

The Relationship between Online Trust and Distrust in Business: Testing Mutual Causality from a Cognitive-Affective Personality System Theory

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ABSTRACT

The present research aims to identify the relationship between trust and distrust in an online business environment. To clarify the concepts, cognitive-affective personality system theory was introduced, through which five types of psychological units were proposed. In developing the research model based on the theory, technical effectiveness of the system and content truthfulness of the website were selected as two key stimuli for the coding process of online users. Trust and distrust were selected as mediating factors that generate consequent behaviors. Finally, purchase intention served as a final dependent variable. Assuming that trust and distrust emerge in psychologically different stages, this study hypothesized the mutual causal relationship between trust and distrust, indicating that the relationship will be determined by their contextual emphasis on each dimension. To validate, a survey was conducted with 307 online shopping mall users. Results show that stimuli were more significantly associated with trust. Trust is therefore a more cognitive construct than distrust, and the path from trust to distrust is stronger than that from distrust to trust. This finding implies that the cognitive aspect of trust is stronger than that of distrust. Distrust is rather more affectively emerging than trust.

Keywords: Trust, Distrust, System Effectiveness, Contents Truthfulness, Cognitive-Affective Personality Systems Theory

I . Introduction

To date, studies on trust have identified its antecedents (Ridings et al., 2002), dimensions (Mayer et al., 1995), and roles (Harris and Goode, 2004) using a variety of theories. Trust facilitates transactions among business parties (Moorman et al.,

1993), with the knowledge that the other party would not behave opportunistically by taking advantage of the situation (Gefen et al., 2003). Trust is an important factor with a variety of effects on online businesses that evoke economic exchanges resulting in high sales and profit volume (Barney and Hansen, 1994). Psychologically, trust works as a critical antecedent

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of vital perception in business such as familiarity (Gefen et al., 2003), subjective norm (Awad and Ragowsky, 2008), and privacy concern (Kim, 2008).

More recently, the presence of distrust in an online environment has drawn the interest of researchers because of its strong destructive effect on businesses (McKnight et al., 2002). Distrust refers to a confirmed negative expectation on the conduct of the other party (Lewicki et al., 1998) and a fear that the other party does not care about one's welfare and their potential to act in a harmful manner (Grovier, 1994). Once distrust emerges, economic transactions between parties become strongly suppressed (Bigley and Pearce, 1998). In an online environment where all transactions are not interpersonal, distrust easily blocks further business exchanges. Avoiding distrust, therefore, is a necessary condition to ensure the success of online businesses (Lewicki et al., 1998).

With the significant effects of trust and distrust on customer behaviors and profits, both concepts have garnered strong interest from researchers and practitioners, particularly in understanding how trust and distrust emerge and diminish and how they are related to each other (Kim et al., 2014; Pavlou and Gefen, 2004). However, regardless of the significant bodies of research on trust and distrust, very little work with a clear conceptual distinction has been done to empirically distinguish distrust from low trust in a single online business context. Incorporating distrust as a distinct entity from trust is, therefore, the preceding condition for understanding trust and distrust.

In the past, distrust has been posed as the opposite notion of trust (Lewicki et al., 1998). Nowadays, however, distrust and trust are widely accepted as not necessarily opposite concepts (McKnight and Choudhury, 2006). Both concepts may independently emerge from the same person (Lewicki et al., 1998),

with different manifestations (Cho, 2006). The importance of this line of inquiry has been highlighted by recent research (Cho, 2006) on how consumer evaluations of a vendor's business operations affect the emergence of trust and distrust.

The current research aims to identify the characteristics of trust and distrust in an online business context, focusing on how these concepts are psychologically different and interrelated to each other. In this study, trust and distrust are incorporated and compared by applying the cognitive-affective personality system theory. Trust and distrust are subsequently shown as notions that emerge and diminish at different psychological stages because they are positioned differently in the cognitive and affective dimensions. The managerial relevance of this research is straightforward in helping researchers and managers to understand the dynamics of trust and distrust before they are finally expressed as customer behaviors.

The paper is organized as follows. The theoretical basis of this study, a human mediating theory called cognitive-affective personality systems theory, is explained. The theory is then applied to the online shopping mall context to derive a research model of trust and distrust. Nine hypotheses are derived to explain trust-distrust mediation processes wherein purchase intention is selected as the dependent variable. For the validation, a large survey data set from Korean Internet shoppers was collected and analyzed by using structural equation modeling. Finally, the theoretical contribution and practical implications are discussed.

II. Theoretical Background

Cognitive-affective personality system theory explains how an individual psychologically mediates

the effect of stimuli and subsequently generates distinctive complex behaviors (Mischel, 1973). The theory argues that individuals differ in how they categorize and encode situational stimuli and in how such encodings activate and interact with the cognitive and affective units of their mental states (Mischel and Shoda, 1995). The theory also provides a rationalization on the different social behaviors of individuals (Bandura, 1986). The theory specifically focuses on the intrinsic psychological mediating processes between the stimuli and actions. It describes the internal chain reactions occurring in the mind set of an individual and provides five specific units to represent each state of mediation.

