-term cooperation (Ambler et al. 1999) where favors can be banked in and retrieved later (Arias 1998). Guanxi is not a one-time-use commodity because guanxi participants in general anticipate long-term cooperative relationships (Ambler et al. 1999).	In online marketplaces, the purpose of guanxi is to quickly obtain a sufficient level of understanding and psychological comfort to facilitate a transaction. In this sense, buyer–seller guanxi is transaction oriented and can be built rather quickly.
Resources	The purpose of building traditional guanxi is to pull certain limited and controlled resources from a variety of actors such as government, officials, and companies (Arias 1998). A number of future commitments and a long-term relationship of the guanxi participants is expected to guarantee access to the limited resources (Arias 1998; Su et al. 2003).	Online marketplaces have dramatically increased the availability of substitute products and sellers. The long-term commitment and level of dependence that characterize traditional guanxi is thus less salient for swift guanxi in buyer–seller relationships in online marketplaces.
Status	Status matters in guanxi relationships because senior people often have more resources than juniors (Arias 1998; Xin and Pearce 1996).	In online marketplaces, the status of buyers and sellers is fairly equal due to the fact that many buyers and sellers interact together and do not differ in terms of resources.
The Role of Technology in Communication	Social interaction is an effective way to build traditional guanxi. If communication is involved in building guanxi, the face-to-face mode is primarily used in the interactions (Liu et al. 2008).	In online marketplaces, CMC is an effective way to build swift guanxi. CMC tools can facilitate interactive and rich technology-enabled communication so as to transform strangers into acquaintances who can engage in online transactions.

The literature review of traditional guanxi provides much more diversified and equivocal definitions and conceptualizations of guanxi (see Table 1). Considering the above four major differences between traditional guanxi and swift guanxi in the online marketplaces (Table D1), we argue that not all of the (diversified) dimensions listed in the traditional literature are applicable to our online context. For instance, long-term cooperation (e.g., Ambler et al. 1999; Lee et al. 2001) is more relevant to traditional guanxi (in which guanxi participants look for long-term collaboration) when compared to swift guanxi in online marketplaces (in which informal buyer–seller relationships can be quickly established). Similar arguments are applied to the dimension of relationship commitment in traditional guanxi measures (e.g., Ambler et al. 1999; Ramasamy et al. 2006), which is a much stronger form of guanxi, while in the online marketplace, online buyers develop a lower dependence on any particular seller and therefore commitment or affect is a less serious concern or focus for both transactional parties. Personal friendship grounded on relationships, such as friends, relatives, classmates, or activities, such as dining together (e.g., Ambler et al. 1999; Chou et al. 2004; Farh et al. 1998) appear to be much less easy to practice in online marketplaces where transactional parties are separated in space and are relative strangers. As a result, these dimensions of traditional guanxi are considered not to be applicable in our conceptualization of the swift guanxi in online marketplaces. Such conceptualizations of swift guanxi (namely, what to include and what to rule out) were further verified by the interviews with the online buyers and sellers, as explained in the later sections, including the quantitative analysis of content validity ratios.

Appendix E

Control Variables

Short Message Service (SMS), Email and Phone Calls. They refer to the frequency of using SMS, email and phone calls to contact the specific (focal) seller. They are typical communication tools that can be used during a transaction. We thus control for the effects of other communication tools on a buyer's evaluation of interactivity and presence.
Extent of Using of IM, Message Box, Feedback System. They refer to whether the buyer actually used the IM, message box and feedback system when transacting with the focal seller. They are binary variables (coded as 0 or 1) for validating the perceptual measures of the effective use of IM, message box and feedback system (scaled from 1 to 7).
Trust in the Transaction Platform. This refers to a buyer's subjective belief that the transaction platform will institute and enforce fair rules, procedures and outcomes in its marketplace competently, reliably and with integrity, and will offer recourse for buyers to deal with sellers' opportunistic behavior (Pavlou and Gefen 2004). By increasing the buyers' trust in the transaction platform, the buyers' transaction intentions with the community of sellers on that particular platform could also be affected.
Community Sellers' Performance. It refers to the buyers' general knowledge about the average performance of sellers in a specific marketplace (Pavlou and Gefen 2004). Outstanding vendor performance in general contributes to customer loyalty to a marketplace and willingness to transact with its sellers.
Past Positive Experience. It reflects the quality of a buyer's positive encounters with sellers in a specific marketplace (Pavlou and Gefen 2004). Satisfaction with the service quality delivered by sellers in the past has been shown to have a positive effect on the future intentions to transact.
Past Transactions. This refers to the self-reported number of past transactions that a buyer has had with a specific seller in this study. The more frequently a buyer has transacted with a seller in the past, the more likely it is that the buyer will further develop the trust (Pavlou and Dimoka 2006) and continue building a long-term relationship with that seller (Arias 1998; Tsang 1998), and the higher the probability that the buyer will engage in a future transaction with the seller (Pavlou 2003). We thus control for the effects of past transaction number on trust, swift guanxi, repurchase intentions and actual repurchase.
Seller Characteristics. This includes the seller's feedback rating score, seller size, and product category. As shown by previous research, a buyer is more willing to buy from a seller that has a higher feedback rating (Ba and Pavlou 2002) and better seller performance (Pavlou and Gefen 2004) because transactions undertaken with such sellers are more likely to be successful. Past studies (e.g., Kumar and Venkatesan 2005) showed that product categories and the number of products made available by the seller (i.e., seller size) affect the buyer's decision to transact with the focal seller.

Appendix F

Measurement Development

Panel Discussion

Following Yin (2009), we used a semi-structured interview protocol (Table F1) to guide the panel discussion. The justification for not pursuing individual interviews but rather using interview panels was because we wished to provoke insightful ideas, thoughts, and conversations with group discussions. Two research assistants served as interviewers on these panels. In the discussion, the research assistants first provided an overview of the research project, including objectives, means for access to data sources, and data analysis. We then sequentially asked the interviewees three sets of semi-structured interview questions. About 10 minutes were allocated for each set of questions. The interviewees were also asked to provide additional feedback or comments on the interview procedures. Each interview discussion panel lasted about 30 minutes.

After the interviews, the research assistants summarized the panel discussions into streams of topics. Overall, the interview data underscored the swift nature of guanxi in online marketplaces, such as TaoBao. The interview data also indicated that the scope of swift guanxi for online marketplaces was restricted to three constructs—mutual understanding, reciprocal favor and relationship harmony—as detailed in Table F2.

Content Validity Ratio

After the interview discussions were completed, the same 23 interviewees were asked to provide independent ratings on the initial 12 swift guanxi items (Table F3) in the context of online transactions on another occasion. These swift guanxi measures were developed based on the literature and discussions in the interview panels. Based on the 23 interviewees' ratings, we then computed the content validity ratio (CVR), following Lewis et al. (1995). All items about swift guanxi were found to score higher than the suggested level of 0.39 in their CVR calculation (Table F3).

Card Sorting Exercise

To further explore the content validity of the measurement items of swift guanxi, card sorting exercises were then run. In a pool of cards, 12 items of swift guanxi were initially created for the three dimensions of swift guanxi (mutual understanding, reciprocal favors, and relationship harmony). A panel of three judges (an academic, a working professional, and a Ph.D. student) was formed following Moore and Benbasat (1991). On the first round, the judges were not provided with the construct names, but they were asked to label each construct. In this round, the correct hit ratio was 80.5 percent. Based on these results and the judges' qualitative feedback, we revised ambiguous or poorly worded items. Second, a structured card sorting was conducted. The names of the three constructs were provided to another three-judge panel (with the same characteristics as the first panel) and a 91.7 percent correct hit ratio was achieved, indicating that most measurement items were placed under their theorized measures. Since 91.7 percent is a satisfactory level of reliability (Moore and Benbasat 1991), we did not conduct a third round of card sorting.

