

Distrust and Trust in B2C E-Commerce: Do They Differ?

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ABSTRACT

Researchers have not studied e-commerce distrust as much as e-commerce trust. This study examines whether trust and distrust are distinct concepts. If trust and distrust are the same, lack of distrust research matters little. But if they are different, the lack of distrust research could be problematic because distrust may have a unique B2C impact. While some researchers believe distrust simply means a low level of trust, others believe distrust is a concept entirely separate from trust. For the latter to be true, trust and distrust variables must first demonstrate discriminant validity from each other, and second, differ in what they themselves predict. This paper tests whether or not trust and distrust variables are distinct. It finds that three sets of trust and distrust concepts are discriminant from each other and that they tend to predict different variables. The findings also show that distrust is an important predictor of risky B2C actions like willingness to share information and willingness to purchase.

Categories and Subject Descriptors

K.4.4 [Electronic Commerce]

General Terms

Management, Measurement, Verification

Keywords

Distrust, trust, structural assurance, trusting beliefs, trusting intention, perceived usefulness, intention to use, purchase

1. INTRODUCTION

Distrust of e-commerce sites is an important phenomenon because engaging in e-commerce holds at least three consumer perils.

First, buying online involves the risk that the website may be a fraud, taking one's money without delivering a product or service in return. The media has highlighted this danger [32]. Second, dealing with an impersonal website makes it harder to see, feel, and try out the product, increasing the felt risk or uncertainty of a product [9]. Third, the purchase of a web product or service may require one to share personal information, including identity, address, credit card number, and sometimes one's social security

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ICEC'06, August 14–16, 2006, Fredericton, Canada.

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number [13]. This can be dangerous because the vendor with whom one deals may, through malfeasance or incompetence, provide one's personal information to those who should not have access to it. Because of such risks, people often distrust e-vendors.

The term distrust is often used in both the news media [15] and in research articles (e.g., [13]) to represent specific negative consumer feelings towards a website or its vendor. Such feelings might include fear or insecurity about the vendor's intentions or competence. However, researchers and the media often use the term distrust to describe the flip side of trust, rather than defining it specifically and using it as a specific, measured variable along with, or in contrast to, trust. For example, Kong and Hung [16] use the term distrust in a definition: "An individual's disposition to trust refers to his/her general predisposition to trust or distrust other people..." Marshall and Woonbong [20] refer to distrust only once, saying there is "an intrinsic distrust of online materials because of the difficulty of distinguishing scholarly from vanity materials online..." Zand [37] refers to distrust many times, but does not clearly distinguish it from trust. Few have studied distrust either as a specific construct by itself or with trust constructs (exceptions: [1, 3, 7, 18, 19]). This study tests empirically whether trust and distrust are distinct concepts.

In recent research, the term "trust" is primarily used in two ways. First, it is used to describe important beliefs or perceptions one holds about the other party, such as their integrity, competence, and benevolence (e.g., [4, 11]). While these beliefs are often termed "trust," we refer to them as trusting beliefs, following McKnight et al. [25]. Second, "trust" is used to describe a willingness to depend or to become vulnerable to the other party when one cannot control the other party's actions [14, 21]. We refer to this construct as trusting intention. Trusting beliefs and trusting intention correspond respectively to the definitions of trustworthiness and trust in Mayer et al. [21]. Sometimes, these two types of trust constructs are addressed together (e.g., [21, 23]), showing they relate in ways similar to how the Technology Acceptance Model (TAM) construct 'perceived usefulness' (a belief) relates to behavioral intention to use (an intention).

If distrust exists as a distinct concept, it stands to reason that, just as with trust constructs, it should be simple to delineate distrust into its components—distrusting beliefs and distrusting intention. This split has already been theorized [22], with distrust concepts defined to parallel the definitions of trust concepts. Distrusting beliefs were defined as the extent to which one believes, with feelings of relative certainty or confidence, that the other party does not have beneficial characteristics. Likewise, distrusting intention was defined to mean one "is not willing to depend, or intends not to depend, on the other party, with a feeling of relative

certainty or confidence” [22: 34]. We adopt these definitions of distrusting beliefs and distrusting intention.

2. THEORETICAL DEVELOPMENT

2.1 The Trust-Distrust Distinction

The main trust/distrust dispute is whether they are distinct concepts or two ends of one continuum. Rotter [31] and Worchel [36] believe the two are the same concept, but are at two different ends of the same conceptual continuum. Recent researchers tend to distinguish between trust and distrust, or at least say they are distinct [17]. For instance, Sitkin and Roth [34] define trust and distrust as two very different concepts: trust as a belief in the other’s task competence, and distrust as a belief the other’s values or motives will cause them to approach situations in an objectionable manner. Lewicki et al. [19] argue that the two are distinct because they tend to differentiate as people become acquainted, such that one learns to trust a person in one area but distrust them in another. They assume one can trust and distrust another party at the same time. They also argue that trust and distrust have different antecedents and consequences.

However, little empirical evidence has demonstrated that trust and distrust are distinct concepts. This has in part been true because trust and distrust are not often studied together. However, Lee and Huynh [18] study two types of initial trust and distrust, finding that trust and distrust were discriminant and had different outcomes. McKnight et al. [26] show empirically that disposition to trust and disposition to distrust are distinct concepts with distinct impacts. Benamati et al. [3] show that trust and distrust have different effects on intention to use an online bank.

