



Rebuilding Post-Violation Trust in B2C Electronic Commerce

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ABSTRACT

This article proposes a model addressing the rebuilding of post-violation trust in B2C electronic commerce. The model uses expectation-confirmation theory and provides empirical verification for the factors affecting post-violation trust rebuilding and the association between them. The factors are perceived trustworthiness, confirmation by trust restoration, satisfaction and continuance trust intention. In accordance with exiting literature, perceived trustworthiness was found to have significant impact on continuance trust intention. The study also showed that confirmation by post-violation trust restoration activities had strong impact on satisfaction but satisfaction did not lead to post-violation continuance trust intention.

Keywords: expectation confirmation theory; trust; trust rebuilding; trust violation

INTRODUCTION

The last decade or so has witnessed an explosive growth of electronic commerce. While the extensive use of Internet provides a new arena for marketers and retailers, the long-term profitability and survival of business to consumer (B2C) electronic commerce depend on the continued online buyers rather than the first-time users. According to Parthasarathy and Bhattacharjee (2001), it costs as much as five times more to acquire new customers than keeping the existing ones. For example, a 5% increase in customer retention in the insurance

industry typically translates into 18% savings in operating costs (Crego & Schiffrin, 1995)

Trust is important for keeping continued buyers (Brynjolfsson & Smith, 2000). A customer has to trust the online business to disclose his/her private information in order to finalize a transaction. He or she has to trust the quality of the products or services because in most of the transactions the seller and buyer may have never met. There are many studies that have investigated on how trust affects consumer behavior in electronic commerce (Kim & Benbasat, 2006; Morrison & Firmstone, 2000; Pennington, Wilcox, & Grover, 2003; Schoder & Haenlein,

2004). In an effort to mitigate online distrust, online companies have been using third party seals, customer feedback or comments board, reputation advertising, privacy statement and insurance to engender trust over their customers and differentiate themselves from untrustworthy competitors (Lee, Ang, & Dubelaar, 2005). Additionally, in risky online environments where information fraud and breach may exist and thereby deteriorate consumers' trust, the online merchants should also understand how trust can be rebuilt should there be a violation of trust.

While previous research has shed light on the antecedents of trust, this study focuses on the process of trust rebuilding using the expectation-confirmation theory. A theoretical model of post-violation trust rebuilding has been developed and empirically tested with data collected from a survey of online consumers. The specific research questions that we would like to address in this study are as follows: 1) what are the factors behind the online users intention to continue trusting the site even after a trust violation? 2) how do these factors influence continuance trust intention?

The article is arranged as follows. The next section describes trust, expectation-confirmation theory and the concept of trust violation. It is followed by the development of the hypotheses and the research model. The third section outlines the research methodology that we used for this study. The fourth section presents the statistical findings, and the fifth section presents the discussions and managerial implications of the research. The last section concludes this study by mentioning the notable findings.

LITERATURE REVIEW

Trust and Trust Rebuilding

Trust has been one of the most significant research phenomena across a variety of disciplinary fields including philosophy, psychology, sociology, management, and information systems etc. Theoretical underpinning of trust has been demonstrated through a plethora of

perspectives. Lumann (1979) indicates that trust refers to the belief that other people will react in predictable ways. From a social-psychological point of view, Cremer et al. (2001) argue that social interactions are pleasant and cooperative if individuals take into account others' interest because understanding trust is important in promoting cooperation across different social interactions. Trust is a bilateral relation that involves an entity manifesting trust called the trustor and an entity being trusted called the trustee. In this research, we adopt the universally acknowledged definition of trust from the work of Mayer et al. (1995), who refer to trust as *the willingness of a party/trustor to be vulnerable to the actions of another party/trustee based on the expectation that the other (trustee) will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party (trustee)*.

Trust is believed to exist when one party has confidence in an exchange partner's reliability and integrity and is the perceived credibility and benevolence of a target of trust (Morgan and Hunt, 1994; Doney and Cannon, 1997). It has been considered essential for understanding interpersonal behavior because of uncertainty and information asymmetry. In conventional or off-line commerce, trust stems from the expectation of positive consequence as well as the acceptance of vulnerability, and is of crucial importance due to the difficulty of confirming another's identity and the information asymmetry between trustors and trustees. The importance of trust has been magnified in online environment, partly because of the lack of physical proximity, which, in off-line settings, can aid trust building. This viewpoint is supported by Quelch and Klein (1996) who argue that trust is a crucial factor in stimulating purchase over the Internet.