Table F1. Interview Protocol

1. Overview of Research Project	(1) This research focuses on buyer–seller guanxi in the context of TaoBao. Through this study, we attempt to explore the definitions and measures of buyer–seller guanxi, as well as its determinants and outcomes. In this interview, we have a set of semi-structured questions. You can discuss how you feel about these questions based on your past transaction experiences on TaoBao. The interview will last about 30 to 40 minutes. Free discussion around the questions is welcomed so as to provoke insightful thoughts. (2) This project is supported by four universities (Tilburg University, City University of Hong Kong, Temple University, and Jinan University). For data analysis purposes, the interview conversation will be recorded. Your interview responses will be kept strictly confidential and data from this interview will only be used for research and reported in the aggregate. You should not identify yourself anywhere during the interview and no individual data will be used for analysis.
2. Semi-structured Interview Questions	(1) How do you feel about the guanxi between you and TaoBao sellers in general? You can also describe the importance, usefulness, or the contribution of guanxi to your purchase decision. (2) Please describe the guanxi between you and the TaoBao seller from whom you bought most frequently or with whom you are most familiar. This needs to be a detailed description. (3) How would you like to define buyer–seller guanxi in C2C online marketplaces? Please define it in terms of its characteristics and describe its importance, its determinants and outcomes in the context of C2C online transactions.

Table F2. Typical Interview Discussions

Topics	Typical Discussions with Interviewees
Importance of Swift Guanxi in Facilitating Purchases in TaoBao's Online Marketplace	"It is necessary to build guanxi with the seller. You know the consumer protection mechanisms are not yet well established in China. Sometimes sellers provide fake products on TaoBao. When you talk to the seller online, and build up the trust and guanxi, such a situation (receiving fake products) can be avoided. With guanxi with the seller, I can always have good products from the sellers. They also provide me with discounts." "This is the case especially when the online seller has just started their business in TaoBao. In such a stage, guanxi is very important for both buyers and sellers. The seller needs to find ways to quickly build guanxi with the buyer to increase sales. The buyer needs to talk to the seller, achieve some level of trust, and feel that the seller has provided flexible negotiation terms. This form of guanxi can definitely promote online business."
The Swift Nature of Guanxi	"I would like to know the seller and the product quickly because I don't want to wait for days or weeks to receive a response from the seller. Otherwise, I will just walk away. So the buyer–seller guanxi needs to be established swiftly so as to facilitate the transaction."
A Polar Opposite View of Guanxi	"I am rational buyer and would not establish any emotional connections with a seller. Even if the first-time purchase from one particular seller is done correctly, I am unlikely to revisit the same seller. I don't want to build guanxi with sellers and repeat purchase is not a normal case for me. I like variety. Buying from different sellers, even for the same type of products, allows me to try different things." [Note: This statement underscores that some buyers prefer one-time transactions from multiple sellers and the lack of guanxi in purely single-shot transactions. This exactly captures the causal relationship of swift guanxi and repeated purchases, viz., less guanxi, more unlikely to have repeated purchases.]
Mutual Understanding in Swift Guanxi	"One time when I was buying books in TaoBao I had a very good conversation with one of the sellers about books. After that I established the guanxi with the seller because we shared the same interests in books."
Reciprocal Favor in Swift Guanxi	"Being good to each other is important in a buyer–seller relationship. For example, the seller can offer discounts to buyers. The buyers can provide good ratings/comments to the seller in return." "The seller sent me a small gift after my first purchase. I felt very happy about the gift. After that I always buy things from him."
Relationship Harmony in Swift Guanxi	"In WangWang conversations, I felt that the seller tried to answer all my questions about my purchase. However, after receiving the products, I wanted to complain due to the quality of the goods. Nevertheless, he did his best to solve the problems for me. Overall I think that he respected me and tried to address the potential conflicts. Such relationship harmony is very important for a smooth guanxi."

Table F3. Measures of Dimensions of Swift Guanxi Used for Content Validity Ratio

Mutual Understanding	**CVR**
1. We can understand each other's needs.	0.91
2. We can understand the point of view of each other.	0.91
3. We can make ourselves heard.	0.91
4. We can follow the flow of conversation.	0.91
5. We show interest in each other's opinions.	0.91
Reciprocal Favor	
1. If I buy from this seller, he/she would provide a discount to me.	0.91
2. We provide a positive rating or comment to each other.	0.74
3. We help each other.	0.65
4. We proved to be friends by doing a favor for each other.	0.39
Relationship Harmony	
1. We maintain harmony.	0.91
2. We avoid conflict.	1.00
3. We respect each other.	1.00

Appendix G

Principal Constructs and Corresponding Measurement Items

Effective Use of Instant Messenger – New scale based on Pavlou and Gefen (2004)
1. I feel that TaoBao's instant messenger (i.e., WangWang) functions as an effective communication channel for me to communicate with this seller.
2. I have used WangWang to verify information with this seller.
3. I believe that WangWang has facilitated the direct communication and negotiation between this seller and me.
4. I have great dialogues with this seller in WangWang.
5. Did you use WangWang in your last transaction with this seller? Y/N
Effective Use of Message Box – New Scale based on Pavlou and Gefen (2004)
1. TaoBao's message box is not an effective (1) is a very effective (7) channel for me to communicate with this seller on one specific product.
2. TaoBao's message box has provided a good question and answer channel to discuss one specific product for this seller and its potential buyers including me.
3. The message box provided by TaoBao did not help me at all (1)/has helped me a lot (7) in the communication process with this seller.
4. Did you use TaoBao's message box in your last transaction with this seller? Y/N
Effective Use of Feedback System – Adapted from Pavlou and Gefen (2004)
1. I feel confident that TaoBao's ratings and feedback mechanism provides accurate information about this seller's reputation.
2. A considerable amount of useful feedback information about the transaction history of this seller is available through TaoBao's ratings and feedback mechanism.
3. I believe that that the ratings and feedback mechanism in TaoBao is effective for buyers to know about this seller.
4. I believe that the ratings and feedback mechanism in TaoBao is reliable and dependable so as to help me evaluate this seller.
5. Did you use TaoBao's feedback system in your last transaction with this seller? Y/N
Interactivity: Measured by Active Control, Two-Way Communication, and Synchronicity
Interactivity: Active Control – Adapted from Liu (2003)
1. I felt that I had a lot of control over my experience at this seller's website.
2. While I was on this seller's website, I could choose freely what I wanted to see.
Interactivity: Two-way Communication – Adapted from Liu (2003)
1. This seller facilitates two-way communication between him/herself and visitors.
2. This seller gives visitors the opportunity to talk to him/her.
Interactivity: Synchronicity – Adapted from Liu (2003)
1. This seller responded to my questions very quickly.
2. I was able to get information from this seller very rapidly.
Presence: Measured by Telepresence and Social Presence
Presence: Telepresence – Adapted from Khalifa and Shen (2004) and Steuer (1992)
1. When browsing this seller's website, my body was in the room, but I felt my mind was inside the world created by this seller.
2. When browsing this seller's website, I felt that I was immersed in the world this seller had created.
3. This seller-generated world seemed to me to be "somewhere I visited" rather than "something I saw."
4. I felt I was more in the "real world" than the "computer world" when I was browsing this seller's website.
Presence: Social Presence – Adapted from Khalifa and Shen (2004) and Steuer (1992)
1. There is a sense of human contact in this seller's website.
2. There is a sense of personalness in this seller's website.
3. There is human warmth in this seller's website.
4. There is a sense of human sensitivity in this seller's website.
Trust in Seller: Formative Measure formed by Ability, Benevolence and Integrity
Trust: Ability – Adapted from Serva et al. (2005)
1. This seller is competent and effective in selling his/her products online.
2. This seller performs its role of selling his/her products online very well.