One of the reasons trust and distrust should form distinct concepts is that distrust often involves strong negative emotions while trust does not, per McKnight and Chervany [22]. Trust makes one feel safe, secure, and comfortable, while distrust makes one feel insecure, worried, and suspicious. One with distrust in an interdependent party will not feel safe without taking action (e.g., control actions or pre-emptive strikes). Distrust usually arises for good reason. Most people are trusting until the other party proves untrustworthy [25]. Thus, some kind of trust breach often takes place before one develops high levels of distrust. A breach of trust would cause a negative emotional reaction [30] that would be strongly associated with the distrust of that person. Trust and distrust in the person would still be related, but not so highly negatively correlated as to be indistinguishable. We believe this should be the case for a number of trust variables, including trusting beliefs and trusting intention.

H1a: Trusting beliefs will be distinct (i.e., discriminant) from distrusting beliefs.

H1b: Trusting intention will be distinct (i.e., discriminant) from distrusting intention.

The trust/distrust distinction should also be true of structural assurance, an institution-based trust concept that means one perceives protective structures (e.g., guarantees) are in place to make a successful e-commerce transaction likely [28]. Structural assurance can bolster trust by providing a safe and secure setting. McKnight and Chervany [22] define a parallel distrust concept they call “no structural assurance,” which means one perceives protective structures are not in place. No structural assurance

involves the feeling of being exposed to unwanted risk. Just as with distrusting beliefs or distrusting intention, the emotional makeup of no structural assurance should make it distinct from structural assurance. Yet they should also be significantly related.

H1c: Structural assurance will be distinct (i.e., discriminant) from no structural assurance.

2.2 Unique Antecedents and Consequences

This study examines trust and distrust in an Internet legal advice provider. This setting is interesting and important because legal issues represent a level of risk to the consumer not found in buying books or CDs. Thus, it is appropriate for studying distrust.

Discriminance is one test of whether trust and distrust are separate concepts. A second test is whether the concepts have different antecedents and consequences [19]. Since trust and distrust concepts are significantly and strongly correlated, it is likely that their antecedents and consequences, while distinct, are similar. Hence, having different antecedents and outcomes is probably more a matter of degree than a black-and-white projection. Therefore, we propose that certain antecedents and outcomes are more highly related to trust than to distrust, for example. For modeling parsimony, we also relate the trust and distrust variables to each other, based on theory. The model is shown in Figure 1.

Structural assurance should be an antecedent of trusting beliefs. Pavlou [28] and Pavlou and Gefen [29] find that institutional structures (similar to structural assurance) predict trust in the community of sellers. Similarly, on the distrust side, *no structural assurance* will be an antecedent of distrusting beliefs. We propose that structural assurance will be a better predictor of trusting beliefs than will no structural assurance and that no structural assurance will be a better predictor of distrusting beliefs than will structural assurance. If these hypotheses prove true, this supports the premise that the trusting and distrusting beliefs are separate concepts because they have different antecedents.

H2a: Structural assurance will predict trusting beliefs significantly better than will no structural assurance.

H2b: No structural assurance will predict distrusting beliefs significantly better than will structural assurance.

One reason H2ab should prove true is that structural assurance and trusting beliefs are positive perceptions about the vendor, while no structural assurance and distrusting beliefs are negative perceptions. As Lewicki et al. [19] discuss, negative concepts are like (i.e., more highly correlated with) negative concepts while positive concepts are like positive concepts. We use this reasoning to build additional hypotheses.

Just as the negative predicts the negative and the positive the positive for (dis)trusting beliefs, so it should be for predicting (dis)trusting intention. Trusting intention should be predicted more strongly by trusting beliefs, while distrusting intention should be predicted more strongly by distrusting beliefs.

H3a: Trusting beliefs will predict trusting intention significantly better than will distrusting beliefs.

