THE HYBRID MODEL OF TRUST AND DISTRUST: EXTENDING THE NOMOLOGICAL NETWORK

by

Gregory Daniel Moody

B. S. Information Systems Management, Brigham Young University, 2006

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This dissertation was presented

by

Gregory Daniel Moody

It was defended on

7 December, 2010

and approved by

Brian Butler, Associate Professor, Management Information Systems

John Hulland, Professor, Marketing

Laurie Kirsch, Professor, Management Information Systems

Paul B. Lowry, Associate Professor, Information Systems, BYU

Dissertation Advisor: Dennis F. Galletta, Professor, Management Information Systems

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Previous research has highlighted the importance of trust in enabling the purchase of goods/services through the Internet. However, other researchers have theorized and shown that distrust, a distinct construct that is related to trust, should also be considered when studying trust (Duestch 1960, Luhman 1979, Gurtman 1992, Sitkin & Roth 1993, Lewicki et al. 1998). Because trust has been cited to be critical for e-commerce, it stands to reason that its related, yet negative counterpart, distrust should be at least as important and potentially more critical in some contexts. It is important to determine what antecedent conditions may increase the amount of distrust felt by the individual, and how these conditions can be mitigated. This dissertation proposes an experiment to test two research questions. First, this study explores novel antecedents of distrusting beliefs that go beyond the disposition to distrust, which has been the main focus of distrust research in IS. Second, building on the ambivalence work by Cacioppo & Berntson (1994) and Priester & Petty (1996), this study proposes that as a negative attitude towards action, distrust may interact and negate intentions when the buyer also feels similar levels of trust, as a positive attitude. Finally, the research methodology and analysis are outlined along with potential contributions for this study.

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PREFACE

I would like to first and foremost thank my wife, Kelly. I was only able to arrive at this point due to all of her patience and her support of me in my work. I also thank my children, Ryan and Briella, who have had the patience to wait just “one more minute” while I finished working on a given task. Next, I would like to thank my advisor, Dennis, who gave me brilliant advice, feedback and encouragement and helped mold the paper into the current form that it now is. I will be forever indebted to his resilient efforts to improve my prose and grammar, which has been a constant effort on his part. Finally, I’d like to thank my committee members, who were willing to read through this dissertation several times and provided valuable feedback. Laurie was instrumental in providing the advice that eventually led to my unique conceptualization of trust and distrust in this paper. John provided such detailed and thorough edits that greatly improved the tone, grammar and problematic areas in the paper. Brian was an excellent instructor who provided much insight into the life of an academic that will aid me in years to come. Paul was not only helpful as a committee member and frequent co-author, but he was instrumental in introducing me to research and getting me on the path that has led to this point.

1.0 INTRODUCTION

A large amount of research in e-commerce in information systems has focused on the critical role that trust plays in the success of e-commerce and the Internet (Jarvenpaa et al., 1999; Ba and Pavlou, 2002; McKnight et al., 2002; Gefen et al., 2003; Gefen and Straub, 2004; Pavlou and Fygenson, 2006; Komiak and Benbasat, 2008). As a result, trust has been a central construct of study in regard to the Internet since the work by Jarvenpaa et al. (1999) over a decade ago. The buying and selling process is readily understood and critical to the overall success of e-commerce.

However, after a few years of research on trust, some researchers have begun to question this initial assumption of the preeminence of trust in e-commerce, and instead suggested that distrust may be an equally integral and important part of the e-commerce process (McKnight et al., 2003; Dimoka, 2009; 2010). *Trust* is exhibited when a truster displays a willingness to be vulnerable to the trustee based on the expectation that the trustee will perform as desired by the truster (Mayer et al., 1995). On the other hand, *distrust* is exhibited when the distruster expects that the other party will act in a negative manner, and either will not or cannot perform the desired behaviors. One exhibits distrust when he or she is unwilling to cope with such outcomes. (McKnight et al., 2001). Since 2003, a number of studies have been conducted in and outside of IS that have focused on distrust and its role in online settings (Hsiao, 2003; McKnight et al., 2004; Schul et al., 2004; Ziegler and Lausen, 2005; Benamati et al, 2006; McKnight et al., 2006;

Wu et al., 2006; Komiak and Benbasat, 2008; Schul et al., 2008; Dimoka, 2009; 2010). These studies demonstrate that distrust has its own effects on Internet-related intentions and behaviors beyond those of trust.

However, the relationship between trust and distrust is still currently debated within the IS research community (McKnight et al., 2003; 2004; Komiak and Benbasat, 2008). Two main approaches to researching trust and distrust have emerged, which are discussed in more detail in Section 3.1. The first view assumes that trust and distrust are at the opposite ends of one continuum and thus increasing trust is all that is needed to avoid the possibility of distrust (Rotter, 1980; McKnight et al., 2002). However, the second main approach to distrust posits that trust and distrust are not only oppositely valanced, but are distinct, separable constructs (Sitkin and Roth, 1993; Lewicki et al., 1998; McKnight et al., 2003; 2004; Komiak and Benbasat, 2008; Dimoka, 2010). These studies have found support that trust can be empirically separated from distrust and that they have different effects upon an individual's intentions to behave. Most recently, Dimoka (2010) conducted an fMRI study that demonstrated that trust and distrust manipulations activate different portions of the brain. Using research from cognitive neuroscience she posits that the different activated regions of the brain can be due to different cognitive processes that are associated with trust and distrust. Despite the mounting evidence, researchers on both sides of the fence continue to debate the validity and assumptions of both approaches.

These two predominant approaches to explain how trust and distrust relate to each are inherently contradictory. One camp proposes that trust and distrust are at opposites ends of one continuum and that individuals ultimately feel trust or distrust towards others (e.g., Kramer, 1994; Mayer et al., 1995; McKnight et al., 2002). The other approach criticizes these

conceptualizations for over-simplifying distrust and trust and instead proposes that trust and distrust, although of opposite valence, are in fact distinct and separate dimensions (Lewicki et al., 1998; Hsiao, 2003; McKnight et al., 2003; 2004; 2006). This point of view adopts a bidimensional approach to explain the co-existence of trust and distrust. However, many researchers still doubt the empirical findings from these bidimensional models of trust and distrust and continue to use and develop models based on a unidimensional approach. Perhaps most interestingly, no model has been proposed that explains the empirical evidence that supports the co-existence of trust and distrust but yet satisfies the demand for internal consistency. For example, no empirical research has demonstrated how an online buyer can hold conflicting beliefs that an online seller is both able and not able to ship a purchased item. This study seeks to address this gap in the research on trust and distrust and proposes the following research question.

RQ1: Can the subdimensions of trust or distrust (i.e., benevolence, competence and integrity) explain how trust and distrust can exist at the same time within a truster-trustee relationship?

Additionally, although the importance of distrust had been posited for several years (Sitkin and Roth, 1993; Lewicki et al., 1998; McKnight et al., 2003; Schul et al., 2004; Schul et al., 2008), the current nomological network of distrust remains relatively unexplored with few known antecedents of distrust having been identified to date (e.g., McKnight et al., 2004). An important step in determining the importance of distrust is demonstrating constructs that can independently alter distrust or at least produce distinct effects on distrust apart from trust. With the majority of e-commerce research focusing on trust and on factors that influence trust, the

current literature misses the complexity, richness and understanding of consumer behavior that might be the reward of reexamining distrust and its role in e-commerce.

Although IS research has proposed and found that the general disposition to distrust increases distrusting beliefs, (McKnight et al., 2004; McKnight et al., 2006) few other studies have attempted to extend the nomological network beyond this main antecedent construct of distrust. Research on distrust can only gain prominence and provide greater insight when its role and its predictors are better understood. To better understand distrust it is necessary that its antecedents be identified and empirically validated. This leads to the second research question of this study:

RQ2: What constructs serve as antecedents of distrust and thereby extend the known nomological distrust network?

Two studies have produced results that indicate several interesting directions that are explored in this study. Everard and Galletta (2004) and Ou (2006) both proposed that errors on Web sites may serve as triggers that undermine an individual's positive perception of a Web site. Supporting these findings, research in communication has long posited that anomalous events serve as cues for distrust (Fein and Hilton, 1994; Buller and Burgoon, 1996). For this study, both errors and anomalous events are referred to as situational abnormality. *Situational abnormality* is defined as the perception of the truster that something in the context of the relationship with the trustee is improper or abnormal (McKnight et al., 2002). Research in social psychology and communication has also proposed that abnormalities in the environment (i.e., e-commerce) may also serve as signals for distrust (Fein et al., 1996; Schul et al., 1996; Schul et al., 2004). Further, the same research streams (Fein and Hilton, 1994; Buller and Burgoon, 1996; Schul et al., 2004;

2008) posit that the relationship between distrust and abnormal events is enabled through the process of suspicion.

Suspicion is defined as the truster doubting the sincerity or motivations of the trustee (Hilton et al., 1993). However, no study to date has empirically validated these propositions. For example, Schul et al., 2004; 2008 produced a theoretical model and empirical results showing how distrust enhances suspicion and thus causes people to engage in more systematic processing when solving non-routine problems—and thus create better decision outcomes. While this was a substantial step forward in the literature, they never measured or verified how trust and distrust were directly impacted in their multiple studies. This raises an interesting question: Is suspicion the process that causes errors to increase distrust? This study seeks to more fully understand the causal chain by exploring the following research question.

RQ3: Do abnormalities in the interaction between the truster and trustee cause an increased sense of distrust due to the increased level of suspicion felt by the truster?

Although research on distrust has begun, the research stream needs theory and empirical results to explain what should occur if online buyers simultaneously hold both high trust and high distrust towards an online seller. Although the emerging assumption that trust and distrust are separable has found empirical support (McKnight et al., 2003; 2004; 2006; Dimoka, 2010), we still do not know what may result if an individual feels both distrust and trust at the same time. Does distrust overpower the effects of trust, or does minimal distrust prevail and discourage e-commerce? Further, if distrust is engendered before trust, will its effects overpower the potential effects of trust, or will trust be able to overcome the effects of distrust? This leads to the following research question.

RQ4: If trust and distrust are both engendered by the truster, which will have more powerful effects on the truster?

Complementary research in social psychology and marketing has produced models that may help to further elucidate this theoretical gap. As distrust is opposed to and a functional equivalent of trust in understanding one's environment (Lewicki et al., 1998), it can be cast as a negative attitude, while trust is modeled as a positive attitude. In situations where an individual can form both a positive and negative attitude towards the same attitude object, it is possible for both attitudes to coexist and thereby form ambivalence. *Ambivalence* is defined as the condition when an individual holds at least two attitudes towards the same attitude object that are contradictory (Kaplan, 1972).

By extending the ambivalence literature to include both trust and distrust, the joint effects of trust and distrust in e-commerce can be theoretically explained. Due to conflicting attitudes held by online sellers, it is possible that an individual's net trust beliefs may be attenuated by ambivalence (Kaplan et al., 1972; Priester et al., 2007; Connor et al., 2002). Further, ambivalence itself may alter how information is processed by buyers, which may provide additional interesting implications for future e-commerce research (Priester et al., 2007). Some researchers have even proposed that signals for distrust may increase the motivation for certainty, and thereby cause information to be processed systematically, which may paradoxically lead buyers to have increased intentions to engage in trusting behaviors (Schul et al., 2008). This brings about the final research question of this study.

RQ5: Does the existence of both trust and distrust cause the truster to feel ambivalence towards the trustee? Further, does ambivalence strengthen or weaken the trusting relationship between the truster and trustee?

This study has the following objectives to provide several new contributions to the trust and distrust literature in e-commerce: First, the study aims to introduce a new e-commerce model for trust and distrust that builds upon both of the general views of trust and distrust as unidimensional and bidimensional. The seemingly incompatible models can be reconciled by proposing a new model of trust and distrust that synthesizes and builds upon the two disparate approaches. Second, this study seeks to extend the distrust nomological network by examining the role of situational abnormality and suspicion as novel antecedents of distrust. The third goal is to introduce the ambivalence construct and its measurement to IS researchers and explain when it is likely that buyers will encounter ambivalence in e-commerce settings, as well as provide evidence of some of its consequences.

This study has several important contributions. First, it introduces a new model of trust and distrust that can be used to resolve the disparate e-commerce research streams regarding the relationship between trust and distrust. In addition, this study demonstrates how to measure these concurrent attitudes within such a model. Third, it extends the nomological network for distrust, and specifically shows that manipulations of situational abnormality can alter specific dimensions of distrust without negatively impacting the perceived level of trust. Fourth, it introduces ambivalence to IS and e-commerce trust research. Fifth, the model of trust and distrust is used to measure the potential for ambivalence and thus allows future research to build upon these findings and explore the effects of ambivalence within an e-commerce setting. Finally, it validates empirically the hypothesized role of suspicion (Fein et al., 1990; 1996; Hilton et al., 1993; McKnight et al., 2003; 2004; 2006; Schul et al., 2004; 2008) as the process whereby situational abnormalities lead to distrust.

The remainder of this paper first presents the literature on behavioral intentions, trust, distrust, ambivalence, and suspicion. Building on these literature streams, a theoretical model is proposed to explore the research questions and objectives of this paper. A methodology is then outlined to examine the theoretical model.

2.0 LITERATURE REVIEW

This section reviews the key literatures that are relevant to the central research questions of this study. This section is divided into three subsections. First, the Theory of Reasoned Action (TRA) is reviewed, and specific attention is paid to how it has been applied in the IS field and e-commerce. TRA is the general theory that serves as the overarching framework for the model in this study because all of the dependent variables represent behavioral intentions. Second, the development of distrust and its relation to trust are reviewed from the standpoints of the fields of psychology and management. Third, the distrust literature for e-commerce is then reviewed to highlight the work that has been done in that area. Finally, literature on ambivalence and suspicion is reviewed to provide extensions to the distrust literature.

2.1 BEHAVIOR AND BEHAVIORAL INTENTIONS

The IS field has highlighted several key constructs that serve as desirable dependent variables. The call for the elaboration of these key constructs began with the first ICIS (then called the "Conference on Information Systems"), and was a main issue in the early work of IS researchers (Keen, 1980; Ives et al., 1980). Since those first formative years, several of these constructs have been described and presented as important dependent variables. These include: use and intentions to use (Davis, 1989); use, user satisfaction, individual and organizational impact

(DeLone and McLean, 1992); service quality (Pitt et al., 1995); user satisfaction and IS use (Seddon, 1997; DeLone & McLean, 2003).

These dependent variables focus on the actual use of a system and its impact on the individual or organization. However, it is often difficult to measure actual system use or actual quality. Instead, many studies use the individual intention to behave in a desired manner, or perception of the quality as proxies for the desired behavior or quality. The approach to infer the connection between an intention and actual behavior is based on TRA, which underlies a large portion of information systems research.

The remainder of this section describes TRA and subsequent theories that have adapted or modified TRA in the IS field.

2.1.1 The Theory of Reasoned Action (TRA)

TRA was developed in the field of social psychology and is used to predict behavior of individuals (Fishbein and Ajzen, 1975; depicted in Figure 1). This foundational theory has been used in many fields and is one of the most influential theories of human behavior (Sheppard et al., 1988; Hale et al., 2003). The overall premise of the theory is that behavior is predicted by the intention that an individual has to engage in that behavior. This intention to behave in such a fashion has two major antecedents: attitudes towards the behavior and the subjective norms that exist that may affect the intention to behave in a given manner. Each of these constructs and their relationships will be described in turn.

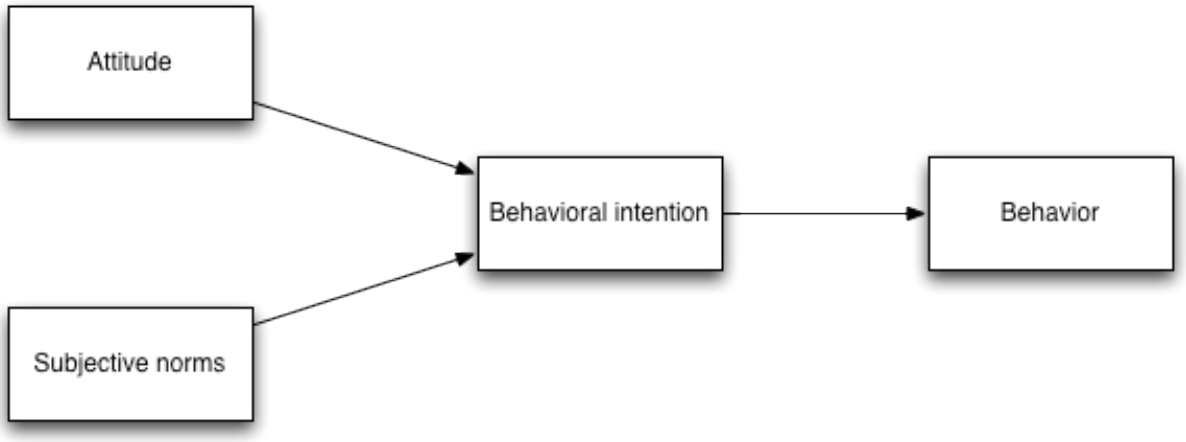


Figure 1. The Theory of Reasoned Action (Fishbein and Ajzen, 1975)

Behavior refers to the voluntary action of an individual that is often a variable of interest to a researcher, manager, or other party (Fishbein and Ajzen, 1975). IS theories that have built on TRA often focus on the use of an information system as the desired behavior (Davis, 1989). The main antecedent of behavior, *behavioral intention*, is the relative strength of the inclination to behave in a given fashion (Fishbein and Ajzen, 1975). The main proposition of TRA is that behavior is rationally thought out before one acts.

Behavioral intention in turn, is predicted by two main conditions: attitudes and subjective norms. *Attitudes* are the positive or negative beliefs that an individual has toward performing a behavior. *Subjective norms* refer to an individual's perception that important social others (i.e., individuals or groups in an individual's social environment) expect the individual to perform or not perform a given behavior (Fishbein and Ajzen, 1975). Fishbein and Ajzen proposed that attitudes and subjective norms might have different effects on behavioral intentions that vary by individuals and situations. Thus, to more accurately predict the intention to behave in a given fashion, each construct is weighted by both situational and individual characteristics. An attitude

is weighted by the evaluation as to the importance of the attitude and the subjective norm is weighted by the importance that an individual attributes to the opinions of others.