In the theory, the mediating processes are explained by five relatively stable cognitive-affective units (Mischel and Shoda, 1995). As shown in Figure 1, these units are encodings or construal of the individual (of self, other people, and situations), expectancies (about outcomes and efficacy of the self), affects (subjective values and emotions), goals and values (for the construction and generation for social behavior), and self-regulatory strategies and plans in the pursuit of goals (Mischel and Shoda, 1995). First, external signals are transformed to the encoding unit. Second, the encoding unit generates and activates the cognitive (i.e., expectation and belief) and the affect units. Finally, these three units interact with each other and generate behavioral outcomes such as goals, values, and plans <Figure 1>.

Among the many implications of the theory beginning its development, the causal relationship between the cognition and the affect units must be highlighted. Literally, cognition is the straightforward and conscious process of being aware of the event. That is, having an understanding and reasoning of the concept (Sebastian et al., 2012). Affect, on the one hand, is a disposition or state of mind emerging

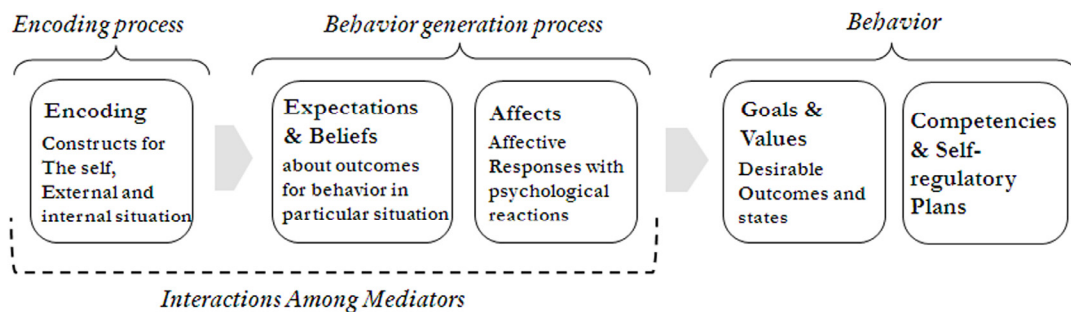
from reasoning and understanding that lasts for a certain period of time. Cognition, on the other hand, is an immediate understanding to the exogenous stimuli. Compared with cognition, affect exhibits the more stabilized state of mind that is formed based on the individual's reasoning and judgment, which emerges and diminishes gradually (Yuksel et al., 2010). In the theory, the cognition unit (i.e., expectation and beliefs) of the outcomes of behaviors in a particular situation is first formed based on the encoded information. Expectations and beliefs then shape affective responses through psychological reactions. Therefore, in the mediating process in which affect and cognition have different forming mechanisms, affect is considered to follow cognition.

The idea of cognition and affect causality has been further exercised and developed in various research contexts because of its effectiveness in explaining the information processing mechanism of an individual. For example, McAllister (1995) distinguished cognition-based trust from affect-based trust to explain the interpersonal cooperation mechanism in organizations and argued that cognition-based trust has a positive effect on affect-based trust. Chang and Chen (2009) proposed a cognition - affect behavior framework to investigate the effect of interface quality and security on customer loyalty. Chua et al. (2008) also investigated the configuration of the cognitive and affective dimensions of trust by referring cognition as a call from the *head* and affect as a call from the *heart*.

In more specific contexts, Cyr and Ivanov (2009) examined perceived interactivity in a model with the inclusion of a cognitive-affective element for trust and an affective element of enjoyment and confirmed the complexity of a model in which cognitive, cognitive-affective and affective elements are present, and advances knowledge on the consequences of perceived

interactivity. Baker et al. (2010) study the incidence, persistence and impact of students' cognitive-affective states during their use of three different computer-based learning environments to suggest that significant effort responding to boredom and confusion, with a particular emphasis on developing pedagogical interventions. Sitzmann et al. (2010) con-

ducted a meta-analysis to clarify the construct validity of self-assessments of knowledge in education and workplace training to see whether self-assessment of knowledge is a cognitive learning or affective measure. All these studies support the observation that cognitive information processing is the foundation of the affective mind set of humans (See <Table 1>).



<Figure 1> Cognitive - Affective Mediating Process

<Table 1> Summary of Literature.