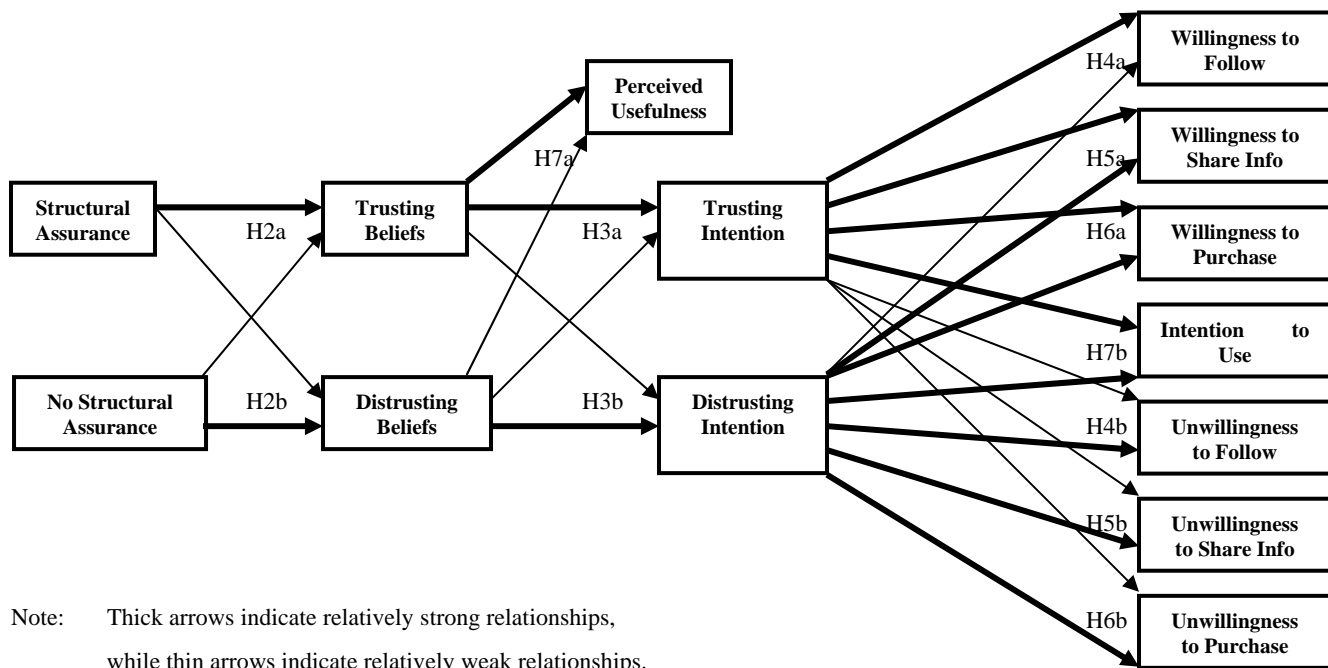


Figure 1. Research Model

H3b: Distrusting beliefs will predict distrusting intention significantly better than will trusting beliefs.

Hypotheses 2ab and 3ab relate to how the antecedents of trust and distrust concepts differ. The next several hypotheses address the consequences or outcomes of trusting intention. Although trusting beliefs may also affect these outcomes, we assume for the sake of parsimony that trusting intention fully mediates the effects of trusting beliefs. The consumer outcomes important to a legal advice provider include: 1. *consumer willingness to follow site advice*, 2. *willingness to share personal information*, and 3. *willingness to purchase advice* [23, 24]. These outcomes of trusting intention are important because they indicate the consumer is willing not only to state that s/he trusts the vendor, but to act on that trust. In addition, based upon TAM research, it should be important for the consumer 4. *to intend to use* the site for their legal needs. Trust research has often integrated trust with TAM concepts (e.g., [11]). These four outcomes will be used to differentiate trusting intention from distrusting intention. We also further differentiate trusting beliefs from distrusting beliefs using perceived usefulness, another TAM variable, as explained below.

From the e-vendor's perspective, willingness to follow advice is a positive outcome. McKnight et al. [24] find trusting intention toward a legal advice website vendor predicts willingness to follow vendor advice. Trusting intention should predict willingness to follow advice better than does distrusting intention, because the latter is focused negatively.

H4a: Trusting intention will predict willingness to follow advice significantly better than will distrusting intention.

We can conceive of and measure an unwillingness to follow advice as well as a willingness to follow. Unwillingness to follow advice, meaning one is hesitant or nervous to follow the advice, is a negative outcome. Because it is focused negatively, it should be predicted better by distrusting intention than by trusting intention.

H4b: Distrusting intention will predict unwillingness to follow advice significantly better than will trusting intention.

Another important positive outcome for a website is willingness to share personal information [24]. Sharing information is needed to complete a transaction, so that goods/services are sent/billed to the right place. For a legal advice site, obtaining personal information is needed so the advice can be personalized. McKnight et al. [24] find trusting intention predicted willingness to share personal information. Since information sharing is positive, it should be predicted well by trusting intention.

However, evidence exists that distrusting intention will also be a good predictor of willingness to share information because of the risk involved in sharing. Willingness to share personal information is probably more risky in nature than is willingness to follow vendor advice. As evidence of this, [24] find that perceived Web risk predicts willingness to share, but does not predict willingness to follow vendor advice. Hence, willingness to share is more risky than is willingness to follow. Further, McKnight et al. [26] find distrust has unique ability to predict risk-laden constructs. They contrast the prediction of three

dependent variables, finding disposition to trust better predicts less risky outcomes, while disposition to distrust better predicts the more risky outcome. This suggests distrust may be especially predictive of risky variables, probably because it engages negative emotions like suspicion, fear and doubt. Willingness to share information involves consumer risk because the e-vendor might misuse or sell the personal information. Media reports about identity theft have heightened concern about providing personal information over the Web. Based on this, we predict the risk involved in willingness to share will boost the predictive power of distrusting intention. If, as just argued, distrusting intention should be a good predictor of willingness to share information; and if, as argued in the prior paragraph, trusting intention should also be a good predictor of willingness to share, then it is likely that no predictive difference will be found between trusting- and distrusting intention.

H5a: Trusting intention will not predict willingness to share personal information significantly better than will distrusting intention.

As the flip side of willingness to share, we employ unwillingness to share information. This concept means a consumer is hesitant or not disposed to share information with the Web advice vendor. Since this concept is focused on the negative, the negatively-oriented distrusting intention should be the better predictor of it. The risky nature of information sharing should assure that distrusting intention predicts it better than does trusting intention.

H5b: Distrusting intention will predict unwillingness to share personal information significantly better than will trusting intention.

