

The Role of Swift Relationships and Institutional Structures in Uncertainty Reduction

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Abstract

Uncertainty has been regarded as the most prominent barrier in ecommerce. However, how communication between buyers and seller contributes to a reduction in uncertainty is under-investigated. Integrating uncertainty reduction theory and relational contract theory, we develop a model that explain how various communication strategies will reduce uncertainty in transactions so as to encourage purchase behavior. In addition, we also explore the role of swift relationships and institutional structures during the uncertainty reduction process, surveying real buyers as data subjects. The study advances our understanding of communication strategies by specifying the e-commerce context to explore how communication can facilitate purchase behavior through uncertainty reduction. We propose that the communication process between individual buyers and sellers may be moderated by both formal and relational contracts. Also, we add to the existing literature by investigating whether formal contracts will affect a relational contract's impact in the online shopping context.

Keywords: Swift relationship, Uncertainty, Institutional structures, Purchase behavior

Introduction

Many studies have indicated that buyer uncertainty is the most prominent barrier in e-commerce due to information asymmetry (Dimoka et al. 2012; Pavlou and Dimoka 2008). Lower uncertainty can lead to social attraction (Antheunis et al. 2010), purchase behavior (Adjei et al. 2010), price premiums (Dimoka et al. 2012), and customer satisfaction (Luo et al. 2012). Despite these confirmatory results about the positive outcomes of uncertainty reduction, it remains unknown whether and how buyer-seller communication can contribute to online uncertainty reduction, especially from a theoretical perspective. These research questions are also practically important, given the unique potential of computer mediated tools in facilitating buyer-seller communication in online marketplaces. Remarkably, PricewaterhouseCoopers¹ attributed the success of Taobao and Tmall (the biggest online marketplaces in China) to a platform-embedded instant messaging tool known as Aliwangwang. In stark contrast, eBay

¹ http://www.pwccn.com/webmedia/doc/635334251818697593_consulting-retail-china.pdf

sold Skype to Microsoft, considering “it does not fit with the rest of eBay’s operation”, according to John Donahoe², the past President and Chief Executive Officer of eBay. Therefore, without an accurate and in-depth understanding of the relationship between communication and uncertainty in online marketplaces, the effectiveness of various communication strategies adopted by buyers and sellers and the value of designing corresponding online communication tools in the platform that can facilitate online transactions remains unclear. In this paper, we adopt uncertainty reduction theory to contextualize to what extent individuals reduce uncertainty through three communication strategies (Berger 1979) as they engage in transactions: passive strategies, active strategies and interactive strategies. Most fundamental mechanisms of uncertainty reduction theory have been proved to be applicable in online settings (Adjei et al. 2010; Flanagan 2007). Therefore, the first objective of our study is to investigate to what extent these three communication strategies might help reduce uncertainty in transactions so as to encourage buyers to make purchase decisions.

We argue that the uncertainty reduction process is not independent from its context. Chinese online shopping platforms have significant investments in designing and implementing effective feedback systems, security, online communication tools and communities, with the aim of cultivating a safe transaction environment and enhancing relationships between buyers and sellers. A swift relationship that is developed between a buyer and a seller, and institutional structures (platform setting institutional mechanisms to assure consumers’ safe transaction environment) are regarded as important factors that support transactions (Ou et al. 2014; Pavlou and Gefen 2004). Furthermore, Martinsons (2008, p.334) proposes that “institutional deficiencies encourage people in China to do business with those ... in their network of connections”. However, how these two contextual factors may change the impacts of communication processes in uncertainty reduction is unexplored. China is considered to have an economy based on relationships instead of rules (Ramasamy et al. 2006), while communication, a swift relationship between a buyer and a seller and their effects in reducing uncertainty so as to facilitate a transaction have received little serious attention. Furthermore, Ou et al. (2014) called for research to further investigate how interpersonal communication would reduce uncertainty in Chinese online markets given that the institutional context in China is less mature than in western countries and a different institutional context could lead to different consumer behavior. However, to the best of our knowledge, interpersonal relationships and institutional structures have not been theoretically framed and investigated during the process of uncertainty reduction.