Source	Contents
Baker et al., 2010	- Study the incidence, persistence and impact of students' cognitive - affective states during their use of three different computer-based learning environments
Chang and Chen, 2009	- Proposed a cognition - affect behavior framework to investigate the effect of interface quality and security on customer loyalty.
Chua et al., 2008	- Investigated the configuration of the cognitive and affective dimensions of trust by referring cognition as a call from the head and affect as a call from the heart.
Cyr and Ivanov, 2009	- Examined perceived interactivity in a model with the inclusion of a cognitive - affective element for trust and an affective element of enjoyment.
McAllister, 1995	- Distinguished cognition-based trust from affect-based trust to explain the interpersonal cooperation mechanism in organizations and argued that cognition-based trust has a positive effect on affect-based trust.
Mischel and Shoda, 1995	- Proposed Cognitive - affective personality system theory that explains how an individual psychologically mediates the effect of stimuli and subsequently generates distinctive complex behaviors
Sebastian et al., 2012	- Assessed the neural processes involved in the ability to attribute thoughts, intentions and beliefs to others and component processes, including cognitive perspective taking and understanding emotions.
Sitzmann et al., 2010	- Conducted a meta-analysis to clarify the construct validity of self-assessments of knowledge in education and workplace training and see whether self-assessment of knowledge is a cognitive learning or affective measure.
Yuksel et al., 2010	- Explored the role of attachment in predicting satisfactory holiday experiences and destination loyalty and show that positive emotional and cognitive bonds with a place could affect an individual's critical assessment of a destination and his/her loyalty to the place.

Likewise, the current study adopts the cognition-affect causality as a theoretical foundation for the following reasons. First, product information analysis is the most important business process for online customers who heavily rely on product information provided on the web because they cannot examine the product by hand for careful analysis prior to making a purchase. Second, trust and distrust, which may emerge during the purchase, are human mental states that are thoroughly conceptualized in the theory. By applying the theory to our research context, we investigate how trust and distrust emerge and diminish and how they are related to other business factors.

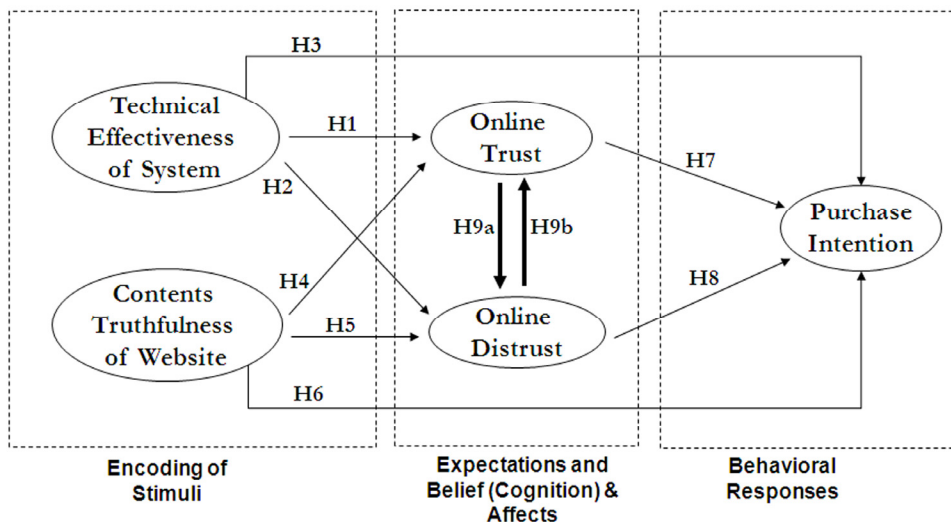
III. Research Model Development

In developing a research model for trust - distrust in an online business, the theory is applied to the online shopping mall context. Recently, electronic commerce has become one of the largest business

sectors in many industries. The managerial significance of trust and distrust has prompted the extensive investigation into their roles in online business to understand customer behaviors and generate higher profits (McKnight et al., 2002; Pavlou and Gefen 2004). In the current study, within the framework of cognitive - affective personality systems, the technical effectiveness of a system and the content truthfulness of websites are selected as the encoded stimuli existing in business environments. Trust is subsequently established as expectations and beliefs, whereas distrust is established as affect units. Finally, customer's purchase intention is selected as a dependent variable because it is a very important business objective in several prior studies (Lee, 2014). In the following sections, the variables and their relationships are described in detail.

3.1. Technical Effectiveness of System

The technical effectiveness of information systems has been discussed with a variety of definitions and



<Figure 2> Research Model

conceptualizations in numerous previous studies (Gounaris et al., 2007; Pavlou and Gefen, 2004). A rationale for these varied perspectives is that the effectiveness of any information system should represent different purposes of information systems in different contexts. When the effectiveness of an information system is conceptualized, it often conveys the different objectives and purposes in functions and features.

To achieve a consistent and integrative conceptualization of technical effectiveness, this study adopts the goal-attainment view and defines such effectiveness as “the technical achievement level of the customer’s objective in his shopping” (Bonoma and Clark, 1988). According to this view, effectiveness is achieved when the performance of information systems meets or exceeds the goals of the organization through the advancement of the technology adopted for the system. Effectiveness can be measured by the distance between the expected and actual results and can incorporate the objectives of the decision maker (Bhattacharjee, 2001).