McKnight et al. [24] find trusting intention predicts willingness to purchase ($\beta=.51^{***}$). This concept is a key and somewhat elusive step for e-commerce consumers to take. Trusting intention should predict willingness to purchase both because they are positive constructs and because of evidence from one past study [24].

On the other hand, risk may make distrusting intention a good predictor of willingness to purchase. To purchase is risky because one cannot always verify the quality of the product/service before one pays for it. McKnight et al. [24] find perceived Web risk predicts willingness to purchase, just as it did willingness to share, indicating the risky nature of willingness to purchase. Recourse after purchase also involves uncertainty. Online purchasing risk should make distrusting intention a good purchasing predictor. Since both trusting intention and distrusting intention should be good predictors of willingness to purchase, the result will be no predictive advantage for either.

H6a: Trusting intention will not predict willingness to purchase significantly better than will distrusting intention.

A similar concept is unwillingness to purchase, meaning one is hesitant or not disposed to purchase from the website. Applying the positive/negative orientation principle, distrusting intention should be the better predictor of unwillingness to purchase. Further, recognizing, as with H5b, that the riskiness of purchasing online will assure the predictive strength of distrusting intention:

H6b: Distrusting intention will predict unwillingness to purchase significantly better than will trusting intention.

The variables examined so far are trust related. Even the outcome variables are classified as trusting behavioral intentions by [22, 23, 24]. Rather than test the predictive discriminance of trust and distrust variables solely using trust-related variables, we include two TAM outcome variables, perceived usefulness and behavioral intention to use the website [8]. We apply the same logic to this set of variables that we applied to trust consequences. Since perceived usefulness is a positive perception, trusting beliefs should be the more powerful predictor of it. Holding a perceived usefulness belief involves little or no risk because it does not imply one is committed to take action regarding the site. Rather, it is simply an expression of a perception about the site. Therefore:

H7a: Trusting beliefs will predict perceived usefulness significantly better than will distrusting beliefs.

Since using the site is a positive outcome, trusting intention should be a powerful predictor of intention to use the site. However, intention to use involves risk because it implies one is committed to using it. Using the site fully implies the consumer will provide personal information and purchase on site, thereby incurring the same risks as discussed above for information sharing and purchasing willingness (H5a, H6a). Thus, the predictive value of distrusting intention will be high, making trusting intention and distrusting intention equivalent predictors.

H7b: Trusting intention will not predict intention to use significantly better than will distrusting intention.

3. METHODOLOGY AND RESULTS

3.1. Subjects, Measures, and General Methods

The study used a questionnaire approach, engaging 571 undergraduate students from a computer literacy course at a large public U.S. university. Students received 2% extra credit towards their course grade for completing the online questionnaire on their own time. The average respondent was 19.5 years old and 59.5% percent were female. College student populations are important to Internet vendors, and since online consumers are young and better-educated than the average consumer, student samples are often used to approximate the online consumer population [27]. After culling out both those who did not answer all the questions and those who completed the questionnaire so rapidly that they may not have taken it seriously, 405 of the 571 respondents' information was accepted for use in the study (71%).

Measures were adopted or adapted from previous studies. Trusting beliefs and trusting intention items were adopted from [23, 24]. Structural assurance was adapted from [23, 24] to reflect site-specific assurance. The willingness to follow advice, to share information and to purchase were adopted from [23, 24], except that item six was not used for following advice, and a fourth item was added to the information sharing and purchasing variables. The second purchasing item was adapted. The perceived usefulness and behavioral intention to use measures were adapted from TAM work (e.g., [8]). The distrusting belief and intention measures, no structural assurance, and the unwillingness to purchase, share, and follow advice measures were adapted from the corresponding trust measures in [23, 24].

The distrusting items were adapted in two steps. First, a mirror image opposite of the trust measure was created by adding "not"

or some other negation. For example, a trusting belief item which reads, "If I required help, LegalAdvice.com would do its best to help me" was transformed into the distrusting belief item "If I required help, legalAdvice.com would not do its best to help me."

The second step was to add negative emotion to each item. We did this because of the theory that distrust embodies significant negative emotion, as argued above [see 22]. First, a list of trust-related negative emotions was developed from the literature associated with distrust: "suspicion," "fear," "doubt," and "wariness" [10, 22, 35]. Next, antonyms of the words used to describe trust, such as secure, assured, safe, and comfortable were sought in *Webster's Ninth New Collegiate Dictionary*. Then Webster's and *Roget's Thesaurus* were consulted to locate synonyms of the words so far identified to describe distrust emotions. Selections from the final list of words were incorporated into each distrust item's wording to give it a flavor of these negative emotions. For example, by adding the emotion of apprehension, the above interim item became "If I required help, I feel apprehensive about whether LegalAdvice.com would do its best to help me." Items not adopted as-is from existing scales are shown in the Appendix. The items used a 7-point Likert scale (Strongly Disagree to Strongly Agree).

Data analysis took place in two phases that analyzed the measurement model and then the structural model. First, we analyzed convergent and discriminant validity, which together constitute construct validity, or "the extent to which an operationalization measures the concept it is supposed to measure" [2: 421]. Convergent validity means the extent to which measures act as if they measure the underlying theoretical construct by sharing variance [33]. Internal consistency reliability is considered a necessary but insufficient condition for convergent validity [33]. Discriminant validity means the degree to which measures of two constructs are empirically distinct [2, 8].

