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An exploratory study of buyers' participation intentions in reputation systems: The relationship quality perspective

Abstract. *Drawing upon a relationship quality framework, this study identifies how satisfaction, trust and different conflict handling styles influence online buyers' participation intentions in reputation systems associated with a C2C online shopping platform. Due to the overwhelmingly positive nature of submitted ratings and an insufficiency of textual feedback, we focus on the intention to submit positive ratings and textual feedback in this study. Further, we investigate how these effects are moderated by social conformity and the perceived value of knowledge. The results of a survey of 269 online buyers indicate that satisfaction, trust and an accommodating conflict handling style have a positive impact on the intention to submit positive ratings while an avoiding conflict handling style has a negative impact on the intention to submit positive ratings. Implications and suggestions for future research are provided.*

Keywords: reputation systems, relationship quality, conflict handling styles, social conformity, perceived value of knowledge

1. INTRODUCTION

Online reputation systems have become an important component of online shopping because they help in building trust [6], increasing profits [79], and making the whole market performance more efficient [71]. As far as sellers with a weak reputation are concerned, their previous failure to deliver products or services implies that they will not be chosen by buyers as trade partners [21]. Many buyers have formed the habit of reviewing sellers' reputation records before making purchase decisions. This ensures that reputation is a crucial guide to a seller's trustworthiness. IResearch, a leading organization focusing on in-depth research in China's Internet industry, indicates that reputation, after sales service, and buyers' comments comprised the three most influential factors in buyers' purchasing decisions [35].

However, even though the importance of reputation systems has been recognized in

previous research, there is a paucity of literature that focuses explicitly on the participation conditions of these systems. Dellarocas suggests that sufficient participation can make the systems more effective, since eliciting sufficient feedback is deemed to be a new opportunity and challenge for research into the study of online systems [21]. Previous research has proposed that satisfied buyers are more likely to post feedback, indicating that reputation systems do not reflect the true feelings of all previous buyers, notably dissatisfied buyers. Scholars further contend that risks associated with trading in the C2C context are higher than is suggested by reputation systems [23]. This means that buyers may not have sufficiently taken advantage of the opportunities offered by reputation systems. Dellarocas *et al.* [22] consider feedback to be a form of public good and analyze online feedback contributions in terms of selfish and altruistic motives, not differentiating buyers' and sellers' contributions. However, IResearch's report indicates that buyers' contributions receive the most attention from potential buyers who are making purchase decisions [35].

Both practitioners and researchers have found that in practice there are several forms of reporting bias in reputation systems [23, 33, 37], notably the overwhelmingly positive nature of ratings and an insufficiency of textual feedback. Dellarocas & Wood argue that reputation systems' usefulness in both deterring fraud and informing buyers can be diminished if the bias from such an overwhelmingly positive set of ratings is severe enough [23]. Further, dissatisfaction with unsuccessful shopping experiences diminishes buyer loyalty, with the result that new buyers in particular may not stick to the same shopping platform [56]. Thus, an inefficient or ineffective reputation system may damage the long-term development of an online market. Consequently, it is meaningful to know why people intend to provide a positive rating and what determines their intention to leave textual feedback since an online reputation system cannot be successful without sustained voluntary feedback contributions [22].

Extending this trend, our study aims to address the following two research questions: What kinds of factors will determine buyers' intention to give positive ratings and textual feedback in online reputation systems? How do these factors affect buyers' participation

intentions in reputation systems? We decided to focus on the intentions rather than actual behavior for the following two reasons. First, positive ratings constitute the majority of the ratings (more than 99%), hence investigating why people intend to submit a positive rating is meaningful. Second, we believe that the real percentage of satisfied buyers is far lower than 99% [23]. That is to say, the actual behavior of the rating submission is badly distorted for many reasons. Hence, intention can better show buyers genuine intentions than actual behavior.

This research adopts a relationship quality framework to investigate the antecedents of buyers' participation intention in reputation systems. Relationship orientation has been suggested as a key operational mode in Chinese social life [72]. Scholars also indicate that in the Chinese C2C market, social relationships are more important than transaction service since the Chinese C2C market is socially oriented and "social relations play a crucial role in maintaining customers in China" [12]. We also analyse the antecedents of intentions to provide textual feedback because many buyers choose to write nothing, although textual feedback contains useful information that supplements numerical ratings [49]. At the same time, in previous research little attention has been paid to the perspective of real users: the actual buyers who participate in and use the reputation system in the C2C online shopping platform. However, all systems have to be used by buyers first before their needs can be fulfilled. Hence, this research will target real online buyers as our research respondents and establish what drives them to participate in reputation systems in online C2C markets.

2. LITERATURE REVIEW

2.1 Reputation Systems

A reputation system is a mechanism which can be used to reduce the number of problems caused by information asymmetry between sellers and buyers in an online shopping context [80]. Information asymmetry is one of the major reasons for market failure [2]. Buyers tend to have less information about products than sellers which results in buyers being unable to

evaluate product quality before purchase [42]. This condition is especially serious in the online shopping context because nearly all the information that buyers can obtain is from the seller's description in the web pages; buyers cannot touch the product or judge its quality directly, unlike in the offline shopping context. Thus, some sellers might take advantage of this opportunity to deliver a product of lower quality than they claim in their description of the product. To avoid this potential for online shopping deception, reputation systems have been introduced to encourage sellers to be honest. It has also been found that a seller's good reputation can help to reduce a buyer's risk perception [4]. Based on Shapiro [57], a seller with a good reputation would not behave opportunistically by enjoying a price premium. According to this logic, a seller would gain more profit in the long term from his good reputation because a good reputation would bring sellers both higher prices and more customers. The seller who engages in opportunistic behavior would not only damage his reputation, but also have his losses exceed his long term gains. Thus, a good reputation not only ensures sellers' long term profits, but also ensures sellers' honest behavior. In the end, both sellers' and buyers' benefits would be ensured by this mechanism.

With the prosperity of online shopping markets, reputation systems (also known as online feedback mechanisms) have been the focus of considerable research effort. Research confirms the contribution of reputation systems from the perspective of such outcomes as: trust building [5]; bringing higher profit [43] and improving market performance [71]. In addition to the positive functions which have been brought about by reputation systems, there is also considerable research that has begun to explore participation and communication issues of the systems.

Resnick & Zeckhauser [53] summarize several findings from their investigation of the reputation systems from eBay's online auction website: 1) More than half the transactions receive feedback; 2) Positive ratings occupy an extremely high percentage; 3) When Pollyanna assessments (disproportionately positive ratings which make newcomers overestimate performance of the website) are encouraged by the website, the system is likely to be less effective or convincing. Dellarocas [21] regards online feedback mechanisms as a

digitized form of word-of-mouth (WOM) behavior. After conducting a case study on eBay's feedback mechanism, he proposed several ways in which these feedback mechanisms could be designed, evaluated and used more effectively. Dellarocas & Wood confirm that satisfied customers are likely to give feedback, and satisfactory outcomes are more likely to be reported by online buyers, which could account for the overwhelming proportion of their positive ratings on eBay [23].