Trust enables cooperation and permits voluntary participation in mutually beneficial interactions which are otherwise costly to enforce or cannot be enforced by third parties. While previous literature has suggested that the establishment of trust is a gradual process because trust is built on the assumption that

trustee can entertain estimates of trustor's trustworthiness, it does not take more than an instant to destroy trust by misfortune or a mistake and it may be costly or take a long time to rebuild trust once it is lost. We argue that trust is bound to be lessened if the trustee fails to perform the tasks to meet his/her commitments due to the lack of incentive and/or ability, or complicated circumstances beyond his/her control. The erosion of trust is believed to harm both the involved parties. The severity of trust violation depends on the magnitude of the violation, number of prior violations, and the specific dimension of trust that was violated. Notwithstanding the previous contention that trust cannot be repaired once it is violated, we argue that the broken trust can be retrieved and that rebuilding trust is a long and arduous journey even if trust violation may seriously damage or irreparably destroy trust. Our argument is based on the assumption that the trustor is willing to or has incentive to reconcile and restore trust on the trustee.

From a psychological perspective, reconciliation occurs when both trustee and trustor exert effort to rebuild a damaged relationship following an incident involving a broken promise and strive to settle the issues that led to the disruption of that relationship (Lewicki and Bunker, 1996). Defined as a deliberate decision by the trustor or victim to surrender feelings of resentment and to grant amnesty to the trustee or offender, reconciliation is viewed as a behavioral manifestation of forgiveness (Tomlinson et al, 2004). Furthermore, according to Lewicki and Bunker (1996), it is possible to forgive someone or release him/her from responsibility for damage he/she has inflicted without exhibiting a willingness to reconcile the relationship or trust him again in the future. Therefore, we believe that, following a trust violation, if the trustor or victim is willing to reconcile, rebuilding trust in the damaged relationship becomes possible.

While previous literature has tended to demonstrate the factors that influence trust, less attention has been paid to how trust may be rebuilt after trust is breached or violated.

Trust violation occurs when the trustor's confident positive expectations of the trustee are disconfirmed. The consequence of the violation is that subsequent trust is eroded and lowered and that it may reduce the extent to which the victims of these violations will cooperate with the offender. This reflects the fundamental mechanisms of human psychology known as the asymmetry principle (Slovic, 1997). According to this principle, trust-destroying events are more noticeable, more credible, and carry much greater weight than trust-building events. For this reason, once initiated, distrust tends to reinforce itself. The asymmetry principle makes it more difficult and more costly for the learning party to obtain estimates of trustworthiness. Research within organizations has shown that trust violations stifle mutual support and information sharing, and even exert negative effects on organizational citizenship behaviors, job performance, turnover, and profits (Cremer *et al.* 2001; Jarvenpaa *et al.* 1998; Mayers *et al.* 1995; Rousseau *et al.* 1998).

Expectation-Confirmation Theory

Expectation-confirmation theory (ECT) describes the process by which consumers reach their repurchase intentions (Oliver, 1980). It has been used to study consumer satisfaction, and post-purchase behavior in consumer behavior literature (Dabolkar *et al.* 2000; Oliver, 1980, 1993). The constructs in the ECT include expectation, perceived performance, confirmation, satisfaction and repurchase intention. According to the theory, consumers purchase a product or service based on initial expectation on the product or service. Satisfaction is formed if the post-purchase evaluation matches their initial expectation. Satisfied consumers finally lead to repurchase intention but dissatisfied users discontinue the subsequent use. Confirmation is inversely related to expectation and directly related to perceived performance. In a test of expectancy theory, DeSanctis (1983) found that higher levels of user expectation were related to higher levels of system use. Adopting ECT, Bhattacharjee (2001) found that continuance

intention was determined by satisfaction with IS use and user satisfaction was influenced by the confirmation of consumer expectations.

Satisfaction is the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience (Oliver, 1981). In the ECT, satisfaction is the key to forming and maintaining loyal consumers. The level of satisfaction depends on the baseline expectation. A high level of expectation tends to enhance one's satisfaction, while low expectation reduces consequent satisfaction. Pre-purchase expectation can change in conditions where consumers have had the first-hand experience and their post-purchase expectation will thereby provide the basis for subsequent behavior (Bhattacharjee, 2001). Others distinct satisfaction from attitude and postulate that satisfaction is a transient, experience-specific effect, while attitude is a relatively more enduring affect transcending all prior experiences (Oliver, 1980, 1981). Therefore, one may have a pleasant experience with a service, but still feel dissatisfied if it is below expectation.