PLS was chosen for general data analysis for several reasons. First, PLS focuses on testing the relationships among variables rather than on model fit. This was appropriate because the hypotheses had to do with the relative strength of relationships. Second, PLS does not require data to match stringent normality assumptions. Since the study involves initial levels of trust, and initial trust is often high [25], we thought it best to use PLS in case the data displayed nonnormalities.

3.2. Measurement Model

PLS v. 2.91.03.04 was used, with 100 bootstrap resamples. Since most of the model constructs are trust constructs and the TAM constructs have been found to relate to trust [11], construct intercorrelations were expected to be relatively high. Nonetheless, using accepted PLS standards, we intend to display both convergent and discriminant validity of the constructs. Convergent validity includes tests of construct internal consistency reliability and whether or not the concept items each relate to its latent construct. Table 1 (last row) indicates that the items display adequate internal consistency reliability (0.70 or better), in that the lowest internal consistency reliability (ICR) is 0.83. The lowest average variance extracted figure (Table 1 second to last row) is 0.56, exceeding the PLS standard of 0.50 [6]. Hence, convergent validity is acceptable.

To assure discriminant validity, each latent variable intercorrelation must be lower than the square roots of the AVEs of the two variables correlated [6]. Table 1 shows the AVE square roots on diagonal. These square roots exceed all the correlations in their corresponding row and column, providing evidence of discriminant validity. By demonstrating discriminant validity, Table 1 supports H1abc, in that: a) trusting beliefs is discriminant from distrusting beliefs ($r = -0.68$), b) trusting intention is discriminant from distrusting intention ($r = -0.63$), and structural assurance is discriminant from no structural assurance ($r = -0.60$).

Table 1 Correlation of Latent Variables

		1	2	3	4	5
1	Structural Assurance	.94				
2	No Structural Assurance	-.60	.93			
3	Trusting Beliefs	.67	-.47	.85		
4	Distrusting Beliefs	-.54	.66	-.68	.87	
5	Trusting Intention	.48	-.35	.63	-.50	.86
6	Distrusting Intention	-.45	.55	-.60	.76	-.63
7	Perceived usefulness	.53	-.36	.77	-.58	.70
8	Willingness to follow	.46	-.33	.69	-.52	.63
9	Unwillingness to follow	-.44	.47	-.60	.67	-.51
10	Willingness to share	.44	-.40	.51	-.44	.41
11	Unwillingness to share	-.39	.44	-.39	.53	-.27
12	Willingness to purchase	.26	-.21	.29	-.29	.34
13	Unwillingness to purch.	-.27	.23	-.27	.38	-.28
14	Intention to Use	.49	-.40	.62	-.55	.65
	AVE	.88	.87	.72	.76	.74
	ICR	.97	.96	.97	.97	.83

	6	7	8	9	10	11	12	13	14
6	.88								
7	-.58	.89							
8	-.54	.76	.88						
9	.68	-.63	-.71	.91					
10	-.39	.41	.40	-.39	.75				
11	.48	-.27	-.28	.41	-.68	.75			
12	-.33	.27	.29	-.30	.40	-.29	.93		
13	.38	-.23	-.24	.31	-.27	.36	-.62	.92	
14	-.63	.71	.63	-.57	.34	-.29	.35	-.29	.94
	.78	.80	.77	.84	.57	.56	.87	.84	.88
	.95	.94	.94	.96	.84	.83	.96	.95	.94

Notes: 1. The diagonal is the square root of the average variance extracted (AVE). 2. ICR is the internal consistency reliability.

Table 2 PLS Hypothesis Testing Results

		hypothesized as:			
		stronger		weaker	
H:	Model Relationships	β	p	β	p
2a	structural assurance → trusting beliefs	.61	***		
	no structural assurance → trusting beliefs			-.11	*
	$R^2 = 0.46$				
2b	no structural assurance → distrusting beliefs	.53	***		
	structural assurance → distrusting beliefs			-.22	***
	$R^2 = 0.47$				
3a	trusting beliefs → trusting intention	.55	***		
	distrusting beliefs → trusting intention			-.12	*
	$R^2 = 0.40$				
3b	distrusting beliefs → distrusting intention	.67	***		
	trusting beliefs → distrusting intention			-.15	***
	$R^2 = 0.60$				
4a	trusting intention → willingness to follow	.49	***		
	distrusting intention → willingness to follow			-.23	***
	$R^2 = 0.43$				
4b	distrusting intention → unwill'ns to follow	.59	***		
	trusting intention → unwillingness to follow			-.14	*
	$R^2 = 0.47$				
5a	trusting intention → willingness to share	.27***			
	distrusting intention → willingness to share	-.22***			
	$R^2 = 0.19$				
5b	distrusting intention → unwill'ns to share	.51	***		
	trusting intention → unwillingness to share			-.05	ns
	$R^2 = 0.23$				
6a	trusting intention → willingness to purchase	.23***			
	distrusting intention → will'ns to purchase	-.18**			
	$R^2 = 0.14$				
6b	distrusting intention → unwill'ns to purch	.34	***		
	trusting intention → unwillingness to purch			-.07	ns
	$R^2 = 0.15$				
7a	trusting beliefs → perceived usefulness	.70	***		
	distrusting beliefs → perceived usefulness			-.10	*
	$R^2 = 0.60$				
7b	trusting intention → intention to use	.42***			
	distrusting intention → intention to use	-.36***			
	$R^2 = 0.50$				