Dellarocas *et al.* [22] investigate participation conditions in online reputation systems in the context of eBay and demonstrate that altruism, self-interest and reciprocity all lead to buyers' participation. According to their research, they found that voluntary online feedback contributions are mainly motivated by self-interest rather than pure altruism. They also find that feedback submission is positively correlated to the reputation scores. However, Dellarocas *et al.* do not differentiate sellers and buyers when studying contributions to reputation systems [22]. Thus, self-interested motives mainly come from sellers for there will be no interest for a buyer to gain even if they contribute [77]. Further, as IResearch shows [35], buyers' comments receive the most attention when purchase decisions are considered. Hence, investigating participation in reputation systems from the buyers' perspective is necessary.

2.2 Relationship Quality

The concept of relationship quality stems from the area of service management and relationship marketing. It refers to the customer being "able to rely on the salesperson's integrity and has confidence in the salesperson's future performance because the level of past performance has been consistently satisfactory" [20]. Although some researchers have recently applied the concept to inter-organizational relationships [32], it was originally applied to interpersonal relationships and this is our current context. Relationship quality is a critical indicator of a healthy relationship between buyers and sellers and has been used to measure interpersonal relationships (customer and salesperson) [20]. Relationship quality has been defined as a high-order construct which is made up of several components. However, so

far there is no consensus on what these components are. As Hennig-Thurau [31] claims, authors “tend to assume that everyone has some kind of intuitive understanding of what it involves”. For instance, Crosby *et al.* [20] first indicate that trust and satisfaction are the basic components of relationship quality. They propose that relationship quality can be “achieved through the sales person’s ability to reduce perceived uncertainty”. Sanchez-Franco, Ramos and Velicia [55] suggest that relationship quality should include trust, satisfaction, and commitment. Skarmeas & Robson [59] consider trust, commitment, satisfaction and conflict to compose relationship quality. Zhang *et al.* [78] include factors of satisfaction and trust .

The preceding review of the literature on relationship quality indicates that it is regarded as a high-order construct which is composed of several different yet related dimensions. Since relationship quality has a number of different components, its definition can vary according to the research context. However, satisfaction and trust are the most common factors across the research studies we examined. Trust refers to “a confident belief that the salesperson can be relied upon to behave in such a manner that the long-term interest of the customer will be served” and satisfaction refers to the emotional state that is created as a result of an evaluation of these interaction experiences between buyers and sales people [20]. Besides, Crosby and his colleagues focus on the perspective of a salesperson’s ability to reduce customers’ perceived uncertainty. This is salient for our research context, C2C online shopping, where online buyers face higher uncertainty than offline buyers; consequently, relationship quality composed of satisfaction and trust also makes sense in our research model.

2.3 Conflict Handling Theory

Conflict, which has been defined as a “perception of incompatibility between values, needs, interests or actions” [76 p.167], happens in people’s daily lives in many different ways. It is believed that people’s different strategies in handling conflict will lead to different outcomes and different relationships [60]. Conflict handling styles have been the focus of research in many disciplines, notably management, negotiation and leadership. Moberg [44 p.147] presents conflict style as “specific behavioral patterns that one prefers to employ when

addressing conflict situations”. Shell [58] complements this concept and adds that conflict styles could be viewed as predispositions of peoples’ behavior in conflict situations, formed due to the influence of personality.

Blake & Mouton [9] proposed a dual concern model, describing five styles of interpersonal conflict management that are derived from two dimensions: “concern for people” and “concern for production”. Blake and Mouton [8] indicate that these dimensions are the two major factors that a person would be concerned about during a conflict situation. Based on Blake and Mouton’s model, other two-dimensional models have been developed to explain the choice of different conflict styles when confronted with interpersonal conflicts [30, 50, 51, 63]. In these models, researchers, despite giving different names to the dimensions, agree that conflict handling choice is based on two dimensions: “concern for self” and “concern for others” [61]. Five conflict handling styles have been developed from these two dimensions [61]: “competing (high concern for self and low concern for others); collaborating (high concern for both self and others); compromising (moderate concern for both self and others); accommodating (low concern for self and high concern for others); and avoiding (low concern for self and for others)”. Under this framework, in determining styles of cognition and thinking, it is crucial to understand how people respond to conflict.

Previous research [64, 68] indicates that the avoiding and compromising conflict handling styles, which can coexist, are the ones that the Chinese people are more likely to adopt when encountering conflict situations. Munduate [46] contends that people are likely to combine different patterns of conflict handling styles rather than using them independently. Van De Vliert, Euwema and Huisman [67, p. 272] proposed the concept of conglomerated conflict handling behavior to describe the “aggregation of various degrees of several modes of conflict handling”.

3. RESEARCH HYPOTHESES

3.1 Preliminary Interviews

Before developing hypotheses, and as part of our preliminary research, we conducted a small scale set of interviews with online buyers from TaoBao in order to understand the research context more clearly. The TaoBao website is chosen as our research context because of its leading status in the C2C online shopping market in China. According to a report from iResearch [36], TaoBao has cornered more than 90% of the Chinese C2C market share. After each transaction on TaoBao is finished, buyers are given the opportunity to rate sellers with a simple ternary evaluation: positive, negative or neutral. Buyers are also invited to contribute up to 500 words of text describing their feelings about this transaction. Neither the evaluation nor the textual feedback is compulsory. However, if a buyer does not elect to rate a seller's performance, then the seller is automatically given a positive evaluation by the reputation system. These system-generated positive evaluations can be distinguished from positive ratings given deliberately by buyers. A seller's reputation is closely tied to the evaluations they receive from buyers. Sellers receive one reputation point for a positive evaluation, no points for a neutral evaluation, and one point is subtracted for a negative evaluation. The more reputation points that a seller accumulates, so the higher the rank of the seller. Generally speaking, highly ranked sellers find it easier to attract buyers [37]. After a rating has been submitted, TaoBao operates a review process which can change a negative rating to a positive rating if the seller can provide persuasive evidence that the negative rating is unreasonable. Ratings may also be changed if they are the result of such actions as inappropriate manipulation of the reputation system (e.g. an action taken by a seller so as to negatively affect a competitor's reputation).

We interviewed 30 buyers altogether, each of whom had previously engaged in at least three successful transactions on TaoBao. Each interview lasted 10 to 30 minutes. The interviews were conducted online using WangWang, a proprietary instant messaging tool especially designed for and mainly used by sellers and buyers on TaoBao. We asked open questions

about participation in reputation systems. Answers from online buyers were coded following open coding techniques [18], classifying textual answers from buyers into different factors. After open coding, we used axial coding to group the concepts into similar themes. Interview results are listed in Table 1.