3. Overall, this seller is a capable and proficient Internet seller.
4. In general, this seller is very knowledgeable about selling his/her products.
Trust: Benevolence – Adapted from Serva et al. (2005)
1. I believe that this seller would act in my best interests.
2. If I required help, this seller would do its best to help me.
3. This seller is interested in my well-being, not just its own.
Trust: Integrity – Adapted from Serva et al. (2005)
1. This seller is truthful in its dealings with me.
2. I would characterize this seller as honest.
3. This seller would keep its commitments.
4. This seller is sincere and genuine.
Swift Guanxi: measured by Mutual Understanding, Reciprocal Favor and Relationship Harmony
Swift Guanxi – Mutual Understanding – New Scale
1. We can understand each other's needs.
2. We can understand the point of view of each other.
3. We can make ourselves heard.
4. We can follow the flow of conversation.
5. We show interest in each other's opinions.
Swift Guanxi - Reciprocal Favor – New Scale
1. If I buy from this seller, he/she would provide a discount to me.
2. We provide a positive rating or comment to each other.
3. We help each other.
4. We proved to be friends by doing a favor for each other.
Swift Guanxi – Relationship Harmony – New Scale
1. We maintain harmony.
2. We avoid conflict.
3. We respect each other.
Repurchase Intentions – Adapted from Pavlou and Gefen (2004)
1. Given the chance, I predict that I would consider buying products from this seller in the near future.
2. Given the opportunity, I intend to place an order from this seller again.
3. I will buy similar products from this seller again.
Actual Repurchases
How many times did the buyer re-buy from the focal seller during the four month time period following completion of the first online questionnaire? (Archival data collected by from buyer's web page on TaoBao).
CONTROL VARIABLES
Past Transactions – Adapted from Pavlou (2003)
Before filling in this questionnaire, how many times of transactions had you transacted with this seller?
Trust in the Transaction Platform – Adapted from Pavlou and Gefen (2004)
1. As an auction host/intermediary, TaoBao can be trusted at all times.
2. As an auction host/intermediary, TaoBao can be counted on to do what is right.
3. As an auction host/intermediary, TaoBao has a high level of integrity.
4. TaoBao is a competent and knowledgeable auction host/intermediary.
Past Positive Experience – Adapted from Pavlou and Gefen (2004)
1. My past experience in TaoBao was positive.
2. I received excellent service from sellers in TaoBao in the past.
3. Sellers in TaoBao did a good job in the past.
Community Sellers' Performance – Adapted from Pavlou and Gefen (2004) Please rate the performance of Amazon's auction sellers on average on fulfilling these goals:
1. Competitive pricing.
2. Timeliness of delivery.
3. High-quality products.

Frequency of CMC Use – New Scale based on Kim et al. (2007)
Do you generally use the following communication tools to interact with sellers before/during/after transactions? IM (WangWang), Message Box; Reputation System; Telephone calls; SMS; Email. (1 = Never, 7 = Always)
Seller's Online Status
The seller's status of being online in the instant messenger, indicating the real-time communication availability in the period of morning, afternoon and evening time. This is an archival data item collected from the seller's website at TaoBao.
Seller Size
The number of products available in the seller's online shop, which is an archival data item collected from the seller's web page.
Product Category
The product category that a seller's products belong to. According to the data collected, the most frequently bought product category is coded as 1, and the least frequently bought product category is coded as 13.
Performance Evaluation
The average customer evaluation of a seller's performance in terms of product description quality, service quality and shipment quality. This is an archival data item collected from the seller's website which ranges from 0-5.

Appendix H

Online Purchases in China in 2010 (Source: CNNIC 2011)

Buyer	Items	Percentage	Buyer	Items	Percentage
Gender	Male Female	54.5% 45.5%	**Age**	16-20 21–30 31–40 41 and above	3.8% 65.9% 22.8% 7.5%
Education	Below college College Bachelor or above	30.6% 29.1% 40.4%	**Annual *Individual* Income** (US$1 = RMB6.83)	Under RMB24,000 RMB24,001–60,000 RMB60,001–96,000 RMB96,001 or above	42.7% 41.5% 8.0% 6.1%
Online purchases in past *HALF* year (# of times)	1-2 2-4 5-10 11 or above	25.4% 23.0% 29.5% 22.1%			
	Items				**Percentage**
Seller Product Category (Allow multiple choices in CNNIC's 2011 survey)	(1) Virtual products such as electronic tickets, cell phone value, game, lottery (2) Clothes, shoes, sport related products (3) Accessories, fashion, glasses, watches, jewelry, handbags, suitcase (4) Electronic and computer-related products (5) Cosmetics and hair-related products (6) Baby and mum related products (7) Home, flowers, gardening related products (8) Food, heath, kitchen, bath, stationery, storage, adult related products (9) Outdoors and car related products (10) Collectibles, pets, books, entertainments, instruments related products (11) Others				(1) 27.7% (2) 70.1% (3) 7.8% (4) 31.6% (5) 17.2% (6) 6.1% (7) 18.0% (8) 11.5% (9) 9.0% (10) 31.4% (11) 4.3%

Appendix I

Measurement Validation for First-Order Constructs

We first used SPSS for verifying construct validity and reliability for the reflective first-order factors. Convergent and discriminant validity are confirmed by exploratory factor analysis.

1. All items loaded on the expected factors with a loading score greater than 0.50. Moreover, the own factor loading scores are higher than all cross loading scores.

2. All eigenvalues of the first-order constructs are larger than the suggested value of 1.0.

3. The communality scores are all higher than the suggested value of 0.50.

These results indicate adequate reliability (Hair et al. 1998).

Second, construct reliability was assessed by identifying the composite reliability scores of the first-order constructs generated from PLS , all of which are above 0.84 (Appendix J), suggesting acceptable internal consistency. The square roots of the average variance extracted are all above 0.80, which are greater than all other cross correlations. This shows that all first-order constructs capture more construct-related variance than error variance (Gefen and Straub 2005; Pavlou and Gefen 2004). These results demonstrate adequate convergent and discriminant validity for all first-order constructs.

Appendix J

Descriptive Statistics, Correlation Matrix, and AVEs of Constructs

Principal Constructs	Mean (STD)	α	VIF	1	2	3	4	4a	4b	4c	5	5a	5b	6	6a	6a	6c	7	7a	7b	7c	8	9
1. Effective Use of IM (Reflective)	5.23 (1.4)	.898	1.52	**.687**																			
2. Effective Use of Message Box (Reflective)	4.38 (1.16)	.959	1.19	.262	**.866**																		
3. Effective Use of Feedback System (Reflective)	5.67 (1.20)	.951	1.51	.308	.174	**.855**																	
4. Interactivity (Second-order Formative Construct)	—	—	—	.484	.254	.536	—																
4a. Interactivity: Active Control (Reflective)	5.29 (1.21)	.877	2.02	.315	.242	.524	**.849**	**.781**															
4b. Interactivity: Two-Way Communication (Reflective)	5.24 (1.37)	.848	1.74	.414	.218	.391	**.783**	.496	**.736**														
4c. Interactivity: Synchronicity (Reflective)	5.33 (1.52)	.983	1.90	.472	.147	.352	**.780**	.449	.486	**.966**													
5. Presence (Second-order Formative Construct)	—	—	—	.346	.255	.340	.517	.402	.364	.488	—												
5a. Presence: Telepresence (Reflective)	4.19 (1.45)	.930	2.37	.309	.210	.316	.484	.396	.348	.424	**.835**	**.816**											
5b. Presence: Social Presence (Reflective)	4.51 (1.43)	.960	3.03	.335	.253	.326	.496	.380	.347	.477	**.988**	.738	**.866**										
6. Trust in Seller (Second-order Formative Construct)	—	—	—	.309	.310	.464	.678	.583	.508	.540	.625	.514	.619	—									
6a. Trust: Ability (Reflective)	5.48 (1.18)	.962	2.88	.272	.248	.465	.661	.584	.512	.492	.572	.476	.565	**.903**	**.865**								
6b. Trust: Benevolence (Reflective)	4.74 (1.39)	.951	2.97	.263	.272	.355	.530	.438	.369	.469	.635	.516	.631	**.840**	.645	**.866**							
6c. Trust: Integrity (Reflective)	5.40 (1.30)	.978	3.24	.289	.310	.397	.591	.501	.440	.482	.508	.416	.504	**.917**	.693	.736	**.918**						
7. Guanxi (Second-order Formative Construct)	—	—	—	.388	.327	.327	.591	.495	.487	.450	.533	.431	.530	.730	.614	.636	.705	—					
7a. Guanxi: Reciprocal Favor (Reflective)	5.06 (1.24)	.896	2.35	.331	.269	.287	.517	.423	.393	.435	.496	.420	.488	.645	.521	.616	.616	**.874**	**.683**				
7b. Guanxi: Mutual Understanding (Reflective)	4.51 (1.58)	.968	2.11	.343	.263	.213	.387	.279	.362	.312	.530	.406	.534	.566	.480	.531	.524	**.735**	.501	**.858**			
7c. Guanxi: Relationship Harmony (Reflective)	5.15 (1.37)	.928	2.44	.310	.282	.276	.500	.445	.440	.321	.355	.270	.358	.581	.516	.423	.575	**.821**	.456	.642	**.865**		
8. Transaction Intentions (First-order Reflective Construct)	5.17 (1.29)	.897	2.24	.219	.209	.361	.478	.482	.333	.309	.387	.366	.370	.640	.599	.493	.588	.656	.563	.447	.564	**.743**	
9. Past Transactions	1.94 (3.94)	—	1.23	-.011	-.014	.083	.050	.119	.065	-.083	-.008	.039	-.021	.130	.130	.089	.116	.075	.037	-.005	.117	.165	—
10. Actual Repurchases	0.55 (0.90)	—	—	.139	.120	.157	.300	.310	.206	.188	.251	.273	.229	.385	.362	.306	.347	.401	.322	.288	.369	.499	.491