Research on TRA has found that the theory is not only predictive and explains a large amount of variance, but also is parsimonious (Sheppard et al., 1988; Becker et al., 1995). However, despite the success of TRA, is has several limitations.

One limitation is that although the connection between behavior and behavioral intentions is generally robust, it is not necessarily significant or important for several reasons. First, behavioral intentions is not a static construct, but can change due to changes in attitudes, subjective norms or new situational factors that may alter relevant weights attributed to either the relevant attitudes or subjective norms (e.g., change in the incentive structure) (Sheppard et al., 1988). Thus, since both attitudes and social norms that lead to behavioral intention and their respective weights are not static, they can change and thus alter the given behavioral intention (Sheppard et al., 1988). With the possibility that the given behavioral intention can change before the given behavior is set to occur, even a strong behavioral intention does not necessarily ensure a predicted behavior.

Second, TRA was theorized to predict only volitional behavior and thus was not intended to include spontaneous, habitual, impulsive, mindless, or scripted behaviors, or behaviors resulting from cravings or addictions (Hale et al., 2003). However, a meta-analysis on TRA found that extending the model to areas not intended in the original theoretical scope still found significant and equally predictive results (Sheppard et al., 1988). Although TRA was intended for volitional behavior, it may generally be extended to non-volitional behaviors, depending on the type of behavior being tested.

Third, TRA focuses on whether or not the individual will or will not perform a behavior. However, TRA has limited prediction accuracy when a variety of behaviors are being considered (Sheppard et al., 1988). With a variety of choices available, many more attitudes and subjective norms become important. Accordingly, several different intentions must be created and considered and evaluated in connection to each other. Further, how these intentions affect the final behavior is beyond the scope of TRA. Consequently, with more choices available to an individual, it becomes more problematic to predict what actual behavior will be performed (Sheppard et al., 1988).

Fourth, TRA is limited in the types of behaviors that can be considered as the final dependent variable. Specifically, TRA is well suited for behaviors that can be performed at one time, but not well suited for goal-oriented behaviors (Sheppard et al., 1988). Goal-oriented behavior often must be performed multiple times in order for the intended goal to finally be realized. For example, predicting whether an individual will be able to start coming on-time for an ongoing series of meetings—to which he is habitually tardy—is different than predicting whether an individual will be on-time for a one-time meeting (Verplanken, 1997).

Finally, TRA is based on cognitive reasoning, and therefore the effect of emotions is not considered by TRA.

Recognizing the limitations of TRA, Ajzen continued to work on and modify TRA to apply it to an increased variety of situations and expand its overall scope. After a decade of work, he reported a revised theory that became known as the Theory of Planned Behavior (TPB) (1985).

2.1.2 The Theory of Planned Behavior (TPB)

After the initial publication of TRA, numerous researchers found that the relationship between behavioral intentions and behavior was not as strong as desired (Sheppard et al., 1988; Hale et al., 2003). For example, previous adaptations of TRA to health behaviors found that the relationship between the intention to engage in a healthy practice was weak or only moderately related to the actual healthy behavior (Sheppard et al., 1988). To help address these issues, Ajzen extended TRA to include another construct, which he believed would increase the ability of the underlying theory to predict individual behavior (1985; depicted in Figure 2). The main change in this theory is the addition of the perceived behavioral control construct, discussed below.

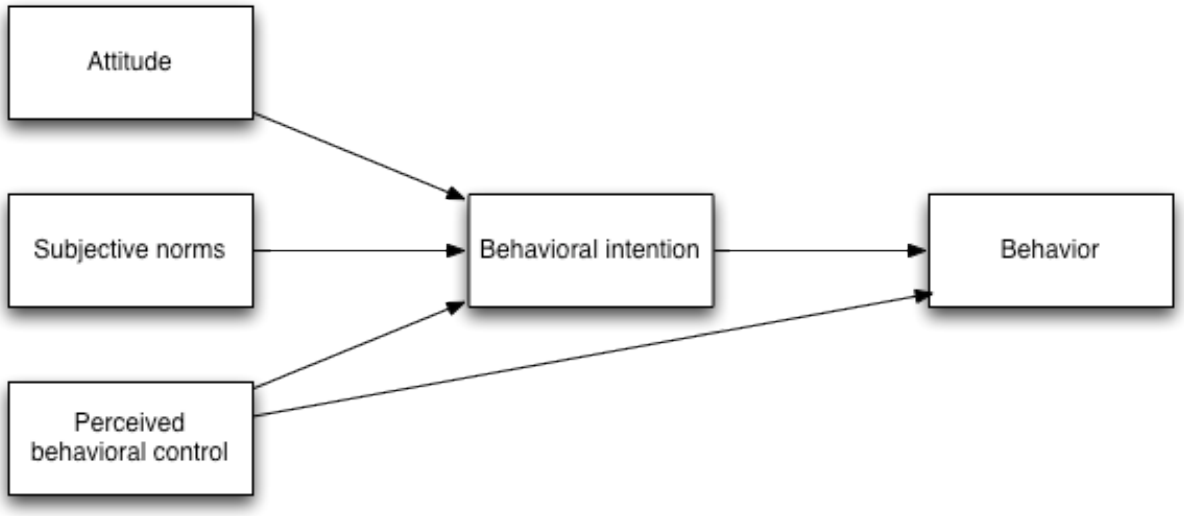


Figure 2. The Theory of Planned Behavior (Ajzen, 1985)

Perceived behavioral control refers to the perceived ease or difficulty of performing a given behavior (Ajzen, 1985). This addition was important because individuals may not feel they have the ability to perform behaviors, but are impeded in their intentions due to some internal or external constraint (Ajzen, 1991). If individuals perceive that they have the ability to perform a

behavior, they would have both an increased intention to behave in the given manner and to subsequently behave in the intended manner.

The addition of perceived behavioral control to TRA is based on Self Efficacy Theory (SET) (Bandura, 1977). SET proposes that expectations associated with repeated failures will determine subsequent behavioral responses. Bandura proposed two types of expectations: self-efficacy and outcome expectancy. *Self-efficacy* is the conviction that the individual can successfully complete a given behavior; whereas *outcome expectancy* is an individual's estimation that a given behavior will lead to a desired outcome. Volitional behaviors would only occur if the following two conditions hold: (1) individuals expect that they will be able to perform the behavior, and (2) individuals expect that they can positively influence the desired outcome by performing the behavior.

Like TRA, TPB's constructs each consist of the construct's definition and its associated weight. Thus, each antecedent of behavioral intentions may or may not be important in a given situation as the weight for each construct may affect the level of importance of each antecedent.

TPB adds an important improvement to TRA. TPB expands the application of TRA to include circumstances where volitional behavior does not actually predict behavior due to the lack of perceived control in the given situation.

Beyond the inherited limitations that TPB has acquired by building on TRA, an additional limitation should be noted here. The perception of individuals in regard to their actual control and in regard to self-efficacy or outcome expectancy may not be accurate and therefore may alter the accuracy of the predictive power of this model.

Both TRA and TPB have been widely used in many fields, but are also two of the more commonly-used underlying theories in many IS studies, especially within the research stream on

e-commerce. This work will focus on major models that build on TRA, as behavioral intentions are the ultimate dependent variable in this work.

2.1.3 The Technology Acceptance Model (TAM)

One of the first major theories in IS was built on the underlying principles founded in TRA. The Technology Acceptance Model (TAM) (Davis, 1989; depicted in Figure 3) was proposed to predict whether a system would be used (accepted) or not. TAM asserts that system acceptance is demonstrated when users actually use the system. As a behavior, use is predicted by the intention to use the system, which is predicted by the perceived usefulness and ease of use of the system. As the behavioral intention and behavior are the same constructs as those described in TRA/TPB, the remainder of this section focuses on the initial half of the model.

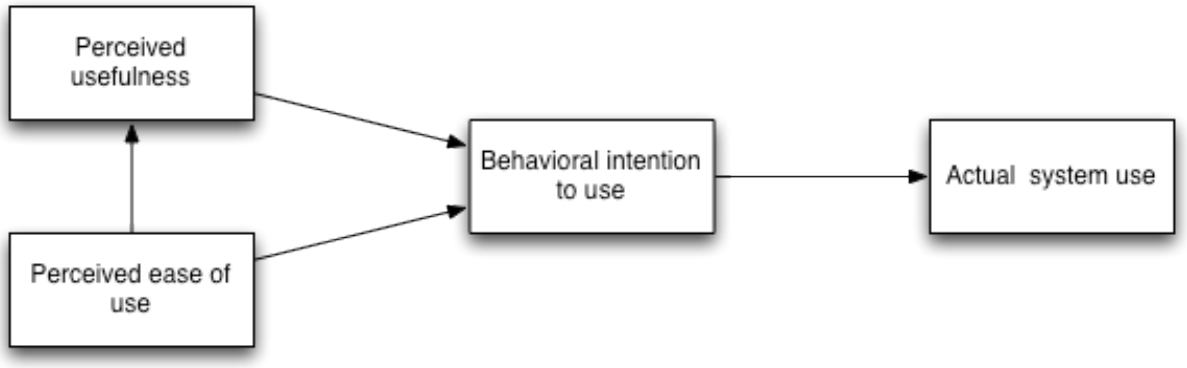


Figure 3. The Technology Acceptance Model (Davis, 1989)

Perceived usefulness (PU) is defined as the individual's belief that using the system would improve his or her job performance (Davis, 1989). This construct is directly related to the attitude construct in both TRA and TPB. In lieu of a general attitude or belief regarding some behavior, this belief is specific and focused on the perceived usefulness (attitude) of intending to use (behavioral intention) a given system. Previous research had also focused on the important

role of perceived usefulness in the adoption of technology (Tornatzky and Klein, 1982; Stewart, 1986; Kim and Malhotra, 2005; Qiu and Benbasat, 2006).

Perceived ease of use is (PEOU) defined as the individual's belief that using the given system would be of little effort (Davis, 1989). Like perceived usefulness, this construct is also a specific instance of the attitude construct from TRA and TPB. The general idea is that if the individual believes that the system will be easier to use, he or she would have greater inclination to use the system. This belief also impacts the other main belief in the model, perceived usefulness. If the system were difficult to use, then even if the system would be very useful for the individual, he or she would be less likely to use the system since the benefits from using the system would be outweighed by the difficulty in using it.

Even though TAM is built on TRA, it does vary from the underlying theory. Instead of incorporating subjective norms, which were introduced in TAM2 (Venkatesh & Davis 2000), TAM builds on two technology-specific attitudes regarding the use of the system: PEOU and PU. Additionally, the model proposes a connection between these two attitudes, thus providing a more complex model than TRA and TPB with two inter-related attitudes.

Like studies that have built on TRA, studies that have built on TAM do not always investigate the ultimate dependent variable of system use, but instead focus on its antecedent of behavioral intentions (Venkatesh et al., 2003; King and He, 2006). Many researchers find it difficult to obtain access to accurate or objective measures to operationalize this variable.

This simple yet elegant theory has had its own research stream for two decades now, with hundreds of replications, minor extensions and modifications by numerous researchers. The most comprehensive of these TAM extensions was reported by Venkatesh et al. (2003), who reviewed

previous studies related to TAM and proposed an overarching, unifying theory—the Unified Theory of Acceptance and Use of Technology (UTAUT), which is reviewed in the next section.

2.1.4 The Unified Theory of Acceptance and Use of Technology (UTAUT)

With almost 15 years of research focusing on the basic TAM model, Venkatesh et al. (2003) expanded on their previous work by comparing various theories about technology acceptance. This work led them to propose a unified theory (depicted in Figure 4) that combines the ideas from these several research streams on technology adoption. This Unified Theory of Acceptance and Use of Technology (UTAUT) incorporates TRA, TPB and TAM along with other concepts from other theoretical bases, such as: Social Cognitive Theory (Bandura 1986), and motivational models (Davis et al., 1992). Additionally, UTAUT builds on previous work by showing several main moderators of the basic TRA/TPB-structured model. Each of these main relationships will be described in more detail in this section.

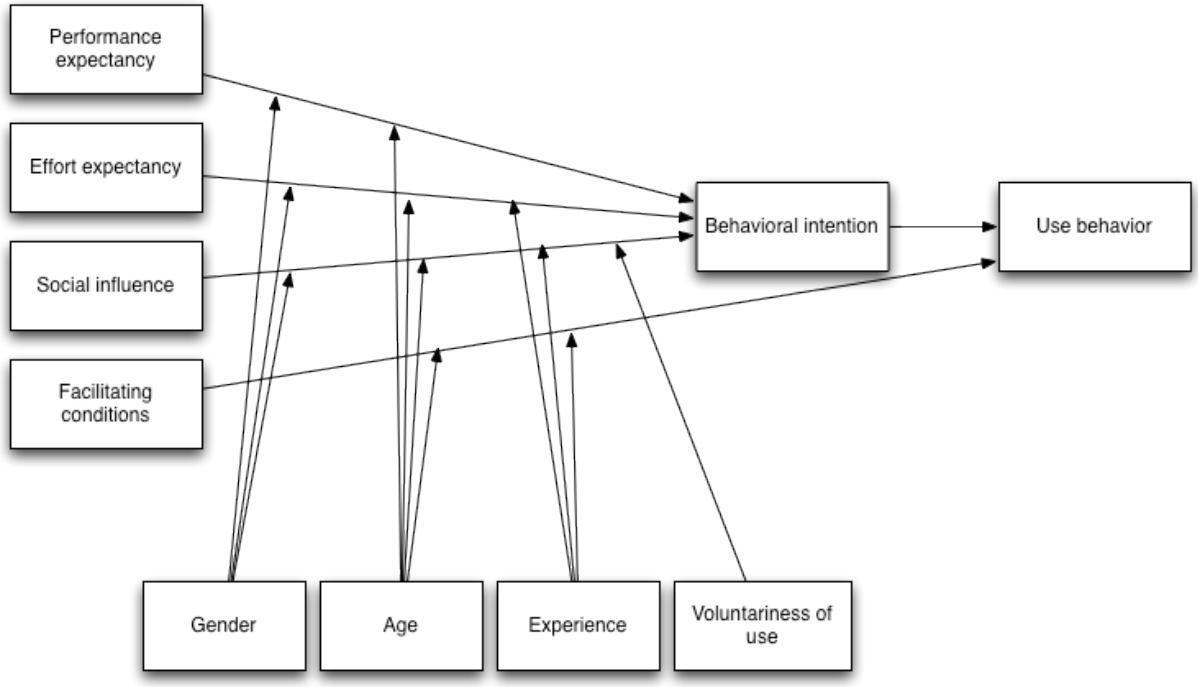


Figure 4. The Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)

Performance expectancy is defined as an individual's belief regarding the ability of the system to help the individual attain gains in his or her job performance. The construct is based on five different constructs in different theories: perceived usefulness (TAM), extrinsic motivation (Motivational model: Davis et al., 1992), job-fit (Model of PC utilization: Thompson et al., 1991), relative advantage (Innovation and Diffusion Theory: Tornatzky and Klein, 1982; Moore and Benbasat, 1991), and outcome expectancy (Social Cognitive Theory: Bandura, 1986). This combination of ideas is incorporated in a specific, technology-related attitude that subsequently affects the intention to use the system. If an individual believes that using a system will be helpful for his or her job, it is more likely that the individual would intend to use the system.

Based on previous findings, both gender and age are presented as positive moderators of this relationship, such that with increased performance expectancy, younger men will have the greatest intentions to use the system when compared to older individuals and women in general.

These moderations are based on the idea that males are more likely to be task-oriented than females and that beliefs regarding the usefulness of the system in performing better on tasks will be more appealing to a man, so the intention to use the system will be greater for men than women. Likewise, Venkatesh et al. (2003) proposed and found that younger men placed even greater emphasis on extrinsic rewards and were more likely to have higher job performance when compared to women.

Effort expectancy is defined as the ease with which an individual is able to use a system. This construct is also a conglomeration of constructs from other theories: perceived ease of use (TAM), complexity (Model of PC utilization) and ease of use (Innovation Diffusion Theory). Like performance expectancy, the individual either believes that it will require much or little effort to complete tasks with the system. If a system is expected to require much effort, it is unlikely that the user would intend to use that system, as other benefits that he or she may acquire would be minimized due to the increased cost of using the system.

Based on previous findings; gender, age and experience are proposed and found to serve as moderators between effort expectancy and behavioral intentions. Venkatesh et al. (2003) propose that effort expectancy is more salient for women than men, which may be due to societal roles. Age and, ergo, experience, is proposed to moderate the relationship, as older individuals tend to have increased difficulties in processing complex situations and attending to information required to perform work in these situations than younger individuals.

Social influence is defined as perception of the individual regarding whether important others believe that the individual should use the system. This construct is a combination of ideas from the following constructs and their respective theories: subjective norm (TAM, TRA, TPB), social factors (Model of PC utilization), and image (Innovation Diffusion Theory). The definition

of this construct is so similar to subjective norm, that it is essentially the same. The basic idea is that the individual believes that important others (e.g., peers, boss, friends) believe that the he or she should use the system. As a result, he or she will feel more social pressure to use the system and therefore will have increased intentions to use it.

The relationship between social influence and intention to use is predicted and shown to be moderated by age, gender, experience and voluntariness. The moderations by age, gender and experience are based on socially constructed roles. Women tend to be more influenced by others, especially when they are older, when compared to men, especially younger men. Also, when an individual has less experience, he or she is more likely to be influenced by others and rely upon their expertise and attempt to ingratiate them. Mandatory usage will heighten social pressure as the individual feels that he or she needs to comply with others who can punish or reward him or her based on given behaviors.

Facilitating conditions is defined as a perception of the individual that technical and organizational infrastructures exist to support the use of the system. This is built upon two important, established constructs: perceived behavioral control (TPB), facilitating conditions (Model of PC utilization) and compatibility (Innovation Diffusion Theory). This builds upon the concept of perceived behavioral control from TPB by altering the perception of the individual regarding his or her ability to successfully complete tasks with the system. As the expectancies regarding the performance of such tasks, and his or her ability to complete the tasks are captured in other constructs in this model, this construct is then directly related to actual system usage. If the individual believes that systems can support actual use, he or she may increase actual usage since potential difficulties can be partially discounted, as others are available and able to provide assistance.