Insert Table 1 here

Results from interviews indicate that a buyers' intention to participate in a reputation system can be directly affected by satisfaction and conflict handling styles. After conducting these interviews, we organised an online group discussion to triangulate the data collected in the interviews. During the online discussion, we confirmed the interview results and also identified a new factor: trust in seller. We clarify that if buyers trust a seller, then they will be more willing to leave textual feedback.

3.2 Hypothesis Development

A high quality buyer-seller relationship is mainly due to previous satisfying interactions and has a significant impact on seller-buyer future interactions [8]. Buyers who exhibit a high relationship quality are inclined to be more cooperative and confident to sellers, hence they are more likely to offer positive rating and feedback to enhance sellers' reputation. Meanwhile, positive rating and textual feedback have the characteristic of having a huge scale, having control (power) through the introduction of automated feedback mediators by information technology, and having trustworthiness of information offered by online interaction [21]. Information offered through reputation systems can be regarded as a form of digital WOM behavior [21] while relationship quality, including satisfaction and trust, have been found to have a positive impact on WOM behavior in the Chinese context [13].

In C2C online shopping platforms, ratings and textual feedback submitted by buyers are based on a single transaction with a certain seller. Thus, satisfaction with the seller exerts a significant impact on the positive rating and feedback submission intention. It has been found that satisfied buyers have a higher propensity to post positive feedback [23], since, in the business context, satisfaction with the transaction is mostly consistent with satisfaction with the service provider [19].

Satisfaction is an important determinant of spreading information through WOM behavior [3, 11]. Casalo *et al.* [11] indicate that satisfaction with previous interactions from a bank website had a positive influence on positive WOM behavior. Ranaweera & Prabhu [52], after conducting a large scale survey investigating fixed line telephone users, report a similar result, showing that satisfaction is the main driver of positive WOM. In an analysis of more than 50,000 eBay transactions, Dellarocas & Wood [23] concluded that satisfied traders are more likely to offer feedback, while dissatisfied traders are more likely to choose to keep silent. Thus, we hypothesize that:

H1. Satisfaction with a seller has a positive effect on the intention to submit a positive rating.

H2. Satisfaction with a seller has a positive effect on the intention to submit textual feedback.

Trust has been defined as “existing when one party has confidence in an exchange partner’s reliability and integrity” [45]. Little research has been conducted to investigate the relationship between trust and participation in reputation systems. However, we find some clues from past research focusing on trust. Previous research indicates that trust can lead to cooperative behavior in virtual contexts as well as in real contexts [48]. In the online shopping context, submitting a positive rating is a typical cooperative behavior because a positive rating can enhance a seller’s reputation. Prior research also shows that trust leads to positive WOM behavior [52]. Ranaweera & Prabhu [52] propose that trust is an antecedent to customer loyalty and that positive WOM is a typical characteristic of a loyal customer. It has also been demonstrated that buyer trust in an seller will lead to positive WOM intentions [28]. Accordingly, we propose that:

H3. Trust in a seller has a positive effect on the intention to submit a positive rating.

H4. Trust in a seller has a positive effect on the intention to submit textual feedback.

Our pre-survey interview results provided hints of antecedents of the intention to submit positive ratings from a conflict handling style perspective. Many buyers adopt avoiding or accommodating conflict handling styles when they are in conflict with sellers. A buyer with a high accommodating conflict handling style expresses a low degree of concern for self and a high degree of concern for the seller. If these buyers receive a product that they are not satisfied with, they are not likely to blame the sellers openly; indeed, they would tend to think that a negative or neutral rating will harm the seller’s reputation which, in turn, could influence future transactions with this seller.

A buyer with a high avoiding conflict handling style expresses a low concern both for self and the seller. If these buyers receive a product that they are not satisfied with, they are likely to offer sellers a positive rating because they want to avoid an embarrassing experience or conflict with the seller. Alternatively, they let the system give a automatic positive rating to the seller.

These actions are consistent with prior research which demonstrates that traditional Chinese culture may influence Chinese negotiating behavior [38]. For instance, research

indicates that people, such as the Chinese, who are influenced by a long term orientation culture are inclined to suppress conflict [54]. Hence, Chinese people are inclined to adopt avoiding and accommodating conflict handling styles rather than a competing style. Ting-Toomey *et al.* [65] investigated the relationship between face maintenance dimensions and conflict styles in five countries, including China. Their research shows that Chinese people are more likely to use a high degree of both the accommodating and avoiding conflict handling styles. Further, Ma [40] has proposed that the Chinese culture of collectivism might lead to non-confrontational styles, including the accommodating and avoiding styles. Thus, we propose the following two hypotheses:

H5. An accommodating style of conflict handling will positively affect a buyer's intention to submit positive ratings.

H6. An avoiding style of conflict handling will positively affect a buyer's intention to submit positive ratings.

According to Ford & Staples [26], a person's perceived value of knowledge (PVK), which reflects "the value that the individual places on his/her knowledge", is another critical factor that impacts his/her knowledge sharing intention. Ford & Staples [26] propose three dimensions of PVK - usefulness, benefits and the source of knowledge - and then suggest that these three dimensions are critical determinants of a person's intention to share knowledge. They also suggest that PVK could indirectly affect knowledge sharing by functioning as a moderator of the existing knowledge sharing intentions. For example, individuals could be inclined to share high-value knowledge with close colleagues yet share low-value knowledge with distant colleagues [26]. In the context of reputation systems, textual feedback does not fit the dimension of benefits, for online buyers who have purchased a certain kind of product cannot get direct rewards or benefits when they offer useful and credible views to reputation systems. Therefore, a buyer's knowledge sharing behaviour might be more directly related to interpersonal factors, such as trust, rather than her/his PVK. This suggests that the influence of a buyer's PVK on her/his intention to submit textual feedback is mediated through a process that involves leveraging the impacts of relationship quality.

Some scholars have suggested the importance of exploring the moderating effects of PVK in knowledge sharing. For instance, Ye *et al.* [73] suggest that PVK positively moderates the relationship between enjoyment in helping others and knowledge contribution intention in virtual communities. Consequently, we propose that higher PVK can strengthen the relationship between satisfaction and the intention to submit textual feedback. According to Anderson [3], altruism is the most important underlying reason explaining the positive relationship between satisfaction and WOM. Therefore, for a buyer whose textual feedback submitting intention is primarily motivated by satisfaction, a higher PVK means more perceived contribution of her/his submission which consequently fits her/his altruistic stance, eventually resulting in a stronger intention to submit textual feedback.

