

Article

Trust and Distrust in E-Commerce

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Abstract: Trust is the key ingredient for sustainable transactions. In the concept of trust, the trustor trusts the trustees. In e-commerce, the trustor is the buyer and the trustees are the intermediaries and the seller. Intermediaries provide the web-based infrastructure that enables buyers and sellers to make transactions. Trust is the buyer's judgment and comprises two distinct concepts; both *trust* and *distrust* reside in the trustor. The purpose of this study was to examine the complicated effects of trust and distrust on a buyer's purchase intentions. Previous studies have provided theoretical frameworks illustrating co-existent trust and distrust, trust transfers from one to another, and trust in buyer-intermediary-seller relationships. Based on these frameworks, this study (i) presented a holistic model that contained the judgment of buyers resulting in trust or distrust in the intermediary and the seller; (ii) investigated trust and distrust transfer from the intermediary to the seller, and (iii) explored the effects of various antecedents that affect trust and distrust. To validate the proposed model, we employed Partial Least Squares (PLS). A summary of key findings are as follows. First, buyer's trust in an intermediary positively affected his or her trust in the seller, positively influencing purchase intention. In other words, we found the trust transfer from an intermediary to its seller. Second, distrust in an intermediary directly impacted on the buyer's perceived risk, negatively influencing his or her purchase intentions. Third, structural assurance and perceived website quality of an intermediary gave a positive impact on buyer's trust in the intermediary. The results of this study shed light on the necessity of managing both trust and distrust to facilitate sales in e-commerce.

Keywords: trust; distrust; e-commerce; intermediary; seller; trust transfer

1. Introduction

Information technologies, such as web-based e-commerce systems, provide a tremendous transaction platform on which to sell products or services to a large number of potential buyers. According to recent research, retail e-commerce sales worldwide reached 1.86 trillion USD in 2016 and are projected to grow to 4.48 trillion USD in 2021 [1]. Also, in the Republic of Korea, e-commerce sales were 1.4 trillion KRW in 2001 and have grown to 49.6 trillion KRW in 2017, with a compound annual growth rate of 25% [2].

Trust plays a vital role in the sustainability of e-commerce transactions. The issue of trust is more critical in e-commerce transactions than traditional commerce transactions due to higher uncertainty [3]. According to PYMNTS and Signifyd—*institutions that track and analyze fraud by examining the transactions of more than 5000 e-commerce merchants in Europe, North America, and Asia*—total fraud increased 5.5% from Q2 2016 to Q2 2017, and the value of potential fraud was estimated to be 57.8 billion USD, as of October 2017 [4]. This implies that e-commerce fraud is becoming more serious, which may lead to consumer anxiety. According to research in 2016, respondents were asked, "How often are you afraid that you might be the victim of a fraud when buying products and

services online?” Forty percent of the respondents said that they were afraid of e-commerce fraud to the extent of ‘always’, ‘very often’, and ‘often’ [5]. Seventeen percent of the respondents said that they had been victims of e-commerce fraud. This shows the level of concern over online shopping fraud in Finland in 2015 [5]. In the Republic of Korea, the Korean Consumer Agency (KCA) received 3261 complaints of e-commerce fraud in 2005 and 8881 complaints in 2016 [6]. Figure 1 shows the relationship between e-commerce sales and fraud cases. As shown in this figure, the number of the complaints of e-commerce fraud has been increasing, as the e-commerce market size increases in the Republic of Korea.

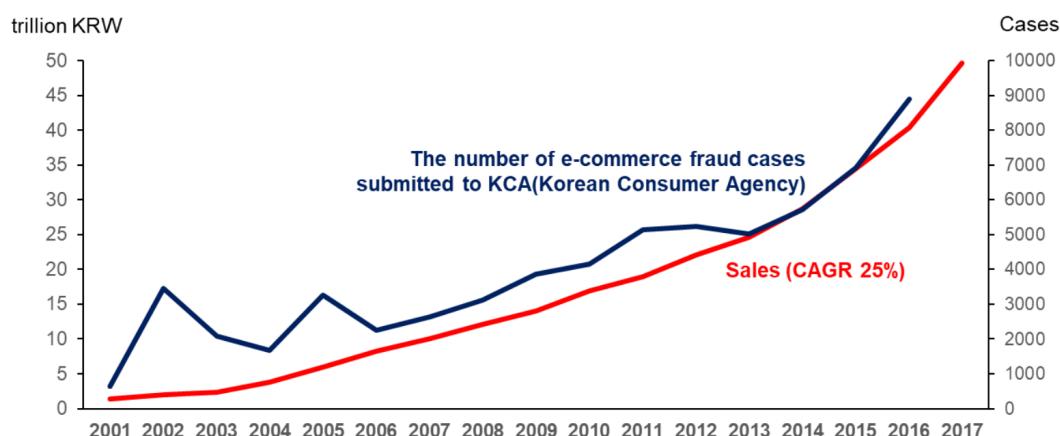


Figure 1. Growth of e-commerce market size and e-commerce fraud cases in the Republic of Korea.

The term “distrust” is used in research articles to represent negative feelings of uncertainty [7–9]. E-commerce transactions are executed based on trust, but there is plenty of room where distrust resides [6–8]. If distrust is an antonym of trust in its concept, the lack of research on distrust matters little. However, if trust and distrust are not simply opposite concepts but play distinct roles, we need a systematic approach for studying trust and distrust separately [8–10]. According to McKnight et al. [11], e-commerce trust is distinguished by three dimensions: intrapersonal-level trust (i.e., buyer), system-level trust (i.e., intermediary), and interpersonal-level trust (i.e., seller). In the e-commerce context, the opportunity for trust and distrust exists between not only the buyer and the seller but also between the buyer and the intermediary through which the monetary transactions flow [3,11]. It is crucial to have a comprehensive understanding of how these different levels of trust or distrust (intrapersonal-level, system-level, and interpersonal-level) influence the intention to purchase using e-commerce. This issue of having multiple levels of relationships and trust or distrust at the same time has not been considered in prior research. In this combined approach, we need to consider the concept of trust transfer. Trust is transferable from a better-known party to an associated party [12]. In e-commerce, the intermediary plays the institutional role of agent in the trust function for trust in a seller [13]. Trust in the intermediary transfers to trust in the seller.

In 2015, the KCA reported that 90% of the “baek-su-o” products in the market were not genuine and contained fake supplements. “Baek-su-o” had been well known as an antioxidant that provided immune system support, and its market size was three hundred million dollars in Korea. After KCA’s report was published, the “baek-su-o” market crashed amidst a massive refund crisis. In one case, the Hyundai Home Shopping Network (HHSN) took responsibility and paid eight million dollars as refunds to buyers. Did HHSN have to take responsibility even though they did not make the product? What should an intermediary like HHSN do to get trust and prevent distrust? What should sellers do to get trust and prevent distrust? If an intermediary gets trust, does the trust transfer to the seller and vice versa? This event was the trigger for this study.

We are interested in the following three questions: (1) What is the role of trust and distrust in the multilevel nature of e-commerce? (2) Do trust and distrust transfer from the intermediary to the seller?

(3) What are the antecedents of trust and distrust in intermediary? To answer these research questions, this article is set out as below: firstly, literature related to the multiple levels of trust and trustor distrust are reviewed as a theoretical background; next, a research model with three levels (buyer, intermediary, and seller) of trustor distrust is proposed; thirdly, the research design and method of data collection is discussed; fourthly, the results of the data analysis are presented; and finally, the paper concludes with a discussion of the results, contributions, limitations, and future directions.