p-values: * <.05 ** <.01 *** <.001

Table 3 Correlation Hypothesis Testing Results

		H'd as: stronger (+) weaker (-)	(+)	(-)	Diff. Test
H:	Model Relationships		r_{xy}	r_{xz}	z p
2a	structural assurance ↔ trusting beliefs		.67		
	no structur. assur. ↔ trusting beliefs			.47	5.66 ***
	$R^2 = 0.46$				
2b	no structur. assur. ↔ distrusting beliefs		.66		
	structural assurance ↔ distrusting beliefs			.54	3.55 ***
	$R^2 = 0.47$				
3a	trusting beliefs ↔ trusting intention		.63		
	distrusting beliefs ↔ trusting intention			.50	4.08 ***
	$R^2 = 0.40$				
3b	distrusting beliefs ↔ distrusting intention		.76		
	trusting beliefs ↔ distrusting intention			.60	5.69 ***
	$R^2 = 0.60$				
4a	trusting intention ↔ willingness to follow		.63		
	distrusting intention ↔ willns to follow			.54	2.72 **
	$R^2 = 0.43$				
4b	distrusting intention ↔ unwill'ns to follow		.68		
	trusting intention ↔ unwill'ns to follow			.51	5.13 ***
	$R^2 = 0.47$				
5a	trusting intention ↔ willingness to share		.41		
	distrusting intention ↔ willns to share			.39	0.52 ns
	$R^2 = 0.19$				
5b	distrusting intention ↔ unwill'ns to share		.48		
	trusting intention ↔ unwill'ns to share			.27	5.40 ***
	$R^2 = 0.23$				
6a	trusting intention ↔ willns to purchase		.34		
	distrusting intention ↔ willns to purchase			.33	0.25 ns
	$R^2 = 0.14$				
6b	distrusting intention ↔ unwill'ns to purch		.38		
	trusting intention ↔ unwill'ns to purch			.28	2.51 *
	$R^2 = 0.15$				
7a	trusting beliefs ↔ perceived usefulness		.77		
	distrusting beliefs ↔ perceived usefulness			.58	6.61 ***
	$R^2 = 0.60$				
7b	trusting intention ↔ intention to use		.65		
	distrusting intention ↔ intention to use			.63	0.65 ns

p-values: * <.05 ** <.01 *** <.001

3.3. Structural Model Results

Testing H1 and the rest of the model in this initial trust setting is, in one way, a stringent test. Trust variables tend to differentiate from each other as parties become more familiar with each other [19]. Therefore, the more experience parties have with each other, the more trusting beliefs differentiate from distrusting beliefs, and so forth. In addition, the more experience parties have with each other, the more trusting beliefs differentiate from trusting intention and from structural assurance. Thus, it is a challenge to find such results when testing this model in an initial trust setting, before the consumers have much time to differentiate their trusting beliefs. We nonetheless expected to find that these variables have differentiated enough to find evidence supporting the hypotheses. Table 2 shows the PLS results of testing H2-7.

Nominally, the last four columns of Table 2 support hypotheses 2ab, 3ab, 4ab, 5b, 6b, and 7a, since the beta values proposed to be stronger are all noticeably larger than the absolute value of those proposed to be weaker. Table 2 also appears to support the equal-predictive-strength hypotheses, in that the absolute values of the betas are only slightly higher for the positive side of each equation set: H5a (.27*** versus -.22***), H6a (.23** versus -.18**), and H7b (.42*** versus -.36***).

We were unable to identify a PLS significance test of the differences between the beta values, although such tests exist for independent samples. Instead, we performed a significance test of the differences among the absolute values of the correlations.

Each set of (absolute values of the) correlations corresponding to the beta values shown in Table 2 was compared using Glass and Stanley's [12] test of differences in dependent correlations. The null hypothesis is that $\rho_{xy} = \rho_{xz}$ and the alternative hypothesis is that they are not equal. We could easily show significant differences because of the positive and negative signs. As a stricter test, we examined whether there were differences in the absolute values of the correlations. Doing this eliminates the possibility that the distrust items are simply reverse-scored items of trust scales. The test takes into account the fact that the independent variables relate to each other. Given correlations among the dependent (x) and independent (y, z) variables, the Glass and Stanley [12] formula is: $\sqrt{n} * (r_{xy} - r_{xz}) / \sqrt{[1 - r_{xy}^2]^2 + [1 - r_{xz}^2]^2 - 2r_{yz}^3 - [(2r_{yz} - r_{xy} * r_{xz}) * (1 - r_{xy}^2 - r_{xz}^2 - r_{yz}^2)]}$. Table 3 shows the results. In each case, the results support (at $p < .05$ or better) the hypotheses predicting stronger/weaker relationships. H5a, H6a, and H7b are supported by nonsignificant correlations.