On the other hand, the relationship between trust and the intention to submit textual feedback could also be positively moderated by PVK. Developing cooperative behavior is a basic consideration of a trusted buyer to submit textual feedback [48]. Since a higher PVK means more valuable perceived contributions of a buyer's textual submission, a feedback submission from a buyer with a high PVK could ensure that such trust-based cooperative behavior becomes stronger and more meaningful. Hence, we propose that PVK can positively moderate two relationships: between satisfaction and the intention to submit textual feedback; and between trust and the intention to submit textual feedback. Therefore, we hypothesize:

H7. Perceived value of knowledge positively moderates the relationship between satisfaction and the intention to submit textual feedback.

H8. Perceived value of knowledge positively moderates the relationship between trust and the intention to submit textual feedback.

Scholars indicate that an individual's behavior is likely to be affected by social influences in uncertain situations, and so an individual would tend to follow the preferences of the majority and engage in mimetic behavior; in this way, herding behavior occurs [7]. Social conformity, which refers to "the alignment of people's thinking or behavior with a societal or group norm" [17 p. 77], has been investigated in a variety of contexts that potentially relate to people's behavior. Social influences reflect both normative and informational social influence.

Normative social influence is “an influence to conform with the positive expectations of another” and informational social influence refers to “an influence to accept information obtained from another as evidence about reality” [24]. Scholars suggest that social conformity could cause herding behavior in the online shopping context. For instance, Dholakia *et al.* [25] note that online buyers will be more attracted by products that have existing bids. Huang and Chen [34] suggest that herding behavior caused by sales volume and customer reviews exerts an influence on buyers’ product choices. In this way, a buyer’s sense of social conformity might play an important role in the process of influencing relationship quality and conflict handling styles on the buyer’s intention to submit a positive rating.

High levels of social conformity indicate that buyers are likely to be strongly influenced by normative social influence from sellers and informational social influence from other buyers during their participation in reputation systems. In TaoBao’s reputation system, for example, more than 99% of ratings are positive, which constitutes a strong informational social influence. Consequently, sellers have a strong expectation for positive ratings from buyers, which in turn forms a strong normative social influence. In this situation, buyers characterised by high social conformity might feel that submitting a positive rating is an implicit routine in the platform. On the other hand, an individual’s social conformity will impact the person’s behaviour in conflict situations [16]. Therefore, for a buyer whose positive rating submitting behavior is mainly determined by their conflict handling style, a higher degree of social conformity means a stronger inclination to avoid conflict and follow implicit routines, eventually resulting in a stronger intention to submit a positive rating; Thus, we propose that

H9. Social conformity positively moderates the relationship between an accommodating conflict handling style and the intention to submit a positive rating.

H10. Social conformity positively moderates the relationship between an avoiding conflict handling style and the intention to submit a positive rating.

Insert Figure 1 here

4. RESEARCH METHODOLOGY

4.1 Sample and Data Collection

Due to the paucity of prior literature, a small scale set of pre-survey interviews was conducted to explore the research scope more thoroughly. Based on our analysis of the interview data, we then proposed a research model that incorporates both a relationship quality perspective (including satisfaction and trust) and conflict handling styles. Interview data suggests that buyers are inclined to choose both accommodating and avoiding conflict handling styles when they face disagreement with sellers. Hence, we include both these two conflict handling styles in our model. In this study, according to the real process a buyer needs to go through, participation in a reputation system has been divided into two segments: indicative ratings (numerical scores) and qualitative textual feedback.

We adopted the survey method to test our hypotheses because it enabled us to gather real information from online consumers, enhancing the realism of our study. TaoBao's website (www.taobao.com) was chosen to be the research context given its large market share of the C2C online market in China. From TaoBao's website, we selected eight categories (as classified by TaoBao website) of tangible products: digital products, cosmetics, clothes, accessories, food, sports and stationery, mother & child, and household. For each of TaoBao's product categories, we choose the first ten sellers through the search engine without any sorting criteria. We then identified buyers who had transactions with these sellers through the reputation system. This contact information enabled us to have access to those buyers and we invited ten buyers from each seller to participate in our survey. In this way, we altogether identified 800 online buyers randomly (100 buyers per category).

We also prepared a text version of the questionnaire for those who failed or did not want to open the hyperlink but were still willing to participate in the survey. An important inclusion criterion was that a survey respondent must have had at least three transaction experiences on the TaoBao website. In this way we could be sure that they were familiar with the transactional processes of the website. The data collection lasted for one and a half months. In

order to motivate participation and ensure a higher response rate, we organised a lucky draw for respondents who completed the survey. When the data collection was complete, a cash prize ranging from 30 to 100 RMB (US\$4-14) was sent to randomly selected respondents through TaoBao's online payment system (Alipay). Altogether, we received 269 valid responses (a 33.63% response rate). Table 2 shows the demographic information of the respondents.

Insert Table 2 here

4.2 Measures

Following Churchill's [15] suggestions, most of the items used in the survey were developed from the literature. We adapted some of the items so as to better suit our research context. For some constructs which could not be found in the literature, we developed new questions based on a review of literature combined with the key words and content mentioned by interviewees during the online interviews. All questions in the questionnaire were measured using seven-point scales anchored from "strongly disagree" to "strongly agree". Three PhD students who had online buying experience in TaoBao reviewed the questionnaire items and suggested improvements. All the items are listed in Appendix 1.

Since the research was to be conducted in China, all instrument items were translated into Chinese. In the translation process, we followed the translation committee approach [66]. Before launching the large-scale data collection, the initial instrument was pilot tested with respondents in a virtual community who would be interested in the subject of this research. The cover letter and a copy of the questionnaire were e-mailed to the members of the virtual community. 30 useful responses were returned via e-mail directly to the first author. This was sufficient to perform the initial statistical analysis for the pilot test. To verify the developed items, we first analyzed the item-to-total correlation within every scale. As a result, we dropped two items, namely A3 (0.414) and L1 (0.302), because of their low item-to-total correlation. Further, we tested the Cronbach Alpha to determine each construct's reliability. In general, Cronbach Alpha values over 0.60 are considered to be acceptable for early stages of

research [62].

5. RESULTS

5.1 Measurement Model

According to two-stage analytical procedures [29], we examined the measurement model and structural relationships. We examined content validity, convergent validity and discriminant validity to validate the measurement model. Content validity was assessed by reviewing the literature and pilot-testing the instrument.

We examined the value of factor loadings, Cronbach's Alpha, composite reliability and the average variance extracted (AVE) to assess convergent validity. The results of CFA (Confirmatory Factor Analysis) show that all loadings were above 0.6. As shown in Table 3, Cronbach's Alphas ranged from 0.619 to 0.969, which were well-above the benchmark value of 0.60, and the composite reliability ranged from 0.795 to 0.976, which were higher than the recommended value of 0.7 [47]. Further, all constructs' AVEs were above 0.5. The results indicate that our measurement model has good convergent validity [14, 27]. In addition, the model fit indicators were $\chi^2(322)=849.37$, RMSEA=0.078, NNFI=0.95, CFI=0.96, and SRMR=0.074, which reveals a good model fit and further shows the good convergent validity of our measurement (Flynn *et al.*, 2009).