2. Literature Review and Theoretical Background

2.1. Trust and Distrust in E-Commerce

The trust and distrust relationship is conducted by two parties, the trustor and the trustee. In e-commerce, those two parties do not participate in a human-to-human relationship, but rather a human to computer-interface relationship. For example, the trustee is a website which provides an e-commerce system, and the trustor is a human who uses the website [14]. Trust and distrust play critical roles in making choices when there is insufficient information. In e-commerce, a trustor cannot see or touch a trustee's products or services or ask questions face-to-face. The trustor must deal with an unfamiliar intermediary and must overcome perceptions of risk and insecurity, such as by submitting personal information, wiring money, and providing credit card information [15].

Trust and distrust had been traditionally considered as mutually exclusive and simply opposite in concept [16], meaning that distrust was considered a low level of trust [17]. Figure 2 shows this unidimensional approach with the two concepts at opposite ends of a single continuum. Trust is given as a "good" and distrust as a "bad" sentiment, which need to be fixed [9].



Figure 2. Unidimensional approach of trust and distrust.

Table 1 shows that trust and distrust have traditionally been defined with positive/negative terms. Researchers have proposed that the distrust construct is the opposite or mirror image of the trust construct [18].

Table 1. Definitions of trust and distrust.

Study	Trust	Distrust
Lewicki et al. [10]	Affirmative positive anticipations for another's action	Affirmative negative anticipations for another's action
Lee [7]	A positive expectation of the partner's future behavior and an emotional bond between two parties	A negative expectation of the partner's future behavior and an emotional repulsion between two parties

Others believe trust and distrust are distinct. Distrust does not necessarily mean a low level of trust. Trust and distrust are independent but linked, and distinct but coexistent [10,19,20]. Since Lewicki et al. [10] proposed a new view of separate, dimensional concepts, the traditional view of trust and distrust faces a bold challenge. A new view asserts that trust is not the opposite of distrust, they have ambivalence in common, and that they are separable [9,19–21].

A modified model illustrating trust and distrust relations in Figure 3 depicts the concepts clearer than its original version, which only mentioned high or low trust or high or low trust/distrust, literally. Within this framework, trust is expressed vertically and distrust is expressed horizontally; each is characterized as high or low by its size of rounded rectangle. Here, four relationship conditions can be derived: low trust with low distrust, high trust with low distrust, low trust with high distrust, and high trust with high distrust. An example of high trust with high distrust is the joint venture between

Boeing and the Japanese company. Even as they worked together and shared technical information, Boeing protected itself from Japanese engineers by limiting access to secure areas [10,22]. As another example, during the period of World War II, Franklin D. Roosevelt and Joseph Stalin put trust in each other to oppose Adolf Hitler, while at the same time still distrusting each other [10,18].

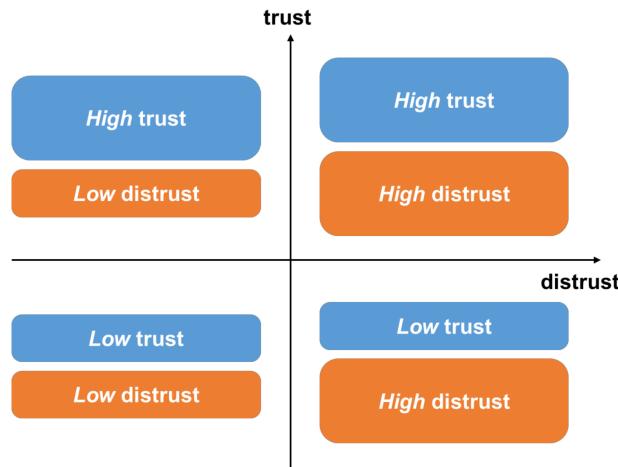


Figure 3. Multidimensional approach of trust and distrust.

Figure 4 offers two views: the two-factor theory and the multidimensional approach of trust and distrust. As we follow Lewicki's view, it reminds us of Herzberg's two-factor theory. Lewicki also considered Herzberg's two-factor theory, but there are differences between the two models. First, Herzberg's model is an organizational view while Lewicki's model is an individual view. Second, Herzberg's model is based on output evaluation, while Lewicki's model is based on process evaluation. Herzberg tried to find certain factors in the workplace that cause job satisfaction and, thus, the theory explains the dual-factor causes of job satisfaction. While Herzberg's model shows cause and effect, Lewicki's model shows cause only. In Lewicki's model, designed to explain how judgments are made, trust and distrust area activated independently [10].

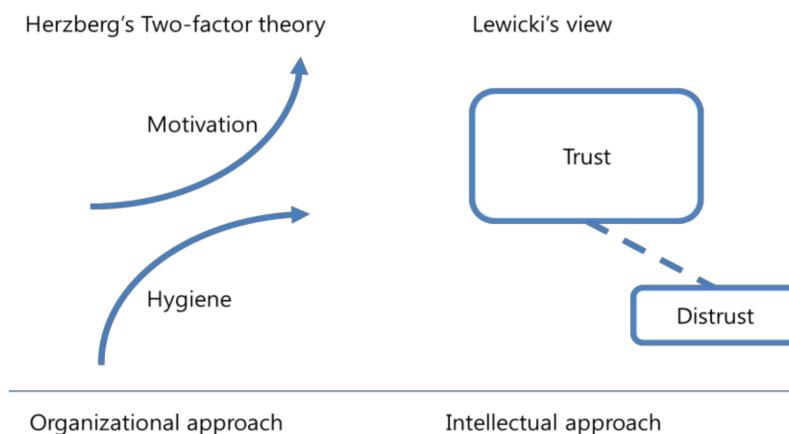


Figure 4. Difference between two-factor theory and multidimensional approach of trust and distrust.

2.2. Affect and Cognition

Trust can emerge based on both cognition and affect [23]. Affect is considered to occur only after cognition has taken place; however, affect and cognition are controlled by separate and partially independent systems [8,24]. Affect might transform trust and distrust from simply cognitive procedures. Affect may even become separated from content, which means affect does not need

memories based on facts [25]. Thaler and Sunstein [26] described “Econs” who are 100% rational, self-interested economic beings, and “Humans” who are altruistic and are swayed by affect. If we are “Econs” who only use rationality, the sum of trust and distrust would be 100%. Then, trust or distrust can explain the opposite, distrust or trust. However, we are not “Econs”. “Humans” use not only cognition but also affect. This might help us to understand the multidimensionality of trust and distrust better [7,8]. Figure 5 illustrates the differences between affect and rationality(cognition).

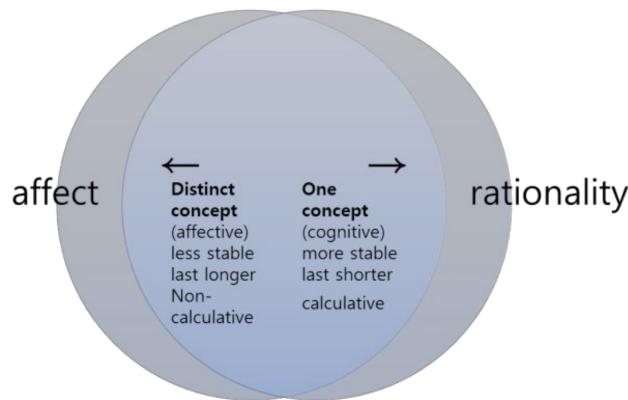


Figure 5. Affect/cognition model in trustor distrust.

2.3. Intermediary and Seller

Trust is sectionalized into three parts: intrapersonal-level (dispositional) trust, system-level trust, and interpersonal-level trust [11]. In e-commerce, a trustor who is the buyer (intrapersonal-level) faces two trustees that are the intermediaries (system-level/intermediary) and the seller (interpersonal-level/vendors) as shown in Figure 6. Intrapersonal-level trust refers to the tendency to believe (or not to believe) in others. System-level trust plays a role of assurance that convinces a trustor to submit personal and financial information and to buy products or services from an unfamiliar seller. Interpersonal-level trust is associated with the seller’s trust in the counterpart of a transaction that delivers products or services [15].