The relationship between facilitating conditions and system usage was proposed and found to be moderated by age and experience. Venkatesh et al. (2003) posited that those with greater experience had greater connections and resources that would allow them to find support more easily. Thus, more experienced people would increase their usage of a system, as they are more assured by the potential for assistance from others. Also, those with higher age are also shown to place more importance on seeking help and assistance for technical tools. Thus, older individuals would be more likely to rely on the assistance of the organization and thereby increase their usage of the system.

2.1.5 Behavioral Intentions in e-Commerce

The purpose of this work is to focus on the behavioral intentions that users have in e-commerce systems. Building on the TRA, and its subsequent extensions and modifications in IS, as previously described; there are several intentions that have been utilized regarding the adoption and use of e-commerce systems (i.e., e-commerce Web sites).

Table 1 summarizes several major studies in e-commerce and various intentions that have been studied over the last decade.

Table 1. Summary of Dependent Variables Researched in a Selection of e-Commerce Studies

Author(s)	Year	Dependent Variable(s)	Theory-base
Jarvenpaa & Tractinsky	1999	Willingness to Purchase	TRA
Grazioli & Jarvenpaa	2000	Willingness to Buy	TRA
Jarvenpaa, Tractinsky & Vitale	2000	Willingness to Buy	TRA
Gefen	2000	Intention to Purchase, Intention to Inquire	TRA
Grazioli & Wang	2001	Willingness to Buy	TRA

Belanger, Hiller & Smith	2002	Willingness to Purchase, Willingness to Provide Private Information	NA
McKnight, Choudhury & Kacmar	2002, 2003, 2004	Willingness to Depend, Follow Advice, Give Information, Make Purchase	TRA
Gefen, Karahanna & Straub	2003	Intention to Use	TAM
Galletta et al.	2004	Intention to Return to the Web site, Intention to Recommend the Web site	TRA
Malhotra, Kim & Agarwal	2004	Intention to Give Information	TRA
Pavlou & Gefen	2004	Intention to Transact	TRA
Gefen & Straub	2004	Purchase Intentions	TRA
Pavlou & Fygenson	2006	Intention to Purchase, Intention to Get Information	TPB
Galletta, McCoy, Henry & Polak	2006	Intention to Return to the Web site, Intention to Recommend the Web site	TRA
Dinev & Hart	2006	Willingness to Provide Information to Transact on the Internet	TRA
Xiao & Benbasat	2007	Intention to Use	NA
Lowry, Vance, Moody, Beckman & Read	2008	Willingness to Depend, Follow Advice, Give Information, Make Purchase	TRA
Moody & Galletta	2008	Intention to Return to the Web site, Intention to Recommend the Web site	TRA

Due to the e-commerce context of this study, its deceit and abnormality manipulations, this study will focus on several of the common intentions that have been used heavily in other e-commerce studies (McKnight et al., 2002; Gefen, 2003; Galletta et al., 2004; Pavlou and Gefen, 2004; Pavlou et al., 2004; Galletta et al., 2006; McKnight et al., 2006; Kim and Benbasat, 2006;

Lowry et al., 2008; Moody and Galletta, 2008). By using these dependent variables (described below), this study is comparable to other studies performed in this research stream.

The first four intentions constructs (i.e., willingness to depend, willingness to follow advice, willingness to give information, willingness to make a purchase) were measured in a combined instrument created by McKnight et al. (2002). Because this instrument has been well-validated and used by different researchers—and also includes a very complete nomological trust network— this study's model includes these dependent variables. Each of these four intentions constructs is closely related and focused on the intentions that would increase the likelihood of the individual engaging and completing an e-commerce transaction online. *Willingness to depend* is related to the intention of an individual to rely upon the behavior of another person based on the belief that he or she can trust the other person. *Willingness to follow advice* is the intention of an individual to behave as advised by another person. *Willingness to give information* is the intention to provide information that is required to complete a transaction. *Willingness to make a purchase* is the intention that the individual has in initiating and completing a transaction with another individual/entity.

This study includes non-transaction-related dependent variables, because distrust and trust may have different effects on different but related e-commerce intentions—especially those that relate to different types of behaviors (e.g., use a Web site, continue to use a Web site, and recommend a Web site to others). Including non-transaction-related intentions can help explore how trust and distrust have different effects on a larger variety of behaviors. *Willingness to recommend* is the inclination that an individual has to introduce a Web site to important others (Galletta et al., 2004). *Intention to return* is the intention that an individual has to continue to return to and use a Web site in the future (Galletta et al., 2004). *Intention to use* is the inclination

that a user has to adopt and use a system (i.e., a Web site in this study) for an e-commerce related task (Gefen et al., 2003).

Having introduced the dependent variables of this study, and the underlying theory of TRA, this review now highlights several main belief constructs that are of interest in this study.

2.2 DISTRUST AND TRUST

Early research and theory building work focused on trust, and also highlighted that its opposite, distrust, was an important concept to consider (Deutsch, 1958 & 1960; Constantinople, 1969; Luhmann, 1979). These early authors produced and compiled numerous notions of trust and also what it meant to distrust. This next portion of the literature review highlights initial ideas about the preliminary theoretical developments of both trust and distrust, and the differences between them.

2.2.1 Trust

Deutsch (1958, 1960) defined trust as a motivational force that leads to behavior when an individual expects an event or action to occur and perceives that there are greater negative motivational consequences if the expected event or action does not occur rather than positive motivational consequences if the event or action does occur. For example, trust is the motivational force that allows an online transaction between a buyer and seller to take place. A buyer believes that by paying the seller of an item, that the trusting event (Luhmann, 1979) (i.e., shipment of the item) is more likely to occur. The shipment of the item has greater possible

negative outcomes associated with it when compared to positive outcomes. Focusing on potential negative outcomes (such as non-delivery or delivery in poor condition) results in increased motivations to not engage in this online transaction.

Conversely, focusing on the positive outcomes (obtaining the product as advertised) results in motivation for the procurement of the desired item by the buyer. However, the negative motivation associated with a potential fraudulent transaction has more effect than positive motivation as the individual would have not only paid for and waited for the desired item, but the buyer would also still lack the benefit of receiving the item (Luhmann, 1979). Without any other motivations to encourage the procurement of the desired item, an exchange would be unlikely to occur. However, trust serves as an additional motivation to overpower the effects of the negative motivations associated with the given transaction by increasing the perception of the buyer that the transaction will be successful.

Building on and simplifying the conceptualization of trust by Deustch and Luhmann, Rotter (1967) defined trust as an individual's expectancy that another individual or group can be relied upon. Luhmann (1979) explained that this reliance of the truster on the trustee could be attributed to the truster's ability to reduce complexity in the social environment and reduce the potential behaviors of the trustee from all of the future possible behaviors to fewer behaviors that the trustee expects from the trustee. Furthermore, when the trustee is aware that the truster is relying upon him or her, general societal norms increase the obligation of the trustee to behave in the expected manner, thereby further enabling the truster to expect the desired trusting behavior from the trustee (Deutsch, 1958).

These initial trust theorists asserted that trust is heightened when the following occur:

- Individuals feel positively towards each other (Deutsch, 1958)

- Individuals are punished for acting in a non-trustworthy manner (i.e., legal arrangements or structure to enforce trusting situations) (Deutsch, 1958; Luhmann, 1979)
- Trustees would feel guilt by breaking the trust placed on them by trusters (i.e., norms of fulfilling trusting expectations by the truster are increased or made more salient for the trustee) (Deutsch, 1958; Luhmann, 1979)
- The trustee is perceived to have high integrity (Deutsch, 1958)
- The truster has increased confidence that the trusted behavior will be performed by the trustee (Deutsch, 1958)
- The expected positive outcomes of the event exceed the potential negative outcomes (Deutsch, 1958)
- The truster is familiar with the trustee (Luhmann, 1979)
- The motivations of the trustee are perceived to be in alignment with the truster (Luhmann, 1979)

More recently, McKnight et al. (1998) built on the comprehensive literature review of trust by Mayer et al. (1995) and proposed a comprehensive model of trust, which is adopted for this paper, along with later modifications presented in McKnight et al. (2002). Building on various trust literature streams and TRA, McKnight et al. proposed that trusting beliefs have two trust-based antecedent constructs and two cognitive processes that can increase both trusting beliefs and trusting intentions, as depicted in Figure 5.

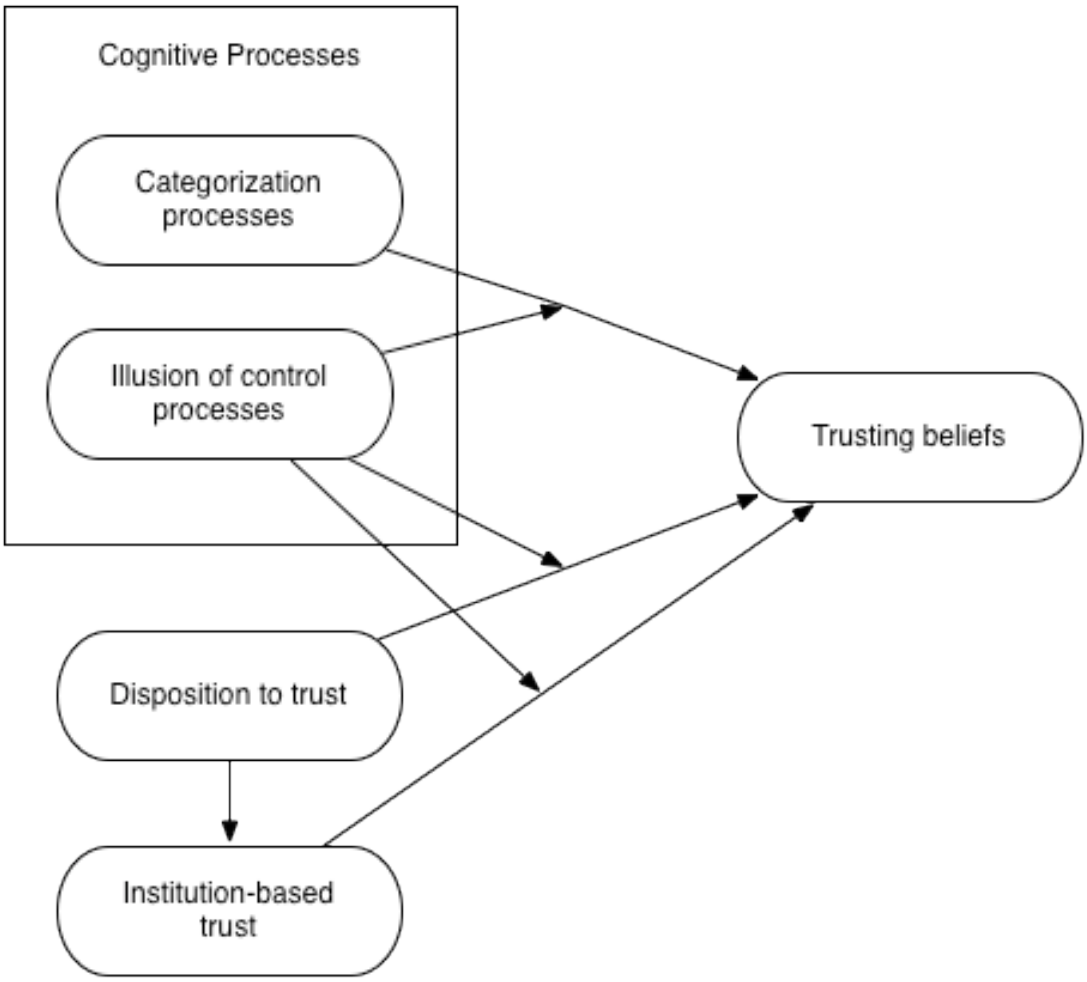


Figure 5. Initial Trust Formation (Adapted from McKnight et al., 1998)

The first antecedent construct is the disposition to trust, which is an individual personality trait (McKnight et al., 1998). *Disposition to trust* refers to the general tendency of an individual to depend on others. It consists of two subconstructs: trusting stance and faith in humanity. *Trusting stance* refers to the belief of the truster that he or she will achieve better outcomes through interpersonal interactions with the trustee as if the trustee were well-meaning and reliable—whether or not the person actually is well-meaning and reliable. Individuals who exhibit the disposition to distrust are more likely to trust others—regardless of the situation—because this disposition increases their likelihood to trust others in general. This proposition,

along with the entire model, has been well-validated in many studies (McKnight et al., 2002; 2004; 2005; 2006; Lowry et al. 2008).

The second antecedent construct is institution-based trust (McKnight et al., 1998). *Institution-based trust* refers to a truster's belief that structures exist that enables the truster to act in anticipation of a successful future interaction. Like the disposition to trust, this construct also has two sub-dimensions: situational normality and structural assurances. *Situational normality* refers to the truster's belief that success is more likely because the setting or roles of the parties involved appear to be normal or typical. *Structural assurances* refer to the increased likelihood of success due to contextual conditions such as promises, contracts, regulations, and guarantees. When individuals perceive that the likelihood of success is increased, they are more likely to trust and become vulnerable to the trustee. If situations are normal, it is more likely that success will occur as trusters have previously transacted with many other sellers with success. Thus, if nothing appears to be out of the ordinary, an individual is most likely to continue to behave in a routine manner. Likewise, trusters who perceive structures that punish trust violations have increased assurances that trustees will behave as expected, because costs due to malfeasance should deter negative behaviors.

The first antecedent cognitive process is *categorization* (McKnight et al., 1998), which refers to the practice of inferring knowledge about the trustee by placing him or her within some known social category. If the trustee can be categorized within a known group, information about that group can be inferred to the trustee and thus knowledge-based trust, due to secondhand information, is enabled. McKnight et al. described three social categorization processes: unit grouping, reputation and stereotyping. *Unit grouping* refers to the practice of placing the trustee in the same social group as the truster, based on perceived similarities between the trustee and

truster. Relating to the trustee on this level allows the truster to assume common values and goals and display an in-group bias towards the trustee. *Reputation* categorization refers to the assigning of attributes to the trustee based on information obtained from secondary sources. High reputations tend to increase inferences of trustworthy characteristics about the trustee. The trustee is more likely to be more competent, benevolent, honest or predictable and thus bring about an increase in trusting beliefs. *Stereotyping* allows the individual to infer characteristics of the trustee based on general or more specific stereotypes that are available to the truster. Thus, if the truster has a positive stereotype concerning veterans, it is more likely that he or she will feel trust towards the trustee if he or she were to be a veteran. The positive stereotype results in the truster inferring positive personality traits and feelings towards the trustee.

The second antecedent cognitive process is the illusion of control process (McKnight et al., 1998). Generally, in uncertain situations, individuals have a tendency to assure themselves that they are in control of the situation and are able to bring about outcomes through their own efforts. However, in reality the ability of the individual to effectuate change in the situation is smaller than the individual perceives it to be. Thus, the individual has an inflated illusion of what he or she is actually able to do, and once these beliefs towards the trustee are formed, it is unlikely that the truster will attend to or evaluate any contrary evidence, but will rather further confirm what he or she already holds to be true.

2.2.2 Distrust

Having introduced trust, it is important to understand the concept of distrust and how it was developed. The first researcher to posit a construct that opposed trust was Deutsch (1958, 1960). Deutsch posited that the construct that was of opposite valence of trust, which he termed

suspicion, is similar to trust, except that when an individual feels distrust, its disconfirmation is preferred to its confirmation. This situation is reversed for trust. For example, a union on strike will expect that the actions of upper management in negotiating a new contract will be contrary to the benefit of the union members. As union members are distrusting of management and its intentions towards the union, the union members would prefer that their expectations be left unmet and the negotiation results in favorable outcomes for the union, rather than the expected outcome that favors management interests. Like trust, the expectation about an event creates a motivational force that leads the individual to act in a given way.

Expanding on this initial conceptualization of distrust, later articles proposed that distrust was not simply the opposite of trust, but was a functional equivalent of trust (Luhmann, 1979). Specifically, an individual can reduce complexity in a social situational by relying upon trusting or distrusting mechanisms. In such circumstances where an individual utilizes distrust to reduce social complexity, he or she uses negative expectations about gathered information that can be relied upon. Thus, an individual relies upon only information that is likely to be the least harmful for him or her (Luhmann, 1979).

Furthering this expanded conceptualization of distrust, trust and distrust are said to coexist in all relationships (Luhmann, 1979). Some element of trust must exist for distrust to also exist. Positive expectations can only exist if there is also the chance for negative outcomes (Luhmann, 1979). Because an individual can use elements of trust and its counterpart, distrust, it is important to be able to identify when an individual's behavior is motivated by trust or distrust. The opposite valence of trust, distrust, leads to a concealment of motives by both the trustee and truster, whereas trust leads to increased communication (Deutsch, 1958). Additionally, distrust is most apparent and identifiable by an individual engaging in distrusting behavior (e.g., behaviors

that reduce the impact of negative outcomes (Luhmann, 1979). When individuals distrust, they expect that the trustee will behave in a fashion that will harm the truster; thus, the truster behaves in a manner that will minimize the likelihood of the negative outcome occurring, or minimize the effects of the negative outcome.

The initial theorists on trust and distrust laid the foundation for early work on distrust and trust that occurred in a variety of disciplines. This next section will describe these studies and present their findings up through more current work in management. This work is summarized to show that other disciplines have recognized and demonstrated that trust and distrust exhibit opposite valences yet can coexist.

2.2.3 Trust and Distrust

Having separately defined and explored some of the literature regarding trust and distrust, it is now important to explore how these two constructs relate to each other. Generally, two different approaches are used to explain how one individual in a relationship with another can feel both trust and distrust: unidimensional and bidimensional models (Lewicki et al., 2006).