Insert Table 3 here.

Discriminant validity could be tested by comparing the relationship between correlations among constructs and the square root of AVEs [27]. Table 4 indicates that the square root of AVEs of each construct is greater than correlations between constructs, suggesting full discriminant validity. In addition, as shown in Appendix 2, all items load on their own constructs.

Insert Table 4 here.

Common method bias was assessed with Harman's one-factor test first. Through

principal components factor analysis, we obtained ten constructs with eigenvalues greater than 1.0, accounting for 75.18% of the variance. Meanwhile, the results indicate that the first of these ten constructs accounts for only 30.29% of the variance, inferring common method bias is not a serious issue in this study. To further ensure common method bias was not a serious threat, we also compared the fit between the one-factor model and measurement model. The results demonstrate that the one-factor model yielded a $\chi^2 = 4672.39$ and d.f. = 350, and the measurement model yielded a $\chi^2 = 803.38$ and d.f. = 322. Thus, the fit of the one-factor model is considerably worse ($p < .01$) than the fit of the measurement model. This indicated that common method bias would not impact the results of this study.

5.2 Structural Model

Hierarchical regression analysis has been used to test the structural model [39]. All items are standardized. Multicollinearity among the independent variables was not a serious problem in this research for we have checked tolerance values and variance inflation factors (VIF) and did not find any evidence of multicollinearity. In particular, for the intention to submit positive ratings, we included satisfaction, trust and two conflict handling styles (accommodating and avoiding) as the independent variables in the first step, and then added social conformity, and the interaction terms in the second step. Further, for the intention to submit textual feedback, we included satisfaction and trust as the independent variables in the first step, and then added perceived value of knowledge, and the interaction terms in the second step.

The regression analysis results are shown in Table 5. We examined respondents' age, education, income, product price and online shopping experiences to control for additional variables. None of these control variables display a significant impact on participation intentions.

For the hypotheses that relate to the intention to submit positive ratings, support for H1, H3, and H5 were found, which proposed that satisfaction ($b=0.422$, $p<0.01$), trust ($b=0.279$, $p<0.01$), and an accommodating conflict handling style ($b=0.133$, $p<0.05$) were positively

related to intention to submit positive ratings (Model 2). Contrary to H6, an avoiding conflict handling style ($b=-0.163$, $p<0.01$) is found to have a negative relationship with intention to submit positive rating. On the other hand, for H2 and H4 which relate to the intention to submit textual feedback, the results indicated that only satisfaction ($b=0.364$, $p<0.01$) was positively related to the intention to submit textual feedback, while there is no significant relationship between trust and the intention to submit textual feedback (Model 2'). Thus, H2 was supported while H4 was not.

In addition, the results also indicated that the positive moderating effect of perceived value of knowledge on the relationship between satisfaction and the intention to submit textual feedback was significant ($b=0.357$, $p<0.01$), which provided support for H7. No significant moderating effect was found between trust and intention to submit textual feedback, and hence H8 was not supported. We did not find any positive moderating effect of social conformity on the relationship between an accommodating conflict handling style and the intention to submit positive ratings. Thus, H9 was not supported. However, negative moderating effect of social conformity on the relationship between the intention to submit positive ratings was found, suggesting that social conformity can mitigate the negative relationship between an avoiding conflict handling style and the intention to submit positive ratings. Therefore, H10 was also not supported. Figure 2 illustrates these moderating effects following Aiken & West's [1] graphical procedure.

Insert Table 5 here

Insert Figure 2 here

6. DISCUSSION

The main effects of relationship quality on participation in reputation systems offer some new findings as well as confirming arguments expressed in prior studies. Satisfaction with sellers was found to have a significant positive relationship with the two kinds of participation in reputation systems: positive rating and textual feedback submission. However, where trust is

concerned, we only found that trust is positively related to intention to submit a positive rating yet did not find any significant relationship between trust and intention to submit textual feedback. This indicates that while trust in the seller can lead to submission of a positive rating it is insufficient to lead to submission of textual feedback, which contradicts previous research in offline environments [52]. It has been argued that consumers would recommend a provider they trusted to their acquaintances mainly because previous experiences might give them the confidence to do so [41]. However, providing textual feedback online is different from the offline situation because consumers would not know who will read their textual feedback. Hence, they might feel that they do not need to take responsibility for those strangers by sharing their online shopping experiences even if they can trust a certain online seller. In addition, our results indicate that satisfaction is the only antecedent which has a positive effect on the intention to submit textual feedback, which is consistent with Dellarocas & Woods' [23] finding that dissatisfied online buyers are inclined to keep silent. In addition, this result also confirms that individuals may not want to express the true extent of their dissatisfaction to people with whom they have weak ties [70].

In accordance with our hypotheses, satisfaction, trust and an accommodating conflict handling style are found to be positively related to the intention to submit positive ratings. However, our data analysis indicates that an avoiding conflict handling style is negatively associated with the intention to submit positive ratings, which is contrary to our expectations. From the definition of avoiding conflict handling style, we can find that it shows low concern for both self and others [61]. Therefore, people who adopt an avoiding conflict handling style do not consider anyone else's interest but simply avoid conflict situations. Besides, we measured intention rather than actual behavior of submitting positive ratings in our study. Online buyers who adopted an avoiding conflict handling style might not intend to submit positive ratings, yet still choose to avoid possible arguments with sellers and so just let the reputation system assign a positive rating by default. In this way, an avoiding conflict handling style can also explain why some buyers stopped giving ratings altogether and simply let the system assign positive ratings automatically.

The positive relationship between an accommodating conflict handling style and the intention to submit positive ratings indicates that an accommodating conflict handling style is an important factor influencing participation in reputation systems. The main reason for buyers to adopt an accommodating conflict style may be due to a high level of empathy with the seller developed during the buyer-seller interaction process [10]. TaoBao's website offers a platform where buyers and sellers can communicate with each other easily. One consequence of this communication can be an increased level of empathy that results in buyers behaving more considerately towards sellers. Thus, even if buyers are dissatisfied with the products they receive, they may still take the seller's effort into consideration and submit a positive rating as a form of encouragement, especially if the service quality was good. This act of consideration is very important to a novice seller who desperately needs to develop and enhance his/her reputation.