In order to fill this gap, our second research objective is to examine the moderating effect of institutional structures and swift relationships in online transactions (as shown in a chain of communication—uncertainty reduction—purchases). Gefen et al. (2008) suggest that institutional structures can moderate the transaction process. Following the same logic, we argue that institutional structures can also moderate the uncertainty reduction process because institutional structures reflect buyers’ perceptions as to what extent they are legally protected (Pavlou and Gefen 2004). In contrast to the institutional context, *guanxi* (interpersonal relationships) could be regarded as an embedded contextual situation because Chinese people’s attitude and behavior would change, subject to the level of *guanxi* (Yang 1992). Hence a swift relationship can work as a moderator in the social interaction process. According to Poppo and Zenger (2002), high levels of uncertainty during exchanges usually lead to a more complex contract, including both a relational contract and a formal contract. We adopt relational contract theory (Carson et al. 2006) regarding swift relationships (swiftly formed interpersonal relationships in the online shopping context) (Ou et al. 2014) as a relational contract in online transactions, while considering institutional structure as a formal contract.

In fact, these two forms of contracts are interrelated and may be substituted by or complementary to each other (Lioliou et al. 2014; Poppo and Zenger 2002). Specially, interpersonal relationships can be considered as a substitute for formal institutional support (Xin and Pearce 1996). In China, institutional deficiencies encourage people to do business with those with whom they share *guanxi* (Martinsons 2008). That is to say, although *guanxi* is prevalent and important in business, there is a boundary of its function. However, to the best of our knowledge, the boundary of *guanxi* function has received little attention in the literature. In this paper, we attempt to explore the boundary effect of swift relationships in online

² <http://www.bloomberg.com/apps/news?pid=20601087&sid=aCWYwCYVYHx4&refer=home>

purchase behavior. Our final objective is to explore how institutional structures and the swift relationship interact with uncertainty reduction and then subsequently influence purchase decisions.

We envisage making several contributions in this study. Firstly, we extend uncertainty reduction theory to the e-commerce context, focusing on different impacts of various communication strategies on uncertainty reduction. Second, we integrate contract theory, uncertainty reduction and communication strategies into an overarching theory to examine consumers' online purchase behavior and differentiate the role of the swift relationship and institutional structures in uncertainty reduction processes. Thus, following Dimoka et al.'s (2012) theoretical argument that IT-enabled solutions can help to overcome buyers' perceived uncertainty during online transactions, our study advances the understanding about communication strategies used in online transactions. The contrast between swift relationships and institutional structures, also shapes our understanding about the important contextual factors in the process of online transactions.

Literature Review

Uncertainty Reduction Theory

Uncertainty reduction theory (Berger and Calabrese 1975) posits that individuals seek information from the other party in order to reduce uncertainty, so that people can predict the other party's behavior and resulting actions. Three strategies have been specified by Berger to decrease the uncertainty, viz.: 1) passive strategies, which mainly rely on observation without interference; 2) active strategies, which refer to seeking information from others; and 3) interactive strategies, referring to direct information exchange and contact with one another.

Uncertainty reduction theory has been applied to C2C commercial transactions to explain individual attitudes and behaviors in the relatively high-risk, initial interpersonal encounter endemic to such a situation (Bente et al. 2012; Flanagin 2007). Consumers can obtain future outcome values when they buy an appropriate product from the online market. In order to do so, consumers need to obtain as much information from sellers as possible. In online purchases, uncertainty reduction is not the ultimate goal but an important vehicle for the primary goal of achieving a successful transaction.