First, the unimensional models of trust (e.g., Worchel, 1979; Rotter, 1980) treat trust and distrust as two opposite ends of one continuum. These models propose that trust has several components (e.g., trusting beliefs, affective trust) that can be captured within a global construct that measures overall trust for an individual (e.g., Jones and George, 1998; McAllister, 1995; Mishra and Mishra, 1994; Williams, 2002). Based on the perception of the trustee's trustworthiness, the truster expects and feels that the trustee will behave in a desired manner and is willing to become vulnerable to the trustee (Mayer et al., 1995). In this conceptualization of trust and distrust, if the trustee is perceived to score high on the global trust construct, the truster

will have high trust in the trustee, whereas if the score is low, low trust, which is equated with distrust, will be engendered.

The unidimensional models of trust and distrust are built on earlier trust research that assumed trust and distrust to be at opposite ends of the same continuum (Barber, 1983; Deutsch, 1958; Rotter, 1980). These earlier models of trust were developed based on an economic game wherein trust was conceptualized as cooperative behavior and distrust as opportunistic behavior (Arrow, 1974). Additional, this approach tended to view trust and distrust as substitutes for each other (Lewis and Weigert, 1984) that cannot coexist (Lewicki and Bunker, 1995).

The second general approach to trust and distrust—that this research builds on—is demonstrated by the bidimensional models of trust (e.g., Lewicki et al., 1998; McKnight et al., 2004; 2006; Dimoka, 2010). Such models propose that trust and distrust are distinct constructs, generally consisting of the same components, but opposite valences. Trust is posited to include the positive expectations regarding the trustee's conduct, while distrust includes the negative expectations (Luhmann, 1979). Even though both trust and distrust are used to describe the expectation regarding the trustee's behavior, there are some nuanced differences. First, trust reduces from the truster's consideration the possibility of undesirable actions by the trustee while distrust introduces the possibility of undesirable actions to the consideration of the truster (Luhmann, 1979). Both mechanisms are able to reduce social complexity, albeit in opposite manners. The bidimensional models for trust and distrust were founded on the principles for separating negative and positive valence constructs (Kaplan, 1972; Kahneman and Tversky, 1979). Later researchers extended these theories of distinct, related constructs and applied them to trust and distrust.

In this conceptualization, although the constructs are framed as opposite valences and expectancies of each other, they are treated as independent of each other (Lewicki et al., 1998)—despite the fact that empirical evidence has found moderate correlations between the two (McKnight and Choudhury, 2006). Low trust from this perspective does not mean the same thing as high distrust. As described by Lewicki et al., (1998), low trust refers to a lack of hope or the uncertainty of the trustee's behavior, whereas high distrust is associated with increased fear, skepticism and vigilance. Additionally, high trust is not the same as low distrust. High trust relates to beliefs and feelings of hope, faith and confidence in the trustee, while low distrust suggests a lack of fear, skepticism, cynicism and the need to monitor the trustee (Lewicki et al., 1998; Lewicki et al., 2006).

The bidimensional models of trust and distrust propose that the relationship between the truster and trustee is more complex than the more general unidimensional approach to trust would suggest. Lewicki et al. (1998) explained that most relationships are complex and have various facets where distrust or trust can be held, and it is thus impossible to generally assign a generic label of trust or distrust to a relationship. Instead, a relationship can focus on an aspect of the trustee that is trusted or distrusted. For example, an individual can have trust in his or her accountant and believe that he or she has the competency to correctly complete and file a tax return for the truster; but at the same time distrust the same accountant to provide investment advice concerning his or her stock portfolio or to babysit his or her daughter while he or she is away on a business trip. Thus, the proper response to whether an individual trusts another should not be "yes or no" but "to do what?" (Hardin, 1993). In complex relationships, it is most important to refer to the specific aspect of importance to understand whether the truster believes or feels trust towards the trustee.

2.2.4 Early (Non IS) Empirical Research on Distrust and Trust

The first study to find factors for both trust and an opposite valence distrust, as proposed by Deutsch (1958, 1960) and Rotter (1967) was reported by Constantinople (1969). She created an instrument to measure interpersonal trust and found that there were positive and negative factors. A similar finding was mirrored in a later instrument created by Scheussler (1982, reported in Robinson et al., 1991). He created another instrument to measure an individual's disposition to both distrust and trust.

Several studies in different fields provided support that trust and distrust were in fact separate factors and could be measured as such. Personality researchers, Whitbourne et al. (1992), performed a longitudinal study of college students over a decade and found that the level of trust and distrust were both different and volatile over the subjects' measured lifetime. An interaction of trust and distrust with the level of vigilance of the individual was found by Gurtman and Lion (1982). They also found that low trusters and high trusters could be separated into different groups that behaved differently. Specifically, low trusters were more suspicious of situations where the trustee was perceived as less trustworthy. These heightened levels of suspicion increased the trusters' vigilance towards the situation and reduced the future probability of engaging in trusting behaviors with the trustees. However, high trusters did not experience as much suspicion, even with perceived less trustworthy trustees, nor did they experience increased vigilance levels when compared with low trusters.

Other researchers tried to use the level of trust or distrust to predict other behaviors of individuals. Hurley et al. (1990) utilized an instrument to measure distrust in an effort to identify patients with eating disorders. Hurley et al. predicted that individuals with distrust would question their self-image more than those that did not, and would thus be more prone to eating

disorders. However, they did not find any relation between individuals with distrust and the presence of disorders. In a related effort, Gurtman (1992) found that individuals with low and high levels of trust have opposite tendencies in regards to Machiavellian behavior. For example, individuals who had low levels of trust were more inclined to behave in a Machiavellian manner, whereas those with high trust levels demonstrated lower tendencies to behave in a Machiavellian fashion.

Unlike these previous studies, Levine and McCornack (1991) focused on individuals' disposition to trust and whether individuals have specific traits to distrust communication from others. They found that some individuals are by nature (i.e., by trait) more distrusting of communication from others when compared to the general population. Further, they demonstrated that an individual could also experience an increased or decreased level of distrust in a given situation that varies due to situational variables (i.e., state distrust).

In the first study focusing on distrust in management, Sitkin and Roth (1993) proposed a two-by-two framework to predict the creation of trust and/or distrust when legalistic remedies are used to reduce the effects of trust violations. They postulated that when individuals are misaligned in terms of values in a general sense, it is likely that the individuals will feel distrust towards each other. However, if an individual simply does not complete a given task in a specific context, trust will only be reduced, as opposed to engendering distrust. They proposed that distrust was generated when an individual felt that the other person had different goals and motivations that were not in alignment with the individual. However, if the shortcomings of the other person only occurred in specific instances or were only connected to the ability of the other person to perform a given task, trust in the other person was merely reduced.

These studies have demonstrated the validity of the coexistence of trust and distrust in other fields and have shown the different effects that these may have on various behaviors. Research on distrust continues in other fields, and a summary of such studies is summarized in Appendix A. Having shown that distrust and trust have been separated in other fields, I now move to the information systems field to summarize the work that has been done on distrust.

2.2.5 Distrust Research in Information Systems

The first notable study that brought the concept of distrust to information systems research is found in McKnight and Chervany (2001). Building on the same literature of distrust described above, they proposed that distrust was also as important as trust in understanding Internet behaviors. Specifically, they posited that distrust is highly emotional, and as such, limits the ability or intention of the individual to engage in behaviors. Building on TRA, they proposed that an individual's distrusting behaviors were best determined by their distrusting intentions, which were in turn predicted by various distrusting beliefs. They further proposed that distrusting beliefs would be increased if the individual had a heightened disposition to distrust others or if the individual felt distrust towards the institution that enabled the exchange (e.g., the Internet in their context).

Additional work by McKnight and his colleagues (2002, 2003, 2004, 2006) further explored how trust and distrust affect an individual's intentions to behave in desirable ways on Web sites. They stressed the importance of distrust and developed an instrument for the disposition to distrust (2004). These studies found that an individual's disposition to distrust decreased the individual's intention to depend on the seller (2001), buy an item (2001), perceive the safety of the Internet (2003), explore a Web site (2004), or share information (2006a).

Building on the distrust studies of McKnight and his colleagues, the IS literature has a few notable studies that have focused on distrust. Hsiao (2003) expanded the framework presented by Sitkin and Roth (1993) to explore the adoption of electronic marketplaces. Hsiao proposed that legalistic remedies of increasing trust (i.e., institutional-, reputational- and technical mechanisms) would only increase the adoption of electronic commerce when the individual was concerned about the reliability of the electronic marketplace. Further, they proposed that if distrust were based on cultural differences then the requisite trust for adoption would be unlikely. Their findings supported these hypotheses and validated Sitkin and Roth's (1993) framework.

In a related study, Ou (2006) explored how certain Web site features could lead to increased trust and distrust. He proposed that Web sites must be minimally functional; otherwise distrust would be increased. Basic functionality of the Web site, which he termed hygiene factors, are proposed to be determined by basic technical functionality, situational normality, basic information quality, ease of finding desired information, structural assurances, ease of use, and usefulness. Like in the McKnight models, distrust was posited to affect buying intentions.

Three other studies in IS have further validated that trust and distrust coexist as oppositely valenced factors that affect individual behavior. Benamati et al. (2006) demonstrated that both trust and distrust determined an individual's intention to use a system, while Komiak and Benbasat (2008) reported a process study about the distinct processes that build trust and distrust. They found that the process for building distrust was distinct from that for building trust, even though both processes existed concurrently. Based on their analyses, distrust and trust were particularly different in the amount of shared information, the individual's awareness of

unknown information and expectation about the outcomes that occurred from using the recommendation agent.

The most recent study on trust and distrust (Dimoka, 2010) demonstrated that trust and distrust are distinct and separable. Utilizing fMRI techniques, she showed that different portions of the brain are activated by trust and distrust manipulations. By activating different regions of the brain, trust and distrust were shown to have different origins and also to exist independently of each other. However, since each was measured as a unidimensional construct, it is impossible to determine whether this study merely captured different dimensions. It could be that these extremes on one continuum merely activate different portions of the brain and are thus inconclusive in determining the true dimensionality of trust and distrust.

Studies of distrust in IS are summarized in Appendix A. The subsequent section will define the trust and distrust constructs that will be used in this study.

2.2.6 Trust and Distrust Constructs in this Study

The distrust and trust constructs for this study are based on TRA and build on previous literature. This section will define distrusting beliefs, disposition to distrust, trusting beliefs and the disposition to trust.

Distrusting beliefs are defined as the individual's beliefs that an Internet-based vendor will act in a self-interested manner, dishonestly, or in an incompetent fashion. As distrust is the opposite valence of trust, and trust is commonly composed of three main subconstructs (i.e., benevolence, integrity and competence) (Mayer et al., 1995), distrust is composed of the three subconstructs that are opposite in valence to the trust subconstructs, namely: deceit, malevolence and incompetence. *Deceit* refers to the truster's belief that the trustee is dishonest and potentially

providing false information. *Malevolence* refers to truster's belief that the trustee has the intention to harm the truster. Finally, *incompetence* refers to the truster's belief that the trustee lacks the ability to perform a desired behavior.

This multidimensional conceptualization of distrust is also supported by other frameworks of distrust (Lewicki et al., 1998; Ullmann-Margalit, 2002; Tomlinson and Lewicki, 2006). These researchers defined two broad categories of distrust: competence-based, and value-based. The *competence-based distrust* factor refers to the idea that the trustee lacks the ability or capacity to perform the trusted behavior (i.e., incompetence). In contrast, the *value-based distrust* factor refers to the notion that the trustee is expected to act in a manner against the truster—intentionally and with a desire to act in the trustee's own interest or against the interests of the truster (i.e., deceit and malevolence).

Disposition to distrust is defined as the general tendency of an individual to not rely on others or become vulnerable to them (McKnight et al. 2001). Research on the disposition to trust has generally referred to the disposition to distrust as a general suspicion towards humanity (Scheussler, 1982; McCornack and Levine, 1990; Sitkin and Roth, 1993; McKnight et al., 2001; McKnight et al., 2004; Benamati et al., 2006). This paper adopts this approach and relies upon the same definitions set forth in McKnight et al. (2001).

Building directly on the trust model developed by McKnight et al. (2002), this paper also adopts the same definitions and subconstructs for both trusting beliefs and the disposition to trust. *Trusting beliefs* is defined as the individual's belief that an Internet-based vendor will act with benevolence, competence and integrity towards the consumer (McKnight et al., 2002). *Disposition to trust* is defined as the general tendency of an individual to depend on others regardless of the situation (McKnight et al., 2002).

2.3 ATTITUDES AND AMBIVALENCE

Attitudes, as shown by the literature on TRA, TPB, and TAM have been commonly studied in many fields and IS. This paper defines *attitude* as the general inclination of an individual to respond to an attitude object in a favorable or unfavorable manner (Kaplan, 1972). Attitudes are composed of three components: beliefs, feelings and behaviors (Smith, 1947; Rosenberg and Hovland, 1960; Bagozzi et al., 1979; Breckler, 1984). *Beliefs* refer to knowledge structures, perceptual responses and thoughts of an individual (Bagozzi et al., 1979). *Feelings* refer to moods, emotions and affect that the individual holds towards an attitude object (Piderit, 2000). *Behaviors* refer to behavioral intentions or overt behaviors that an individual exhibits towards an attitude object (Breckler, 1984).

Trust and distrust have been shown to be attitudes that affect how an individual may or may not behave. However, before the advent of TRA, other theorists also proposed models to explain how attitudes affect behavior. One such important notion is the idea that an individual's ambivalence towards a behavior attenuates the link between attitudes and behavior (Conner et al., 2002). *Ambivalence*, more specifically *attitudinal ambivalence*, is the state in which an individual is inclined to assess both equivalently strong positive and negative evaluations toward an attitude object (Thompson et al., 1995). Because trust is a positive evaluation and distrust is a negative evaluation, they have the potential to produce attitudinal ambivalence if they are both held at roughly equivalent levels towards the same attitude object (Kaplan, 1972; Jonas et al., 1997).

Attitude and ambivalence research posits that attitudes consist of multiple components: feelings, beliefs, and behaviors (Smith, 1947; Rosenberg and Hovland, 1960; Zanna and Rempel, 1988; Trafimow and Sheeran, 1998; Kachadourian et al., 2005). Further, ambivalence can occur

within (i.e., intracomponent ambivalence) or between (i.e., intercomponent ambivalence) these three components (Thompson et al., 1995; Maio et al., 1997; MacDonald and Zanna, 1998). Thus, ambivalence could be engendered through conflicting attitudes within the same component (e.g., positive and negative feelings) or by having different components with opposing valences (e.g., positive feelings and negative beliefs). For example, suppose that an online buyer holds trusting (positive) affect toward the buyer due to numerous customer ratings that serve as an indicator of the seller's benevolent reputation found among the buyers. However, suppose that the buyer also feels distrust toward the seller due to the perception that the seller lacks competence—as demonstrated by obvious errors in, or even a lack of information about the product. In this scenario, the buyer may feel both trust and distrust toward different aspects of the seller that would eventually be used to formulate a decision regarding the purchase of an item from that seller. If the strength of both of these feelings were relatively strong, then it is likely that the buyer would experience a form of intercomponent ambivalence.

Previous work in psychology and marketing shows that both positive and negative attitudes can be, and often are, held simultaneously by individuals (Cacioppo et al., 1997; Larsen et al., 2001; Williams and Aaker, 2002). Kaplan (1972) first introduced a method to adapt traditional attitude scales, which treated attitudes as single dimensions along one continuum, and split the attitude into a negative and a positive component using a semantic differential technique. The positive attitude was then measured on a scale from "very positive" to "not at all positive" and the negative attitude was measured on a scale from "not at all negative" to "very negative." Kaplan further explained that the overall attitude could still be expressed as roughly equivalent to the summation of the two components, while the ambivalence score would be the

sum of the positive and negative components less the absolute value of attitude. These equations are shown here:

$$A \approx A' = A_p + A_n$$

$$TA = A_p + |A_n|$$

$$POL = |A|$$

$$AMB = TA - POL$$

A—True attitude (determined by weighting the positive and negative components), which is theoretically immeasurable but can be approximated by A'

A'—Independently derived attitude (unweighted net summary)

TA—Total effect: total amount of attitude directed towards an object, regardless of sign

POL—Polarization of attitude: the overall net effect of the given attitude towards the object

AMB—Ambivalence

Later, research on ambivalence also proposed additional models to mathematically derive ambivalence (Thompson et al., 1995; Priester and Petty, 1996; Jost and Burgess, 2000) or to subjectively obtain a measure of ambivalence from a subject (Sparks et al., 1992; Maio et al., 1996; Nowlis et al., 2002; Priester et al., 2007).

Although several social psychologists proposed models of dual/opposing attitudes before the ambivalence model was presented by Kaplan in 1972 (Chein, 1951; Green and Goldfried, 1965; Scott, 1966, 1969), this work was greatly hindered due to generally accepted assumptions from the field of psychology based on Cognitive Dissonance Theory (Festinger, 1957), and Balance Theory (Heider, 1946). Both of these theories are built upon an assumption that individuals cannot or will not allow competing attitudes to coexist within an individual's mind. Thus, whenever an individual is experiencing conflicting attitudes, he or she has high motivation to strengthen one attitude and minimize the other. Researchers in marketing began to question this assumption in the early 1990s (Zanna and Thompson, 1991; Cacioppo and Bernston, 1994;

Thompson and Zanna, 1995; Thompson et al., 1995). Instead, these researchers proposed that rather than only adopting one attitude, individuals are able to compare and evaluate several attitudes—even if the attitudes are contradictory—that could eventually lead the individual to some conclusion or behavior (Priester and Petty, 1996). Several studies have supported this assumption and have demonstrated that conflicting attitudes can coexist (Cacioppo et al., 1997; Larsen et al., 2001; Williams and Aaker, 2002).

Building on this assumption that conflicting attitudes can coexist, more recent work further proposed how opposing attitudes coexist in memory, and how this internal conflict could have effects on decision-making/behavioral outcomes (Petty et al., 2006). Petty et al. (2006) proposed a hybrid model of attitudes—explained within the context of an associative network model of memory—fusing the assumptions from the ambivalence tradition and those presented from psychology in Balance and Cognitive Dissonance Theories. They proposed the Past Attitudes are Still There (PAST) model, depicted in Figure 6. This model suggests that initially an individual feels a given level of trust toward a seller (For the example given in Figure 6, this initial level is considered positive). Thus, in the individual's memory, the node that represents trust is then connected to the node that represents the seller. The strength of this association, and therefore its future accessibility and recall, is determined by the cues that are perceived by the individual (Keller, 1987, 1993). For example, the association between the seller node and the trust node may be rather strong due to the individual having received the requested item, in the described condition, which meets some or all of the expectations of the individual regarding the transaction.