With respect to the moderating influences of perceived value of knowledge, we only found that perceived value of knowledge strengthens the relationship between satisfaction and the intention to submit textual feedback. Since we do not find a significant relationship between trust and the intention to submit textual feedback, our hypothesis that perceived value of knowledge can only catalyze existing intentions is supported in this study. The results also indicate that social conformity at a general level strengthens the relationship between an avoiding conflict handling style and the intention to submit positive ratings. A possible explanation for this phenomenon can be that there are many default positive ratings in the online reputation system, which means that those buyers who adopt an avoiding conflict handling style are less willing to give a positive rating by themselves, instead letting the system assign it by default. These default positive ratings can not only help buyers avoid potential conflict with the sellers, but also help buyers not to give a positive rating which would have been the opposite of their original intention. However, for the factor which has a positive relationship with the intention to submit positive ratings, the moderating effect has not been found. The possible explanation is that if online consumers are inclined to adopt an accommodating conflict handling style towards sellers, they are likely to be less influenced by

social conformity for they think that their decision is appropriate for the context of the TaoBao website and hence is more socially acceptable. This indicates that when making decisions of rating submission, especially neutral or negative ratings, those people who have high levels of social conformity are likely to be affected by the prior ratings made by other buyers.

This research confirms that satisfied online buyers are more likely to submit textual feedback and positive ratings. Previous research shows that “reluctance to transmit bad news” [23] could be a possible explanation. Besides, there are also other possible explanations for this phenomenon. Since many online buyers choose to adopt an avoiding conflict handling style, this indicates that they might not want to remind themselves of this unpleasant experience again and so choose to keep silent. According to Wetzer, Zeelenberg and Pieters [69], there are altogether eight motivations which can lead to WOM behavior: comfort search, venting, advice search, bonding, entertaining, self-presentation, warning and revenge. Due to limitations in the reputation system’s functions, not all of the goals of WOM can be realized, such as comfort search and advice search. Thus, buyers have fewer motivations to submit their negative textual feedback after a dissatisfying shopping experience. Moreover, some buyers indicated that they did not fully trust the reputation system, as sometimes their own negative ratings and negative textual feedback disappeared, without any appropriate explanation. Thus, they felt that submitting feedback was no use and gave up doing so.

7. LIMITATIONS AND EXTENSIONS

There are some limitations to this study which further research should address. Only buyers’ perceptions have been measured and investigated in this research. However, both sellers and buyers can participate in reputation systems, resulting in an interactional process. Dellarocas & Wood [23] propose that sellers’ ratings and textual feedback can also affect buyers’ participation. Future research could take the sellers’ perspective into consideration so as to render our understanding of participation process more complete.

We didn’t collect sufficient data describing buyers who submitted negative or neutral

ratings. Consequently, we do not have a deep understanding of the antecedents of negative or neutral ratings, nor of how these negative or neutral sentiments are expressed. What would they do with negative or neutral information obtained from reputation systems, and how would it affect the way they interact with sellers? What would motivate them to submit negative or neutral ratings? How else might they express negative or neutral feelings about their transaction experience? These questions could usefully be studied in future research.

Besides, more research is necessary in the following directions. First, textual feedback has its own valence similar to WOM, i.e. it can be negative, positive or neutral. However, the valence of the feedback has been ignored in this research, even though negative WOM and positive WOM might have different antecedents and so be motivated differently. Hence, in future research, negative, neutral, and positive WOM could be differentiated and different motives could be explored. Second, research on online knowledge contribution has emphasized the quality of knowledge, suggesting that high quality knowledge could keep an online community alive. In this study, we have only investigated participation intentions. Yoo, Suh, & Lee [75] find that knowledge quality can influence participation in online communities. Thus, the quality of feedback is critical for future development of reputation systems.

8. IMPLICATIONS

Notwithstanding these limitations, this study makes significant contributions to both research and practice. This study advances theoretical development in the area of reputation systems in the Chinese C2C online shopping context by integrating a relationship quality framework into our research model. We further enrich the study of reputation systems by examining factors from the relationship quality framework and conflict handling styles' effect on the intention to participate in reputation systems. It contributes to a better understanding of why online buyers from C2C websites are willing to participate in reputation systems. Indeed, research that focuses on antecedents of participation in reputation systems is quite limited. Researchers studying reputation systems mostly emphasize the functionality of the system itself yet

neglect the participation process. Dellarocas [21] encourages researchers to conduct empirical research which can consider systems users' perspectives. The present study responds to his call. From the perspective of relationship quality, our research extends our current understanding of reputation systems by refocusing attention from the system perspective to the user perspective. A high value of R square (0.528 for the intention to submit positive ratings and 0.393 for the intention to submit textual feedback) of each of the dependent variables indicates that we have captured the right orientation in this area.

Another contribution to the extant literature is that participation in reputation systems can also be explained through different conflict handling styles. This finding breaks new ground by introducing conflict handling styles into reputation systems research and confirms that an accommodating conflict handling style has a positive effect on positive rating intentions while an avoiding conflict handling style has a negative effect. This indicates the need for future research by adding a more detailed and comprehensive examination on conflict handling styles into reputation research.

The findings of the moderating effect of perceived value of knowledge enhance our understanding as to the function of perceived value of knowledge in the reputation systems context as well as the knowledge sharing area. While previous literature suggests a direct effect from perceived value of knowledge to sharing intentions, we believe that perceived value of knowledge can also be regarded as a moderator to strengthen existing positive relationships. As such, this study sheds new light on the role of perceived value of knowledge in affecting individuals' intentions both to share and to participate in online reputation systems.

The results of this study lead us to offer several suggestions for encouraging online buyers to participate in reputation systems. Sellers need to be honest and frank with buyers, keeping them updated with transactional information. They also need to develop a friendly relationship with buyers. For example, sellers can understand buyers' personal preferences through online communication so as to offer them better options. This can lead to buyers having higher levels of satisfaction and so a stronger intention to participate in reputation

systems.

There are also some implications for websites to improve their management of reputation systems. There is currently an atmosphere that neutral and negative ratings cannot be tolerated by sellers. E-commerce platforms like TaoBao should encourage buyers to submit their honest feedback regarding the transaction instead of being accommodating and giving positive responses. An excess of positive feedback could mislead future buyers and create distrust in reputation systems. Finally, it could even damage the reputation of the platform in the long run.

Not all buyers realize that their textual feedback is useful to future buyers. Platform managers could emphasize this point by adding some hints when asking buyers to write a comment, making them realize that they would make a valuable contribution to novice buyers by writing several words or sentences.

Buyers who have an avoiding conflict handling style are likely to let the system leave a positive rating automatically. Obviously, these positive ratings cannot reflect buyers' real evaluations on transactions. Moreover, these positive ratings can mislead future buyers, especially novice buyers. Hence, if buyers do not want to participate in reputation systems, they should have the right to quit instead of the system giving a positive rating by default.

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Table 1

Interview Results.