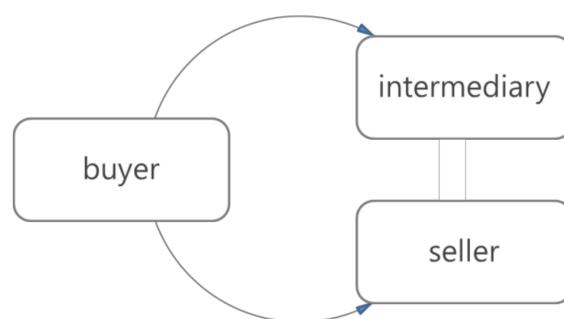


Figure 6. Buyers’ trust in an intermediary and seller in an e-commerce transaction.

2.4. Transfer of Trust and Distrust in E-Commerce

Trust can be transferred from the better-known trustee to the lesser-known trustee [12,27]. In e-commerce, the intermediary and the seller are associated with hypertext links. A buyer might perceive a positive intermediary-seller relation between the intermediary and the seller when they are linked together. Trust transfers across the hypertext link between the intermediary and the seller as presented in Figure 7. Institution-based trust transfers from the intermediary to the seller. If changes in the intermediary imply weaker structural assurances, the trustor might have less institution-based trust than before [13,28].

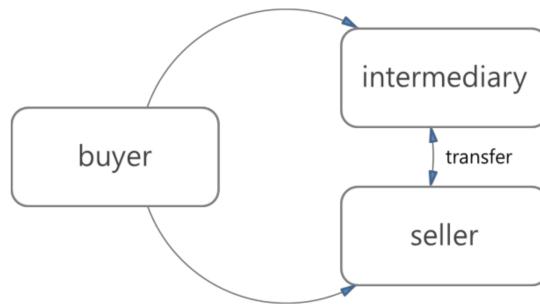


Figure 7. Buyers' trust transfer to intermediary and seller in an e-commerce transaction.

Figure 8 combines trust/distrust, intermediary/seller, and the affect/cognition concept. Affect is considered to occur only after cognition [7]. Trust in the seller does not mature enough relative to trustor distrust in the intermediary. In the user experience (UX) context, out of affect, usability, and usefulness, affect is a major component [29]. The main role of an intermediary is UX management. In intermediaries, affect plays a relatively significant role to the seller. When a buyer makes a decision as to whether to purchase a seller's product or service, he or she compares and analyzes the specification of the products or service with regard to the alternatives. In this process, cognitive areas in the buyer's brain are activated. Relatively, division of trustor distrust in the seller becomes meaningless, which is getting closer to the equation of "trust in seller = 1-distrust in seller".

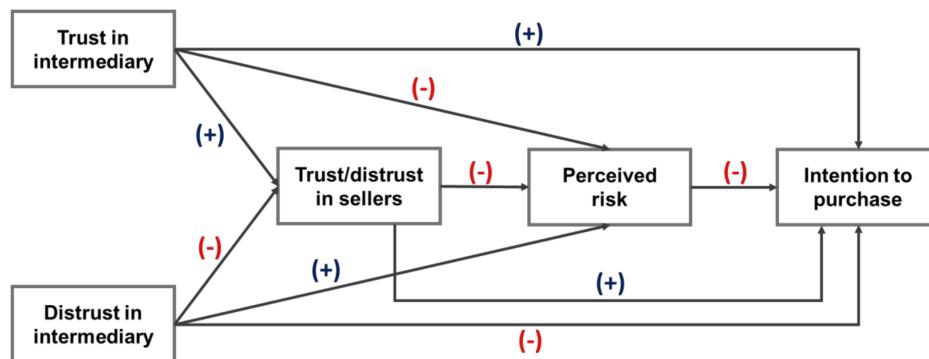


Figure 8. Proposed relationships among trust/distrust in the intermediary and seller.

2.5. Antecedents of Trust and Distrust in E-Commerce

We conducted an analysis of the antecedents of trust in the literature. Table 2 summarizes the antecedents of trust in e-commerce. Antecedents are categorized by the trustee, divided by quality (i.e., perceived quality) and quantity (i.e., structural assurance), experience, (which is a dynamic approach), intrapersonal-level antecedents (which is trustor's disposition to trust), and interpersonal-level antecedents (which concerns others' reputations). According to Kim et al. [29], trust is gauged by reputation, size, information quality, transaction safety, communication, economic feasibility, and word-of-mouth referrals. The study by Kim et al. [30] suggested that the antecedents of trust are information quality, privacy protection, security protection, third party seals, familiarity, disposition, and positive reputation. Information quality means a buyer's awareness of the website accuracy and completeness. Privacy protection is defined as a buyer's awareness of the website's ability to protect the buyer's confidential information. Security protection refers to a buyer's awareness that the intermediary complies with legal security requirements, such as encryption. A third party assurance seal is a verification method authorized by a third-party certificate authority like an internet security agency to assure an intermediary. Familiarity is an indicative factor that shows the buyer's level of awareness regarding the seller. Disposition refers to each customer's characteristic temperament and affects expectations

about credibility. Positive reputation refers to information that the seller has fulfilled its obligations to other buyers in the past. Antecedents of trust presented in Gefen et al. [31] are calculative-based antecedents, knowledge-based antecedents, institution-based antecedents, cognition-based antecedents, and personality-based antecedents. Calculative-based antecedents mean rational assessments of costs and benefits. Knowledge-based antecedents refer to familiarity. Institution-based antecedents are associated with structural assurances and situational normality. Cognition-based antecedents are related to first impressions rather than experience. Personality-based antecedents are factors like the propensity to trust, for example, which is associated with the tendency to believe (or not to believe) in others. Ba et al. [32] listed three antecedents, which are calculativeness, familiarity, and values. Calculativeness refers to the subjective assessment of costs and benefits, familiarity refers to repeated interactions, and values are associated with institutional structure. Sullivan and Kim [33] proposed two antecedents of online trust: website reputation and perceived value. A recent study by Hallikainen and Laukkanen [34] proposed disposition to trust as the antecedent of trustworthiness, and also claimed that disposition to trust is affected by national culture.

Table 2. Antecedents of trust in e-commerce.

Study	Perceived Quality	Structural Assurance	Experience	Intrapersonal Level	Interpersonal Level
Kim et al. [29]	economic feasibility information quality	size transaction safety	-	-	communication reputation word of mouth referrals
Kim et al. [30]	information quality	privacy protection security protection third party seal	familiarity	disposition	positive reputation
Gefen et al. [31]	calculative cognition	institution	knowledge-based familiarity	personality	-
Ba and Pavlou [32]	calculativeness	values	familiarity	-	-
Sullivan and Kim [33]	perceived value	-	-	-	website reputation
Hallikainen and Laukkanen [34]	-	-	-	disposition to trust national culture	-

There is limited research regarding the antecedents of distrust. Moody et al. [21] listed situational abnormality, suspicion, and disposition to distrust, as antecedents to distrust and McKnight and Choudhury [9] studied the distinction between antecedents of trust and distrust. Lee and Peng [8] suggested that the technical effectiveness and content truthfulness of online systems are the antecedents of online trust and distrust. McKnight et al. [20] proposed that information quality, system quality, and service outcome quality are the antecedents of both trusting and distrusting beliefs in the context of B2B data exchange.

2.6. Summary of Literature Review

Based on previous literature, this study attempted to present a holistic view of trust and distrust in e-commerce that consists of intermediaries, sellers, and buyers, considering the transfer of trust and distrust, as well as their antecedents. Table 3 presents a summary of the literatures on trust and distrust in e-commerce.