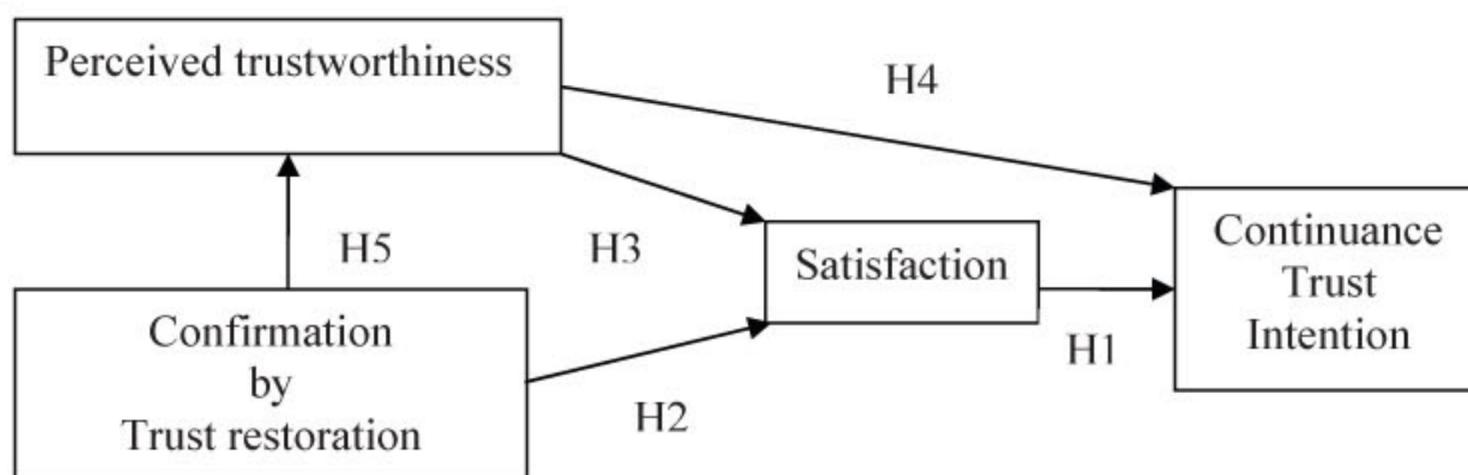
Conceptual Development

Consumers' post-violation trust rebuilding in electronic commerce is similar to consumers' repurchase decision-making. Both decisions are influenced by an initial experience and followed by a confirmation experience (product/service

use or trust restoring activities). Rational users most likely will go through a decision making process, similar to that in the ECT, prior to making a decisive choice. Figure 1 shows the proposed relationships among the constructs and the focus is on the post-violation trust rebuilding since this is more reflective of the trust rebuilding context. First, perceived trustworthiness is a post expectation that is important for services where expectation and perception may change with time, as is often the case with IS use. Second, perceived trustworthiness has been identified as a crucial factor in stimulating purchase over Internet (Quelch and Klein, 1996).

Following the propositions of ECT, consumers' continuance trust intention is likely to be determined by their satisfaction with prior trust restoration experience after a violation had occurred. The relationship between user satisfaction and continuance intention has been confirmed by many information systems researchers (Davis, Bagozzi, & Warshaw, 1989; Karahanna, Straub, & Chervany, 1999; Taylor & Todd, 1995). The same contention can be extended to trust rebuilding in B2C electronic commerce. When the post-violation activities fulfill the assuring promises, present action consistent with their policies, or show care and concerns for damages caused by the violation, the consumers are likely to reconcile, accept the remedies, understand it as a temporary condition, and stay in the trusting relationship. Gregg and Scott (2006) found that recent negative feedback posted in an online reputation system

Figure 1. Research model



can be used to predict future online auction activities. Therefore, the first hypothesis:

H1: *Consumers' level of satisfaction with trust restoration activities is positively associated with their continuance trust intention for that online business.*

The proposition of the ECT suggests that consumer satisfaction will be determined by perceived website trustworthiness and confirmation of expectation after trust violation. Since the current study focuses on the post-violation trust, the perceived trustworthiness represents the post-violation baseline expectation, against which confirmation is evaluated by consumers to determine their satisfaction. Selnes (1998) found that constructive conflict handling increases satisfaction and leads to improved trust in buyer-seller relationships. In this context, confirmation implies the realization of the expected remedies assured by the online company, while disconfirmation denotes failure to achieve expectations. This leads to the second hypothesis:

H2: *Consumers' extent of confirmation is positively associated with their satisfaction with online business.*

The second determinant of satisfaction, as suggested by the ECT, is perceived trustworthiness (expectation of the website's trustworthiness). In B2C e-commerce, companies use signals by trustworthy web merchants to differentiate themselves from their untrustworthy counterparts (Lee *et al.*, 2005) and add reputation advertising and structural assurance to increase the consumers' expectation of their trustworthiness, showing that their effects did not erode over time (Mcknight *et al.*, 2004). The perceived trustworthiness can be a result of cumulated expectation through repeated transactions and probably effective trust restoration activities, which, according to Dinev and Hart (2006), can even balance out their personal information disclosure concerns. Customers

with high perceived trustworthiness would be more willing to tolerate violations and open to reconciliation and, therefore, more satisfied.