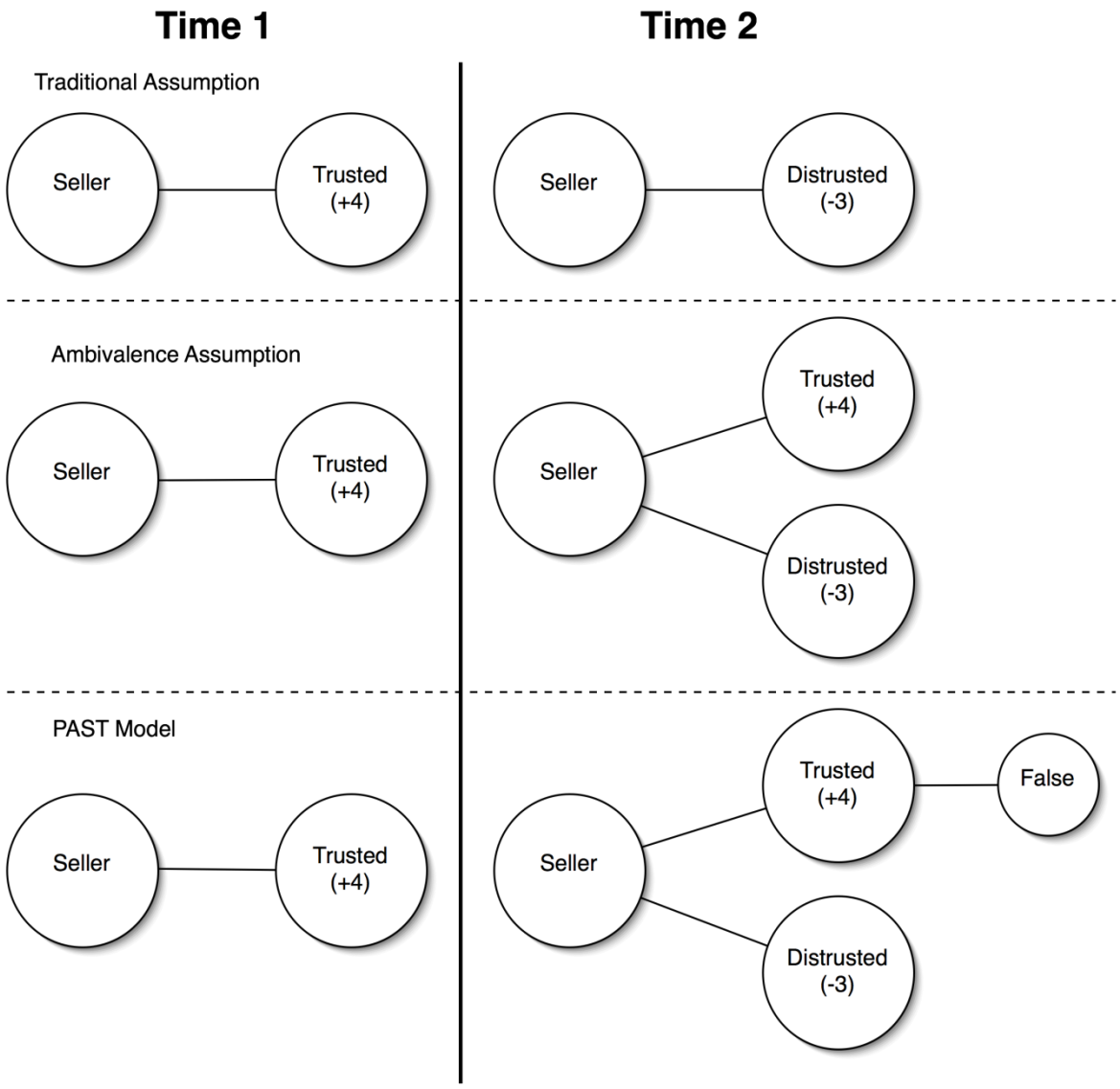


Figure 6. Comparison of Assumptions for Psychology, Ambivalence and PAST Models for Attitudes

Based on Cognitive Dissonance Theory, the "traditional assumption" (see the top row in Figure 6) posits that individuals cannot have conflicting attitudes. For example, an individual orders an item, and is happy after having received the item. However, shortly thereafter the item breaks and the seller is unwilling to allow for a return of the item or to provide any service for it. As a result, the buyer now feels distrust towards the seller at a later time, whereas previously the buyer felt trust toward the seller.

Research in social psychology first challenged the initial model, and proposed that in lieu of accommodating the initial association with trust, distrust is also associated with the seller in the second time period (shown in the second row of Figure 6, "ambivalence assumption," e.g., Kaplan, 1972). This assumption posits that the buyer can have conflicting attitudes associated with the seller in his or her memory (e.g., the buyer believes that the seller has the item and is willing to sell it, but does not believe that the seller is accurately describing the condition of the item). Thus, with two conflicting attitudes, ambivalence can then be mathematically derived from the measured effects of the two attitudes. Given a near equal strength between the conflicting attitudes, the strength of ambivalence would be quite high, and future behavior, as predicted by either of the attitudes, would be highly attenuated. As a result, it is unlikely that the buyer would purchase again from the seller due to the buyer's high level of ambivalence towards the seller.

Finally, the PAST model (depicted in the third row of Figure 6) proposes that although conflicting attitudes exist, even discarded attitudes would also be present and available for recall. Even though an individual has acquired information or decided that an attitude is no longer valid/true, the association in memory that the attitude is no longer valid has to also be recalled to discount the original attitude. However, the accessibility of the validity of the attitude (depicted as the false idea associated with the trusted attitude in Figure 6), called *negation*, is difficult and can sometimes fail to be recalled in connection with the corresponding attitude (Mayo et al., 2004).

Negation may fail for several reasons. First, the negation may have decayed in memory faster than the original attitude, or may have already decayed (e.g., sleeper effect, belief perseverance effect)—meaning that the association between the attitude and its validity is no

longer stored in memory. Second, the creation of an association between the discarded attitude and its negation increases the accessibility of the discarded attitude, due to the increased number of associations with the node (Keller, 1987; Nedungadi, 1990). Third, even if the negation existed and can be recalled, it may not be spontaneously recalled in connection with the discarded attitude. Thus, previous attitudes—conflicting or even discarded—can be recalled from memory and play a part of some evaluation that leads to an intention to behave.

Research on ambivalence focuses generally on how heightened levels of ambivalence attenuate the relationship between attitudes and behaviors and how ambivalence can be decreased. However, Jonas et al. (1997) proposed a unique model to explain how ambivalence could potentially increase the relationship between attitudes and ambivalence. They reason that dual attitude models naturally extend and combine with dual processing models of information—particularly the heuristic-systematic dual processing model (HSM) (Chaiken, 1980; Chaiken et al., 1989).

HSM is an information-processing model that posits that individuals have two general strategies to employ to acquire and evaluate information (systematic or heuristic). A fundamental assumption of HSM is that individuals attempt to minimize the expenditure of effort for information processing. The amount of information considered is dependent upon the motivation needed to not only process the information, but also to understand its implications and outcomes. This assumption leads to two basic principles that underlie HSM. First, the *least-effort principle* proposes that individuals are cognitive misers and will only expend energy as needed. This desire to avoid work is possibly due to the use of heuristics, which allow an individual to make decisions with minimal expenditures of effort (Chaiken, 1980). Heuristics allow the individual to

quickly evaluate information based on general rules, as long as these rules provide sufficient confidence as described next.

Second, the *sufficiency principle* proposes that every situation has a given threshold of certainty that an individual desires to have. The level of certainty varies by individual differences and motivational states. For example, an individual buying a car for his or her own personal use would have a higher sufficiency threshold for terms of overall car quality than for a purchase decision regarding a ream of paper. Thus, if higher confidence is desired from the processed information, the sufficiency threshold will rise, which will alter the motivational state. Additionally, as both the motivation and sufficiency requirements rise, it is unlikely that given heuristics will be able to provide enough confidence to meet or exceed the desired certainty threshold. It is therefore likely that the individual will engage in systematic processing (Bohner et al., 1995)—the active cognitive elaboration of the given information available.

Jonas et al. (1997) proposed that ambivalence demonstrates little confidence in one's attitudes. It is then possible that this lessening of confidence is below the sufficiency level desired by the individual for the given situation. As a result, an individual would likely engage in systematic processing in an attempt to increase the confidence level regarding the processed information. As an individual performs a more thorough and effortful elaboration of the information, the relationships among attitudes, intentions and behaviors are likely to be more consistent.

The differences between systematic and heuristic approaches to information processing, and their effects on the attitude-behavior relationship are summarized in Table 2.

Table 2. Summary of the Heuristic-Systematic Dual Processing Model

Detail	Systematic	Heuristic

Defined	The active and effortful elaboration of all given information	The passive and elementary evaluation of information based on rules called heuristics
Cognitive effort level	Higher	Lower
Sufficiency level	Lower	Higher
Effect of ambivalence on attitude-behavior	Increased	Decreased

Building on this ambivalence literature and applying it to the domain of this thesis, trust and distrust can be conceptualized as related, conflicting positive and negative attitudes. As related attitudes, it is possible for an individual to hold both of these conflicting attitudes at the same time, which may result in ambivalence if the individual has neither strong feelings of trust nor distrust, or relatively equal levels of trust and distrust towards the attitude object. The majority of ambivalence research provides evidence that ambivalence attenuates the relationship between attitudes and behavior; however, some theorists propose that ambivalence may actually increase the connection between attitudes and future behavior (Jonas et al., 1997). For example, a buyer who feels both distrust and trust towards the seller, and thus ambivalence, will more likely to engage in systematic processing. Systematic processing is more likely to be used because the individual will have increased motivation to process the information and arrive at a solution. Thus, cues regarding trust or distrust towards the seller will be more closely scrutinized in an attempt to arrive at a solution. With a more thorough analysis, any intention that the buyer has towards the seller will be based more on information processing and more likely to occur than an

individual with lower or no ambivalence towards the seller. Thus, ambivalence may increase the relationship between intentions and behaviors.

2.3.1 Suspicion

Even though trust has been investigated within IS for some period of time, the majority of the literature has focused on the trust-building process, with only some exceptions (Szulanski et al., 2004) that are outside of distrust research. Compared to distrust, the general understanding of trust and its nomological network is much better known. As has already been stated, with the majority of IS research on distrust focusing on the disposition to distrust, it is critical to extend the nomological network of distrust further to explore its primary antecedents and thereby understand how distrust is engendered. Few studies have gone in this direction; this section briefly summarizes how this study extends beyond these previous studies (Ou, 2006; Komiak and Benbasat, 2008; Schul et al., 2008).

This present work extends beyond the current literature and particularly the studies by Komiak & Benbasat (2008) and Ou (2006) in the following ways: Komiak & Benbasat (2008) focused on the difference between trust and distrust building processes. This paper builds on that work by demonstrating that trust and distrust have both different and shared antecedents. Unlike Komiak and Benbasat, this study uses a variance model to test its hypotheses, because the focus is on the antecedents and their relative strengths on both trust and distrust. Further, this study explores the interaction of trust and distrust as positive and negative attitudes and the effect that the felt ambivalence may have on buying and Web site behavioral intentions.

Ou (2006) was focused on dividing given Web site features into two general categories: hygienic and motivating. *Hygienic items* are basic items that are required or expected by Web

site users, and as such, if such features or functionalities are missing or erratic, distrust would be created. *Motivating items* are those that increase the functionality or increase the ability of the Web site user to enjoy or utilize the Web site, and as such, engender more trust. However, rather than focusing on actual features, this study deals with user perceptions of features. Because it would be difficult for a Web site user or designer to measure and assess the perceptions of all its users, the current study extends the study by Ou (2006) by explaining why given features or functionalities should alter the level of trust or distrust. This study provides a theoretical antecedent chain to explain suspicion, the predicted main antecedent of distrust (Deutsch, 1958, 1960; Luhmann, 1979; Kramer, 1999). Further, building on findings in communications, this paper explores several potentially important antecedent conditions of suspicion.

Schul et al. (2008) reported two experiments wherein subjects were instructed to identify whether answers to given questions were from imposters or from verifiable sources. They proposed that when subjects were told that informants may or may not be imposters, subjects were on guard for deception and thus were able to alter their behaviors and avoid behaving in routine fashions. Thus, distrust stimulated subjects to behave differently due to perceived abnormalities in the environment. This study extends Schul's study in several ways. First, environmental abnormalities are more thoroughly conceptualized and manipulated. Instead of merely informing subjects that deception is present, subjects will be exposed to abnormalities in various aspects of the buying process. Second, Schul et al. (2008) assumed that subjects would be on guard or vigilant of available information, whereas this study proposes and measures the level of suspicion which is often associated with the level of vigilance. Third, rather than focusing on the routineness of behaviors, this study focuses on the differences in behavioral intentions towards the Web site vendor.

Suspicion, for this study, is said to occur when an individual actively entertains multiple, rival hypotheses regarding the intentions of another's behavior that prevents the individual from adopting a positive or negative attitude towards the object at that current time (Kramer, 1999). Although many definitions exist for suspicion, several are linked to concepts of distrust (Deutsch, 1958, 1960; Gurtman et al., 1982), and others are tied to experimental manipulations (Levine and McCornack, 1991; Buller and Burgoon, 1996) rather than the theoretical construct of suspicion. Both state and trait suspicions exist (McCornack and Levine, 1990; Levine and McCornack, 1991; Moreno et al., 1993); however, the trait aspect of suspicion—as defined in those papers—is akin to suspicion of humanity, which is the subconstruct measure used for the disposition to distrust. Thus, when suspicion is used in this paper it refers to state suspicion, or the suspicion that an individual feels in a given, specific situation.

Individuals who are suspicious of others actively consider multiple hypotheses due to a lack of sufficient evidence or proof that would allow them to achieve the sufficiency threshold that would allow them to be certain and thus hold to their beliefs (Hilton et al., 1993; Buller and Burgoon, 1996). A suspicious individual lacks certainty of a desired attitude among competing attitudes without enough evidence to warrant one attitude to hold precedence over the others. This lack of dominance of one attitude causes an increased motivation to acquire more information or to more thoroughly process information to arrive at a conclusion (Hilton et al., 1993). This increased motivation to acquire information causes individuals to become more vigilant (i.e., suspicious of available information). This resulting lack of knowledge, evidence or certainty should cause the individual to be reluctant to draw inferences regarding his or her intention to distrust or trust a given seller (Hilton et al., 1993). As certainty is increased, or

knowledge acquired, the individual's suspicion in this context changes to either trusting beliefs or distrusting beliefs (Buller and Burgoon, 1996).

Although trusters who are suspicious of other individuals would neither be trusting nor distrusting, several tendencies accompany suspicion: Suspicious individuals are more likely to overestimate the likelihood of ulterior motives, rather than what can be easily inferred from behavior, as demonstrated by the correspondence bias (Hilton and Fein, 1993). Typically, an individual under the influence of the correspondence bias would assume that the behavior of the individual represents the intention motivating the behavior. However, suspicious individuals are aware of information regarding potential ulterior motives in a scenario and do not have or do not wish to devote enough cognitive resources to correct or evaluate these rival hypotheses regarding the ulterior motives of the other person. Although suspicion-oriented individuals have the same information as those who display the correspondence bias, the inability to ascertain the certainty of the information towards one specific attitude relegates the individual to remain suspicious and non-committal to any particular attitude over another regarding the attitude object (e.g., seller, Web site).

Another important consideration with regard to suspicion is the relative weights assigned to the conflicting attitudes, despite evidence to the contrary. Previous research in risk and risk taking shows a general tendency of individuals to shy away from risky behavior (Kahneman and Tversky, 1979; Epley and Huff, 1998). Even if more relevant and/or specific evidence supports a positive outcome, for most individuals the desire to avoid a negative outcome is stronger than the desire for a potentially positive outcome. Therefore, it is likely that negative attitudes will have greater weights attached to them and be of more importance compared to positive attitudes.

Several studies have predicted when suspicion is most likely to occur, and have developed manipulations to induce state suspicion in subjects. Based on previous trust, distrust and suspicion literatures, Kramer (1999) categorized four sources of suspicion: First, one reason for suspicion is based on the possibility that an individual is being deceived by another. If individuals perceive that others have hidden motives or intentions that are being hidden, then it is likely that they would become suspicious (Buller and Burgoon, 1996).

Second, suspicion is engendered if a situation appears to be more complex than the visible behaviors and communications of the individuals involved. If individuals perceive that others have reason to deceive and obfuscate hidden motives—desires or agendas that are contrary to their well-being—it is likely that suspicion would be engendered. As individuals become suspicious, it is likely that they would begin a mindful, relatively active processing of information that may help to determine the motives that influence the behavior of others.

Third, contextual factors may also precede suspicion. Specifically, presenting information that caused an individual to perceive that the situation was not normal could engender suspicion. This absence from normality could be cause for an individual to become suspicious of others as motives behind behaviors were not commonly known or understood and with a lack of information available to the individual to understand the context; it is difficult to discount rival hypotheses (Hilton et al., 1993; Buller and Burgoon, 1996; Epley and Huff, 1998; Schul et al., 2004).

Fourth, social categorizations, or stereotypes, also serve as cues to increase an individual's likelihood of becoming suspicious. Due to expectations that are anchored to a stereotype, individuals become more prone to evaluate surface and ulterior motives that may or may not be available to the person being stereotyped (Hilton et al., 1993).