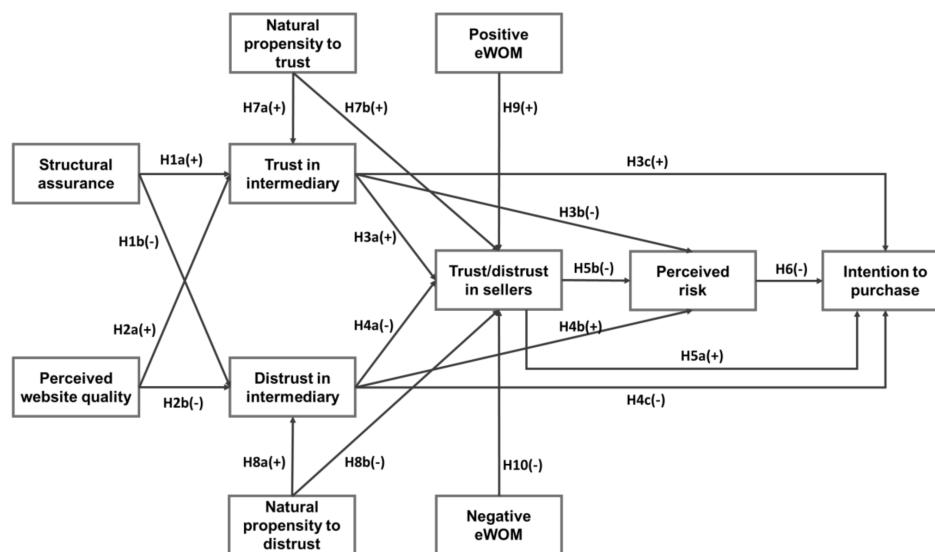
Table 3. Summary of literature review.

Included Variables/Concepts in the Model	McKnight and Choudhury [9]	Lee [7]	McKnight et al. [11]	Kim [3]	Verhagen et al. [13]	Hong and Cho [15]	Kim et al. [29]	Kim et al. [30]	Lee et al. [35]
trust	X	X	X	X	X	X	X	X	X
distrust	X	X							X
intermediary seller			X	X		X			X
buyer's natural propensity			X	X				X	
trust transfer					X	X			X
intention to purchase	X	X		X	X	X	X	X	X
perceived risk								X	X
structural assurance		X						X	X
perceived website quality									X
website quality									

Notes: X implies the corresponding variable/concept (in the row) is included in the corresponding reference (in the column).

3. Research Model and Hypotheses

In consideration of the multi-level trust model (buyer, intermediary, and seller levels) and distrust, the research model illustrated in Figure 9 is proposed.

**Figure 9.** Proposed research model.

Structural assurance is an institutional trust in which a buyer perceives robust structures that ensure that a successful e-commerce transaction will take place under safe and secure circumstances [9]. Safe and secure circumstances, inclusive of information quality, privacy protection, and security protection, which are perceived by the buyer, provide a setting that positively affects the buyer's trust. According to previous studies, structural assurance has a positive effect on the trust of e-marketplace participants, and positively influences buyer's trust in e-marketplace operators (i.e., intermediaries) [9,36,37]. Recently, third-party seals (TPS) help buyers to build trust. A TPS is a structural assurance by a certifying institution, such as a bank, accountant, or government that positively affect the buyer's trust [30,37]. Also, a parallel distrust concept is defined when a buyer does not perceive that protective structures are in place [9]. Therefore, we derived the following hypotheses:

Hypothesis 1a: Structural assurance positively affects a buyer's trust in an intermediary.

Hypothesis 1b: Structural assurance negatively affects a buyer's distrust in an intermediary.

Based on uncertainty, a buyer tends to trust websites with up-to-date, rich, and easy-to-understand information [8,30]. One experiment showed whether buyers' perception of website quality affected their trust. Participants were provided with eight distinct versions of websites with flaws (style, incompleteness, and language) and asked questions to see how the flaws affected their feelings of trust. The result showed that website pages with more flaws could only attain a low level of trust [38]. A similar experiment showed that investment in website design affects buyers' trust. Even when two sites offer the same content, a highly-funded website with a better design attains a higher level of trust from buyers [39]. Plenty of previous studies have empirically shown the effect of perceived website quality in e-commerce on trust or distrust [14,27,40,41]. Therefore, we suggest the following hypotheses:

Hypothesis 2a: A buyer's perceived website quality positively affects his/her trust in an intermediary.

Hypothesis 2b: A buyer's perceived website quality negatively affects his/her distrust in an intermediary.

Previous research suggests that trust may be transferred from different types of sources, like an individual or an organization. In e-commerce, trust is transferred across hypertext links back and forth through the perceived interaction and similarity between linked organizations [28]. Trust in an intermediary is an antecedent to trust in a seller. Potential buyers must develop trust in the intermediary first, and then trust in the intermediary will promote trust in the seller [42]. Likewise, trust can be transferred from an intermediary to a seller in e-commerce [13]. Several previous studies have empirically proven the presence of trust transfer in an e-commerce context [13,15,36,43]. Also, Oh [44] have shown that distrust in the seller transfers to distrust in the intermediary. This finding implies that distrust can also be transferred.

In e-commerce, perceived risk may act as an entry barrier. Contrary to a retail shop, in e-commerce, the potential buyer must make a decision armed only with information provided by a website. Trustworthiness of an intermediary with institutional operating systems is helpful in building up trust in the seller by reducing perceived risk [36]. Not only trust but also distrust can affect the perceived risk of the customer. In general, an e-marketplace operator (i.e., intermediary) provides an online marketplace where sellers and buyers can buy and sell goods and adjusts them to make transactions smoothly under the responsibility of the sellers and buyers. Therefore, all the problems that may arise in connection with the transactions between the seller and the buyer belong to themselves. Because of this characteristic, e-marketplaces have a high potential for opportunistic seller behavior and transaction uncertainty, which can act as a factor of distrust that can coexist with trust in a different dimension [45].

Trust and distrust affect purchase intentions in e-commerce [7,8,27]. Trust and distrust affect the willingness to purchase, intention to use, and willingness to share information [9]. Based on the above theoretical observations, potential buyers' perceived risks affect their intention to purchase. We need to consider both trust and distrust of the intermediary and the seller as antecedents to perceived risk and intention to purchase. Along this line, we propose the following nine hypotheses:

Hypothesis 3a: A buyer's trust in an intermediary positively affects their trust or distrust in the seller.

Hypothesis 3b: A buyer's trust in an intermediary negatively affects their perceived risk.

Hypothesis 3c: A buyer's trust in an intermediary positively affects their intention to purchase.

Hypothesis 4a: Distrust in an intermediary negatively affects trust or distrust in the seller.

Hypothesis 4b: Distrust in an intermediary positively affects perceived risk.

Hypothesis 4c: Distrust in an intermediary negatively affects a buyer's intention to purchase.

Hypothesis 5a: Trust or distrust in a seller positively affects a buyer's intention to purchase.

Hypothesis 5b: Trust or distrust in a seller negatively affects perceived risk.

Hypothesis 6: Perceived risk negatively affects a buyer's intention to purchase.

The natural propensity to trust is derived from a potential buyer's mood or attitude, that is derived from personal experience and his/her culture [11,16]. Natural propensity acts as a reference point, so a relative approach is needed rather than an absolute scale for determining trust [44]. The buyer who has a high level of natural propensity to trust tends to trust the e-commerce intermediary and seller [34]. Therefore, we posit:

Hypothesis 7a: A buyer's natural propensity to trust positively affects their trust in an intermediary.

Hypothesis 7b: A buyer's natural propensity to trust positively affects their trust in a seller.

Hypothesis 8a: A buyer's natural propensity to distrust positively affects their distrust in an intermediary.

Hypothesis 8b: A buyer's natural propensity to distrust negatively affects their trust in a seller.