It is possible for one testing method to give supportive results while another does not. In order to assure the results are robust across testing methods, we performed Lagrange Multiplier tests [5] of the differences between the pairs of predictors. To do this, we accessed the latent variable correlation matrix from PLS. We converted it to the absolute values of the correlations. This correlation matrix was used as input to an EQS structural equation model and a Lagrange multiplier test of the differences was specified. For example, if V1 = trusting beliefs, V2 = structural assurance and V3 = no structural assurance, the test measured whether, in EQS program terms, $(V1, V2) - (V1, V3) = 0$. That is, it tests whether the link from structural assurance to trusting beliefs is greater than the link from no structural assurance, which is equivalent to H2a. The test produced the test statistics shown in

Table 4. This set of results also supports all the hypothesis. The only difference is that three of the levels of significance became weaker (e.g., $p < .001$ to $p < .01$) using the Lagrange Multiplier test.

4. DISCUSSION

4.1 General Discussion of Results

This study found that three sets of trust and distrust concepts are distinct from each other, in that: a) the trust/distrust pairs are discriminant, and b) except where the positive dependent variable is risky, they predict and/or are predicted by different constructs.

Table 4 LaGrange Multiplier Test Results

		H'd as:		Diff. Test	
		(+)	(-)	χ^2	p
H:	Model Relationships				
2a	structural assurance → trusting beliefs	+		13.7	***
	no structural assurance → trusting beliefs		-		
2b	no structural assurance → distrusting beliefs	+		5.6	*
	structural assurance → distrusting beliefs		-		
3a	trusting beliefs → trusting intention	+		10.3	**
	distrusting beliefs → trusting intention		-		
3b	distrusting beliefs → distrusting intention	+		22.1	***
	trusting beliefs → distrusting intention		-		
4a	trusting intention → willingness to follow	+		5.8	*
	distrusting intention → willns to follow		-		
4b	distrusting intention → unwil'ns to follow	+		18.8	***
	trusting intention → unwil'ns to follow		-		
5a	trusting intention → willingness to share	=		0.2	ns
	distrusting intention → willns to share	=			
5b	distrusting intention → unwil'ns to share	+		19.7	***
	trusting intention → unwil'ns to share		-		
6a	trusting intention → willns to purchase	=		0.1	ns
	distrusting intention → willns to purchase	=			
6b	distrusting intention → unwil'ns to purch	+		4.6	*
	trusting intention → unwil'ns to purch		-		
7a	trusting beliefs → perceived usefulness	+		27.8	***
	distrusting beliefs → perceived usefulness		-		
7b	trusting intention → intention to use	=		0.4	ns
	distrusting intention → intention to use	=			

p-values: * < .05 ** < .01 *** < .001

It is an interesting finding that H5a, H6a, and H7b are supported. Based on [26], it is likely that this occurred because of the risk level involved with these dependent trust variables. McKnight et al. [26] argued and found that dispositional distrust concepts are better predictors of risky concepts than are dispositional trust

concepts. It appears that H5a, H6a, and H7b involve relatively risky concepts, willingness to share personal information, willingness to purchase, and intention to use the website. These are riskier than trusting beliefs or trusting intention because the latter do not imply a commitment to put one's personal information or credit card number online, whereas willingness to purchase or to share information do. Intention to use the site also puts one at some risk—more than just forming an intention to trust or trusting beliefs about the e-vendor. Therefore, it is likely that the risk involved in these dependent variables increases the predictive salience of distrusting intention, making it almost as predictive as trusting intention. Additional research is needed to understand better the impact of risk on trust/distrust variables.

4.2 Limitations and Research Implications

The data gathered in this study were not longitudinal, and thus the relationships are not proven to be causal. This suggests future research be done using longitudinal samples. It is possible that the emotional makeup of distrust may improve the predictive power of distrust longitudinally, because emotion may make distrust perceptions easier to retrieve from memory than trust perceptions. The data were gathered from a relatively homogeneous group—underclass students from one public U.S. university. The results of the study may not generalize to the whole population of college students, much less to Internet users as a whole. Other samples should be gathered to test the robustness of these findings. Since this was a study designed to examine trust and distrust in the context of advice sites, the results may or may not generalize to the context of Web product vending sites. Thus, the study should be performed in the e-commerce product venue as well. This study hypothesizes differential effects for trust and distrust based on the idea that perceived risk makes a difference. While the results support the hypotheses, the implications would be more certain if perceived risk of the various outcomes was also measured in the study. We did find perceived webrisk (of providing information to web vendors) correlated with willingness to share information at $r = -0.19^{**}$ and with willingness to purchase at $r = -0.07$ ($p = .07$), but not at all with willingness to follow ($r = -0.03$; $p = .27$). This indicates that following advice is lower on this kind of risk but may involve a different kind of risk. Future research should solidify the linkage to risk by measuring perceived risk of the different outcome variables.

5. CONCLUSION

This paper contributes by providing evidence that trusting beliefs, trusting intention, and structural assurance are consistently distinct from their distrust construct counterparts because they are empirically discriminant. It also supplies evidence that these trust concepts predict differently from their respective distrust concepts. Trust concepts tend to predict trust and other positive concepts, while distrust concepts tend to predict distrust and other negative concepts. However, when predicting a positive variable that entails high risk for the respondent, distrust concepts predict approximately as well as do trust concepts. We also add new emotion-laden distrust measures to the literature. The paper points to several additional avenues for future distrust research.