In the online shopping mall, the goal of customers is to purchase the exact product they desire (Lee and Lee, 2009). Purchasing the desired product is the most critical and most important issue because customers cannot closely examine the products in an online shopping mall. Major shopping malls such as Amazon.com have been active in developing new functions to support customer decision making, including online review systems and helpfulness voting systems. With these supports, customers can easily purchase the product they want, and thus they are likely to have high expectations about the transaction results, increasing trust level. A highly effective website is a seller’s gesture of demonstrating care for the welfare of customers. This caring attitude of the other party is an important feature of trust (Grovier,

1994). From these arguments, the following hypothesis is formulated:

H1: The technical effectiveness of systems is positively associated with trust in online business.

On the contrary, the technical effectiveness of a system is negatively related with distrust because low effectiveness causes fear or anxiety. An ineffectively working website may require customers more time and effort and eventually may cause fear, such that they might not purchase the product they want (Cyr and Ivanov, 2009). Customers will be annoyed and disrupted, thereby inducing worry or fear. From these premises, the following hypothesis is posited:

H2: The technical effectiveness of systems is negatively associated with distrust in online business.

The high level of technical effectiveness of a website also increases customer purchase intention (Luo et al., 2012). Highly effective online shopping mall systems will help customers purchase the exact product that they want with less time and effort, and these systems will encourage customers to make repeated visits and purchases. Therefore, we propose the following hypothesis:

H3: The technical effectiveness of systems is positively associated with purchase intention in online business.

3.2. Content Truthfulness of a Website

The content truthfulness of a website is defined as the level of closeness of the product information to the actual features of the product (Cukier et al., 2004). It is a parameter that shows the level of exactness of the product that a customer may purchase

relative to the same product on the website; content truthfulness is also a badge of integrity stating that only a small gap exists between the expected value and the real value (Rust et al., 1999). The perceived truthfulness of the content is an encoded stimulus representing the functionality and performance of the website. When customers browse product information on the web and feel that the website is truthful, this stimulus will be encoded as high truthfulness. Once this stimulus is psychologically encoded into truthfulness, it affects the other cognitions, emotions, and even behaviors of the person. Psychological interactions among individuals are complicated but have a confirmative order in the process (Bandura, 1986).

The highly truthful content of websites guides customers in maintaining a high level of trust, which is a positive expectation about the future action of the partner (Lee, 2014). When the website is truthful, the integrity that the website will deliver the product as promised will be satisfied. This integrity becomes the important source of trust (Vance et al., 2008). More generally and intuitively, if the product information on the web is truthful, then customers can find the product they are looking for more easily. This aspect induces positive expectations about transactions on the web. From these arguments, the following hypothesis is put forward:

H4: The content truthfulness of websites is positively associated with trust in online business.

Distrust is a cognitive belief for the possible losses that could be incurred by one party. When a customer purchases a product, he often experiences an economic loss when the product information is incorrect. Untruthful information guides him to buy the wrong, unwanted product (Kim and Jaju, 2010). Therefore,

if the information is truthful, then it relieves the fear and anxiety of the customer and reduces the level of distrust that the customer might have. From these arguments, the following hypothesis is formulated:

H5: The content truthfulness of websites is negatively associated with distrust in online business.

Truthful information on the web builds the purchase behavior of customers (Keller, 1993). If highly truthful information is presented in the website, then it will satisfy customers' need for accurate information, thereby encouraging them to make visits and purchases. Truthfulness is an important function of a website, and it should be the primary condition for its success, directly affecting customer behavior toward the purchase. Therefore, the following hypothesis is proposed:

H6: The content truthfulness of websites is positively associated with purchase intention in online business.

3.3. Trust

Trust refers to an expectation that the people one chooses to trust will not behave opportunistically by taking advantage of the situation (Gefen et al., 2003). Such expectation reduces transaction complexity by eliminating protective transaction layers such as confirmation and verification (Luhmann 1979), thus facilitating buyer - seller transactions in business (Hawes et al., 1989). In the present study, trust is defined as an emotional investment on the party who is believed not to behave opportunistically.

Among the numerous functionalities of trust, building a relationship in which uncertainty exists is a critical factor (Moorman et al., 1993). Building

a relationship is important not only for a single transaction, but also for establishing long-term business ties (Dasgupta, 1988). By trusting the other party, one can initiate and maintain a lasting relationship. Therefore, trust increases purchase intention, as previous studies have proposed (Kim et al., 2012). As an important affective notion in the human mediation process, a high level of trust induces high customer purchase intention in online shopping malls. Thus, the following hypothesis is formulated:

H7: Trust is positively associated with purchase intention in online business.