Evaluating these general categories, suspicion is usually exhibited through two common themes: First, individuals experiencing suspicion know that they lack information related to other people (Hilton et al., 1993). They may not know the other people well enough or they may not understand the context completely, etc. Second, individuals experiencing suspicion, lacking information, are unable to successfully attribute the behavior of other people to either internal or external causes in the given situation (Kelley, 1973). The inability to attribute the behavior of other people to either a trusting or distrusting concept reduces the ability of individuals experiencing suspicion to discount hypotheses regarding the trusting or distrusting nature of the other person. Therefore, they must evaluate all possible information to provide some level of certainty regarding the other people, until enough certainty can be achieved to discount rival hypothesis and firmly accept one of the relevant attitudes (i.e., trust or distrust in this study).

3.0 MODEL DEVELOPMENT

This study seeks to explore how abnormal situations engender increased suspicion among online buyers and how increased suspicion affects the level of trust and distrust felt toward online merchants. Through increased suspicion, buyers have increased beliefs and feelings of distrust that may be focused on various aspects of the buyer-seller relationship. Building on the trust framework of Mayer et al. (1995) and McKnight et al. (1998; 2002), this study proposes that components, or dimensions of trust may be evaluated negatively and thus result in distrust for each particular dimension. Therefore, net trusting beliefs represent the net balance of the trusting and distrusting beliefs held by the buyer regarding specific aspects of the seller. Subsequently, if the buyer concurrently holds opposing valences, attitudinal ambivalence may be created, which may weaken the relationship between net trusting beliefs and trusting intentions. The proposed model is depicted in Figure 7.

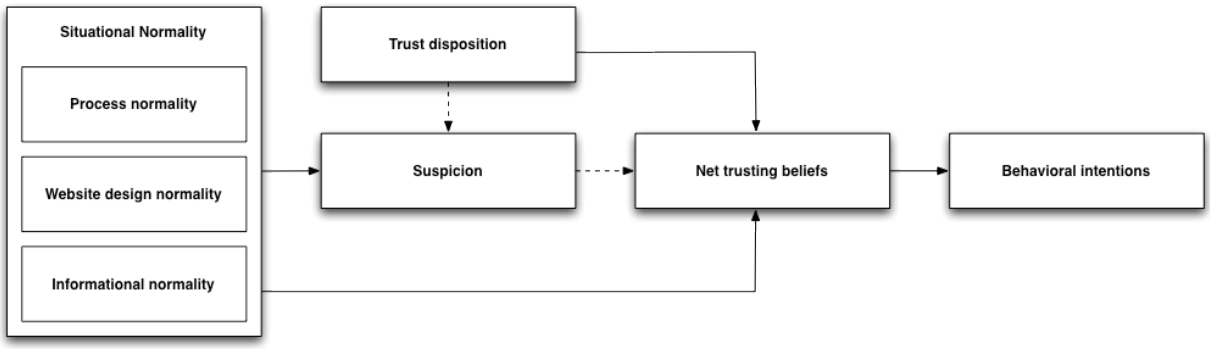


Figure 7. General Research Model

This section first explains the proposed model of trust and distrust. Next, the novel predicted antecedents of distrust (suspicion and situational normality) are explained and predicted. Third, the relationships between trust, distrust and net trusting beliefs and behavioral intentions are explained and predicted.

3.1 MODEL OF TRUST AND DISTRUST

Even though several studies have adopted a unidimensional (Worchel, 1979; Rotter, 1980; Lewicki and Bunker, 1995) or bidimensional (Lewicki et al., 1998; McKnight et al., 2004; 2006; Dimoka, 2010) view of trust and distrust, no one model of trust has been generally accepted in the various disciplines that study trust and distrust (Lewicki et al., 2006). Building on this opportunity, this research proposes a hybrid model of trust and distrust that synthesizes both of the views into one model. This model integrates the foundations of the unidimensional and bidimensional views of trust and distrust, and then builds upon attitude and ambivalence research (Kaplan, 1972) to explain how each of the three general subconstructs of trust are unidimensional constructs that consist of positive and negative components. Distrust is

engendered whenever at least one of the subconstructs is perceived to be negative by an individual. Likewise, trust is engendered whenever at least one of the three subconstructs is perceived to be positive. Subsequently, net trusting beliefs are formed from the three subconstructs. As each subconstruct may be either positive or negative, it is possible that ambivalence is engendered between subconstructs with differing valences.

This section begins by explaining the limitations of both approaches, then the assumptions and additions of the new hybrid model are explained, as depicted in Figure 8.

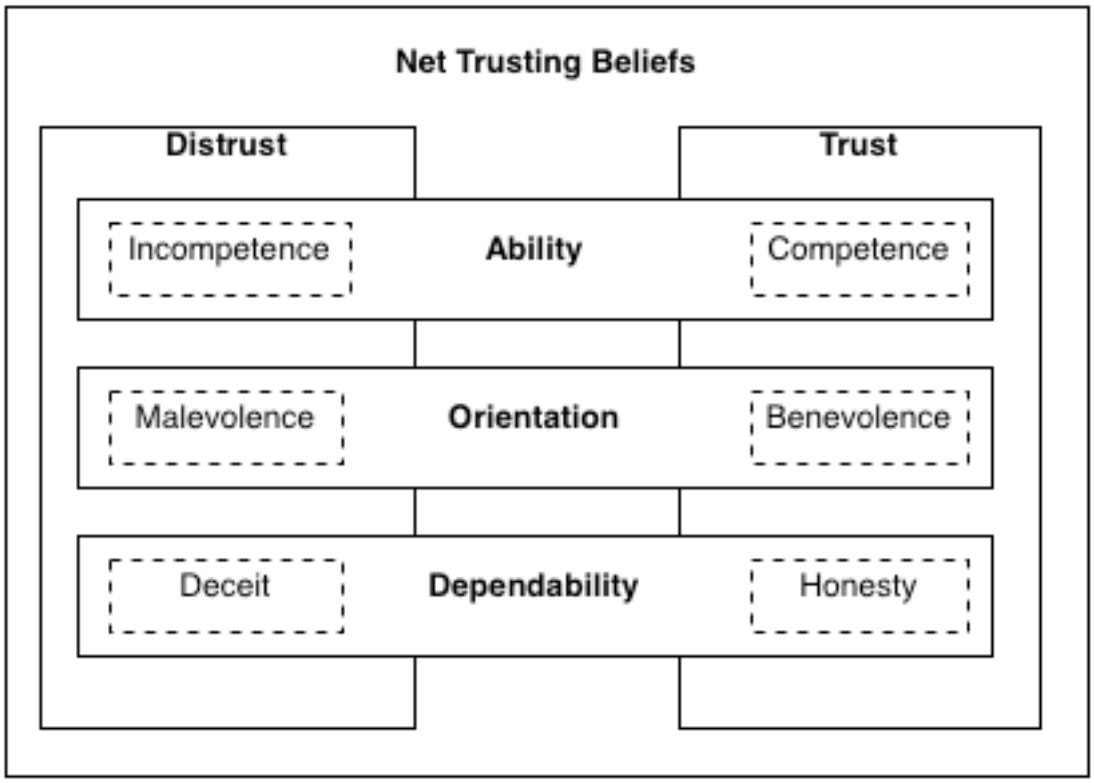


Figure 8. Hybrid Model of Trust and Distrust

3.1.1 Shortcomings of Unidimensional Models of Trust

Unidimensional approaches to models of trust and distrust have several troublesome research shortcomings. First, the basic premise of these models is that trust and distrust cannot coexist and

that an individual will only be utilizing one of these as a social simplification mechanism (Deutsch, 1958; 1960; Rotter, 1980). Further, more recent models of trust have simply built on these assumptions and have not actively considered the influence of distrust on trust (e.g., McKnight et al., 1998; 2002; Gefen and Straub, 2004; Pavlou and Fygenson, 2006). Further, recent work on trust and distrust has found evidence that both coexist (e.g., Komiak and Benbasat, 2008; Dimoka, 2010), thus eroding the underlying premise of these models.

Second, the overemphasis on trust by these models undervalues the possibility that distrust—as a negative valence construct—may have a stronger influence on behavioral intentions and subsequent behaviors than trust (Kaplan, 1972; Kahnemen and Tversky, 1979). Previous work has shown that a negative valence (e.g., risk, negative affect, word of mouth, etc.) has a stronger influence on individual attitudes and beliefs than the related positive valence (Kahneman and Tversky, 1979; Richins, 1983; Kramer, 1999; Laczniak et al., 2001). Thus, although these models have been quite common, they miss the predictive power that the negative valence construct distrust may have on intentions (McKnight et al., 2003).

Third, the unidimensional models assume that the trust between a buyer and seller will generalize across the whole relationship. Namely, these models are built upon the assumption that if a truster has trust toward a trustee, the truster will behave positively toward the trustee across all possible behaviors. However, many studies on trust have found and identified various facets of trust that defy such generalization (see Mayer et al., 1995). For example, a truster may trust a trustee's competence to perform a desired behavior, but may simultaneously doubt whether the trustee actually desires to behave in an altruistic manner. As relationships are complex and involve various aspects, it is important to understand that the truster and trustee can interact in many ways. As Lewicki et al. (2006) state, it is not a matter that one trusts another in

all regards, but that he or she will trust the other to do specific behaviors. Hence, unidimensional models are unable to account for more complex and realistic relationships that exist in reality, and instead oversimplify the general trust that exists in a relationship.

Finally, unidimensional models do not account for intra-aspect conflict (i.e., when differing subconstructs have opposing valences; see section or 2.3 or Kaplan, 1972) within the dimensions of trust. If a buyer believes that a seller is dependable and competent, but has a negative orientation towards the buyer, this would create moderately high trust levels that may result in subsequently moderately high intentions to purchase from the seller. However, given the negative orientation of the seller towards the buyer, there is a possibility for some level of distrust on the part of the buyer, and due to the presence of both trust and distrust, ambivalence may be engendered. As these models posit that low levels of trust have relatively little impact on intentions and behaviors, the predictions of such a scenario make little sense in an actual buying scenario. Rather, it would make more sense to compare the relative magnitudes of the given trust aspects, and the reliabilities of these ratings, and how these weighted magnitudes influence the overall decision to trust or to distrust. Further, by supposing that low trust is in fact distrust, these models ignore the possibility that distrust may have a more powerful effect on intentions than trust.

The limitations of the unidimensional models of trust and distrust are summarized in Table 3.

Table 3. Summary of Limitations of the Unidimensional Models of Trust and Distrust

#	Model Limitation	Explanation	Example	Refutation	Source
1	Trust and distrust cannot coexist	Basic assumption behind the model is that trust is a continuum	Deustch, 1958; 1960 Rotter, 1980	Empirical studies have found that a truster is	Komiak and Benbasat, 2008

		with high trust on one end and high distrust on the other end. A trustee may thus only feel trust or distrust.		able to feel both trust and distrust towards the same trustee	Dimoka, 2010
2	Focus on trust at the expense of distrust	Model deals with the creation of trust and avoidance of distrust. Emphasis is given to trust at the expense of distrust. This emphasis creates an assumption that the positive effect size of trust is equal to or greater than the effect size of distrust	McKnight et al., 1998; 2002	Research on negative valence attitudes has found that their effect sizes are greater than those of positive valence attitudes. Thus, emphasis between trust and distrust should be focused on distrust as the potentially more influential attitude	Kaplan, 1972 Kahneman and Tversky, 1979 Richins, 1983 Kramer, 1999 Laczniak et al., 2001 McKnight et al., 2003
3	Generalized trust	Model treats trust as a general trust that one has with another that holds for all aspects of the relationship	Morgan and Hunt, 1994 McAllister, 1995 Hosmer, 1995 Doney and Cannon, 1997 Jarvenpaa and Tracinsky, 1999 Williams, 2001 Ba and Pavlou, 2002 Stewart, 2003 Gefen et al., 2003	Research on trust has proposed and found that trust is multi-dimensional. Further, it is not about trusting a trustee in all situations, but trust is between two individuals regarding a specific behavior	Mayer et al., 1995 McKnight et al., 1998; 2002 Lewicki et al., 2006
4	Conflicts between trust and distrust	As trust is proposed to not coexist with distrust, unidimensional models are unable to predict what outcomes would result when both trust and distrust are present in a relationship	Deustch, 1958; 1960 Rotter, 1980	Ambivalence literature shows that coexistence of attitudes with opposite may result in ambivalence	Kaplan, 1972 Priester et al., 1996

3.1.2 Shortcomings of Bidimensional Models of Trust

Several researchers identified the limitations of the unidimensional models of trust and distrust and proposed that these approaches to trust be modified to either include distrust in a more prominent role (McKnight et al., 2001), or to consider that both trust and distrust can coexist (Lewicki et al., 1998; Kramer, 1999). As several more researchers began to consider the notion that trust and distrust could coexist, more bidimensional models of trust and distrust were created and empirically supported (McKnight et al., 2003; 2004; 2006; Lewicki et al., 2003; Schul et al., 2004; 2008; Wiethoff and Lewicki, 2005; Komiak and Benbasat, 2008; Dimoka, 2010). Generally, these models provided support that trust and distrust coexist and supported a multi-dimensional view of trust and distrust that was lacking in many unidimensional models. Thus, most of the issues summarized in Table 3 were overcome by the new bidimensional models of trust and distrust, excluding the concept of ambivalence, which was not taken into account by bidimensional models of trust and distrust.

Although bidimensional models of trust and distrust overcome many of the shortcomings of the unidimensional approaches and thus advanced the literature regarding trust and distrust, they still have several limitations that the current study attempts to address. First, although these models were developed from attitudinal research highlighting that constructs of positive and negative valence often coexist and should be modeled as independent constructs (Kaplan, 1972; Kahneman and Tversky, 1979), later attitudinal work has largely been ignored—specifically in the area of ambivalence. The initial theorist in this area proposed the separation of positive and negative affect mainly for the purpose of showing how ambivalence can be created (Kaplan, 1972). However, bidimensional models of trust—although modeling positive valence trust and negative valence trust—make no predictions about how the concurrent existence of both

constructs may engender ambivalence by the individual. Instead, these models mainly highlight that distrust is distinct and may have a more powerful effect on behavioral intentions than trust. Although this approach to distrust and trust allows for better predictions of individual behavior when compared to the unidimensional model, this approach undermines predictability because it does not factor in common, ambivalent outcomes caused by the concurrent coexistence of the two constructs. Given that ambivalence may be present whenever a positive and negative attitude exists in a relationship, considering the effects of ambivalence on intentions and behavior could further enhance the predictive power of the bidimensional models.

Second, the adoption of a bidimensional model of trust and distrust from attitude research necessitates that the constructs of trust and distrust should comprise positive and negative beliefs (Cacioppo and Berntson, 1994). Building on the review of trust by Mayer et al. (1995), most IS trust research conceptualizes a multi-dimensional view of trust (McKnight et al., 1998; 2002; Gefen and Straub, 2003; 2004; Pavlou and Fygenson 2006), and this multi-dimensional view of trust has likewise been applied towards distrust (McKnight et al., 2004; 2006). However, in adopting the separate dimension of distrust, these models have adopted dimensions of trust with their own separable positive and negative valence in the same fashion as trust and distrust. This approach is not supported in attitudinal research, which focuses on the overall negative and positive attitudes that may coexist, each of which is comprised of negative and positive beliefs respectively (Triandis, 1977; Kaplan, 1972; Cacioppo and Berntson, 1994; Petty et al., 2006). Thus, although a general negative attitude and positive attitude can coexist, the models from attitudinal and ambivalence literature do not propose that an individual concurrently believes and disbelieves the same thing. For example, the buyer cannot both disbelieve and believe that the seller shipped the item on the date as indicated in a status update message. However, the buyer

may trust the message given the perceived integrity of the seller, and may likewise distrust the message given that the item has not yet arrived even though it was shipped one month ago. Attitudes towards the seller that are constructed from various beliefs and the processing of these beliefs are able to coexist even when they may contradict; however, individual beliefs often displace previously held beliefs once they have been modified in memory (Keller, 1993). Thus, the general approach of measuring the competence and the incompetence of the seller by reversed questions is based on a potentially faulty assumption that the held beliefs of the individual may be contradictory and coexisting—just like attitudes—even though this contradicts some of the generally accepted findings in studies of attitudes (Kaplan, 1972; Cacioppo and Berntson, 1994) and, more broadly, social psychology (Heider, 1946; Festinger, 1957).

Bidimensional models of trust have improved upon the measurement of trust and distrust and increased the ability of researchers to ascertain behavioral intentions and behaviors when compared to unidimensional models (Dimoka, 2010). However, they do not account for the engenderment of ambivalence due to the coexistence of trust and distrust. Further, these models overextend the bidimensional view from attitude and ambivalence research by proposing that positive and negative beliefs can coexist within one concrete, definable subconstruct that forms the attitude. The limitations of the bidimensional models of trust and distrust are summarized in Table 4.

Table 4. Summary of Limitations of the Bidimensional Models of Trust and DIstrust

#	Model Limitation	Explanation	Example	Refutation	Source
1	Conflicts between trust and distrust	Although trust and distrust are proposed to exist, current models do not explain or predict the potential effect of ambivalence	Lewicki et al., 1998; 2006 McKnight et al., 2004; 2006	Ambivalence literature shows that coexistence of attitudes of opposite valences may result in	Kaplan, 1972 Priester et al., 1996

			Komiak and Benbasat, 2008 Dimoka, 2010	ambivalence	
2	Conflicts within the same subconstruct	Models propose and measure the concurrent positive and negative attitude towards the trustee on the same dimension. In other words, the truster simultaneously holds both a positive and a negative valence belief of the same subconstruct	McKnight et al., 2004; 2006	Recent empirical work on trust and distrust has found that although trust and distrust coexist, there is no evidence that they coexist within the same subconstruct. This is further proposed and described as a basic underlying feature of bidimensional models in the attitude and ambivalence literature	Kaplan, 1972 Cacioppo and Berntson, 1994 Komiak and Benbasat, 2008 Dimoka, 2010

3.1.3 Explaining the Revised Model of Trust and Distrust

As depicted in Figure 8, the model of trust and distrust for this study adopts views and assumptions from both general approaches and further expands upon the model by incorporating concepts and theory from attitudinal and ambivalence research. First, both trust and distrust beliefs are modeled to include several dimensions: ability, orientation and dependability. These dimensions are based on the general trust areas identified by Mayer et al. (1995). *Ability* refers to the notion that the seller has the necessary competence to complete a given task. *Orientation* refers to the idea that the seller is positively or negatively disposed towards the buyer. Finally, *dependability* refers to the notion that the buyer expects the seller to adhere to a set of principles

or guidelines. Thus, net trust is a multi-dimensional construct, with each dimension representing a distinct continuum for that dimension only. Each of these components may result in either a positive or a negative instantiation on that continuum. These continua are then used to form the multi-dimensional net trust construct (The actual measurement of this construct is discussed in more detail in the Analysis section).