Relational Contract Theory

Relational contract theory (MacNeil 1980) indicates that business relationships are often characterized by informal agreements and unwritten promises. Accordingly, exchange between two parties usually involves more than a formal contract. The enforcement of obligations, promises and expectations occurs in the social process (Poppo and Zenger 2002). In contrast to a formal contract, the relational contract has been found "more expeditious and efficient in ensuring fulfillment of commitments by the business partners" (Johnson and Sohi 2015) and is regarded as an effective complement or even substitute to a formal contract (Poppo and Zenger 2002). The relational mechanism of a social contract, namely a "living contract" (MacNeil 2000) coexists with the "contract at law". However, while a relational contract relies on social relationships, a formal contract relies on legal guarantees.

Indeed, all exchanges can be placed on a spectrum between discrete exchanges and relational exchanges based on their relational intensity (MacNeil 1983). In discrete exchanges, transactions can be independent of the past and future relationships, with exchange parties mainly relying on economic and legal sanctions to ensure fulfilment of the contractual obligation. Conversely, in relational contracts, transactions are embedded in a social relational context, where the enforcement of contractual obligations is based on norms of exchange that serve to guide and regulate the behavior of the exchange parties (Johnson and Sohi 2015; MacNeil 1980). MacNeil (1980) further indicates that relational attributes are present even in very discrete transactions.

Most research suggests that a relational contract is based on trust between the parties. However, the online shopping context may also determine the salience of the contextual variables. Firstly, most online transactions can be characterized as one time transactions instead of repeated transactions, especial in the online consumer-to-consumer marketplace (Ou et al. 2014), so that function of trust is limited. Secondly, online trust building mechanisms differ from offline situations (Pavlou et al., 2008). In online reputation systems, transaction records provided by the third party platform can be effective trust building tools. As

such, inter-personal trust might have a less significant impact when institutional structures are believed to be effective (Fang et al. 2014). Accordingly, we believe that a swift relationship would be a better indicator of a relational contract in the online shopping context, as further explained below.

A Swift Relationship between a Buyer and a Seller

The concept of a buyer-seller relationship has received attention from various disciplines. Generally, relationship building requires the investment of time, effort and money for its development and maintenance, which is very difficult to be achieved by online consumers. Abramson (1997) regarded buyer and seller relationships as short-term based relationships, since neither buyer nor seller expects trust, commitment, or shared goals because the relationship is characterized by short duration and a low level of interdependence (Whipple et al. 2010). Similarly, Pavlou and Gefen (2005) proposed that in online marketplaces, buyer-seller relations are of a transactional nature because contracts are deemed essential in buyer-seller relationships.

On the other hand, Ou et al. (2014) proposed the concept of swift guanxi between buyers and sellers in the Chinese online shopping context, indicating that such a swiftly formed relationship refers to an informal buyer-seller connection that can be established in online marketplaces, consisting of mutual understanding (each party appreciating the other party's need), reciprocal favors (the generation of positive benefits for both transacting parties), and relationship harmony (respect and conflict avoidance). Compared with traditional relationship built through face-to-face interactions, an online swift relationship is transaction orientated and can be built rather quickly. So it is easy to build by using computer-mediated-communication (CMC) tools (such as online live chatting) and therefore doesn't require considerable investment of time and energy to develop and maintain. As such, a swift relationship is characterized as a kind of shallow, quick and transaction-orientated relationship that helps buyers and sellers to complete an online transaction. Other researchers also indicate that personal relationships play an important role in Chinese e-business market. For example, Chen et al. (2007, p.97) illustrate that the market is a social environment and a social relationship is "the most important customer service". Similarly, Martinsons (2008) argued that institutional deficiencies in China encourage people to build their relationship network and only do business with others in their relationship network.

In this situation, we adopt typology of relationship content and decompose the buyer-seller relationship into instrumental ties and expressive ties. We name it as a swift relationship between buyer and seller, considering that such a relationship needs to be quickly formed and it can be shallow as it can be already sufficient for an online transaction. Instrumental ties can be used to facilitate resource exchange which mainly emerges from a formal relationship, while expressive ties mainly reflect feelings and emotions to express social support and a sense of belonging (Balkundi and Harrison 2006). As such, instrumental ties can reflect a transactional buyer-seller relationship while expressive ties can cover the relational perspective of a relationship built between buyers and sellers (Lee et al. 2001).