Antecedents of Textual Feedback Submission intention	Frequency of mention	Illustrative comments
Satisfaction	21 (70%)	“I will write feedback in two conditions. One is when I am very satisfied; the other is when I am very dissatisfied. If I feel just so-so, I will leave the work to system default”
Perceived usefulness of knowledge	12 (40%)	“I usually will submit textual feedback. As for my experience, I will always look at others’ feedback before purchase. I think it offers a reference. So, no matter how I feel I will always write it as a feedback. I think some one must care about it. Anyway, I do care!”
Antecedents of Positive Rating Submission intention	Frequency of mention	Illustrative comments
Satisfaction	15 (50%)	“I definitely will give a positive rating when I am satisfied with the seller’s service and product”
Avoiding Conflict Handling Style	5 (16%)	“I bought a bag from TaoBao several days ago. The quality is really awful. I really want to give a negative rating but I dare not.”
Accommodating Conflict Handling Style	7 (23%)	“I know how much a neutral rating or a negative rating means to a seller. So, usually, as long as I could endure, I will always give a positive rating even though I am not satisfied”

Table 2

Demographics of Respondents.

	Items	Percentage (%)
Gender	Male	44.60%
	Female	55.40%
Age range	Below 20	2.95%
	20-29	71.38%
	30-39	24.16%
	40 or above	1.51%
Educational Level	High school	2.97%
	Undergraduate	59.48%
	Master or above	37.55%
Personal income (monthly)	Below RMB1000	41.26%
	1000-3000	32.34%
	3001-5000	14.87%
	5001-10,000	8.18%
	Above 10,000	3.35%

Table 3

Results of Confirmatory Factor Analysis.

Measures	Items	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Satisfaction (SAT)	5	0.937	0.952	0.801
Trust (TRU)	3	0.705	0.835	0.628
Avoiding (AVO)	3	0.755	0.857	0.668
Accommodating (ACC)	4	0.619	0.795	0.565
Intention to submit positive rating (PR)	3	0.857	0.913	0.779
Intention to submit textual feedback (TF)	3	0.885	0.929	0.814
Perceived Value of Knowledge (PVK)	5	0.969	0.976	0.891
Social Conformity (SC)	3	0.797	0.882	0.714

Table 4

Correlations Between Constructs

	PR	TF	AVO	ACC	PVK	SC	TRU	SAT
PR	0.88							
TF	0.38**	0.90						
AVO	-0.06	0.12*	0.82					
ACC	0.31**	0.29**	0.20**	0.75				
PVK	0.27**	0.38**	0.07	0.37**	0.94			
SC	-0.03	-0.02	0.22**	0.35**	0.14*	0.84		
TRU	0.58**	0.39**	0.08	0.28**	0.17**	0.01	0.79	
SAT	0.62**	0.53**	0.13*	0.29**	0.32**	0.11	0.67**	0.89

PR, Intention to submit positive rating; TF, Intention to submit textual feedback; AVO,

Avoiding; ACC, Accommodating; PVK, Perceived Value of Knowledge; SC, Social

Conformity; TRU, Trust; SAT, Satisfaction

Note: The shaded numbers in the diagonal row are square roots of the average variance extracted.

Table 5

Results for Hierarchical Regression Analysis.

	Intention to submit positive ratings		Intention to submit textual feedback	
	Model 1	Model 2	Model 1'	Model 2'
<i>Control Variables</i>				
Age	0.084	0.094	0.003	-0.007
Education	0.010	0.008	-0.034	-0.033
Income	0.017	0.016	0.076	0.058
Product Price	-0.003	-0.012	-0.015	0.013
Online Shopping Experiences	-0.058	-0.056	0.058	0.010
<i>Main effects</i>				
Satisfaction (SAT)	0.400**	0.422**	0.497**	0.364**
Trust (TRU)	0.301**	0.279**	0.059	0.080
Avoiding (AVO)	-0.169**	-0.163**		
Accommodating (ACC)	0.128**	0.133*		
Social Conformity (SC)		-0.110*		
Perceived Value of Knowledge (PVK)				0.357**
<i>Interaction effects</i>				
SAT*PVK				0.258**
TRU*PVK				0.004
AVO*SC		-0.129**		
ACC*SC		-0.018		
<i>Model Summary</i>				
Model F	25.733**	21.965**	13.498**	15.137**
R ²	0.499	0.528	0.293	0.393
Adjusted R ²	0.480	0.504	0.272	0.367
Change of R ²		0.029		0.100
F Change		5.208**		14.076**
Note: *p<0.05; **p<0.01 (two-tail test)				

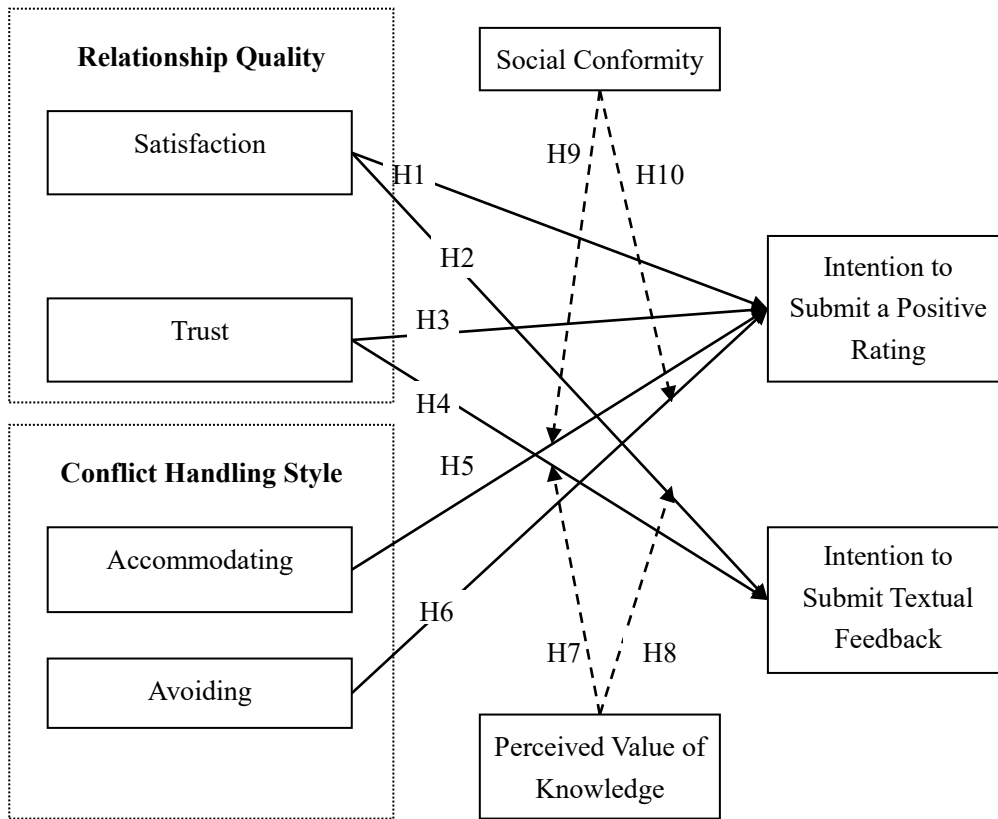
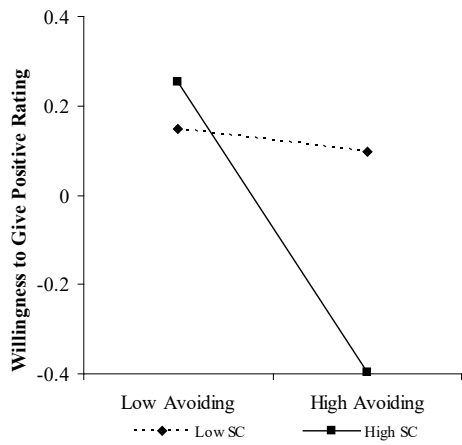
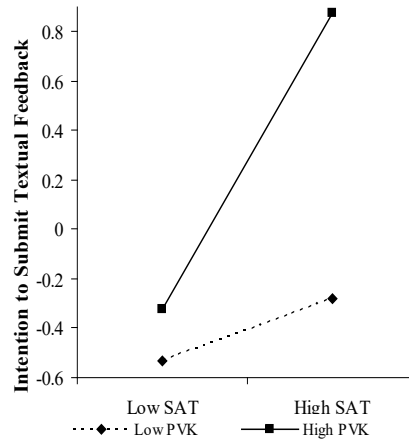