As indicated by the model, and as discussed as a limitation of the bidimensional approach to trust and distrust, each aspect can only be instantiated once and will be either positive or negative, but not both. Further, this model allows for the inclusion of other beliefs quite easily. Thus, although only general competence/incompetence, benevolence/malevolence, and integrity/deceit are considered here, future research could further decompose each of these into even more specific aspects of the buyer seller relationship and explore how those aspects of the relationship ultimately impact the behavioral intentions of buyers. For example, future research could examine how the communication competences of the seller affect buyer behaviors in an online marketplace. Relevant competences may include how the seller describes product-related information on a Web page, how the seller responds to direct questions from a buyer, and in what manner a seller communicates with the buyer after a purchase. Research would need to determine the specific competences here rather than rely upon a general impression of the seller's competence. By focusing on specific competences, the more general competence could then be formed as a second-order formative construct of these more specific competences.

Second, building on models from both approaches, the model proposes that trust and distrust are composed of three general components that relate to the ability, orientation and dependability of the seller (Mayer et al., 1995; McKnight et al., 1998; Lewicki et al., 1998; McAllister et al., 2000; McKnight et al., 2004). Trust is composed of the positive instantiations

of these aspects (i.e., competence, benevolence, and integrity, respectively), while distrust is composed of the negative instantiations (i.e., incompetence, malevolence, and deceit, respectively).

Third, building on the bidimensional model of trust, the model proposes that trust and distrust can coexist within the truster-trustee relationship (Lewicki et al., 1998; 2006; McKnight et al., 2004). As described elsewhere in this paper, many studies have found empirical support that both positive and negative valence factors have been found and related to the felt trust or distrust for one individual towards another (e.g., Komiak and Benbasat, 2008; Dimoka, 2010).

Fourth, building on the unidimensional approach, the model proposes that although trust and distrust can coexist, only one instantiation (e.g., benevolence or ability) can exist for each specific aspect. The truster will feel only feel distrust or trust on any component at a point in time, independent of other components. For example, an online buyer can believe that the seller is incompetent, and thus should not be trusted. While the buyer cannot also feel that the seller is competent at the same time, the buyer may feel trust towards the seller in regard to other components of trust (i.e., benevolence or integrity). The buyer could believe that the seller is incompetent, but the buyer could also feel that the seller will be honest during the buying process and has the buyer's good will in mind. Thus, a truster can only have a negative or a positive belief for each particular component within the model, although contradictory beliefs can exist within a dimension of trust. Given the complex trusting relationship between the buyer and seller, multiple aspects of this relationship could be added to this model (e.g., predictability, previous experience); however, this study only adopts the general trust components that have been proposed and validated in previous literature (i.e., ability, dependability and orientation).

Finally, this model is the first to fully support the construct of ambivalence, which can be engendered in two main ways: intracomponent ambivalence and intercomponent ambivalence. *Intracomponent ambivalence* refers to the idea that the individual has conflicting evidence regarding one belief that is used to generate an attitude (Kaplan, 1972). In the context of this paper, intracomponent ambivalence would be engendered if an individual were to experience both positive and negative aspects of the same belief (e.g., ability). For example, if a customer doubts the ability of the firm to pack the item carefully, but does not doubt that the item would ship immediately or go to the correct address, then this situation could result in ambivalence in the competence dimension. This conflicting instantiation—both positive for competence and negative for incompetence—may then cause the individual to become ambivalent about the perceived ability of the seller.

Likewise, *intercomponent ambivalence* in this paper refers to the possibility of opposing valenced subconstructs within the makeup of net trust (Kaplan, 1972). In other words, the truster experiences one or more subconstructs positively, while also experiencing one or more other subconstructs negatively. These oppositely valenced subconstructs increase the possibility that intercomponent ambivalence will be engendered. For example, a buyer could have a positive perception of competence within ability and conflicting negative perceptions within the orientation and dependability components (i.e., malevolence and deceit). The coexistence of conflicting separate dimensions is a situation where ambivalence can be engendered due to conflicts between disparate components.

Although intercomponent and intracomponent ambivalence are both potentially important in decision-making, they do not always result in the customer's perception of ambivalence. For instance, if the customer has read reviews and found a small number of users praising the firm

for fast shipping, and also a small number of users complaining of overcharging, she might have such slight ambivalence that it is not part of her decision-making process. Perceived ambivalence becomes more likely as the levels of each type of ambivalence increase. If there are several mentions of fast shipping from happy customers, she might find the vendor quite attractive, but at the same time, the existence of several complaints of overcharging will create strong feelings of ambivalence. Interestingly, individuals may choose to avoid ambivalence by rationalizing, discarding, or avoiding the opportunity to read conflicting beliefs as explained by cognitive dissonance theory (Festinger, 1957).

Building on previous models of trust and distrust (McKnight et al., 19981; 2001; 2002; 2003; 2004; Ou, 2006; Benamati, et al., 2006), the model likewise proposes that the trust instantiations (benevolence, competence, and integrity) will positively predict trust, and likewise for the relationship between distrust instantiations (deceit, incompetence, and malevolence will predict distrust). Specifically, and in line with previous models of trust and distrust, the model posits the following propositions:

P1: Trusting beliefs will be positively related to assessments of benevolence, competence and integrity.

P2: Distrusting beliefs will be positively related to assessments of deceit, incompetence and malevolence.

P3: Net trusting beliefs will be positively related to trusting beliefs.

P4: Net trusting beliefs will be negatively related to distrusting beliefs.

3.2 ANTECEDENTS OF DISTRUSTING BELIEFS

Much of the research on distrust has focused on understanding the disposition to distrust and how it predicts distrusting beliefs and various types of intentions. However, this study extends the distrust nomological network by considering novel antecedents that are predicted to increase distrusting beliefs. The two novel antecedents considered in this study are situational abnormality and suspicion—discussed as follows:

3.2.1 Situational Abnormality

Situational abnormality refers to environments that are defined by dominant rules and social norms that serve as general expectations for a truster in determining what to expect within the truster-trustee relationship (Schul et al., 2008). In other words, a truster perceives abnormal situations whenever the situation appears to be out of the norm, or unexpected things occur. In abnormal environments, individuals sense that in the given setting, things or individuals may not be as they appear (Schul et al., 2008). Because a given setting is perceived to be abnormal and thus somewhat novel, an individual does not have prior experience, knowledge or feelings to draw upon to guide attitudes or behaviors (Fein et al., 1990; Hilton et al., 1993; Fein et al., 1997). Thus, in abnormal situations, individuals must resort to non-routine information processing to understand the situation as routine behaviors and attitudes are not available in novel situations (Schul et al., 2008).

As individuals seek to understand the abnormal environment, they seek to understand the motivations behind available information (Kelley, 1973; Kelley and Michela, 1980). This search for underlying motives often results in assuming that others' underlying motives are negative and

may not result in positive outcomes for the individual (Kelley and Michela, 1980; Fein et al., 1990; Fein et al., 1997; Schul et al., 1996). In an attempt to understand the environment and unknown motives, individuals engage in discriminative encoding. *Discriminative encoding* refers to information processing where information is delayed during the encoding process while the individual promotes the construction of alternative scenarios, motivations, or interpretations called counter scenarios (Schul et al., 1996). *Counter scenarios* refer to scenarios that the truster creates in his or her mind in an attempt to understand what motivates the behaviors of others; including their having hidden motives that could result in negative outcomes for the truster (Schul et al., 1996). By considering the negative scenarios that may occur, the truster utilizes distrust to deduce the behavior of others, based on his or her perceptions of the trustee's distrustworthiness (Schul et al., 2004; 2008).

Previous studies have found that abnormal situations are likely to lead individuals to distrust others in the same environment (Fein et al., 1990; Hilton et al., 1993; Schul et al., 1996; Fein et al. 1997; Schul et al., 2004; 2008). Therefore, it is proposed that situational abnormalities will be positively related to distrust.

Generally speaking, abnormalities in the truster-trustee relationship may signal that the trustee lacks the competence to perform a desired behavior, as the relationship or context does not appear similar to other relationships or contexts. This deviance from other normal relationships or contexts violates the expectations for a capable trustee and may result in negative affect towards the trustee (Buller and Burgoon, 1996)[1]. Likewise, abnormalities may also signal

[1] Likewise, positive violations can also occur (Burgoon and Hale, 1988), which could likewise result in more favorable attitudes towards the trustee. The predicted model is able to capture these positive violations, however, the manipulations and abnormalities used in the study are all in a negative direction, and thus this remains outside the context of this paper.

that the trustee has motives or intentions that may be dishonest or result in negative outcomes for the truster.

As previously explained, abnormalities can cause the truster to expect negative characteristics for the trustee (Buller and Burgoon, 1996; Burgoon and Hale, 1988). These negative expectations regarding the characteristics of the trustee, will lead the truster to form negative attitudes towards the trustee (Burgoon and Hale, 1988). These negative attitudes will likely result in perceptions of distrust towards the trustee (Lewicki et al., 1996; Kramer, 1999). This leads to the following proposition:

P5: Situational abnormality will be positively related to distrusting beliefs; and therefore, negatively related to trusting beliefs.

With suspicion being predicted as the main antecedent of distrusting beliefs, it is equally important to understand how and when suspicion is more likely to be invoked in a given truster-trustee relationship. Most of the literature on suspicion asserts that suspicion is most likely to occur when something in the situation is different than expected, or in other words abnormal (Gurtman and Lion, 1982; Tomlinson and Lewicki, 2006; Vlaar et al., 2007). When trusters encounter something that is different than expected or outside the norm, they are more likely to become more vigilant and aware of the environment and actors in the given circumstance (Gurtman and Lion, 1982).

If the abnormality provides cues or signals that the trustee may have ulterior or hidden motives beyond what is readily apparent, the truster will likely become suspicious. Trusters should also become suspicious when only few abnormalities are perceived by the truster due to the increased likelihood of receiving positive signals alongside the negative/abnormal signals regarding the characteristics and intentions of the trustee. The presence of both positive signals

about aspects of the trustee and negative signals inferred from the abnormalities provide some information to the truster, but potentially not enough to initially convince the truster to either trust or distrust, thereby also increasing the level of suspicion (Gurtman et al., 1982). Thus, suspicion would be engendered, which would then increase the vigilance of the buyer and result in more thorough information processing, which is more likely to produce distrust (described later).

Research in communications and management has proposed that abnormalities in the environment lead to suspicion, which then leads to distrust. (Gurtman et al., 1982; Fein et al., 1990; Hilton et al., 1993; Schul et al., 2004; 2008). However, these research streams have not focused on this relationship, but simply proposed its existence. This leads to the following proposition:

P6: Situational abnormality will be positively related to suspicion.

3.2.2 Suspicion

Suspicion has long been cited as the leading construct or idea behind distrust (Deutsch, 1958; 1960; Luhmann, 1979; Gurtman and Lion, 1982; Hilton et al., 1993; Kramer, 1994, 1999; Schul et al., 2008). Although previous theories and conceptualizations of distrust have proposed this relationship (e.g., Hilton et al., 1993; Schul et al., 2008), there has yet to be empirical work that demonstrates this relationship. Further, while work in the field of communications has developed a measure for suspicion (McCornack and Levine, 1990), the same research stream has not attempted to connect suspicion to distrust, but rather has focused on deception in communication.

The connection between suspicion and distrust stems from the consideration of ulterior motives by suspicious individuals (Luhmann, 1979; Gurtman and Lion, 1982; Levine and McCornack, 1991; Kramer, 1999; Lewicki and Tomlinson, 2003). Suspicion occurs when an individual believes that another person could possibly have hidden motives, not readily apparent, concerning potential behaviors of the other person (Hilton et al., 1993). These hidden or ulterior motives usually refer to motives that would lead to negative outcomes for the individual (Fein and Hilton, 1994). Motives for negative outcomes are more prevalent candidates for suspicion by expecting another person to act in the individual's good will entails no risk (Buller and Burgoon, 1996; Kramer, 1999). Without risk, there is little to no incentive to devote energy necessary to identify situations wherein others may secretly be acting for the good of the trustee (Hilton and Fein, 1993). Rather, identifying situations where others are harboring intentions of harming the individual, when appearing not to, is potentially very beneficial for the individual (Hilton and Fein, 1993; Buller and Burgoon, 1996; Kramer, 1999). Through suspicion, individuals can identify potentially harmful and risky situations and thereby avoid potential future harm by distrusting these other persons and not becoming vulnerable to them through trusting behaviors.

Previous research has also proposed that suspicion is a main antecedent of distrust (Luhmann, 1979; Gurtman and Lion, 1982; Kramer, 1999; Schul et al., 2008). Individuals who are suspicious of other persons and situations are more likely to identify and/or perceive motives in others that may cause potential harm to the individual. By identifying potential negative consequences, the individual is able to form negative expectations regarding the actions of others, which is the basis for distrusting beliefs. Therefore, I propose:

P7: Suspicion will be positively related to distrusting beliefs.

As stated above, the focus of this paper is on situational signals that may indicate to the truster that the trustee has ulterior motives and thus indicate the need for suspicion. However, the prevalent research on distrust commonly contains the disposition to distrust, which is generally indicative of one's general suspicion of humanity. The disposition to distrust is a persistent view that an individual holds across situations and other individuals (McKnight et al., 2001, 2003). The disposition to distrust is marked by the tendency of the truster to believe that all other people are either incapable of performing desired behaviors or lack the motivation to engage in those behaviors (Kramer, 1999). With the truster doubting either the ability or motivation of the trustee to perform the given behavior, he or she would thus believe that trustees have both the stated intentions of performing the given behavior, but also ulterior intentions to take advantage of the truster when possible. These competing hypotheses are the central core of suspicion. Thus, if a truster has a general tendency to distrust everyone, it is likely that no matter the situation, he or she will be more suspicious of others due to the increased likelihood of attributing ulterior intentions to the trustee.

Previous research has proposed that the disposition to distrust, or suspicion of humanity, is linked to increased tendencies towards suspicion (Luhmann, 1979; Fein and Hilton, 1994; Kramer, 1999; McKnight et al., 2004). Therefore, I propose:

P8: The disposition to distrust will be positively related to suspicion.

3.3 DISTRUST, TRUST AND AMBIVALENCE

The previous literature on trust, and especially distrust, support an assertion that distrust and trust can coexist and are of opposite valences (e.g., Lewicki et al, 1996; 2006). Specifically, it has

proposed that trust involves the positive expectations of the seller's behaviors, while distrust focuses on the buyer's negative expectations of the seller's behaviors (Luhmann, 1979; Lewicki et al., 1996; McKnight et al., 2004). Building on Lewicki et al. (1996), trusting beliefs is an overall net trust construct that is composed of trust and distrust. Each component of trust (i.e., competence, benevolence and integrity) represents a different aspect of the buyer-seller relationship. Each of these aspects can result in a positive or negative expectation of the seller's behavior by the buyer. Thus, there is the potential that various aspects of trust can be opposed and result in conflicting beliefs regarding the trustworthiness of the seller.

These conflicting beliefs should result in increased ambivalence due to conflict within the trusting beliefs components. Mixed, concurrent components of attitude have been shown to result in attitudinal ambivalence (Kaplan, 1972; Maio et al., 1996; Priester et al., 2007; Kacadourian et al., 2005). A similar effect has also been proposed with regards to trust and distrust, but it has never been tested (Lewicki et al., 2006). Therefore, the following proposition is posited:

P9: High levels of trust and distrust will be positively related to perceived ambivalence.

3.4 PREVIOUSLY SUPPORTED RELATIONSHIPS

Previous work on trust and distrust has proposed that the truster's disposition to both distrust and trust are related to the truster's subsequent distrusting or trusting beliefs in specific trustees (McKnight et al., 1998; 2002; 2003; 2006). As a truster's general disposition to trust or distrust is a permanent characteristic of the truster, that individual will be most likely to either trust or distrust others if he or she has high dispositions to trust and/or distrust (Mayer et al., 1995; McKnight et al., 2002; 2006). As these relationships have been previously studied and validated

in other research, they are included here merely to complete the extant nomological network and are not novel or central propositions of this model.

Likewise, previous work on trust, distrust and the Theory of Reasoned Action (Fishbein and Ajzen, 1975; Ajzen, 1985; Mayer et al., 1995; Lewicki et al., 1996; McKnight et al., 1998; 2002; 2006) has predicted and has shown that trusting intentions are predicted by the truster's trusting beliefs. Thus, this relationship is also replicated in this model as a central tenet of TRA.

P10a: The truster's disposition to distrust will be positively related to distrusting beliefs.

P10b: The truster's disposition to trust will be positively related to trusting beliefs.

P10c: Positive net trust beliefs will be positively related to trusting intentions

3.5 APPLYING THE THEORETICAL MODEL TO E-COMMERCE

Having established the underlying theoretical model, this paper now turns to the operationalization of this model to the e-commerce buyer-seller relationship that results in online transactions. The remainder of this section will operationalize each portion of the model to this context.

3.5.1 Online Buyer Trust and Distrust towards the Seller

This section briefly defines the scope, focus and definitions of trust and distrust constructs in this study. First, this paper is focused on the initial trust (McKnight et al., 1998; 2002) that is quickly formed through Web site impressions and via the buying process. This study is not focused on

the building of trust over time and through repeated interactions, but on how trust and distrust are initially first constructed. Future work could be done to test this model in the context of repeated interactions of the buyer and seller over long periods of time.