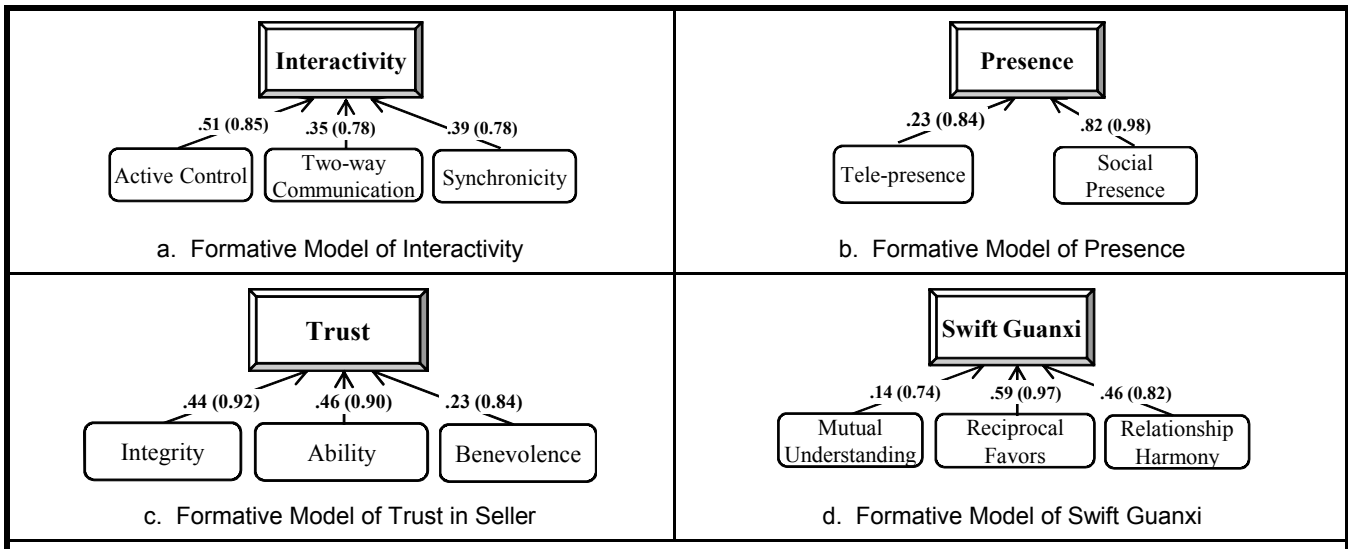
Note: Correlations among formative constructs are shown in highlighted gray. Constructs 4, 5, 6, and 7 are second–order constructs that are formatively measured. All other constructs are reflectively measured first-order constructs.

Appendix K

Testing of Formative Factors

The literature has provided various methods to validate the formative measures. For instance, Jarvis et al. (2003) listed a set of comprehensive criteria for examining construct indicators and measurement specifications. Notably, they encouraged researchers to use two baselines for formative measures—whether the construct indicators are interchangeable, and whether they have the same antecedents and consequences. Following their guidelines, we first examined the construct indicators of trust as an example. Trust covers three dimensions (i.e., integrity, ability, and benevolence). Each dimension represents a different meaning, where ability refers to skills and competencies; integrity means adhering to a set of principles the buyer finds acceptable, and benevolence is about doing good (Table 2). As a result, indicators of trust are not interchangeable. Second, past literature on trust (e.g., Gefen 2002; Gefen and Straub 2004) has informed us via empirics that integrity, ability, and benevolence have different antecedents and consequences. In sum, trust should be considered as a formatively measured construct that covers integrity, ability, and benevolence (Petter et al. 2007). In the same vein, these criteria for the formative measures are also applicable to other formative constructs in this study, including interactivity, presence, and swift guanxi.

Also following the molar model (Chin and Gopal 1995; Petter et al. 2007), the second-order formative models were modeled as the relationship between the first-order and the second-order factor in PLS. Formative models with multidimensional constructs were chosen because first-order factors capture conceptually different aspects of the second-order construct. According to Petter et al. (2007), such "multidimensional constructs provide the ability to increase granularity and detail on different aspects of a construct" (p. 628) and such "parsimonious models can provide abstractions that generate insightful explanations about a complex phenomenon" (p. 628). Following Chin et al. (2003) and Edwards (2001), we first modeled the paths from the lower-order to the higher-order construct. We then used the scores of the latent variables from the PLS analysis as the formative measures for the second-order constructs. This approach was used for all second-order formative factors (i.e., interactivity, presence, trust, and swift guanxi).



Legend: Bevels represent second-order (Interactivity, Presence, Trust, and Swift Guanxi). Rectangles represent first-order factors measured with reflective scales.

Note: The formative models were analyzed in the PLS model simultaneously with the entire structural model. The numbers in brackets are the loadings of the indicators. All weights are significant at the $p < 0.01$ level.