3.4. Distrust

Distrust is defined as a confirmed negative expectation regarding the conduct of another person (Lewicki et al., 1998). It conveys the concern of one person that the other does not care about the former's welfare and that the other may act to cause harm (Grovier, 1994) distrust is also a belief that the other person is capable of doing harmful things (Sitkin and Roth, 1993). More intuitively, distrust is described as a frantic, fearful, frustrated, and vengeful feeling (McKnight and Choudhury, 2006), and it is sometimes depicted as a paranoid characteristic. Distrust affects the behavioral intention of a customer when considering the purchase of a product online because distrust is a strongly negative belief (Lee, 2014). More intuitively, when an individual fears and worries about transacting with another party, distrust will reduce his positive expectations about the actions of his partner. Therefore, the following hypothesis is put forward:

H8: Distrust is negatively associated with purchase intention in online business.

3.5. Trust - Distrust Relationship

According to McAllister (1995), trust has both cognition- and affect-based dimensions. Cognition-based trust reflects technical competency and predictability (Rempel et al., 1985). It relies on rational evaluation, available knowledge, and good reasons (Jeffries and Reed, 2000). By contrast, affect-based trust is rooted in emotional attachment and emotional bonds between individuals. People with affect-based trust emotionally invest in relationships and express genuine care and concern for the welfare of partners (Lewis and Weigert, 1985).

Distrust was previously viewed as the opposite of trust (Lewicki et al., 1998). However, the notion that trust and distrust are not always in opposite directions is extensively accepted nowadays (McKnight and Choudhury, 2006). The levels of trust and distrust in a certain situation do not always need to be negatively correlated, which implies that trust and distrust are separate, even independent concepts (Luhmann, 1979). For example, when both trust and distrust levels are high, a high risk - high returns situation occurs, in which the transacting party is expected to deliver a high benefit; at the same time, "if" he behaves opportunistically, then the expected disadvantage would be immense.

The major distinction between distrust and low trust is that whether the term measures the size of the possible negative result or the probability of the event occurrence generating the negative result. As previously explained, trust is a positive expectation regarding the behavior of the other party. The higher the trust level, the higher the chance that the partner behaves as he wishes (Hsu et al., 2014). On the one hand, a low level of trust accordingly means a situation in which the probability that an agreeable behavior from the partner is low. Distrust, on the other hand,

represents the magnitude of the possible harm caused by the partner. It is a calculated fear and anxiety. The higher the distrust level, the greater fear and anxiety would emerge.

This study adopts a flexible view on the relationship between trust and distrust, indicating that the relationship will be determined by their contextual emphasis on each dimension (Ku, 2012). Positing one of them on one dimension and the other on the other dimension is not decisive because trust and distrust have both cognitive and affective dimensions. Instead, we acknowledge the possibility of their interaction in both directions, that is, trust can affect distrust and distrust can affect trust simultaneously. Therefore, their relative strength will be determined by how much the trust is built based on the cognitive-affective foundations, compared to distrust. From these arguments, the following hypotheses are proposed:

H9: The causality between trust and distrust is determined by the relative dominance of their cognitive and affective aspects.

H9a: If trust is built more cognitively than distrust, then trust will negatively affect distrust.

H9b: If trust is built more affectively than distrust, then distrust will negatively affect trust.

IV. Data Collection and Analysis

4.1. Descriptive Study

The survey method was used to test the hypotheses. The instruments were developed based on relevant literature because of the lack of existing scale with the same concepts and views adopted in our study.

Keywords were abstracted from major studies (Clark 2000; Cukier et al., 2004) and used to construct complete sentences. Two methods, namely, adopting and refining the existing scales (Flavián and Guinalí, 2006; Mcknight et al., 2002) and developing items from the key words abstracted from major studies (Lewicki et al., 1998; Luhmann, 1979), were combined to develop measures for trust, distrust, and purchase intention. Initially, six to eight items for each construct were developed. Then, a pilot study was conducted, with 57 undergraduate students from one of the major universities in Korea as participants. By repeating numerous construct, face, discriminant, and convergent validity tests, questions were modified and finalized into 24 items, namely, five items each for technical effectiveness, content truthfulness, distrust, and purchase intention and four for trust. These items are listed in the <Appendix>.

With these items, a paper-based experimental survey was developed, in which respondents were asked to view well-known online shopping mall websites and answered questions about their perceived levels of system effectiveness and content truthfulness. For the main survey, a total of 307 responses were elicited from users of various types of online shopping mall in Korea. An analysis of the data revealed that all of the respondents were capable of responding to the contents of the survey. No significant gender or age bias was observed. Most of the participants had experience with online shopping mall, as shown in <Table 2>.

4.2. Measurement Model Test: Item Validation

Exploratory factor analysis was conducted on the data set, and the SPSS 17.0 software was used to test the convergent and discriminant validities of the items. The items within a set are divided into

five major components (<Table 3>), with factor loading values ranging from 0.63 to 0.91. The convergent and discriminant validities of the items are justified

given that the baseline factor loading value is satisfied (Hair et al., 1998). Cronbach's alpha test was conducted to verify the internal consistency of the items.

<Table 2> Respondent Demographics.