Theoretical Development and Hypotheses

Grounded on uncertainty reduction theory and relational contract theory, we develop our conceptual model (as shown in Figure 1). According to uncertainty reduction theory, we argue that buyers and sellers in online markets communicate with each other with uncertainty reduction as the means to achieve the final goal of completing the transaction to maximize their own values. Meanwhile, we combine relational contract theory, including relational contracts and formal contracts, to regulate and guide online transactions. Specifically, we choose the swift relationship as the relational contract and institutional structures as the formal contract, aiming to investigate their moderating effects in the whole transaction process. Definitions of the constructs are summarized in Table 1.

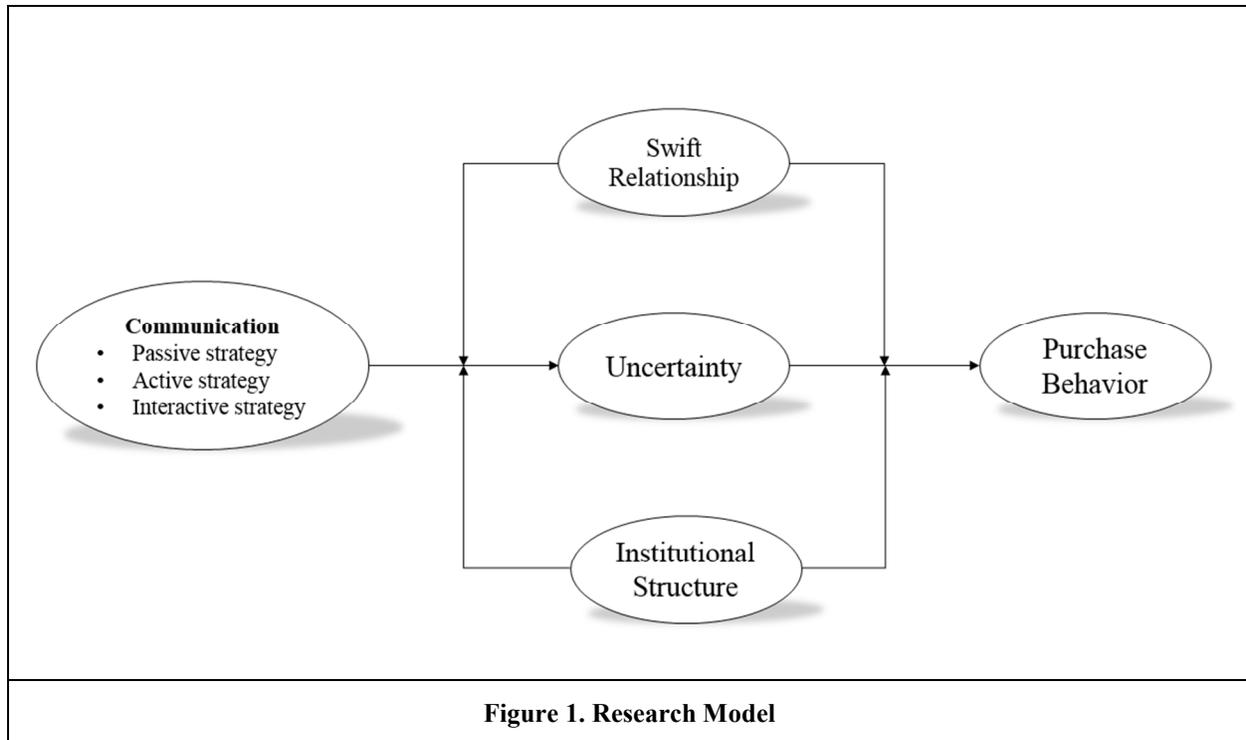


Figure 1. Research Model

Table 1. Construct Definition		
Construct	Definition	source
Passive strategy	The reliance on unobtrusive observation, where uncertainty is reduced by witnessing behaviors and drawing conclusions based on the observation of an individual's action	(Berger 1979; Flanagin 2007)
Active strategy	Requiring individuals to exert some type of effort to obtain uncertainty-reducing information, e.g. seeking relevant information directly from others	
Interactive strategy	Individuals' engagement in some form of interaction with one another	
Uncertainty	A buyer's difficulty in predicting the outcome of an online transaction due to information asymmetry	(Dimoka et al. 2012)
Swift relationship	A shallow buyer-seller connection swiftly formed online, covering both instrumental ties (i.e., the aspect of transactional buyer-seller relationship) and expressive ties (i.e., the aspect of relationship buyer-seller relationship)	(Balkundi and Harrison 2006); (Lee et al. 2001)
Institutional structure	The linkages to third-party institutional mechanisms exhibited by an online vendor in order to assure customers that transactions with that vendor are secure	(Fang et al. 2014; Pavlou and Gefen 2004)

Communication and Uncertainty

Uncertainty reduction theory (Berger 1979) fundamentally suggests that communication and information exchange can lead to uncertainty reduction. Although this theory has been primarily used in the context of

face-to-face relationships, it has also been extended to the online context. Information asymmetry in the online context is even more salient compared to the offline context. Usually uncertainty arises because of a lack of information. According to the theory, three strategies can help decrease uncertainty, which is applicable to the online context. Specifically, they are 1) passive strategies, which mainly rely on observation without interference; 2) active strategies, which refer to seeking information from others; and 3) interactive strategies, which refer to direct information exchange and contact with one another.