Word-of-mouth (WOM) is the expressed opinions of others as to whether they are favorable or unfavorable to a seller's products or services. A typical characteristic of WOM is that it is often excessively positive or extremely negative [46]. People usually share their feelings and opinions when they feel extreme satisfaction or dissatisfaction. WOM is a buyer's direct opinion of a seller. The term WOM particularly applies to e-commerce. Therefore, we propose the following hypotheses:

Hypothesis 9: Positive eWOM positively affects a buyer's trust in a seller.

Hypothesis 10: Negative eWOM negatively affects a buyer's trust in seller.

4. Research Design and Data Collection

4.1. Measurement

Most of the measures in this study were already established in previous research. Appendix A depicts the measures designed to test our research model. The survey consisted of two parts. The first part gathered demographic profiles and basic factors such as gender, age, the websites that the respondent visits regularly, and so on. The second part had multiple measures for each construct, such as trust and distrust in the intermediary and seller, structural assurance and perceived website quality for an intermediary, a buyers' perceived risk, and purchase intention. All of the items were measured on 7-point Likert-type scale.

4.2. Participants and Data Collection

This study used a website developed to conduct the survey of this study. Surveys were collected from a group of undergraduate students attending colleges in Seoul and Gyeonggi-do Province, South Korea, for two months from October to December 2015. A total of 145 responses were collected in this survey. After eliminating 22 invalid responses, a total of 123 responses were used for the analysis.

Table 4 summarizes the profile of the participants of the 123 usable responses, which were analyzed. Respondents' genders were relatively equal (58.5% males; 41.5% females). For age, most of respondents were between age 20 and 24 (81.3%) with 99% under age 30. It is acknowledged that by being limited to one age group, the responses may be biased. The reason for bias in age was that

the responses were collected from students in lower-level undergraduate courses. Respondents were asked which shopping website they visited most regularly and the responses were for five sites: 35.0%, 24.4%, 12.2%, 7.3%, 6.5% chose G Market, 11 street, Naver Shop N, Auction, and Interpark, respectively. The other 14.6% answered lotte.com, shinsegae.com (SSG), GSshop, and other similar sites.

Table 4. Characteristics of the sample.

	Variables	Responses	Portion
Gender	Male	72	58.50%
	Female	51	41.50%
Age	15–19	13	10.60%
	20–24	100	81.30%
	25–29	9	7.30%
	30+	1	0.80%
Intermediary	G Market	43	35.00%
	11st.	30	24.40%
	Shop N	15	12.20%
	Auction	9	7.30%
	Interpark	8	6.50%
	Other	18	14.60%
	Sum	123	100.00%

5. Data Analysis and Results

We tested the hypotheses using SmartPLS 2.0, which is a PLS (Partial Least Squares) analysis tool. PLS is well known for its effectiveness regarding validity and statistical parsimony, even if there are not enough samples [47]. PLS tests the measurement model for its reliability and validity. Next, the structural model was tested to see the causality of its variables and verify the research hypotheses.

5.1. Testing the Measurement Models

As a first step of PLS analysis, the measurement model was tested for reliability of internal consistency and for construct validity. The reliability of internal consistency was tested using Cronbach's alpha and composite reliability. Cronbach's alpha is the coefficient of reliability and composite reliability (CR) indicates internal consistency. Both should be higher than the minimum cutoff score of 0.7. Table 5 shows that all Cronbach's alpha results were higher than 0.7 and all CRs were greater than the benchmark of 0.7. This means the measurements were reliable and the factors measured the constructs consistently.

Table 5. Reliability coefficients for constructs.

Constructs	AVE	CR	R ²	Cronbach's Alpha	Communality	Redundancy
Intention to purchase	0.825	0.950	0.397	0.929	0.825	-0.040
Perceived risk	0.823	0.933	0.302	0.892	0.823	0.243
Trust in seller	0.707	0.923	0.607	0.897	0.707	-0.015
Trust in intermediary	0.716	0.926	0.514	0.900	0.716	-0.003
Distrust in intermediary	0.712	0.937	0.172	0.919	0.712	0.014
Structural assurance	0.750	0.923		0.889	0.750	
Perceived website quality	0.845	0.942		0.908	0.845	
Natural propensity to trust	0.707	0.923		0.902	0.707	
Natural propensity to distrust	0.649	0.847		0.753	0.649	
Positive e-word of mouth	0.759	0.927		0.894	0.759	
Negative e-word of mouth	0.756	0.925		0.911	0.756	

Construct validity was tested using the subcategories of convergent validity and discriminant validity. Convergent validity was examined in terms of average variance extracted (AVE), and it was accepted when AVE was greater than 0.5. Discriminant validity was also examined in terms of AVE, and it was accepted when the square root of AVE was greater than all cases of correlations between each pair of constructs. Table 5 shows that all AVE were greater than 0.5, indicating that most of the variances were explained by their constructs. Table 6 shows that every square root of the AVE (diagonal elements) was higher than 0.5, indicating that each measurement explained the intended construct without overlapping an adjacent construct. Factor loading can be used to test convergent validity and discriminant validity as an alternative. A set of confirmatory factor analyses was conducted and we can be reasonably assured that the measurement models had the reliability of internal consistency and construct validity. The next step was testing the structural model.

Table 6. Correlations of latent variables.

		1	2	3	4	5	6	7	8	9	10	11
1	Intention to purchase	0.91										
2	Perceived risk	-0.28	0.91									
3	Trust in seller	0.58	-0.18	0.84								
4	Trust in intermediary	0.52	-0.17	0.71	0.85							
5	Distrust in intermediary	-0.19	0.54	-0.24	-0.32	0.84						
6	Structural assurance	0.44	-0.22	0.51	0.59	-0.32	0.87					
7	Perceived website quality	0.53	-0.26	0.63	0.65	-0.27	0.52	0.92				
8	Natural propensity to trust	0.40	-0.08	0.31	0.16	-0.09	0.17	0.26	0.84			
9	Natural propensity to distrust	0.24	0.13	0.19	0.19	0.16	0.18	0.15	-0.19	0.81		
10	Positive eWOM	0.56	-0.33	0.61	0.51	-0.20	0.42	0.51	0.48	0.13	0.87	
11	Negative eWOM	-0.26	0.63	-0.32	-0.26	0.59	-0.21	-0.25	-0.10	0.11	-0.42	0.87

Notes: The square root of AVE are presented as the diagonal elements. They have to exceed the inter-construct correlations to ensure adequate discriminant validity.

5.2. Testing the Structural Model

Figures 10 and 11 and Table 7 show the structural model results of statistical tests (*t*-test) of path coefficients to draw conclusions regarding the research hypotheses and measures of the validity (R^2) of the model that explain how well the model fit. Structural assurance ($\beta = 0.347$, $t = 3.67$) and perceived website quality ($\beta = 0.476$, $t = 5.85$) show positive effects on trust in intermediaries (H1a and H2a were supported). Structural assurance ($\beta = -0.277$, $t = 1.99$) showed a positive effect on distrust in intermediaries (H1b was supported). In contrast, perceived website quality ($\beta = -0.163$, $t = 1.05$) did not show a negative effect on distrust in intermediaries (H2b was not supported).