Figure 1. Research Model.



A. Moderating effects of social conformity on the relationships between avoiding and the intention to submit positive rating.



B. Moderating effects of the perceived value of knowledge on the relationships between satisfaction and the intention to submit textual feedback.

Figure 2. Significant Interactions

Appendix 1. Survey Measurement Items

Variables	Items	References
	The seller is good.	
	I will choose the same seller to trade with next time.	
Satisfaction with the seller	Overall, I am satisfied with the seller's product and service.	[74]
	I am satisfied with the seller's performance.	
	It is a pleasant experience to deal with this seller.	
	I found the seller to be dishonest sometimes.	
Trust	This seller is trustworthy	[20]
	The seller will inform me when there is a problem	
	Textual feedback I left could be a reference to other buyers.	
	Textual feedback I left could help other buyers	
Perceived value of knowledge	Textual feedback I left could help buyers make purchase decisions	Adapted from [26]
	Textual feedback I left could let buyers get more information about the product	
	Textual feedback I left could let buyers get more information about the seller	
Social Conformity	If most people made the same decision, then the decisions they made should be correct.	Self developed
	I am inclined to behave in accordance with	

	the majority.	
	I am easily influenced by others when making decisions.	
	I would rather sacrifice my own interest to stay away from disagreement with the seller	
Avoiding (conflicting style)	I try to keep my disagreement with sellers to myself in order to avoid hard feelings	[51]
	I try to avoid unpleasant exchanges with sellers	
	In my opinion, sellers hope that I will submit positive feedback.	
Accommodating (conflicting style)	A seller will feel unhappy if I do not submit positive feedback.	Adatped from [51]
	When I decide to submit feedback, I will consider the seller's feelings.	
	In this transaction, I think that it was reasonable to submit positive feedback.	
Intention to submit positive rating	I was inclined to submit positive feedback.	Self-developed
	I did not want to submit positive feedback.	
	I would like to leave textual feedback to the seller	
Intention to leave textual feedback	I am inclined to leave textual feedback to the seller	Self-developed
	I do not feel like leaving textual feedback to the seller	

Appendix 2. Confirmatory Factor Analysis for Principal Constructs

	TRU	SAT	AVO	ACC	HP	PY	PVK	SC
Trust 1	0.83	0.56	0.13	0.26	0.41	0.3	0.14	0.04
Trust 2	0.71	0.4	-0.09	0.14	0.55	0.33	0.14	-0.12
Trust 3	0.84	0.62	0.16	0.25	0.42	0.3	0.12	0.11
Satisfaction 1	0.56	0.83	0.15	0.32	0.48	0.48	0.25	0.14
Satisfaction 2	0.57	0.88	0.08	0.2	0.55	0.38	0.23	0.03
Satisfaction 3	0.61	0.9	0.08	0.26	0.6	0.47	0.32	0.08
Satisfaction 4	0.61	0.93	0.12	0.28	0.57	0.52	0.35	0.14
Satisfaction 5	0.62	0.93	0.13	0.24	0.56	0.53	0.3	0.12
Avoiding 1	0.13	0.18	0.74	0.1	-0.06	0.14	0.02	0.09
Avoiding 2	0.03	0.07	0.86	0.18	-0.04	0.03	0.06	0.21
Avoiding 3	0.04	0.05	0.86	0.2	-0.05	0.13	0.08	0.23
Accommodating 1	0.32	0.36	0.25	0.68	0.23	0.33	0.14	0.19
Accommodating 2	0.19	0.21	0.07	0.77	0.29	0.2	0.38	0.29
Accommodating 3	0.12	0.1	0.12	0.81	0.17	0.13	0.32	0.32
Positive Rating 1	0.53	0.61	0.07	0.38	0.83	0.37	0.26	0.14
Positive Rating 2	0.5	0.51	-0.11	0.18	0.9	0.29	0.21	-0.13
Positive Rating 3	0.51	0.52	-0.12	0.26	0.91	0.34	0.24	-0.07
Textual Feedback 1	0.36	0.55	0.2	0.31	0.37	0.93	0.37	0.05
Textual Feedback 2	0.37	0.52	0.17	0.29	0.31	0.93	0.37	0.04
Textual Feedback 3	0.33	0.37	-0.05	0.19	0.35	0.84	0.28	-0.14
Perceived Value of Knowledge 1	0.15	0.29	0.1	0.38	0.27	0.37	0.92	0.16
Perceived Value of Knowledge 2	0.16	0.3	0.06	0.36	0.27	0.36	0.96	0.11
Perceived Value of Knowledge 3	0.13	0.27	0.04	0.32	0.23	0.33	0.95	0.12
Perceived Value of Knowledge 4	0.18	0.33	0.07	0.36	0.26	0.37	0.95	0.14
Perceived Value of Knowledge 5	0.17	0.34	0.05	0.34	0.26	0.36	0.94	0.14
Social Conformity 1	0.06	0.12	0.19	0.3	-0.01	0.02	0.12	0.86

Social Conformity 2	0.06	0.09	0.12	0.33	0.01	-0.06	0.11	0.88
Social Conformity 3	-0.08	0.08	0.24	0.27	-0.06	-0.01	0.13	0.79