According to the setting of online shopping platform, the passive strategy from observations can enable buyers to obtain very important information promptly, including transaction records (how many products have been sold in the past), seller reputation (overall seller rating, and detailed rating include service quality rating, delivery rating and description rating), and product reviews offered by buyers. This information can effectively reduce uncertainty towards unknown sellers during online transactions (Flanagin 2007). Hence, we propose:

H1a. The use of a passive communication strategy by buyers on online shopping platforms can decrease the perceived uncertainty in online transactions.

Recently online shopping platforms have offered the function of “asking others” as one more channel to obtain information about products and sellers. Visitors and potential buyers have the right to ask any product related questions on the product purchase webpage. Both buyers who have already bought the product and the seller can answer the questions. Since most of the answers come from previous buyers instead of sellers, potential buyers might think the replies are more authentic and objective compared to traditional product reviews. Any potential buyer can actively make use of such a new channel to obtain useful information about products, transaction process and the sellers so as to minimize the uncertainty in online transactions. Hence, we propose:

H1b. The use of an active communication strategy on online shopping platforms can decrease the perceived uncertainty in online transactions.

The fundamental way for buyers to obtain information is still through direct communication with sellers. Wangwang, the instant message tool that is embedded in TaoBao’s shopping platform, facilitates more than 90% of the transactions on TaoBao (c.f. Ou et al. 2014). Sellers might not have the responsibility to answer all the questions from buyers. However, those sellers who have the capability to and do answer the questions w from buyers can easily address the concerns of the potential buyers and easily create a good impression to the buyers. Accordingly, we suggest that interactive communication between buyers and sellers can help to decrease buyers’ perceptive uncertainty. Hence, we propose:

H1c. The use of an interactive communication strategy on online shopping platforms can decrease uncertainty in online transactions.

Uncertainty and Purchase Behavior

According to predicted outcome value theory (Sunnafrank 1986), which was developed from uncertainty reduction theory (Berger and Calabrese 1975), uncertainty is regarded as a means by which individuals can maximize their outcome value through better predicted future relational outcomes. That is to say, uncertainty reduction is not the final goal, but individual buyers need to maximize their outcome value by making the right purchase decisions. When uncertainty decreases, indicating that buyers are more willing to rely on sellers and the information they provide, buyers will regard sellers as credible information sources. In this way, their purchase confidence would be enhanced and they would be more inclined to continue the exchange relationship, which illustrates the possibility of enhancing purchase behaviour. Hence we propose:

H2. Uncertainty is negatively associated with purchase behavior.