H3: *Consumers' perceived trustworthiness of online business is positively associated with their satisfaction with online business.*

The ECT posits that expectation influence customer continuance intention. This can be explained by self-perception theory (Bem, 1972), which states that individuals continually adjust their perception (e.g., expectation) as they acquire new information about the focal behavior. The adjusted perceptions then provide the basis for subsequent behaviors. In this context, it would be the decision of whether to continue the trust on the website. If the violation was very damaging, and the consumers experienced strong negative cognitive and emotional reactions and were not willing to accept the trust restoration, the trust cannot be rebuilt.

H4: *Consumers' online business continuance intention is positively associated with their perceived trustworthiness of online business.*

Users may have some initial expectation (perceived trustworthiness) of a website and it will be adjusted as a result of the confirmation experience if the reality shows some discrepancies. The association between confirmation and expectation (perceived trustworthiness) postulated by the expectation-confirmation theory is based in Theory of Reasoned Action/Theory of Planned Behavior (TRA/TPB) (Ajzen, 1975, 1985) and can be supported by cognitive dissonance theory (Festinger, 1957). In the context of this article, the theory holds that consumers may experience dissonance or psychological tension if their pre-violation trustworthiness perceptions are disconfirmed during actual online transaction. Rational users may try to remedy this dissonance by distorting or modifying their trustworthiness perceptions of that online vender in order to be more consistent with reality. Confirmation will tend to elevate

online businesses' perceived trustworthiness and disconfirmation will reduce such perceptions. Therefore, we propose that:

H5: *Consumers' extent of confirmation is positively associated with their perceived trustworthiness of online business.*

METHODOLOGY

Data Collection

The empirical data for this study were collected employing a field survey of electronic commerce customers. The target respondents were drawn from students enrolled in three large universities, one in the Midwest, one in the south, and one on the eastern coast. Each customer received an email soliciting his/her participation in a survey of electronic commerce trust rebuilding. The email message outlined the purpose of the study and also provided a hyperlink to an online survey form. This method was chosen since online surveys have several advantages over traditional paper-based mail surveys, such as lower costs, faster responses, and geographically unrestricted sample (Tan & Teo, 2000). Participants were directed to the survey site by clicking on the link included in the email message. The participation in the survey was completely voluntary and the anonymity of the respondents was maintained. Any identifying information of the respondents such as IP addresses was removed before data analysis.

To ensure appropriate selection of subjects, the process of eliciting qualified subjects consisted of two steps: 1) prior to answering all other questions, subjects were first questioned whether they had shopped online or not. If not, their answers were excluded for further investigation and the survey exited. 2) Then subjects were asked whether they had encountered any trust violation problems online. Their answers were excluded for further analysis if they answered none.

Of 323 respondents to the survey, only those respondents who had bought a product from a website and have had a bad or unhappy experi-

ence were selected for data analysis. The sample size was 108 after excluding the online consumers who have not had bad experience while buying products on the web. The sample comprised of 46.3% of males and 53.7 of females. Regarding the internet experience, 14.8% reported having less than 1 year, 38.0% between 1 and 3 years, 19.4% between 3 and 5 years, and 27.8% more than 5 years.

There is no general consensus in the sample size requirements for PLS analysis. As one of the popular heuristics recommended by Chin (1998), the minimum sample size requirements is ten times the largest of these two possibilities: 1) the latent variable with the largest number of indicators or 2) the dependent variable with the largest number of independent variables. In our study, the latent variable that has the maximum number of indicators is "perceived trustworthiness" which has 10 indicators. And the dependent variable with the largest number of independent variables is either "satisfaction" or "continuance trust intention" both with two independent variables. Since the first option with the latent variable with the largest number of indicators is greater than the other option, the minimum sample requirements will be 10 multiplied by 10, resulting in a total of 100. Therefore, this research has reached the heuristics for sample size requirements. Further, it is noted to other researchers that the heuristics used in this article should be considered with caution because smaller sample size may be subject to greater amount of estimation errors.

Instrument Development and Validation

Four constructs measured in this study are perceived trustworthiness, satisfaction, electronic commerce continuance intention, and confirmation. Constructs were measured using multi-item scales, drawn from existing trust and expectation-confirmation research, and reworded so as to relate specifically to the context of B2C electronic commerce (See Table 1). Satisfaction items were based on the seven-point semantic differential scales. All others used five-point Likert scales

anchored between 1 for “strongly disagree” and 5 for “strongly agree” (Appendix).