Figure K1. PLS Results on Formative Second-Order Factors

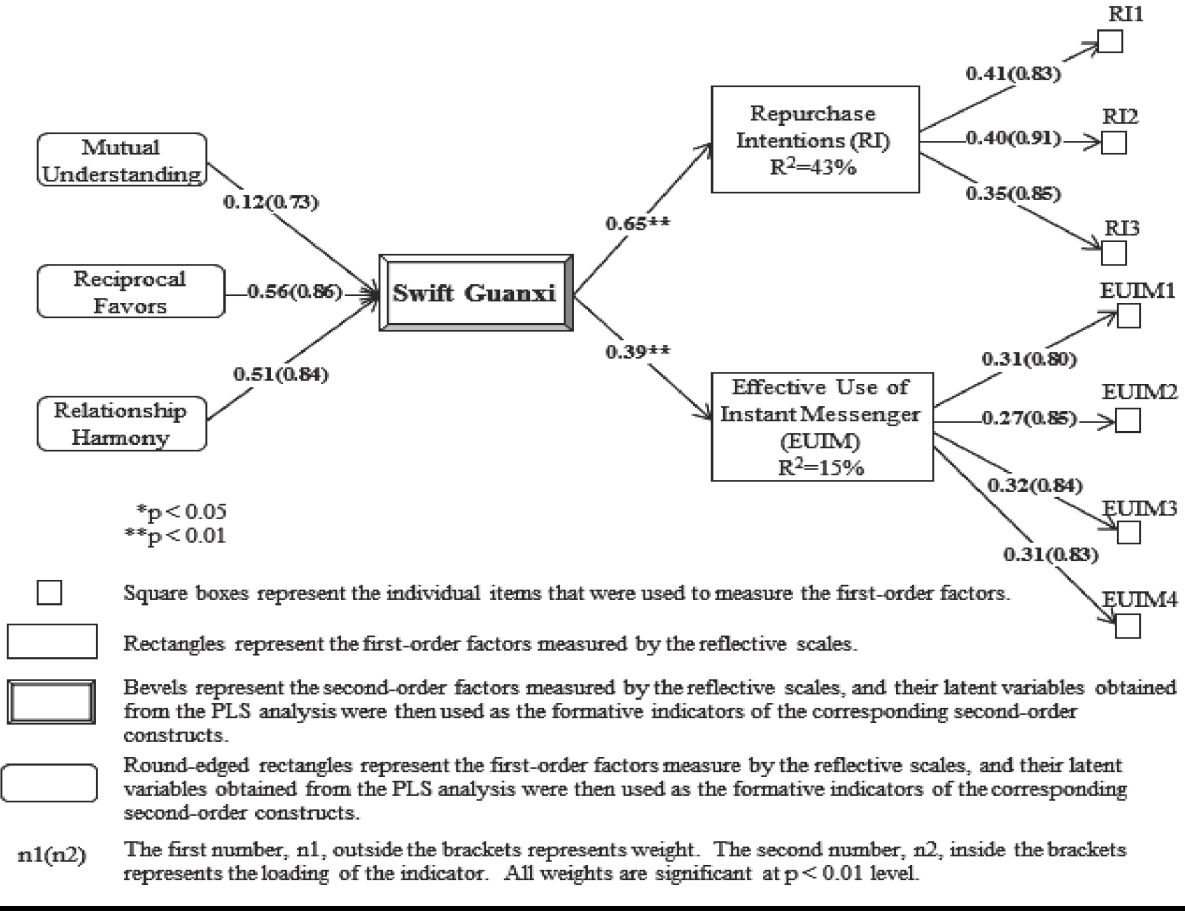


Figure K2. A Changed Nomological Network of Swift Guanxi

To verify the validity of the formative second-order constructs (Figure K1), we first examined multicollinearity in the formative constructs that "can potentially lead to unstable indicator weights" (Cenfetelli and Bassellier 2009, p. 694). We checked for indicator collinearity for the formative constructs (i.e., the first-level constructs that formed the formatively measured second-order constructs). Cenfetelli and Bassellier (2009) suggested that high correlation (e.g., 0.90) between indicators in the formatively measured construct would be a threat to the validity of formative indicators. The correlation tests indicate our formative indicators do not suffer from high correlations (Appendix J). Of greter importance, the tolerance statistics and their inverse variance inflation factors (VIF) were all acceptable when compared to the acceptable standard of 3.33 (Cenfetelli and Bassellier 2009, p. 694; Diamantopoulos and Siguaw 2006) or 10.00 (Hair et al. 1998; Mathieson et al. 2001). Although the first-order factors of the formatively measured constructs do covary, the low VIF scores suggest that these constructs have distinct effects, thereby inferring the validity of formative factors for our second-order constructs (see Jarvis et al. 2003).

Meanwhile, we conducted a modified multitrait-multimethod matrix (MTMM)[2] analysis (Loch et al. 2003) that examines whether the items used to measure each latent formative construct are more highly correlated with their own second-order construct than all other variables. The modified MTMM analysis indicates that the dimensions of interactivity are more highly correlated with their own second-order construct than all other items. This pattern is also found for the presence and swift guanxi items (highlighted in gray in Appendix J). Then, we constructed all formative second-order factors measured with first-order factors in the PLS model. The results in Figure 2 (and Figures O1 and O2) show that all first-order factors are significant when simultaneously analyzed with the entire PLS model. These results further support the validity of the formative second-order constructs.

[2]The traditional MTMM analysis can be found in Straub (1989) and Malhotra et al. (2006). The current studies used a modified MTMM method by analyzing the correlation matrix of first-order constructs. We validated the self-reported data with secondary data in Table L1.

Another important issue of the formative measurement is the relative invariance of a construct's weights when the construct is used in different nomological networks (Cenfetelli and Bassellier 2009, p. 698), although the same degree of variance should be always expected (Diamantopoulos 2006). Given the focus of this study on swift guanxi, we changed the nomological network of swift guanxi in a revised model by adding a reflectively measured construct (effective use of instant messenger) as the outcome variable of swift guanxi. The comparison between the original models (Figure 2 and Figure K) with the changed nomological network of swift guanxi (Figure K2) shows that changes of the relative magnitude of indicator weights are small. A similar pattern was found when we used other reflectively measured constructs as the outcome variable of swift guanxi in the changed nomological networks, suggesting the formative measurement's construct portability (see Cenfetelli and Bassellier 2009).

Appendix L

Validation of Measurement Items with Secondary Data

To test the self-reported measures used in the online questionnaire, we ran correlation tests with the secondary data. First, for the effective use of IM, message box, and feedback system, we used a three-part binary question: Did you use WangWang/message box/feedback system in the last transaction with this seller? (Appendix G). In fact, the effective use of CMC tools is significantly correlated with the corresponding binary variables. Second, since interaction is a key part of customer service (Parasuraman et al. 1985), we treated the third-party archival data about service performance as a proxy of interactivity. We conducted the correlation test between interactivity and seller's service performance (Table 3), which was also significant ($r = 0.09$, $p < 0.05$). Third, we used the seller's online status (measured by the online status in the morning, afternoon, and evening) (Table 3) to validate the scale of presence. For each time slot, the effect on online status was 0.20 ($p < 0.01$), 0.38 ($p < 0.01$), and 0.27 ($p < 0.01$), respectively. The overall correlation between presence and online status was significant ($r = 0.10$, $p < 0.01$). These significant correlations between the secondary and self-reported data (Table L1) denote support for the validity of the instrument items and their correspondence with archival data recorded in the marketplace.

Table L1. Validation of the Self-Reported Data with Secondary Data

Constructs	Corresponding Secondary Data	Correlation
Effective Use of Instant Messenger	The use of IM with the focal seller (binary variable)	$r = 0.39$ ($p < 0.01$)
Effective Use of Message Box	The use of message box with the focal seller (binary variable)	$r = 0.58$ ($p < 0.01$)
Effective Use of Feedback System	The use of feedback system with the focal seller (binary variable)	$r = 0.16$ ($p < 0.05$)
Interactivity	Evaluation score of each focal seller's service performance (mean score ranging from 0~5 provided by all previous buyers)	$r = 0.09$ ($p < 0.05$)
Presence	Seller's online status in morning, afternoon, and evening sessions	$r = 0.10$ ($p < 0.05$)

Appendix M

Testing for Common Method Bias and Multicollinarity

Testing for common method bias (CMB) involved five steps in this study. First, evidence for CMB exists when (1) a single factor emerges from exploratory factor analysis (unrotated) or (2) one general factor accounts for the majority of the covariance of the variables (Podsakoff et al. 2003, p. 889). The unrotated principal components factor analysis (omitted for brevity) indicates 38.56 percent of the total variance, implying that CMB is not substantial (see Vance et al. 2008). In addition, the rotated solution of the exploratory factor analysis shows that each principal factor explains roughly equal variance (3.9%~7.1%), further suggesting the lack of CMB. Second, the correlation matrix (Appendix J) shows that all correlations are below 0.74, while CMB is evidenced by extremely high correlations ($r > 0.90$) (Bagozzi et al. 1991). Third, we obtained the measures of the predictor and the criterion variables from different sources, following Podsakoff et al.'s (2003) guidelines to prevent CMB. Although our data on the independent and mediating variables was gathered from primary data (i.e., same source of respondents) in an online questionnaire that is hence still subject to CMB, our dependent variable (actual repurchases) was collected from the TaoBao website (through archival sources). Such system-captured data can significantly lower the susceptibility to CMB due to data source, response format, objective, and abstractness of measures (Sharma et al. 2009). Podsakoff et al. contended that the most effective way to control CMB is to include procedural controls, such as obtaining measures from different sources and temporal separation of measures. In addition, we validated the instrument scales used in the questionnaire with other secondary data (Table L1). Fourth, we created temporal separation (4 months) by introducing a time lag between the measurement of the dependent variable (actual repeat transactions) and its predictors. Podsakoff et al. highlighted that this technique is "particularly important in the study of attitude-attitude relationships" (p. 887) to reduce the potential of CMB. Taken together, these tests provide evidence that CMB is not a serious problem for this study.

To test for multicollinearity, collinearity diagnostics for all constructs were also conducted. The analysis shows that the tolerance values and their inverse VIFs (as shown in Appendix J) are all less than the acceptable cut-off points 3.33 (Cenfetelli and Bassellier. 2009). These findings imply no major multicollinearity problems.

Appendix N

Additional Analyses (Mediation and Moderation Tests)

With the attempts to explore the respective roles of swift guanxi and trust on repurchase intentions, we conducted the following additional hierarchical regression analyses. First, in a simplified model, we took trust as the only independent variable. The PLS results show that trust explained 42 percent of the variance of repurchase intentions (Figure N1). When taking swift guanxi as the only independent variable, the variance explained to repurchase intentions was 43.4 percent (Figure N2). Integrating both swift guanxi and trust in the model explains 50 percent of the variance of repurchase intentions (Figure N3). These hierarchical regression analyses indicate that when controlling for the effect of trust, swift guanxi can explain an additional 8 percent of the buyers' repurchase intentions.