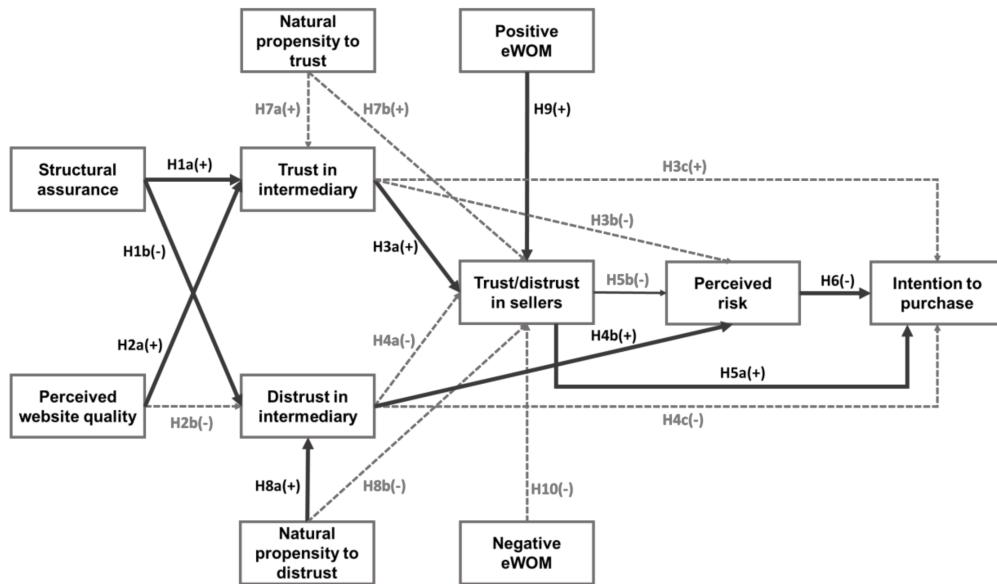


Figure 10. Results of hypothesis testing with supported hypotheses.

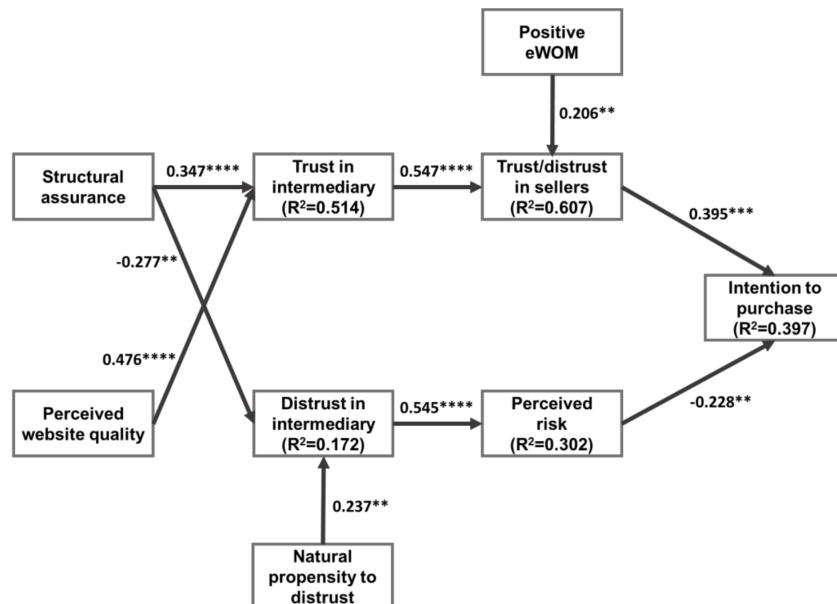


Figure 11. Results of the structural model (* significant at the 0.10 level, ** significant at the 0.05 level, *** significant at the 0.01 level, **** significant at the 0.001 level).

Table 7. Results of hypothesis testing.

	Hypotheses	Results ¹
H1a	Structural assurance → Trust in intermediary	Supported ****
H1b	Structural assurance → Distrust in intermediary	Supported **
H2a	Perceived website quality → Trust in intermediary	Supported ***
H2b	Perceived website quality → Distrust in intermediary	Not supported
H3a	Trust in intermediary → Trust in seller	Supported ***
H3b	Trust in intermediary → Perceived risk	Not supported
H3c	Trust in intermediary → Intention to purchase	Not supported
H4a	Distrust in intermediary → Trust in seller	Not supported
H4b	Distrust in intermediary → Perceived risk	Supported ***
H4c	Distrust in intermediary → Intention to purchase	Not supported
H5a	Trust in seller → Intention to purchase	Supported ***
H5b	Trust in seller → Perceived risk	Not supported
H6	Perceived risk → Intention to purchase	Supported **
H7a	Natural propensity to trust → Trust in intermediary	Not supported
H7b	Natural propensity to trust → Trust in seller	Not supported
H8a	Natural propensity to distrust → Distrust in intermediary	Supported **
H8b	Natural propensity to distrust → Trust in seller	Not supported
H9	Positive e-word of mouth → Trust in seller	Supported **
H10	Negative e-word of mouth → Trust in seller	Not supported

¹* significant at the 0.10 level, ** significant at the 0.05 level, *** significant at the 0.01 level, **** significant at the 0.001 level.

For trust transfers between intermediaries and sellers, trust in intermediaries ($\beta = 0.547, t = 6.09$) showed a transfer to (or a strong positive effect on) trust in sellers (H3a was supported). However, trust in intermediaries ($\beta = 0.547, t = 0.52$) did not show an effect on trust in sellers (H3b was not supported). Also, trust in intermediaries ($\beta = 0.234, t = 1.54$) did not show an effect on the trust in sellers (H3c was not supported).

Distrust in intermediaries ($\beta = 0.043, t = 0.43$) did not show a transfer to (i.e., any effect on) trust in sellers (H4a was not supported). This result shows that promoting trust in intermediaries is more important than reducing distrust in intermediaries to promote trust in sellers. Distrust in intermediaries ($\beta = 0.545, t = 5.60$) shows a strong effect on perceived risk (H4b was supported). This means intermediaries should pay attention to avoid distrust rather than to promote trust when perceived risk needs to be controlled. Distrust in intermediaries ($\beta = 0.100, t = 0.82$) did not show an effect on trust in sellers (H4c was not supported).

Trust in sellers ($\beta = 0.395, t = 2.83$) showed an effect on intention to purchase, but trust in sellers ($\beta = -0.103, t = 0.73$) showed no effect on perceived risk (H5b was not supported). Perceived risk ($\beta = -0.228, t = 2.14$) indicated a negative effect on purchase intentions (H6 was supported).

Trust in an intermediary directly affected trust in the seller, which positively influenced the buyer's purchase intention; whereas, distrust in the intermediary directly impacted on perceived risk, which negatively influenced purchase intentions.

Natural propensity to trust ($\beta = 0.112, t = 1.24$) and natural propensity to distrust ($\beta = 0.043, t = 1.04$) did not show an effect on trust in sellers (H7b and H8b was not supported). Natural propensity to trust ($\beta = -0.014, t = 0.16$) did not show an effect on trust in intermediaries (H7a was not supported), while natural propensity to distrust ($\beta = 0.172, t = 1.99$) showed a positive effect on distrust in intermediaries (H8a was supported).

Positive eWOM ($\beta = 0.236, t = 2.49$) showed a positive effect on trust in sellers (H9 was supported), but negative eWOM ($\beta = -0.100, t = 0.78$) did not show any effect on trust in sellers (H10 was not supported).

6. Discussion

This study proposed an integrated behavioral model based on a differentiated approach that included (1) division of two different dimensions: the intermediary and seller, (2) multi-dimensionally

coexistent trust and distrust, unlike the traditional unidimensional approach (i.e., trust and distrust are opposites). To investigate the effects of trust and distrust on purchase intentions in e-commerce, PLS, a structural equation modeling method was used. Results showed several findings. First, trust in an intermediary transferred to trust in a seller. Second, distrust in an intermediary directly impacted on perceived risk, negatively influencing purchase intentions. Third, structural assurance and perceived website quality of an intermediary gave a positive impact on buyer's trust in the intermediary.