A pre-test was first conducted to validate the instrument by administering the questionnaire to IS researchers comprising of doctoral students and the faculty. Their suggestions were accommodated in order to further refine the instrument.

DATA ANALYSIS

Partial Least Square (PLS) was employed to test the hypotheses of the proposed model. Before using PLS, data were analyzed by running a Principal Components Factor (PCA) analysis with varimax rotation to determine the convergent and the discriminant validity. The factor analysis resulted in four factors having eigen values above 1. The amount of variance explained was 78.92. Reliabilities of the measures were analyzed to determine that multiple measures of the constructs are measuring the respective constructs. The results of the analysis are presented followed by their discussion.

Measurement Model

The measurement model was examined by assessing the individual item reliability, internal consistency, convergent validity and

discriminant validity. All measures but one had acceptable item loadings of .707, as suggested by Carmines and Zeller (1979). One item, TRU9, did not meet the requirements and was dropped. Item weights and loadings are shown in Table 2. T-Statistics for all the item loadings are significant at .001 level. Internal consistency was determined by two measures: composite reliability (CR) and average variance extracted (AVE). The composite reliabilities for all the measures exceed the 0.70 level. The AVE above the level of 0.5 indicates that the measures meet the required criteria of internal consistency (Fornell & Larcker, 1981). Table 3 shows the CR and AVE for all the measures are well above the required criteria, thus indicating that the measures are internally consistent.

The convergent validity is inferred when each measurement item correlate with its related theoretical construct. The test was performed by using the confirmatory factor analysis in PLS. Table 2 shows that the t-values of the outer model loadings are above the level of 1.96, as suggested by Gefen and Straub (2004), thus indicating that the measures meet the criteria of convergent validity.

The discriminant validity is inferred when each measurement item correlate weakly with all the constructs except for its theoretically linked construct. Table 3 shows that the square root of AVEs of each constructs is greater than the inter-

Table 1. Construct map

Construct	Operational definition	Source of measures
Ecommerce continuance intention	Consumers' intention to continue using e-commerce	Mathieson's (1991) behavioral intention scale
Satisfaction	Consumers' feelings about e-commerce	Adapted from Spreng et al.'s (1993) overall satisfaction scale
Perceived trustworthiness	Consumer's perception of the expected trust of e-commerce	(Ba & Pavlou, 2002; Jarvenpaa, Knoll, & Keidner, 1998; Straub, Hoffman, Weber, & Steinfield, 2002)
Confirmation	Consumers' perception of the congruence between expectation of e-commerce trustworthiness and its actual trust restoring activities	Adapted from Bhattacharjee (2001)

construct correlation. These tests suggest that the measures have reached the adequate level of convergent and discriminant validity.

Structural Model

Once it was determined that the measures were valid, PLS was used to generate the structural model. The PLS path coefficients of the research model are shown in Figure 2. The bootstrapping method with 200 iterations was used to determine the significance of path coefficients. The hypotheses were tested using t-tests and the results are summarized in Table 4.

The results of the PLS analysis showed that 54 % of the variance in continuance trust intention was explained by perceived trustworthiness and satisfaction. Perceived trustworthiness and confirmation explained 42% of the

variance in satisfaction. Further, confirmation explained 62% of the variance in perceived trustworthiness.

In hypothesis 1, we predicted that satisfaction with trust restoration activities would be positively associated with continuance trust intention. It was not supported ($b=.075$; $p > .05$). This indicates that other variables besides satisfaction were responsible for continuance trust intention of consumers to involve in doing business with the online company. The association between confirmation and satisfaction was found significant as hypothesized in the second hypothesis ($b=.513$; $p < .01$). This showed that when the consumers are confirmed by the realization of the expected remedies from the online company after their trust is violated, their satisfaction with the company will be influenced. According to hypothesis

Table 2. Item weights and loadings

Construct	Item	Weight	Loading	T-Statistic*
Perceived Trustworthiness	TRU1	.0874	.8887	33.10
	TRU2	.0849	.8736	34.64
	TRU3	.0705	.7866	17.14
	TRU4	.0851	.8656	21.10
	TRU5	.0902	.8990	39.94
	TRU6	.0926	.9204	45.03
	TRU7	.0909	.9113	44.28
	TRU8	.0811	.7253	11.92
	TRU9	.0420	.4022	2.89
	TRU10	.0894	.8969	45.82
	TRU11	.0768	.7975	15.47
	TRU12	.0986	.8816	38.65
	TRU13	.0947	.8942	38.76
	TRU14	.0904	.8985	35.26
Confirmation by Trust Restoration	CFM1	.3628	.9525	86.01
	CFM2	.3709	.9569	90.87
	CFM3	.3311	.9046	30.54
Satisfaction	SAT1	.2727	.9096	45.99
	SAT2	.2618	.9344	53.73
	SAT3	.2889	.9163	54.91
	SAT4	.2684	.9037	39.90
Continuance Trust Intention	CTI1	.5413	.9659	147.64
	CTI2	.4973	.9594	88.68