Age	Freq.	Gender	Freq.	Internet shopping Exp.	Freq.	Shopping/Mon	Freq.
20-29	84	Male	150	Less than a year	53	0-1	85
30-39	91	Female	157	1-4 yrs	79	1.1-3	132
40-49	80	Total	307	5-8 yrs	107	3.1-10	73
50 <	52			8 yrs <	70	10 <	17
Total	307			Total	307	Total	307

<Table 3> Exploratory Factor Analysis and Reliability Test

	C1	C2	C3	C4	C5
Tech_Eff 1	.820	.192	.209	-.039	.129
Tech_Eff 2	.830	.246	.145	-.053	.168
Tech_Eff 3	.840	.237	.147	-.049	.146
Tech_Eff 4	.856	.216	.124	.040	.149
Tech_Eff 5	.786	.216	.100	-.103	.203
Cont_True 1	.116	.083	.824	-.097	.103
Cont_True 2	.104	.179	.868	-.040	.198
Cont_True 3	.191	.122	.848	-.077	.195
Cont_True 4	.292	.135	.762	-.014	.118
Cont_True 5	.008	.147	.673	-.082	.287
Trust 1	.256	.263	.318	-.099	.669
Trust 2	.292	.203	.354	-.065	.717
Trust 3	.297	.332	.376	-.189	.663
Trust 4	.276	.293	.319	-.174	.706
Distrust 1	-.051	-.077	-.108	.679	-.123
Distrust 2	.063	.150	.009	.630	-.270
Distrust 3	-.073	-.065	-.031	.906	.009
Distrust 4	-.038	-.091	-.053	.923	-.006
Distrust 5	-.067	-.127	-.093	.860	.014
Purc_Int 1	.125	.766	.179	-.038	.034
Purc_Int 2	.264	.831	.162	-.016	.120
Purc_Int 3	.321	.813	.138	-.093	.166
Purc_Int 4	.245	.821	.117	-.042	.234
Purc_Int 5	.234	.790	.111	-.100	.329
Cronbach's Alpha	0.931	0.921	0.898	0.871	0.905

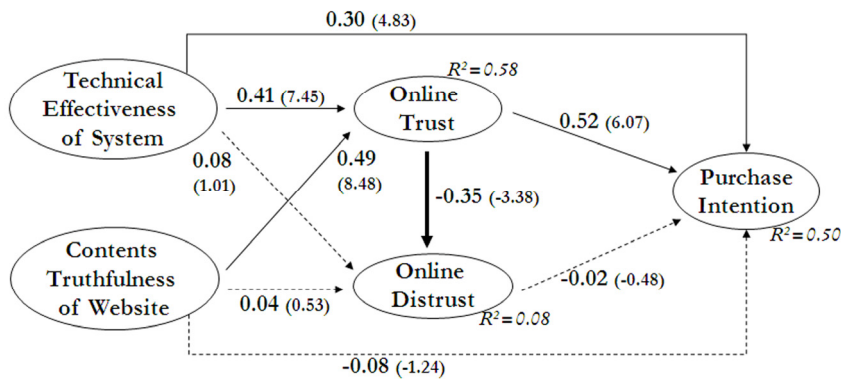
The Cronbach’s alpha values of all items range from 0.87 to 0.93 (<Table 2>), which satisfy the minimum prescribed value for social science studies (i.e., 0.7) (Nunnally and Bernstein, 1994). The correlations

among most constructs in <Table 4> are less than 0.7, which indicate that multicollinearity is not a potentially serious problem in the model (Bagozzi and Phillips, 1991).

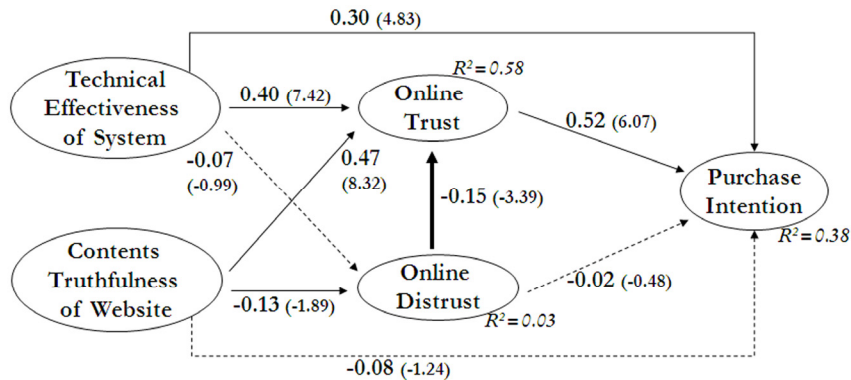
<Table 4> Correlations of Latent Variables

Construct	Means (S.D.)	Effectiveness	Truthfulness	Trust	Distrust	Purchase
Effectiveness	3.49(0.86)	1				
Truthfulness	3.28(0.83)	.395**	1			
Trust	3.04(0.78)	.579**	.636**	1		
Distrust	3.42(0.91)	-.128*	-.173**	-.269**	1	
Purchase I	3.00(0.80)	.552**	.394**	.595**	-.160**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).