The Moderating Role of Buyer-Seller Relationships

When a swift relationship is built, buyers and sellers are believed to establish the relationships based on mutual understanding, reciprocal favors, and relationship harmony (Ou et al. 2014). In this way, a swift

relationship between buyers and sellers would smoothen the whole transaction process, making it easier for buyers to receive and trust information obtained from sellers. Previous research indicates that swift guanxi works as a lubricant during online transactions (Ou et al. 2014). In addition, Wang and Groth (2014) suggest that customers in positive relationships would be more likely to “see what they want to see” and choose to overlook those negative clues. Under the circumstance of being with a good relationship, communication can be undertaken more easily, effectively and smoothly. Accordingly, we argue that buyers in a positive relationship with sellers would be more likely to accept and trust the information transferred through the communication with buyers. This process would help them to reduce uncertainty in an effective and positive way. Hence, we propose:

H3. A swift relationship between buyer and seller positively moderates the impact of communication on reducing uncertainty.

When uncertainty decreases, buyers are more willing to continue the exchange relationship with the seller. In the context of China, people normally are inclined to do business with people with whom they have swift relationship, even in the online context (Martinsons 2008). That means if the relationship between an online buyer and a seller is strong, even a minimal level of uncertainty reduction may be sufficient for the buyer to reach a purchase decision. Hence we propose:

H4. A swift relationship between buyer and seller positively moderates the impacts of uncertainty on purchase behavior.

The Moderating Role of Institutional Structures

Institutional structures offer a safe online transaction platform for buyers and sellers (Pavlou and Gefen 2004). When buyers and sellers perceive the high effectiveness of these institutional structures, they would feel that they are well protected by the platform. As such, buyers would place more trust on sellers, and through communication processes, information asymmetry would be more easily decreased. In addition, in a relatively safe and well protected transaction environment, even minimal information might be considered sufficient for conducting transactions and thus a minimal level of communication can help reduce the consumer’s perceived uncertainty. In contrast to the moderating effect of swift relationship, which comes from the relational perspective (which means one person is more willing to believe another party because they have a relationship), the moderating effect of the institutional structure comes from the cognitive perspective (which means one person is more willing to believe another party because s/he knows that the other party doesn’t have a reason to cheat). Therefore, we propose:

H5 Institutional structures positively moderate the relationship between communication and uncertainty.

Institutional structure is a kind of formal contract that represents promises and obligations regulated from platform aiming to protect both buyers’ and sellers’ interest during transactions (Pavlou and Dimoka 2008). According to transaction cost economics, uncertainty is the main condition which might lead to the exchange hazards that make contractual safeguards necessary (Poppo and Zenger 2002). Accordingly, when buyers feel that they are well protected by the platform, they would be much more assured and willing to conduct transactions when uncertainty is decreased. On the other hand, when the institutional structure is not effective, even though buyers can fully rely on sellers, buyers would still be concerned with other transaction related issues which are beyond the control of sellers’, such as payment and security. Hence, institutional structure offers both buyers and sellers a safer transaction environment, which helps to strengthen the relationship between uncertainty and purchase behavior. That means the negative relationship between uncertainty and purchase behaviour would be strengthened when the institutional structure is more effective. Hence we propose:

H6 Institutional structures positively moderate the impacts of uncertainty on purchase behavior.

Furthermore, we intend to explore the association between institutional structures and swift relationship. We argue that when the perceived effectiveness of institutional structures is high, buyers would have a strong belief that their interest is highly protected. In such a case they will be less inclined to rely on an interpersonal connection like swift relationship. On the other hand, when the effectiveness of institutional

structures is perceived to be low, buyers would rely more on building swift relationship with sellers, which leads to a strong swift relationship in online transactions. We hence hypothesize that:
 H7a Increases in institutional structure discourage the formation of swift relationship.
 H7b Decreases in institutional structure encourage the formation of swift relationship.