Note: T-Statistics are for loadings, not weights. *All loadings are significant at $p < .001$

Table 3. Correlation matrix, mean, standard deviations and average variance extracted for constructs

	Mean	SD	CR	Trust	Confirmation	Satisfaction	Continuance
Trust	2.55	.99	.975	.752			
Confirmation	2.83	.98	.957	.786	.883		
Satisfaction	3.24	1.12	.954	.565	.640	.839	
Continuance	2.91	1.21	.962	.732	.606	.465	.927
Square root of AVE				.87	.94	.92	.96

Note: Average Variance Extracted (AVE) is shown on diagonals; SD = Standard Deviation; CR = Composite Reliability; Trust = Perceived Trustworthiness; Confirmation = Confirmation by Trust restoration; Continuance = Continuance Trust Intention.

Figure 2. PLS analysis of research model

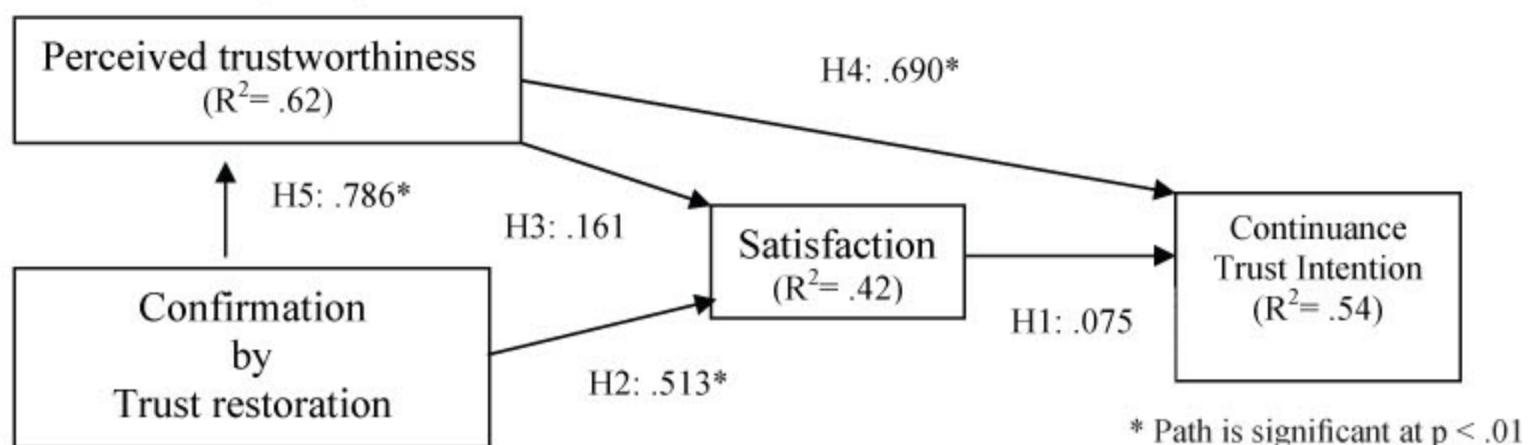


Table 4. Results of hypothesis tests

Hypothesis	Path Coefficient	P-value	Support
H1: SAT → CTI	.075	n.s.	x
H2: CFM → SAT	.513	< .01	y
H3: TRU → SAT	.161	n.s.	x
H4: TRU → CTI	.690	< .01	y
H5: CFM → TRU	.786	< .01	y

Legend: y = Supported; x = Not supported; n.s. = Not significant

3, perceived trustworthiness would have a positive association with satisfaction. It was not supported ($b = .161$; $p > .05$), indicating that other factors might be responsible for satisfaction. The relationship between consumers' online business continuance intention and the perceived trustworthiness of online business

was found significant ($b = .690$; $p < .01$). This showed that consumers would be willing to continue the transaction with online business if they believe that the business is trustworthy. The association between confirmation and perceived trustworthiness was found significant as hypothesized in the fifth hypothesis ($b = .786$;

$p < .01$). This supported the contention that when consumers' expectation of trust restoring activities undertaken by business are confirmed then their perceived trustworthiness of business would increase. Implications of the results are discussed in the next section.