The results show that both trust and swift guanxi explain a substantial part of the variance in repurchase intentions. Given the role of trust in online transactions, as demonstrated by prior research, swift guanxi adds further value in shaping repurchase intentions. This is evident in the additional variance (R^2) of repurchase intentions that yields an additional 8 percent of variance explained. Based on these results, we argue that transactions in online marketplaces require both trust and swift guanxi, suggesting that these two concepts are complementary. In situations when the institutional and legal environment is equally deficient for both buyers and sellers, interpersonal relationships (i.e. swift guanxi) can constitute a key contributor to the likelihood that a transaction will be completed.

According to the literature (e.g., Arias 1998; Martinsons 2008), guanxi matters more when there is a lack of institutional trust. In this study, this position suggests that guanxi has a stronger effect on those buyers with lower institutional-based trust, meaning institutional-based trust negatively moderates the effects of swift guanxi toward repurchase intentions. To empirically test this position, we conducted additional analyses. We took the construct *trust in transaction platform* as the moderator of the path between *swift guanxi* to *repurchase intentions* in a simplified model (Figure N4). Although the moderating effect of *trust in transaction platform* is negative, however, it was not statistically significant (Figure N4).

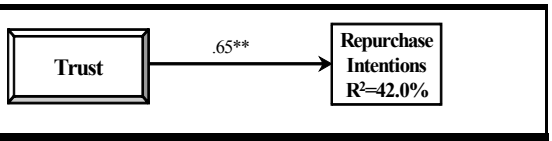


Figure N1. Trust

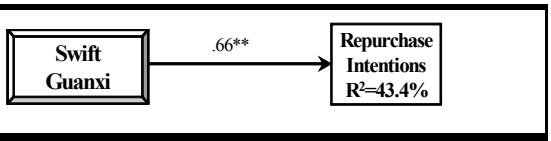


Figure N2. Swift Guanxi

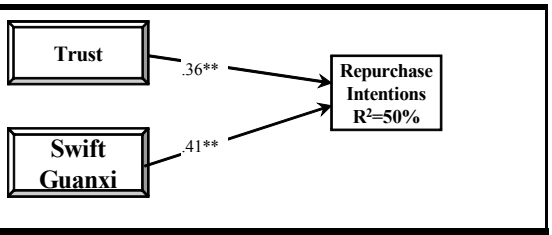


Figure N3. Swift Guanxi and Trust

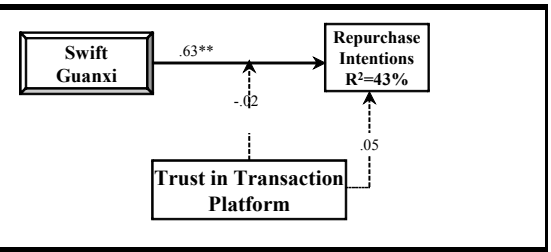


Figure N4. Swift Guanxi and Trust in the Transaction Platform

In addition, we also examined the mediating role of interactivity and presence in the relationship between the effective use of the three CMC tools and swift guanxi using the mediation test (Edwards and Lambert 2007), which integrated the mediation tests with the causal step procedures suggested by Baron and Kenny (1986). A competing model with a direct link from the effective use of the three CMC tools to swift guanxi was also tested. The results showed that the direct effects of the effective use of the three CMC tools on swift guanxi were initially significant (IM: $r = 0.28$; $p < 0.01$; MB: $r = 0.24$, $p < 0.01$; FS: $r = 0.21$, $p < 0.05$). However, their direct effects on swift guanxi became insignificant (IM: $r = 0.07$, $p > 0.10$; MB: $r = 0.13$, $p > 0.10$; FS: $r = 0.07$, $p > 0.10$) when interactivity ($r = 0.35$, $p < 0.01$) and presence ($r = 0.34$, $p < 0.01$) were included as mediators in the model. Using the same mediation tests, the direct effects of IM ($r = 0.14$; $p < 0.01$), MB ($r = 0.19$, $p < 0.01$), and FS ($r = 0.39$, $p < 0.01$) on shaping trust changed to insignificant (IM: $r = 0.10$, $p > 0.10$; MB: $r = 0.07$, $p > 0.10$; FS: $r = 0.08$, $p > 0.10$) when including interactivity ($r = 0.39$; $p < 0.01$) and presence ($r = 0.35$; $p < 0.01$) in the model. These analyses also indicated the full mediation effects of interactivity and presence in the relationship between the effective use of the three CMC tools and trust. In sum, these tests support the full mediating role of interactivity and presence, further supporting of the proposed mediating effects in the proposed research model.

With the same rationale and steps, we explored the mediation effect of repurchase intentions on the paths from swift guanxi and trust to the final DV (actual repurchases). A competing model with a direct effect of swift guanxi and trust to actual repurchases was examined. The results showed that swift guanxi ($r = 0.26$; $p < 0.01$) and trust ($r = 0.18$; $p < 0.01$) can directly affect actual repurchase without the presence of repurchase intentions in the model. However, their direct effects became insignificant (swift guanxi: $r = 0.10$, $p > 0.10$; trust: $r = 0.06$, $p > 0.10$) when including repurchase intentions ($r = 0.40$; $p < 0.01$) as the mediator in the model. In sum, these tests support the full mediating role of repurchase intentions as proposed in the research model.

In addition, we compared a theoretical model with three saturated models that focus on swift guanxi, repurchase intentions, and the dependent variable actual repurchase, following the method suggested by Gefen et al. (2011). In the first saturated model, we included all the possible paths from other principal constructs to swift guanxi. The calculation[3] yielded a small f^2 value, the standard measure of effect size, of 0.05. Meanwhile, all the original paths remained significant. With respect to the second and the third saturated models focusing on repurchase intentions and actual repurchase, the f^2 values are 0.03 and 0.05, respectively, all the original paths remain significant. Our results ($f^2_{\text{saturated model 1}} = 0.05$, $f^2_{\text{saturated model 2}} = 0.03$ and $f^2_{\text{saturated model 3}} = 0.05$) indicate that only small effects (f^2 values of 0.02 to 0.05) (Chin et al. 2003; Cohen 1988; Gefen et al. 2011) were observed in the saturated models, suggesting that adding the paths via the saturated models does not significantly increase the effect size and thus further proves the predictive power of the theoretical model.

Additional insights related to individual CMC tools are also evident in Appendix J. IM is shown as the most effective tool in terms of facilitating synchronicity ($r = 0.472$, $p < 0.01$), two-way communication ($r = 0.414$, $p < 0.01$), and telepresence ($r = 0.335$, $p < 0.01$), while the feedback system is best in creating active control ($r = 0.524$, $p < 0.01$) and social presence ($r = 0.326$, $p < 0.01$). Compared to the other two

[3]The formula is documented in Gefen et al. 2011, page viii.

CMC tools, message box presents moderate correlations with interactivity and presence. In terms of their correlation with trust and guanxi, IM is most linked with guanxi ($r = 0.388$, $p < 0.01$), while the feedback system is more linked to trust ($r = 0.464$, $p < 0.01$). In the online questionnaire, we also asked how long the buyers chatted with the focal seller in the first transaction. The results were that 154 buyers (45.6%) spent between a few minutes and 10 minutes in IM chatting; 78 buyers (23.1%) spent more than 10 minutes (but less than 1 hour) in IM chatting. The average time buyers spent in IM chatting with the focal buyer is about half an hour, suggesting buyer–seller guanxi can be swiftly developed in the online marketplace. Theoretical and practical implications of these findings are discussed in the "Implications" section of the paper.

Our data also indicate that 19.5 percent of the buyers did not use IM, 61.2 percent did not use the message box, and 7.4 percent did not use the feedback system during their last transaction. Our data also shows that 63.9 percent of the respondents frequently used IM during their TaoBao transactions in general at a scale of seven out of seven. Thus, IM, together with the feedback system, is actually used in most transactions. This provides further evidence for the expansive role of WangWang in TaoBao's online marketplace. However, all 338 questionnaire participants used at least one of the three CMC tools during their last purchase. An independent sample t-test showed buyers who used IM perceived IM to be significantly more effective than non-users. The same pattern was shown for the users/non-users of the message box and feedback system. In addition, we conducted three separate PLS analyses without the non-users of IM, message box, and feedback system, and we used Chin's method on multiple group analysis[4] and the Smith-Satterthwait test to compare the regression coefficients of the two samples. The results showed no significant difference between the two samples, confirming the robustness of the overall model.