Proposed Methodology

We plan to survey the actual users of electronic platforms for their experience of communication, institutional structures, swift relationship with a seller, as well as to measure their perceived uncertainty about the purchase and then the amount and evaluation of the actual transaction in the electronic platforms. We target the users of largest online B2C and C2C platform in China, TaoBao.com, to collect both subjective and objective data. Regarding the measure of the principal constructs in the proposed research model, the survey instrument will be developed based on the items adapted from existing literature. In order to obtain multi-aspect data and avoid common method bias, we will also collect objective data of survey participants' record of communication with the seller, purchase amount, product category, their online purchase evaluation. All constructs (except the demographic data and objective data) will be measured using a 7-point Likert scale. We will host the survey at a website and invite actual TaoBao buyers to participate. We will compare our sample with the statistical data about TaoBao users from Alexa.com so as to examine the sample representativeness. Measurement information is indicated in Table 2.

Table 2. Measurement Information	
Construct	Source & Objective data
uncertainty	(Luo et al. 2009)
Swift Relationship	(Manev and Stevenson 2001)
Institutional structure	(Pavlou and Gefen 2004)
Passive strategy	Sales volume, positive rating, seller classification, product information, performance evaluation
Interactive Strategy	Buyer-Seller communication frequency, length, quality
Active strategy	Information quality & quantity obtained in Q&A section
Purchase Behavior	Purchase volume and amount

Potential Implications

We expect our study will have several implications, both theoretically and practically. Firstly, we extend the uncertainty reduction theory by considering communication as an effective strategy in the e-commerce context. Most past studies on e-commerce regarded the online purchase as an automatic process like using a vending machine (c.f., Ou et al. 2014) and consider that uncertainty can be managed by demonstrating more information about products and the seller online, including visual and written information (Dimoka et al. 2012). The current study offers a different angle to reduce uncertainty in online purchase via direct and interactive communication with the sellers. Our conceptualization and integration of the three communication strategies (Berger 1979; Flanagin 2007) into the online context to reduce uncertainty provide a springboard to further investigate the online uncertainty reduction process.

Second, our study extends the relational contract theory (MacNeil 1980; Carson et al. 2006) into the online transaction context. We conceptualize the implicit/explicit contracts in the online context into formal and relational contracts, in which the former specifies the institutional mechanisms, while the latter denotes a swift relationship between the buyer and the seller. Future research on contractual theory can make use of our conceptualization and specifications into investigate how these informal and formal contracts interact with each other (such as co-exist, substitution, and complementarity) in business negotiations and transactions.

Furthermore, we integrate contract theory, uncertainty reduction and communication strategies into an overarching theory as we examine consumers' online purchase behavior. Communication, formal and informal contracts, uncertainty are not isolated, yet to the best of our knowledge, they have yet to be examined in an integrated vein. In this study we conceptualize the moderating effects of formal and informal contract in the path from communication to uncertainty reduction and subsequently consumers'

purchase behavior. Future research can ground on our conceptualization and modeling to investigate the dynamics of business negotiation and relationships.

In addition to the above theoretical implications, in this study we provide both buyers and sellers with effective practical guidelines on uncertainty management. Uncertainty may be an inherent characteristic of online transactions. However, there are many mechanisms that can be used to reduce this uncertainty. Information asymmetry is the root cause of uncertainty. Communication is perhaps the most fundamental, but often neglected, means to treat this root cause. However, whether one certain communication strategy is effective can be subject to the contextual issues like institutional structures and the relationship between the seller and buyer. We recommend both buyers and sellers to adjust their methods, specifically communication strategy, in reducing certainty by considering the contextual issues. Such guidelines are also applicable to the design of online platforms.

To conclude, in this study we propose an overarching theory that integrates communication, swift relationship and institutional structures in examining uncertainty reduction and subsequently consumers' online purchase behavior. We encourage IS researchers to build on our theory in future so as to resolve the problems of uncertainty with the aid of IT.

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