DISCUSSION AND IMPLICATIONS

Continuance Trust Intention

Results of this study had no support for the ECT's contention that satisfaction is a significant predictor of users' continuance intention. Although prior IS studies have found satisfaction being the key to explaining the IS acceptance-discontinuance (user discontinuance of IS after its initial acceptance) and dissatisfaction is the necessary condition for IS discontinuance (Bhattacharjee, 2001), it is not confirmed by this study in the post-violation trust context. A study by Lewicki and Bunker (1996) shows that satisfaction with trust restoration activities do not always lead to the willingness to reconcile the relationship or trust the trust violator again. This agreed with the earlier discussion. Even though the customer was satisfied with online vendor's trust restoration activities, they may not immediately want to go back to the site for shopping. More measures need to be taken to regain those customers' trust. This suggests that continuance intention may have additional salient predictors than those identified in the ECT. Future studies should include satisfaction and its antecedents in order to provide a better understanding of its effect on continuance behavior in different contexts.

As proved in prior acceptance and continuance IS studies (Davis et al., 1989; Taylor and Todd, 1995; Bhattacharjee, 2001), perceived trustworthiness is a significant predictor ($R^2 = 0.51$) of continuance trust intention. While in ECT, perceived trustworthiness affects continuance intention indirectly through satisfaction, the proposed model in this study shows a direct

association between the two constructs. An explanation for this is the use of post-violation expectation. Before occurrence of any violations by the online business, the user expectation of trustworthiness is based on information from referent others, popular media, or other resources, which could be biased and unrealistic. In contrast, post-violation expectation is based on users' first-hand experience, therefore, is more realistic and less susceptible to change (Fazio and Zanna, 1981). This stable and established cognitive belief about an online business acts as a strong determinant of continuance trust intention and sometimes can underplay the negative impact of the trust violation.

The findings of this research have important implications for online businesses. Because perceived trustworthiness is more important for post-violation continuance trust intention, online vendors should be more careful when posting their customer claim policies and procedures. Customers prefer trust-assuring approaches that encompass market driven (reputation advertising, branding and relational marketing etc.) as well as institutional (legal binding) strategies (Pavlou & Gefen, 2004). Kim and Benbasat (2006) found that when dealing with customer complaints, claim plus data and backing can better increase consumers' trusting belief. Even though customer satisfaction with post-violation handling may play a less significant role, every customer complaint should be treated as a first time violation because cumulated internet trust can be built through this process and it can balance out consumer negative concerns resulted from trust violation activities (Dinev & Hart, 2006).

Satisfaction

Satisfaction with trust rebuilding was predicted by user perceived trustworthiness ($R^2 = 0.09$) and confirmation by trust restoration activities ($R^2 = 0.33$). These two determinants jointly explain only 0.42 of the satisfaction variance, thus suggesting that there are other predictors for satisfaction other than those identified using the ECT.

Confirmation is a strong predictor of satisfaction in the ECT and has been verified by other IS studies (Bhattacharjee, 2001). According to ECT, perceived trustworthiness provides the baseline level, against which confirmation is assessed by customers to determine their satisfaction. A high level of perceived trustworthiness tends to enhance customer satisfaction. When the perceived trustworthiness level is lowered after trust violation, customers can be less satisfied. The insignificant relationship found between perceived trustworthiness and satisfaction suggests that customers can still be dissatisfied even when they are confirmed about the realization of the expected remedies for trust violations because violation involves damages at multiple dimensions as suggested by Lewicki (2003). Violation of integrity and benevolence are likely to be experienced as more severe and damaging than violations that implicate the lack of instrumentality or ability. Examples of these natures may include intentional deception, purposefully renegeing on a promise or obligation, and disrespectful treatment. If the air ticket a customer ordered online was an overbook, he/she can get cash reward or ticket for free trips as the remedy but he/she can still be dissatisfied because he/she may have to miss an important meeting or reschedule the connecting flights.

Confirmation also had a significant impact on perceived trustworthiness ($R^2 = 0.62$). Trust erodes with repetitive violations but can be restored if both trustee and trustor try to rebuild it (Lewicki and Bunker, 1996). Temporal change in perceived usefulness/expectation has been reported in IS research. This study suggests that confirmation might be one of the underlying causes for such changes.

Understanding the dynamics between confirmation by trust restoration, perceived trustworthiness and satisfaction is critical for online business. The good news from this study is that, in addition to building initial perceived trustworthiness, it is possible to improve customer perceived trustworthiness even after the trust violation. When carefully delivered, the confirmatory trust restoration activities can

restore trust damages and result in better customer relationships and customers' loyalty. Trust restoration activities can also cultivate customer satisfaction. Satisfaction with post-violation restoration activities may not immediately lead to continuance trust intention but can affect perceived trustworthiness, which in turn can influence continuance trust intention.