Because that product category may have an impact on our proposed model, we compared the product categories reported by our respondents with those reported by a much larger nationwide survey in China (CNNIC 2011, p. 17). The comparison of the frequency of product categories confirmed the consistency between the two sets of data. Second, we took the frequency of product categories as a criterion to compare across all constructs used in our model. The ANOVA test indicated no significant difference across our constructs. Third, we examined the potential direct and moderating effects of product category on all paths in our research model, but the proposed model did not substantially change. Taken together, our research model remains robust across product categories.

Appendix O

The Moderating Role of Prior Purchases

To examine whether past transactions moderate the effect of swift guanxi on intentions or actual repurchases, we conducted additional analyses. The tests in Figures O1 and O2 indicate that the moderating effects of past transactions and prior purchases on the effect of guanxi on intentions or actual repurchases were not significant.

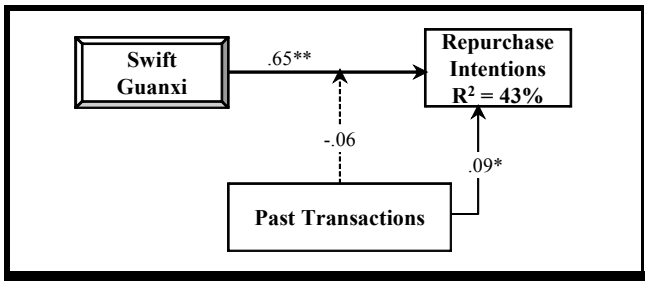


Figure O1. The Moderating Test 1 for Past Transactions

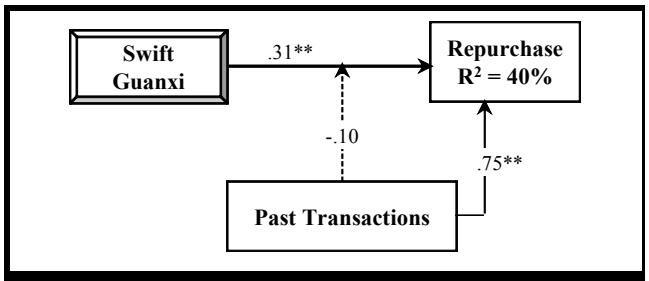


Figure O2. The Moderating Test 2 for Past Transactions

[4]Available at "http://disc-nt.cba.uh.edu/chin/plsfaq/multigroup.htm.

In order to drill down to the detailed effects of prior purchases and swift guanxi in different stages of purchases, we also create another variable called *Repeat Customer* where Repeat Customer = 1 for those respondents with prior purchase(s), otherwise Repeat Customer = 0. The moderating effect of Repeat Customer on the path between swift guanxi on actual repurchases is found to be significant, but not for repurchase intentions (Figures O3 and O4). The integrated results of the above tests imply that the effect of swift guanxi on repurchases may be highlighted such that the initial guanxi development may have lesser weight, although the moderating effect of past experiences on the path between swift guanxi on actual repurchases may not be linear.

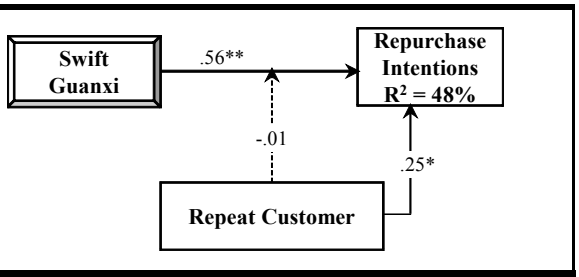


Figure O3. The Effects of Swift Guanxi on Repurchase Intention in Different Stages of Purchases

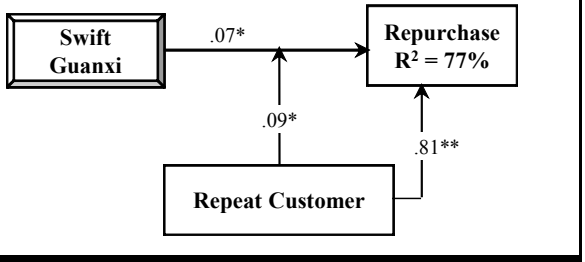


Figure O4. The Effects of Swift Guanxi on Repurchase in Different Stages of Purchases

Appendix P

Robustness Checks across Two Samples

In our sample, 226 respondents (66.9%) were one-time buyers (meaning they only purchased once from the focal seller during the period of investigation), while 112 respondents (33.1%) were repeat buyers (meaning they purchased from the focal seller more than once). There may be inherent differences between one-time and repeat buyers. In order to compare one-time and repeat buyers relative to all buyers, we tested two models with the samples of one-time buyers (Figure P1) and repeat buyers (Figure P2), in order to examine the robustness of the research model across two samples.

When comparing across the three samples (Figures 2, P1, and P2), several interesting findings can be identified. First, both trust and swift guanxi remain significant in all three samples, while it appears that they render different influences on shaping a buyer's repurchase intentions. Specifically, swift guanxi appears increasingly powerful to determine repurchase intentions when comparing one-time purchasers ($r = 0.33$, $p < 0.01$) and repeat purchasers ($r = 0.43$, $p < 0.01$). In contrast, trust appears to have a decreasing effect on repurchase intentions for repeat buyers.[5] Second, the changing effect of interactivity and presence across one-time and repeat buyers is noticeable. The significant direct effects of interactivity ($r = 0.22$, $p < 0.01$) and presence ($r = 0.10$, $p < 0.10$) on guanxi building are evident only for one-time buyers (Figure P1), but not for repeat buyers (Figure P2: interactivity →swift guanxi, $r = 0.09$, $p > 0.10$; presence → swift guanxi, $r = 0.08$, $p > 0.10$). The data, however, suggest that trust does contribute more ($r = 0.59$, $p < 0.01$) to strengthen the effect of guanxi for repeat buyers, and it overwhelms the direct effect of interactivity and presence on guanxi. These results don't mean that repeat buyers don't need to maintain guanxi through interactivity and presence. On the contrary, the results support the important roles of interactivity and presence in shaping guanxi for the repeat buyers, but through an indirect route that involves strengthening buyers' trust. Without the contributions of interactivity and presence to trust (explaining 61% of the variance), the foundation for guanxi may not be strong. These results suggest the critical role of trust in building buyer–seller guanxi, especially for repeat buyers. In this sample, the effects of interactivity and presence on buyer–seller guanxi are indeed mediated by trust. Third, Figure P2 suggests that the message box is much less important on interactivity. This is reasonable because when

[5]This finding is consistent with past studies on trust and guanxi. For example, Ambler et al. (1999) found that trust and guanxi can separately predict export performance of inter-province export ventures in China. They showed that guanxi had a stronger effect ($\beta = 0.38$; $p < 0.01$) than trust ($\beta = 0.15$; $0.05 < p < 0.1$) on export performance over the first 3 years of a sales relationship. However, trust exerted an insignificant effect on export performance in the last 2 years of the relationship, while the effect of guanxi remained strong throughout the 5-year period of observation.

buyers become accustomed to IM to communicate with sellers ($r = 0.40$, $p < 0.01$), the message box may be considered as a less effective tool for communication. Fourth, the significant control variables on trust (trust in transaction platform, positive experience, and past transactions) for one-time buyers and all buyers became insignificant for repeat buyers. This result implies that dyadic trust based on first-hand experience with IM and feedback system weighs much more heavily than the institutional protection provided by the transaction platform for repeat buyers.