The findings have some theoretical contributions. First, this study considered both trust and distrust to analyze patterns of buyer behavior. E-commerce distrust has not been studied as much as e-commerce trust. If trust and distrust are a unidimensional concept, researching lack of distrust matters little. However, if they are a multidimensional concept, the lack of research on distrust could risk a biased point of view in understanding e-commerce. This study provided a holistic and balanced view, by separating trust and distrust and integrating a research model to better understand e-commerce. Relying on how cognition works against affect, a unidimensional approach to trust in a seller and a multidimensional approach to trust and distrust in an intermediary have shown validity and reliability of measurement. This contribution is expected to act as motivation for further studies. Second, this study also broke down e-commerce into the intermediary and the seller. This dual perspective provided us with a better understanding of buyers' decision-making behavior, especially empirical evidence of trust or distrust transfer from intermediaries to sellers. Third, this study showed us the effect of the antecedents of trust or distrust in the intermediary and seller. Structural assurance and perceived website quality had a positive impact on trust in an intermediary but did not have an effect on trust in a seller, directly. While this study showed us that trust transfers from an intermediary to seller, trust in an intermediary and seller are both affected by these two antecedents, directly and indirectly.

The findings have some practical contributions. First, the results of the study highlight the management of distrust. Distrust in an intermediary directly impacts on perceived risk, negatively influencing purchase intention. Meanwhile, trust in an intermediary and trust in a seller do not influence distrust at all. This means that no matter how great trust is, a buyer can still have a high perceived risk. The effort of raising trust does not reduce distrust level. This study suggests managing trust or distrust simultaneously. Second, trust in a seller does not break into a dual perspective of trust and distrust, which means that cognitive factors play stronger than affective factors. A buyer is influenced by a seller's information on the product or service when they make the decision to trust the seller. To raise trust in the seller, providing specific and precise information is highly recommended.

Despite its academic and practical contributions, this study was not without limitations. First, most of the participants were in their 20s because the surveys were collected from a group of students taking undergraduate courses. Survey distribution to a broader population of Internet buyers and a larger sample size will be needed in further research. Second, the data used in this study were not longitudinal. Former transaction experience could affect trust or distrust in the intermediary and the seller. A longitudinal research model is recommended for further study. Third, the antecedents of trust in this study were just a fragment of the trust experience. Structural assurance and perceived website quality are just two possible alternatives. A holistic view, which is more balanced and offers richer antecedents of trust, and especially, of distrust, is expected for further study, including buyers' trust propensity, and other buyers' WOM.

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Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Constructs	Item	Measurement Items
Structural assurance	SA1	The website is well-equipped with safeguards to reassure me comfortably from using it to do personal business transactions.
	SA2	I feel secure that the adequate website system protects me legally and technologically from any problems that may arise thereon.
	SA3	I feel sure that encrypted and technologically advanced website makes me safe to do business there.
	SA4	Generally, this site is safely designed environment to transact business.
Perceived website quality	PWQ1	The website in use has high quality.
	PWQ2	I use the website which quality is extremely high.
	PWQ3	I am completely for sure that the website in use has a highly functional quality.
	PWQ4	I use the website that seems to have very low quality. (Reverse scale)
Trust in intermediary	TI1	The intermediary will sincerely understand my anxiety about the product, and try its best to reduce it
	TI2	I would have a feeling of loss if I could not buy any more from this intermediary.
	TI3	The intermediary will respond to my problems or questions caringly.
	TI4	I get the perception that the intermediary put in practice promises and fulfill commitments.
	TI5	I trust that this intermediary keeps my best interests in its mind.
	TI6	This intermediary is trustworthy.
Distrust in intermediary	DI1	I feel afraid that this intermediary's business conduct may bring damage in future.
	DI2	I have a suspicion that this intermediary will react to my interest in the product with malicious intention.
	DI3	I am worried that this intermediary might not be interested in my business.
	DI4	I am not comfortable about whether this intermediary is trustworthy and committed.
	DI5	I would feel cautious about characterizing this intermediary as honest.
	DI6	This intermediary is untrustworthy and unreliable.
Trust in seller	TS1	The seller will sincerely understand my anxiety about the product, and try its best to reduce it.
	TS2	I would have a feeling of loss if I could not buy any more from this seller.
	TS3	The seller will respond to my problems or questions caringly.
	TS4	I get the perception that the seller put in practice promises and fulfill commitments.
	TS5	I trust that this seller keeps my best interests in its mind.
	TS6	This seller is trustworthy.
Positive eWOM	PWOM1	Many WOMs evaluate seller positively.
	PWOM2	Trustful WOMs evaluate seller positively.
	PWOM3	I agree with WOMs which evaluate seller positively.
	PWOM4	Previous buyers evaluate seller positively.
Negative eWOM	NWOM1	Many WOMs evaluate seller negatively.
	NWOM2	Trustful WOMs evaluate seller negatively.
	NWOM3	I agree with WOMs which evaluate seller negatively.
	NWOM4	Previous buyers evaluate seller negatively.

Constructs	Item	Measurement Items
Natural propensity to trust	NPT1	I always believe people until they show me a proper reason not to believe them.
	NPT2	In general, I willingly believe people when I first meet them.
	NPT3	It is my typical approach that I trust new people until they show I should not believe them.
	NPT4	I generally have faith in humanity.
	NPT5	I understand that people are trustworthy in general.
Natural propensity to distrust	NPD1	I am always careful about trusting people when I first work with them.
	NPD2	When I first meet people, I have a tendency of keeping a close eye on their actions.
	NPD3	I am always suspicious about new acquaintances until they show me that I can believe them/they are reliable.
Intention to purchase	NPD4	I hesitate to believe people until they have proved themselves to be trustworthy.
	INT1	I feel like I will buy the goods from the seller on this website.
	INT2	I feel like I will recommend the seller on this website to my friends.
	INT3	I feel like I will buy another product from the seller on this website if I need the products that I purchased in the past.
	INT4	Considering the need, I have the intention to use the seller on this website to obtain the product I need.

References

1. Statista. Global Retail E-Commerce Sales 2014 to 2021. Available online: <https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/> (accessed on 25 March 2018).
2. Korean Statistical Information Service (KOSIS). Online Shopping Mall Sales Trend in Korea. Available online: http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1KE1002&conn_path=I2 (accessed on 25 March 2018).
3. Kim, D.J. A Study of the multilevel and dynamic nature of trust in e-commerce from a cross-stage perspective. *Int. J. Electron. Commer.* **2014**, *19*, 11–64. [[CrossRef](#)]
4. Security Magazine. E-Commerce Fraud Loss Reaches \$57.8 billion. Available online: <https://www.securitymagazine.com/articles/88451-e-commerce-fraud-loss-reaches-578-billion> (accessed on 25 March 2018).
5. Statista. Level of Concern over Online Shopping Fraud in Finland. 2015. Available online: <https://www.statista.com/statistics/551601/finland-level-of-concern-over-online-shopping-fraud/> (accessed on 25 March 2018).
6. Korea Consumer Agency (KCA). Yearbooks of Consumer Complaints. Available online: http://www.kca.go.kr/brd/m_377/list.do (accessed on 20 February 2018).
7. Lee, J. Dual effect of price in e-commerce environment: Focusing on trust and distrust building processes. *Asia Pacific J. Inf. Syst.* **2014**, *24*, 393–415. [[CrossRef](#)]
8. Lee, J.; Pee, L.G. The relationship between online trust and distrust in business: Testing mutual causality from a cognitive-affective personality system theory. *Asia Pacific J. Inf. Syst.* **2015**, *25*, 500–518. [[CrossRef](#)]
9. McKnight, D.H.; Choudhury, V. Distrust and trust in B2C e-commerce: Do they differ? In Proceedings of the Eighth International Conference on Electronic Commerce ICEC'06, Fredericton, NB, Canada, 14–16 August 2006.
10. Lewicki, R.J.; McAllister, D.J.; Bies, R.J. Trust and distrust: New relationships and realities. *Acad. Manag. Rev.* **1998**, *23*, 438–458.
11. McKnight, D.H.; Choudhury, V.; Kacmar, C. Developing and validating trust measures for e commerce: An integrative typology. *Inf. Syst. Res.* **2002**, *13*, 334–359. [[CrossRef](#)]
12. Strub, P.J.; Priest, T.B. Two Patterns of Establishing Trust: The Marijuana User. *Sociol. Focus* **1976**, *9*, 399–411. [[CrossRef](#)]
13. Verhagen, T.; Meents, S.; Tan, Y. Perceived risk and trust associated with purchasing at electronic marketplaces. *Eur. J. Inf. Syst.* **2006**, *15*, 542–555. [[CrossRef](#)]
14. Seckler, M.; Heinz, S.; Forde, S.; Tuch, A.N.; Opwis, K. Trust and distrust on the web: User experiences and website characteristics. *Comput. Hum. Behav.* **2015**, *45*, 39–50. [[CrossRef](#)]
15. Hong, I.B.; Cho, H. The impact of consumer trust on attitudinal loyalty and purchase intentions in B2C e-marketplaces: Intermediary trust vs. seller trust. *Int. J. Inf. Manag.* **2011**, *31*, 469–479. [[CrossRef](#)]