Limitations

There are several limitations in this study. First, although the survey was designed to be administered to students in different geographical regions with equal representation of races, the online nature of the survey and the large proportion of incomplete questionnaires prevent the investigators from verifying the non-response bias.

Second, students have been used as proxy for online customer in many IS studies. The survey demographic showed 14.8% of the usable responses were from students having less than 1 year internet experience, which partially explained the low rate of violation experience. This may affect the generalizability of the outcome of the study. Future research should solicit subjects from other segments.

The third limitation is that the sample used was only confirmed of having trust violation experience but not necessarily post-violation trust rebuilding activities. This might contribute to the insignificant association between satisfaction and continuance trust intention, which is inconsistent with the literature that says "*satisfaction is a strong predictor of intention in the expectancy-confirmation theory*". When the respondents were asked about the post-violation service level, there is room for misrepresentation since the respondents may not interpret post-violation service level exactly as post-violation trust rebuilding activities. We strongly recommend that future studies include the specific trust restoration activities carried out by websites after the incidence of trust violation.

The next limitation is related to the measure of satisfaction. In this study we assessed the

overall experience of the website's post-violation service. Similar to the above limitation, it will be advisable to assess the overall experience of the trust-rebuilding activities performed by the website. Just assessing the experience with the website's post-violation service may leave room for misrepresentation.

Another limitation is the need for longitudinal testing of the ECT. To capture the complex post-violation trust rebuilding process, a longitudinal comparison for trustworthiness and trust intention before and after trust violation and trust restoration would be ideal. This cross-sectional study restricted such temporal comparisons but can still be used to as a preliminary step for future research extensions.

CONCLUSION

The goal of this article is to identify salient factors of post-violation continuance trust intention and to understand how they influence the dependent variable. ECT was adapted from the consumer behavior literature and integrated with prior IS trust research to formalize a post-violation trust rebuilding model. Data collected from online e-commerce users with violation experiences provided partial support for the proposed model. The results indicate that perceived trustworthiness is a significant factor in determining continuance trust intention with online business. Confirmation has significant impact on satisfaction and perceived trustworthiness. Contrary to prior findings, satisfaction doesn't have significant influence on continuance trust intention. As such, contribution of the study includes the empirical investigation of trust building in a post-violation context, the incorporation of perceived trustworthiness into the ECT, the validation of expectation-confirmation model, and offering an explanation for the post-violation trust rebuilding process.

As malicious intruders and online crimes are increasingly targeting electronic businesses, understanding how online businesses handle breaches or violations can be of crucial importance for safeguarding and retaining

customers. In addition to initial trust-building mechanisms, strategies should also be implemented to rebuild customer trust in an effort to avail businesses with additional surviving mechanisms. In essence, the trust rebuilding approaches may differ from the ones that are used for initial trust building. Because trust is not only time-consuming to engender and cultivate, but also fragile and therefore can be destroyed. The process of continuous trust development deserves special attention (Siau & Shen, 2003) and businesses have to ensure the effect of their trust assuring and rebuilding effects don't erode over time (Mcknight, Kacmar, & Choudhury, 2004). These mechanisms engender trust, not only in a few reputable sellers, but also in the entire community of sellers who contribute to an effective online marketplace.

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APPENDIX

Intention (CTI)

1. I intend to continue trusting and using this website rather than discontinue its use.
2. My intentions are to continue trusting and using this website than use any alternative means (e.g. physical stores).
3. If I could, I would like to discontinue my trust and use of this website.

Perceived Trustworthiness (TRU)

1. This website was very concerned about the satisfaction of customers.
2. Customer satisfaction is very important to this website.
3. This website would not knowingly do anything to upset the customers.
4. This website is concerned about what is important to customers.
5. This website will do everything within its capacity to help the customers.
6. This website will do its best to be fair in dealing with customers.
7. This website has a strong sense of commitment.
8. I am never doubtful about whether this website will do what they promised.
9. I am never sure if this website is going to do what it promises or not.
10. This website displays a solid business ethics.
11. I believe this website will handle the violation according to the posted terms and conditions.
12. I feel very confident about this website's capability to settle any disputes and fulfill my needs.

13. This website seems to be successful in performing its tasks.
14. I think this website is honest.

Satisfaction (SAT)

1. How do you feel about your overall experience of this website's post-violation service:
Very dissatisfied / very satisfied
Very displeased/ very pleased
Very frustrated/ very contented
Absolutely terrible/ absolutely delighted

Confirmation (CFM)

1. My experience with this website's post-violation service was better than what I expected.
2. The post-violation service level provided by this website was better than what I expected.
3. Overall, most of my expectations of this website's post-violation service were confirmed.

Note: Except for "satisfaction" all the items were anchored in a scale of 1 (strongly agree) to 5 (strongly disagree).

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