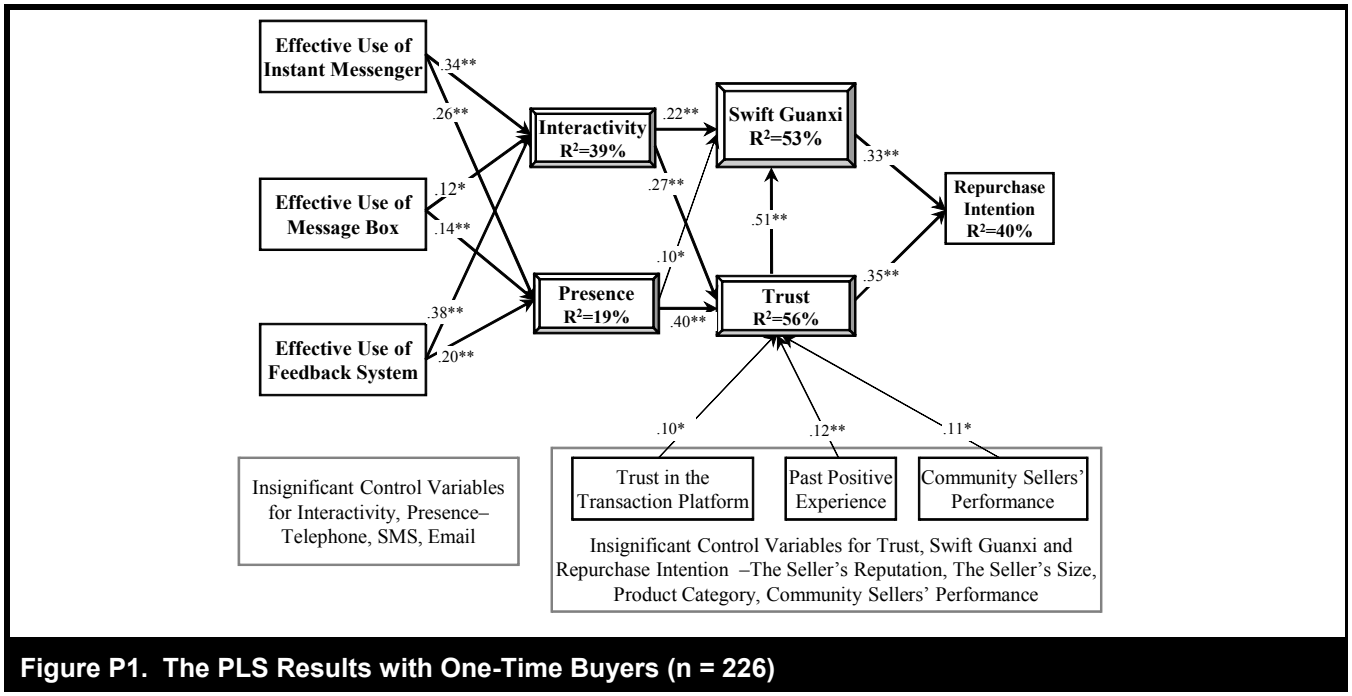


Figure P1. The PLS Results with One-Time Buyers (n = 226)

Note: Two constructs (*actual repurchases* and *past transactions*) are excluded from the PLS analysis of Figure P1 because no variance can be observed (i.e., all values are zero for these two constructs for one-time buyers).

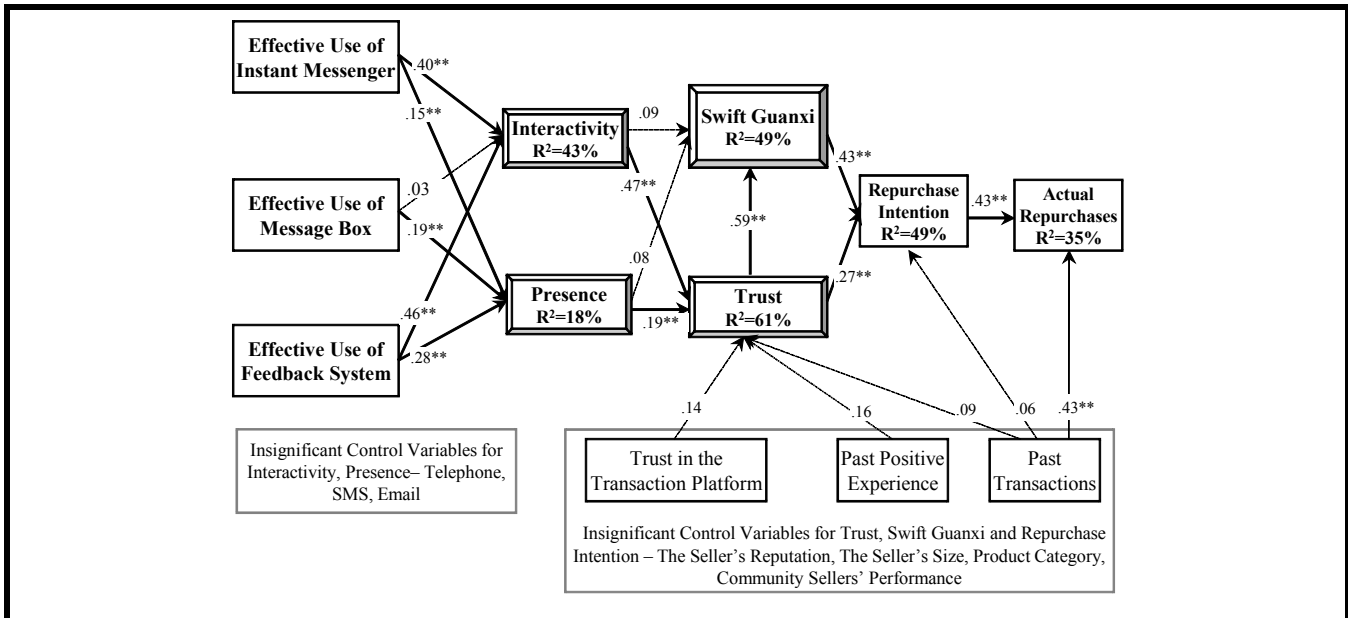


Figure P2. The PLS Results with Repeat Buyers (n = 112)

Appendix Q

Qualitative Analysis and *Ex Post* Explanations

Given the salience of IM in Chinese transaction platforms, we also collected buyers' feedback on WangWang using an open-ended question ("Please comment on whether/how WangWang has facilitated your online purchases at TaoBao") in order to develop a more complete picture of the role of IM technology. Sample comments include "IM is the most convenient method for prompt communication because I can talk to the seller immediately when necessary" and "The seller warmly greeted me in WangWang and provided very detailed answers [to my questions] in the conversation, exactly like a normal traditional bargaining and transaction process" (thus implying presence). Another respondent commented that WangWang helps buyers "get timely product information, bargain on prices, ask about the delivery process and know the sellers better" (implying interactivity). Another type of comment indicated "WangWang tells me whether the sellers are online. Normally, I can get sellers' replies very quickly on WangWang. This tool helps me make the buying decision. I think WangWang has facilitated the buying-and-selling guanxi building in TaoBao via the direct interaction." These qualitative data imply the critical role of WangWang, interactivity, and presence in the process of establishing buyer–seller guanxi.

In addition to WangWang, we also asked the respondents to briefly describe how the platform-embedded message box and the feedback system have been used in their transaction process at TaoBao. The message box is described by the respondents as "a convenient venue for us [buyers] to pick up extra product explanations, such as functions, characteristics, strengths and weaknesses, because the one [seller]-to-many [potential buyers] conversations can reveal more product details that may not be documented in the standard product description webpage." With respect to the feedback system, the respondents evaluate it as "a necessary tool because it documents the history of all transaction records of sellers." Also, the feedback system is considered by the buyers as "both a communicative and a control mechanism that allows them to share their transaction evaluations with the seller after the transaction." Together with the comments on the IM and message box, these qualitative descriptions offer support for the role of CMC technology in facilitating interactivity and presence in TaoBao's online marketplace.

Since swift guanxi is the study's primary focus, we also included an open-ended question where buyers could comment on swift guanxi. Specifically, most of the questionnaire participants preferred buying from those sellers they "know," meaning "a quick and minimal understanding of the sellers' behavior prior to the transactions," with the aid of online communication tools. The importance of reciprocal favor in such buyer–seller guanxi was also highlighted by the comments from several buyers (e.g., "I received a small gift, a souvenir of my favorite football team, from the seller. What a surprise but I know this is an extra gift for my birthday! I felt very happy about this gift because the seller knew what I like. I will certainly buy from him again!"). In a combinative sense, this qualitative feedback provides further support that swift guanxi between buyers and sellers is a common phenomenon in TaoBao's online marketplace and also underscores its positive influence on repurchase behavior.

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