<Figure 3> Results of Structural Model Testing with H9a



<Figure 4> Results of Structural Model Testing with H9b

4.3. Structural Model Test

Structural model fit was tested with LISREL 8.71. We tested the model twice based on the following procedure: one for the model hypothesizing H9a and the other for the model hypothesizing H9b (see <Figures 3> and <Figures 4>). The overall fit statistics of the models are the same and reveal an adequate fit level of the model to the data (chi-square test statistic (χ^2): $df = 369.09: 220$; p value = 0.0000; goodness-of-fit index (GFI) = 0.90; root mean square error of approximation = 0.047; root mean square residual = 0.032; adjusted GFI = 0.88; normed fit index (NFI) = 0.97; non-NFI = 0.99; comparative fit index = 0.99; normed $\chi^2/df = 1.68$).

As shown in <Figures 3> and <Figures 4>, technical effectiveness of the system shows significant positive effects on trust and purchase intention, but not on distrust (H1 and H2 are accepted, but H3 is rejected). Content truthfulness of the website shows a significant positive effect on trust, but an insignificant effect on purchase intention (H4 is accepted, but H6 is rejected). However, path to distrust is insignificant in H9a and slightly significant in H9b (H5 is partially supported). In both models, trust shows

a significant positive effect on purchase intention, whereas distrust shows insignificant effects (H7 is accepted, but H8 is rejected).

Finally, we compare the paths in Models A and B to test H9. The path coefficient from trust to distrust (H9a) is significantly higher ($|-0.35| > |-0.15|$) than the path coefficient from distrust to trust (H9b). Moreover, the R^2 value of the dependent variable is significantly higher in Model A than Model B. However, fit indexes of both models have similar level of fits. From this finding, it is not conclusive that one model is more adequate than the other to explain the relationship between trust and distrust. The results of the hypotheses tested are summarized in <Table 5>.

V. Discussion and Conclusion

5.1. Summary of Findings

We draw the below discussions from the result. First, trust and distrust are different in terms of psychological status, and trust appears more cognitive than distrust. However, distrust appears more affec-

<Table 5> Hypotheses Test Results

	Hypotheses	Result
H1	Technical Effectiveness of System \rightarrow Trust	Supported
H2	Technical Effectiveness of System \rightarrow Distrust	Not Supported
H3	Technical Effectiveness of System \rightarrow Purchase intention	Supported
H4	Contents Truthfulness of Website \rightarrow Trust	Supported
H5	Contents Truthfulness of Website \rightarrow Distrust	Partially Supported
H6	Contents Truthfulness of Website \rightarrow Purchase intention	Not Supported
H7	Trust \rightarrow Purchase intention	Supported
H8	Distrust \rightarrow Purchase intention	Not Supported
H9	Trust \leftrightarrow Distrust	Not Supported

tive than trust, based on H9 test results. Moreover, trust is more significant in determining the level of customer purchase intention. By contrast, distrust indicates an insignificant relationship with purchase intention, which is different from our expectation. Significantly higher R-square value of the trust than that of distrust ($0.58 > 0.3, 0.08$) also supports the idea that trust generally shows more significant factor than distrust in determining purchase decision of an individual. From the view of the model, the role of trust appears clearer and more critical than that of distrust.

Second, both technical effectiveness of system and content truthfulness of website are important sources of trust building, as opposed to distrust building. However, technical effectiveness of system shows a significant effect on purchase intention, whereas content truthfulness does not. These different effects on purchase intention imply that the main difference between truthfulness and effectiveness lies in whether they reflect the intent or the capability of the website. Truthfulness reflects frame of mind and intention of a website manager, whereas effectiveness reflects their ability or capability. Therefore, the intent of a seller (i.e., truthfulness) appears to affect psychological status of customers (i.e., trust) but not their behaviors, whereas capability of a seller (i.e., effectiveness) affects both psychological and behavioral aspects of customers.

5.2. Academic Contribution

The contributions of this research to trust - distrust literature are multifaceted. First, this study shows how concepts of trust and distrust are empirically differentiated based on cognitive - affective personality system theory. As shown in the structural model test (particularly H9), distrust is a relatively

affective notion, whereas trust is a cognitive notion. Moreover, hypotheses related with trust are mostly supported, whereas hypotheses related with distrust are not. These observations show the possibility that trust and distrust may emerge and diminish in different psychological stages with different mechanisms. This result contributes to literature by enriching the conceptualizations of trust and distrust, which has not been fully discussed in extant literature (Hong et al., 2012).

Second, this study shows how two important features (i.e., technical effectiveness and contents truthfulness) in an online shopping mall are identified and work differently in the encoding systems of individuals. Effectiveness does interact with trust and purchase intention but not with distrust, whereas truthfulness interacts with trust only. The results indicate that effectiveness may reduce annoyance and inconvenience levels of customers but cannot relieve fear and wariness. However, an extremely truthful website may reduce both levels, but it does not directly increase purchase intention unless truthful information shows a favorable judgement to target product. These two factors may not be the only factors in online business context. However, as the results show, they are the two critical and representative factors that affect cognition and affection dimensions of online shopping mall users.