Given that trust and distrust constructs are distinct, the question remains, which—trust or distrust—is more important to key

online behaviors and under what conditions? Our findings show that trusting intention was more predictive of willingness to follow site advice than was distrusting intention. However, distrusting intention was just as effective as trusting intention at predicting willingness to share personal information and willingness to purchase. Also, e-commerce researchers should examine which is the more important issue: to build trust or to reduce distrust. Apparently, consumers have different degrees of trust and distrust, and different degrees of willingness to participate in various aspects of electronic commerce. Thus, the question of which is more important to manage—trust or distrust—may depend on the individual's point of readiness to engage in a specific electronic commerce activity. We speculate that trust is more important than distrust when consumer actions bear low to medium perceived risk; but when consumers perceive high degrees of risk about an electronic commerce action, it is likely that distrust will be more important than trust. To determine whether and when this is true requires more distrust research.

6. ACKNOWLEDGEMENTS

Many thanks to Chuck Kacmar and Ken Baldauf for their help in conducting this study, and to Roger Calantone and Randy Fotiu for their timely and helpful suggestions.

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Appendix

New Measures

Structural Assurance
1. The LegalAdvice.com website has enough safeguards to make me feel comfortable using it to transact personal business.
2. I feel assured that legal and technological structures adequately protect me from problems on this site.
3. I feel confident that encryption and other technological advances on the LegalAdvice.com website make it safe for me to do business there.
4. In general, this site is a robust and safe environment in which to transact business.
No Structural Assurance
1. The LegalAdvice.com website does not have enough safeguards to make me feel comfortable using it to transact personal business.
2. I feel worried that there aren't enough legal structures to adequately protect me from problems on this site.
3. I fear that strong enough technological protections do not exist on LegalAdvice.com for me to feel safe doing business there.
4. In general, I feel troubled that this site is not yet a robust and safe environment in which to transact business.
Distrusting Beliefs
1. I am not sure that LegalAdvice.com would act in my best interest.
2. If I required help, I feel apprehensive about whether LegalAdvice.com would do its best to help me.
3. I suspect that LegalAdvice.com is interested in just its own well-being, not in my well-being.
4. I am worried about whether LegalAdvice.com would be truthful in its dealings with me.
5. I would feel cautious about characterizing LegalAdvice.com as honest.
6. It is uncertain whether LegalAdvice.com would keep its commitments.
7. I am uneasy about whether LegalAdvice.com is sincere and genuine.
8. I am skeptical about whether LegalAdvice.com is competent and effective in providing legal advice.
9. I feel uncertain about whether LegalAdvice.com performs its role of giving legal advice very well.
10. Overall, I worry about whether LegalAdvice.com is a capable and proficient Internet legal advice provider.
11. I feel nervous about how knowledgeable LegalAdvice.com is about the law.
Distrusting Intention
1. In general, if an important legal issue or problem arises, I would feel uncomfortable depending on the information provided by LegalAdvice.com.
2. I would feel nervous relying on LegalAdvice.com in a tough legal situation.
3. I am doubtful that I could count on LegalAdvice.com to help with a crucial legal problem.
4. Faced with a difficult legal situation that required me to hire a lawyer (for a fee), I would worry about using the firm backing LegalAdvice.com.
5. If I had a challenging legal problem, I would be quite hesitant about using LegalAdvice.com again.

Unwillingness to Follow Advice
1. I would feel nervous acting upon the landlord/tenant information given to me by LegalAdvice.com.
2. I would feel on edge using the landlord/tenant information LegalAdvice.com supplied me.
3. I would worry about implementing the advice I was given by LegalAdvice.com.
4. I would feel uncomfortable using the landlord/tenant information from LegalAdvice.com.
5. In spite of the advice I just read, it would make me feel tense to serve notice, wait, get the repair done, and then deduct the cost of the repair from my rent.
Willingness to share
4. I would be willing to provide credit card information on the LegalAdvice.com web site.
Unwillingness to share
1. I would feel nervous about providing information like my name, address, and phone number to LegalAdvice.com.
2. I would feel on edge if I were to share the specifics of my legal issue with LegalAdvice.com.
3. I would feel worried about providing my social security number to LegalAdvice.com.
4. I would feel uneasy about providing my credit card information on this web site.
Willingness to purchase
2. I would be willing to pay to gain access to information on this site that would help me solve a legal issue.
4. I feel the information on LegalAdvice.com is valuable enough that I would be willing to pay a small fee to access it.
Unwillingness to purch.
1. Faced with a difficult legal situation, I would feel nervous about paying to access information on the LegalAdvice.com web site.
2. I would be uncomfortable about paying to gain access to information on this site even if it helped me solve a legal issue.
3. Given a tough legal issue, I would be apprehensive about paying for a 30 minute phone consultation with a LegalAdvice.com lawyer.
4. I feel quite uncertain as to whether the information on LegalAdvice.com is valuable enough to pay a small fee to access it.
Perceived usefulness
1. I expect that using LegalAdvice.com will be very helpful in enabling me to resolve the situation described in the Scenario.
2. I find LegalAdvice.com to be a very useful site.
3. The LegalAdvice.com site would adequately address my legal needs.
4. Using LegalAdvice.com would help me a lot if I had an important legal issue to resolve.
Intention to Use
1. When a difficult legal issue arises, I presently intend to use the LegalAdvice.com site.
2. If I had a legal issue on which I needed help, I would intend to actually use LegalAdvice.com.
3. Given the need, I intend to use the LegalAdvice.com web site to obtain legal information.
4. Given a legal difficulty, I predict that I would use the LegalAdvice.com web site.