16. Rotter, J.B. Generalized expectancies for interpersonal trust. *Am. Psychol.* **1971**, *26*, 443–450. [[CrossRef](#)]
17. Stack, L.C. Trust. In *Dimensionality of Personality*; London, H., Exner, J.E., Jr., Eds.; Wiley: New York, NY, USA, 1988; pp. 561–599.
18. McKnight, D.H.; Cherany, N.L. Trust and distrust definitions: One bite at a time. *Lect. Notes Comput. Sci.* **2001**, *2246*, 27–54.
19. Moody, G.D.; Lowry, P.B.; Galletta, D.F. It's complicated: Explaining the relationship between trust, distrust, and ambivalence in online transaction relationships using polynomial regression analysis and response surface analysis. *Eur. J. Inf. Syst.* **2017**, *26*, 379–413. [[CrossRef](#)]
20. McKnight, D.H.; Lankton, N.K.; Nicolaou, A.; Price, J. Distinguishing the effects of B2B information quality, system quality, and service outcome quality on trust and distrust. *J. Strateg. Inf. Syst.* **2017**, *26*, 118–141. [[CrossRef](#)]
21. Moody, G.D.; Galletta, D.F.; Lowry, P.B. When trust and distrust collide online consumer behavior. *Electron. Commer. Res. Appl.* **2014**, *13*, 266–282. [[CrossRef](#)]
22. Sabbagh, K. *Twenty-Five Century Jet: The Making and Marketing of the Boeing 777*; Scribner: New York, NY, USA, 1996.
23. McAllister, D.J. Affect—and cognition-based trust as foundations for interpersonal cooperation in organizations. *Acad. Manag. J.* **1995**, *38*, 24–59. [[CrossRef](#)]
24. Zajonc, R.B. Feeling and thinking preferences need no inferences. *Am. Psychol.* **1980**, *35*, 151–175. [[CrossRef](#)]
25. Zhang, P. The affective response model: A Theoretical framework of affective concepts and their relationships in the ICT context. *MIS Q.* **2013**, *37*, 247–274. [[CrossRef](#)]
26. Thaler, R.H.; Sunstein, C.R. *Nudge: Improving Decisions about Health, Wealth, and Happiness*; Revised & Expanded, ed.; Penguin Books: New York, NY, USA, 2009.
27. Qu, M.; Kim, J.; Choi, S. The effects of multidimensional customer trust on purchase and eWOM intentions in social commerce based on WeChat in China. *Asia Pacific J. Inf. Syst.* **2017**, *27*, 77–98. [[CrossRef](#)]
28. Stewart, K.J. Trust Transfer on the World Wide Web. *Organ. Sci.* **2003**, *14*, 5–13. [[CrossRef](#)]
29. Kim, H.W.; Xu, Y.; Gupta, S. Which is more important in Internet shopping, perceived price or trust? *Electron. Commer. Res. Appl.* **2012**, *11*, 241–252. [[CrossRef](#)]
30. Kim, D.J.; Ferrin, D.L.; Rao, H.R. A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decis. Support Syst.* **2008**, *44*, 544–564. [[CrossRef](#)]
31. Gefen, D.; Karahanna, E.; Straub, D.W. Trust and TAM in online shopping: An integrated model. *MIS Q.* **2003**, *27*, 51–90. [[CrossRef](#)]
32. Ba, S.; Pavlou, P.A. Evidence of the effect of trust building technology in electronic markets: Price premiums and buyer behavior. *MIS Q.* **2002**, *26*, 243–268. [[CrossRef](#)]
33. Sullivan, Y.W.; Kim, D.J. Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments. *Int. J. Inf. Manag.* **2018**, *39*, 199–219. [[CrossRef](#)]
34. Hallikainen, H.; Laukkanen, T. National culture and consumer trust in e-commerce. *Int. J. Inf. Manag.* **2018**, *38*, 97–106. [[CrossRef](#)]
35. Lee, S.-J.; Choi, S.; Ahn, H. Roles of buyer's trust and distrust in open markets: Focusing on transfer between intermediary and seller. *J. Korea Contents Assoc.* **2017**, *17*, 360–374.
36. Pavlou, P.A.; Gefen, D. Building effective online marketplaces with institution-based trust. *Inf. Syst. Res.* **2004**, *15*, 37–59. [[CrossRef](#)]
37. Kwahk, K.-Y.; Kim, H.J. The determinants of trust and participation intention in internet auction: Model generating strategy approach. *J. Korean Oper. Res. Manag. Sci. Soc.* **2005**, *30*, 95–117.
38. Everard, A.; Galletta, D.F. How presentation flaws affect perceived site quality, trust, and intention to purchase from an online store. *J. Manag. Inf. Syst.* **2005**, *22*, 56–95. [[CrossRef](#)]
39. Schlosser, A.E.; White, T.B.; Lloyd, S.M. Converting web site visitors into buyers: How web site investment increases consumer trusting beliefs and online purchase intentions. *J. Mark.* **2006**, *70*, 133–148. [[CrossRef](#)]
40. Yoon, H.S.; Occeña, L.G. Influencing factors of trust in consumer-to-consumer electronic commerce with gender and age. *Int. J. Inf. Manag.* **2015**, *35*, 352–363. [[CrossRef](#)]
41. Jones, K.; Leonard, L.N.K. Trust in consumer-to-consumer electronic commerce. *Inf. Manag.* **2008**, *45*, 88–95. [[CrossRef](#)]
42. Pennington, R.; Wilcox, H.D.; Grover, V. The role of system trust in business-to-consumer transactions. *J. Manag. Inf. Syst.* **2004**, *20*, 197–226. [[CrossRef](#)]

43. Sun, H. A Sellers' trust and continued use of online marketplaces. *J. Assoc. Inf. Syst.* **2010**, *11*, 182–211. [[CrossRef](#)]
44. Oh, J.C. An effect on service failure of tenants and switching intention in open market: Focused on distrust transfer. *e-Bus. Stud.* **2013**, *14*, 141–165.
45. Kahneman, D. *Thinking, Fast and Slow*; Farrar, Straus and Giroux: New York, NY, USA, 2011.
46. Hu, N.; Pavlou, P.A.; Zhang, J. Can online reviews reveal a product's true quality? Empirical findings and analytical modeling of online word-of-mouth communication. In Proceedings of the 7th ACM Conference on Electronic Commerce (EC'06), Ann Arbor, MI, USA, 11–15 June 2006; ACM: New York, NY, USA, 2006; pp. 324–330.
47. Kwahk, K.-Y.; Ahn, H. Moderating effects of localization differences on ERP use: A socio-technical systems perspective. *Comput. Hum. Behav.* **2010**, *26*, 186–198. [[CrossRef](#)]



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