Lastly, we test cognitive-affective personality system theory in the online business context and demonstrated that the theory is applicable. Systems theory provides a base framework for the information processing mechanism of an individual, and several online business studies adopt the theory (Chang and Chen, 2009) to contrast concept of cognition and affection, but few have validated this theory from a holistic perspective, which covers the initial stage (i.e., encoding of stimuli) to the final stage (i.e., customer behav-

ior). The integrative view of this study adds value because it enables researchers to comprehend the information processing mechanism of online customers seamlessly.

5.3. Practical Implication

This study provides several important implications for online shopping mall managers. First, the study shows how online shopping mall managers can evoke trust and avoid distrust. They are separate concepts rather than opposite of one another. In the study, we show the causality between trust and distrust, thereby enabling managers to manage trust and distrust practically. For example, to increase customer purchase intention, high trust may be the more critical condition than low distrust. For managers, focusing on increasing trust is more efficient than decreasing distrust. Moreover, given that causality indicates that trust is the negative cause of distrust rather than vice versa, enhancing trust would be more effective in decreasing distrust levels. This study not only suggests a simple increase and decrease of trust and distrust, respectively, but also shows how to effectively manage them for best results in online business contexts.

Second, as important antecedents of trust and distrust, the roles of technical effectiveness and contents truthfulness of a website are discussed. These roles show that they have different effects on customer purchase intention. As such, managers should manage them according to their business objectives. For example, the result indicates that truthfulness does not have a direct effect on purchase intention, whereas effectiveness does. Thus, managers can regard truthfulness as an important foundation for maintaining high trust although it does not critically affect customer behavior. If managers focus on influencing customer behaviors instead of having a long-term relation-

ship with them (i.e., building trust), increasing the effectiveness of a website would be the more effective strategy than increasing truthfulness.

Lastly, this study provides a framework as to how exogenous stimuli affect customer behavior via trust and distrust. Given that these psychological mechanisms are difficult to observe, providing such a seamless framework can benefit practitioners in understanding customer behavior with evidence. Furthermore, it enables practitioners to apply these strategies to businesses. For example, the result shows that distrust does not have a direct effect on purchase intention, whereas trust has a direct effect. This finding indicates that controlling trust should be enhanced and that managers should be more critical of customer loyalty than controlling distrust. Therefore, if managers face resource constraints in reality, or in other words, if managers cannot control trust and distrust at the same time, focusing on controlling trust instead of distrust would be ideal.

5.4. Limitation and Future Study

Several limitations in this research should be considered for future research. First, compared with trust, distrust has not been fully explained by its antecedents in the model. Statistically, *R-squared* value of distrusts is 0.03 in <Figure 3> (H9a test) and 0.08 in <Figure 4> (H9b test) respectively. These values indicate that less than 10% of total variance of distrust is explained with the structural model, which is less than the recommended value (Falk and Miller, 1992). Therefore, future studies should consider other exogenous variables that can be sources of distrust. Second, only two website features in online shopping mall businesses have been considered in the model. Numerous other factors that influence trust, distrust, and purchase intention may exist.

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<Appendix>

Construct	Indicator	Question
Technical Effectiveness of System	Tech_Eff 1	This website delivers product information that helps save my time and effort to scan.
	Tech_Eff 2	This website delivers product information effectively so that I can scan conveniently.
	Tech_Eff 3	This website provides exact product information that I want and look for.
	Tech_Eff 4	The product information provided in this website is helpful.
	Tech_Eff 5	This website provides exact product information I need.
Content Truthfulness of Website	Cont_True 1	This website provides accurate information.
	Cont_True 2	The information in this website does not intend to hide any information.
	Cont_True 3	The information in this website does not give any false assurances.
	Cont_True 4	The information in this website does not contain any false information.
	Cont_True 5	The information in this website does not include any omission or distortion.
Trust	Trust 1	I think this website genuinely cares for the customers.
	Trust 2	I can ensure the integrity of this website.
	Trust 3	I have faith in this website.
	Trust 4	I can transact with this website with confidence.
Distrust	Distrust 1	I am wary of transacting with this website.
	Distrust 2	I think I need to exercise vigilance in this website.
	Distrust 3	I think I need to take protective action when transacting with this website.
	Distrust 4	I fear transacting with this website.
	Distrust 5	I feel insecure when transacting with this website.
Purchase Intention	Purc_Int 1	I am positive toward buying this product.
	Purc_Int 2	I have the intention of buying this product.
	Purc_Int 3	I think buying this product is a good idea.
	Purc_Int 4	I will buy this product.
	Purc_Int 5	I have no problem to purchase this product.

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Submitted: April 21, 2015; Accepted: August 3, 2015