Second, this study adopts a cognitive trust assumption that the beliefs of the truster will be of more importance than affective trust (McKnight et al., 1998; 2002). As individuals lack any firsthand knowledge of the trustee and can only obtain minimal relational knowledge of the trustee from previous buyers who have left feedback about the specific seller, the ability of the individual to form strong affect towards the seller is limited. However, information on the Web site readily allows the individual to gather information and to form beliefs about the trustworthiness of the seller as explained by signal theory (See Wells et al., 2010; Everard & Galletta, 2005). Trusting beliefs will thus be of more importance than affective responses to the Web site. This assumption is generally used within this area of research and is in alignment with previous work in this area (McKnight et al., 1998; 2002; Gefen and Straub, 2004; Stewart, 2006).

Many other researchers have posited the importance of institutional-based trust in a TRA-based model (Sitkin and Roth, 1993 Mayer et al., 1995; McKnight et al., 2002), however, this study's context is limited to Internet-based vendors and thus institution-based trust will be ignored as a major construct in this study as it would be constant for all vendors. Additionally, McKnight et al. (2002) have proposed that institution-based trust would become a non-significant factor of trusting beliefs when other more relevant and important factors were considered; this proposition has also been supported by other researchers (Gefen et al., 2006; Lowry et al., 2008). As institution-based trust is beyond the scope of this study, the potential for institution-based distrust will also be outside the scope of this study.

Trust in the seller is an important variable within the e-commerce literature (McKnight et al., 2002; Lim et al., 2006). Online transactions are often strongly determined by the level of trust or distrust that the potential buyer has towards the seller (McKnight et al., 2001; 2002). Understanding how trust can be further increased, and distrust avoided within an online relationship is an important consideration that online sellers need to consider in order to achieve higher levels of success (Gefen et al., 2003).

Building on Mayer et al., (1995), McKnight and his colleagues (2002) developed a model to explain the initial trust formation in an online e-commerce relationship. They adopted the view of Mayer et al. (1995) that trust is formed of three general subconstructs (i.e., benevolence, competence and integrity). Their study and further studies have largely validated this model of trust in the e-commerce context (e.g., Lowry et al., 2008). McKnight et al. (2004; 2006) later extended this model to include distrusting beliefs and proposed that distrusting beliefs were also formed from three general subconstructs (i.e., which have been labeled deceit, malevolence and incompetence in this study). Their empirical studies have validated this model also.

Much more work has been done on the relationship between net trusting beliefs and trusting intentions (e.g., Belanger et al., 2002; Gefen et al., 2003; Stewart, 2003; 2006; Lim et al., 2006; Kim et al., 2006; Pavlou and Fygenson, 2006; Lowry et al., 2008; Cyr et al., 2009). These studies have proposed and have shown that trusting beliefs in an online seller are related to the intentions of the buyer to engage in a transaction or other relationship outcome with the online seller.

Building on this foundation of trust research in the buyer-seller e-commerce context, this study operationalizes the previous propositions in this context and hypothesizes the following:

H1: A consumer's trusting beliefs will be positively formed by the perceived levels of benevolence, competence and integrity of the online seller.

H2: A consumer's distrusting beliefs will be positively formed by the perceived levels of deceit, incompetence and malevolence of the online seller.

H3: A consumer's measured net trusting beliefs will be positively related to the consumer's perceived trusting beliefs in the online seller.

H4: A consumer's measured net trusting beliefs will be negatively related to the consumer's perceived distrusting beliefs in the online seller.

3.5.2 Situational Abnormality and Suspicion and the Online Buyer

Internet situational abnormality refers to controllable (for the seller or Web site owner) factors of a Web site that are perceived by the buyer to be abnormal or improper (McKnight et al., 2002). As the entire relationship between the buyer and seller is mediated or occurs within the context of the Web site, abnormalities are perceived based on the experience that is provided by the Web pages created by the seller. Therefore, this study focuses on situational characteristics that can be controlled by a Web site owner or seller.

There are different ways in which online shopping can depart from the expectations of the potential buyer (Ou, 2006). This paper builds on previous related work on e-commerce abnormalities (Everard and Galletta, 2003) and proposes three general aspects within e-commerce that serve as signals for Web sites users to infer characteristics of online sellers (Franks, 1969; Folkman et al., 1979; Huang et al., 2008).

First, *process abnormality* refers to events or occurrences that a buyer had not expected and thus causes the buyer to perceive that the buying process has gone outside of the norm. For example, suppose that an individual is buying a CD online through a given seller. The buyer has selected the CD, and added it to her shopping cart. Immediately thereafter, the buyer is forwarded to an order confirmation page where she is told that she needs to enter her shipping and purchase information prior to receiving any price for the selected CD. As most buyers would not expect to supply this information prior to receiving a price, this violates the expected buying process. This type of behavior is likely to be considered abnormal, as the buyer would expect to know the price of an item prior to supplying transaction-related information necessary to place the order. In this situation the buyer might become suspicious as to why the seller desires to gather all the information necessary for a purchase prior to disclosing the price. Further, the buyer would likely become highly suspicious due to the likelihood that the seller may have a motive to harm the buyer (e.g., initiating a transaction of an item that has a largely inflated price). The attempt by the seller to obtain shipping and purchase information prior to releasing price information serves as a signal that the buyer interprets regarding the self-interest or lack of integrity of the seller. The buyer interprets those actions as signals of the interests and motives of the seller (Frank, 1969; Everard & Galletta, 2005; Wells et al., 2010).

Second, *Web site design abnormality* refers to presentational, graphical and/or navigational errors present on a Web site. These errors can be categorized as abnormalities, as the number, frequency or prevalence of errors may be more than commonly encountered or expected on a Web site. For example, consider a buyer on a Web site that on attempting to locate a desired item finds numerous broken links, and a page that displays an error indicating that the desired Web page with the product cannot be found. If the seller is unable to produce and display

accurate, correct and reliable information on his or her Web site, the buyer will perceive these presentational flaws and errors as signals regarding the competence of the seller (Everard & Galletta, 2004). With signals indicating that the seller lacks competence, it is likely that the buyer would become suspicious of the seller and his or her ability to accurately complete the desired transaction. By doubting the ability of the seller to complete the transaction, the buyer will become suspicious of the seller and believe that the seller possesses negative characteristics.

Third, *informational abnormalities* refer to flawed or inconsistent information supplied by the seller that is specific to the product or service being offered. Flawed information is perceived to be abnormal due to the buyer's expectation that featured items should be adequately described, have information about the given product, and contain a picture (Hong et al., 2004). For example, consider the situation when a buyer is trying to locate a desired CD and finds a page with the correct title for the CD. However, the picture of the item appears to be incorrect and indicates a different artist than the one listed on the Web site. Additionally, the songs listed on this album do not match the songs that the buyer knows should be on the album. Again, these abnormalities may serve as signals that the buyer uses to infer the competence of the seller. If the seller appears to lack the ability to display correct information, the buyer may begin to doubt the ability of the seller to complete the transaction. These abnormalities regarding the information about the product may lead the buyer to be suspicious as to the nature of the product and also believe that the seller is either incompetent or does not have buyers' best interests in mind.

This study does not propose that these are the only Web site features that may contribute to situational abnormalities, but rather focuses on several major aspects of e-commerce abnormalities. For example, abnormalities relating to what information should be exchanged to enable a transaction may be considered as its own form of abnormality, but this is not considered

in this study. Previous work has also highlighted that errors and flaws may serve as cues that a buyer may use to infer the characteristics of the seller (Molich and Nielsen, 1990; Rosenfeld et al., 1994 & 2002; Harrington and Beard, 1996; Kim and Moon, 1998; Nielsen et al., 2000; Lynch and Horton, 2002; Everard and Galletta, 2005; Lowry et al., 2008). Another source of abnormality that may be considered elsewhere is usability violations. *Usability* refers to the ability of the Web site in assisting the user to complete goals, and comprises navigation and ease of use (Fang & Holsapple, 2007). In line with these previous findings, it is proposed that errors and flaws in a Web site are signals regarding product-related information and the buying process. These serve as signals regarding the self-interest, deceitfulness and incompetence of the seller. With increased doubts regarding the ability or intention of the seller to successfully complete the transaction, it is likely that the buyer will have increased distrust towards the seller.

Each of these three general sources of abnormalities on Web pages provides the buyer with signals and cues that can be used to interpret the characteristics of the seller. As abnormal events increase the processing of information and attention of the buyer (Schul et al., 2004; 2008) it is likely that negative violations (Buller and Hale, 1988) will result in negative inferences regarding the seller. It is therefore likely that Internet abnormalities may result in the buyer having an increased level of distrust towards the seller. This leads to the following hypothesis:

H5: Web sites with perceived abnormalities will be negatively related to the consumer's net trust.

Likewise, the cues and signals that result from abnormalities on the Web pages serve as cues that may increase the buyer's suspicion concerning the seller and his or her intentions towards the buyer. Although violations of expectations may be evaluated as positive or negative

by the buyer (Burgoon and Hale, 1988), fulfilled expectations also provide the buyer with signals concerning the normalcy of the relationship and indicate that the seller is behaving as expected whereas unfulfilled expectations may also signal the presence of abnormalities. Mayer et al. (1995) proposed that fulfilled positive/negative expectations allow the buyer to predict the behaviors of the seller and thus lead to an increased level of trustworthiness/distrustworthiness in the seller. McKnight et al. (2002) extended this to the context of e-commerce and showed that normal environments do in fact lead to higher levels of trusting beliefs between the buyer and seller. It is a natural extension that the opposite should hold true; namely, that abnormal environments should also serve as signals for distrust, or at least suspicion if receiving mixed signals. In such a situation, the buyer receives both positive signals concerning both the normalcy of the transaction and negative signals concerning the abnormalities in the relationship.

The receipt of both positive and negative signals cues the buyer to consider that the seller may have positive or negative intentions towards the buyer and in itself increases the likelihood that the buyer will become suspicious of the seller. Having been alerted to the fact that the situation is abnormal, the buyer will increase his or her expenditure of mental activity in order to evaluate the veracity of available cues and signals concerning the seller (Schul et al.; 1996; 2004; 2008). This heightened evaluative process is also called suspicion. Thus, the presence of abnormalities on the Web site and within the buyer-seller relationship increase the likelihood that the buyer will enter this heightened state of evaluation and become suspicious of the seller. This leads to the following hypothesis:

H6: Perceived situational abnormality will be positively related to the consumer's reported level of suspicion.

As previously explained, trusters who are suspicious of the actions of the trustee will consider both positive and negative inferences towards the trustee in an attempt to identify accurate information (Schul et al., 1996). Previous work on attitudes and attributions has found that individuals will tend to overemphasize the potential negative outcomes and risks (Kaplan, 1972; Kahneman and Tversky, 1979). As these findings have been applied to many truster-trustee relationships, there is no reason to expect that these findings should not apply to the buyer-seller relationship within an e-commerce setting.

Previous work in communication has also long proposed suspicion as a predictor of distrust (Fein and Hilton, 1994). The entire relationship between the buyer and seller in e-commerce is essentially Internet-mediated communication, indicating the importance of communication in the buyer-seller relationship. Buyers who are suspicious of the motives of sellers should therefore be more disposed to distrust the seller, especially since the buyer and seller are often anonymous and have no expectations of ever meeting (McKnight et al., 2002; Gefen et al., 2003). Thus, buyers should be more naturally disposed to attribute negative characteristics to the seller if he becomes suspicious of the seller. This leads to the following hypothesis:

H7: Perceived suspicion will be negatively related to the consumer's measured net trust.

Previous work in e-commerce research has shown that the disposition to distrust others holds within the online context (McKnight et al., 2004; 2006). Further, given that research on the disposition to distrust has long equated this construct with a general suspicion of humanity and a trustee's intentions towards the truster, it is likewise extended that the general disposition to distrust others in the online context would equate to a general suspicion of online sellers. This general disposition to distrust others results in the individual actively entertaining negative

scenarios and attributions regarding others, without the need for signals and cues that could be used to infer a need for suspicion of the seller and his or her motives. It is thus reasonable to extend the previous work to the online context that connects the disposition to distrust with suspicion.

H8: A consumer's disposition to distrust will be positively related to the reported level of suspicion.

3.5.3 Online Buyer Ambivalence

Consumer research has long proposed that buyers experience ambivalence in the online world as often as they do offline (Priester et al, 2007). Given that there are many cues and signals that may be used by the buyer to interpret the characteristics and motivations of the seller, it is very possible that the buyer experiences both positive and negative attributions towards the seller. As previously discussed, the more that the truster experiences both positive and negative attributions, it is more likely that he or she will engender ambivalence towards the seller (Kaplan, 1972; Petty et al., 1996; 2006; Priester et al., 2007).

The level of perceived ambivalence towards the seller may originate from either of two sources. First, the buyer may have received conflicting information within one of the dimensions of trust (i.e., ability, orientation, and dependability) towards the seller. If the buyer receives information from signals and cues about the seller that the seller may have both positive and negative inclinations along that one dimension, it is likely that the buyer may experience intracomponent ambivalence. In this situation, the buyer is unable to ascertain whether the given subconstruct is positively or negatively fulfilled by the seller (e.g., the buyer is unable to ascertain whether the seller should be attributed as competent or incompetent in terms of ability).

The subsequent result of this inability to assign a positive or negative instantiation of a trusting subconstruct may result in the inability of the buyer to form either trust or distrust towards the buyer, and instead a general level of ambivalence is established.

Second, the buyer may also perceive that different subconstructs of trust are opposed in valence, which is referred to as intercomponent ambivalence. If the buyer has received negative signals regarding one of the subconstructs and therefore attributed a negative fulfillment of that subconstruct while likewise assigning a positive fulfillment on one or both of the remaining subconstructs, it becomes difficult to ascertain whether trust or distrust should be engendered. Given that at least one subconstruct implies a negative motivation of the seller, and at least one subconstruct implies a positive motivation, it becomes very difficult for the buyer to ascertain the general trustworthiness or distrustworthiness of the seller. Given a higher degree of magnitude between the negative and positive valences, the likelihood of the buyer generating a general level of perceived ambivalence is greater.

A buyer may experience one of both of these scenarios, and both serve as indicators that the buyer may perceive ambivalence towards the seller (Sparks et al., 2004; Priester et al., 2007). This study thus operationalizes the ambivalence theory and proposition into the following hypothesis:

H9: Derived scores for intercomponent and intracomponent ambivalences will be positively correlated with measured attitudinal ambivalence.

3.5.4 Previously Supported Relationships

Previous research on trust and distrust has verified several relationships that are included in the model for the sake of completeness and to allow comparability with previous studies (McKnight et al., 1998; 2002; 2006). Thus, I include previously-validated relationships below:

H10a: Reported disposition to distrust of an online e-commerce consumer will be positively related to the consumer's perceived distrusting beliefs.

H10b: Reported disposition to trust of an online e-commerce consumer will be positively related to the consumer's perceived trusting beliefs.

H10c: Measured net trust beliefs will be positively related to the online e-commerce consumer's perceived trusting intentions

4.0 PILOT STUDIES

Two studies were performed prior to the final study used to test the theoretical model; each of these studies will be described in turn.

4.1 PRELIMINARY STUDY

A preliminary study was conducted to ascertain the relevant aspects and features of the buying processes that are normally expected by online shoppers. This was done to ascertain the cues or features that could serve as unexpected signals on the website during the buying process. Additionally, respondents were asked to identify why they trust and distrust, and do business with online vendors in order to ascertain whether trust and distrust needed to include any other dimension than the dimensions previously discussed in this study.

4.1.1 Subjects

Graduate students from a summer course on e-commerce strategies at a private Northeastern university were instructed to answer questions regarding their beliefs, feelings, actions and expectations regarding sellers in a typical online shopping environment (n=20).

4.1.2 Instrument

Specifically, participants were asked to provide responses to the following open-ended questions regarding online sellers that were created for this pilot study:

1. List the steps that you would expect to follow in a typical online transaction.
2. How would you describe your feelings about a trustworthy online merchant?
3. What key characteristics do you believe are shared by trustworthy online merchants?
4. How would you behave when you interact with a trustworthy online merchant?
5. How would you describe your feelings about an untrustworthy online merchant?
6. What key characteristics do you believe are shared by untrustworthy online merchants?
7. How would you behave when you interact with an untrustworthy online merchant?

4.1.3 Data

Data were obtained from 20 students at a Northeastern private university. A total of 20 responses were collected from a total of 40 potential respondents (Response rate = 50%). No responses were incomplete and all were used in the subsequent coding of the data.

4.1.4 Data Coding

Two coders familiar with online shopping separately categorized data. After this initial coding, the coders compared results and discussed each discrepancy until they could both agree on the

categorization. Initial interrater reliability was 95%. Table 5 summarizes the expected steps in an online buying episode. The coded responses were counted and categorized. Items with high counts show which aspects of the buying process buyers are expecting to experience.

The categorizations in Table 5 indicate that the general online consumer expects that a product should first be described on its own Web page. Next, a consumer should enter information required to ship the item. Next, purchasing information is requested. Finally, a confirmation page is displayed summarizing the entire order. If the order is correct, the consumer submits the order and is shown an invoice or receipt for the purchase. This expected order was then utilized in the creation of treatment scenarios for both the pilot and final data collections.

The responses indicate the expected buying process from the initial item selection until the item has been purchased and received. By determining the expected process, these results were used to create the treatments for the main study. Thus, the normal treatments that are used in the main study consisted of expected steps of the buying process (See Table 5), whereas the abnormal treatment included additional, unexpected steps that are not summarized in Table 5. The ambivalent treatment consisted of the normal steps with only one or two unexpected steps.

Table 5. Expected Shopping Scenario Process

Category	Examples	Count
Item selection	"Search/browse items", "Browse the goods"	14
Add to cart	"Click on buy", "Check out"	10
Create an account	"Create a username and password", "Login"	6
Begin transaction	"Make purchase", "Make the transaction"	13
Enter order/billing information	"Enter credit card info and shipping info", "Decide payment info"	15

Review purchase/invoice	"Review order confirmation", "Confirm the purchase"	13
Confidentiality	"Expect confidentiality"	2
Seller follow-through	"Receive an email"	4

The results from the tripartite view of attitudes in respect to trust and distrust are shown in Table 6. The coders also reviewed the responses and coded them as previously described. These responses show what characteristics and actions are most commonly associated with trust or distrust with identified dimensions. Dimensions were determined by comparing existing responses with others and forming ideas that were being expressed by the participants, rather than using already established conceptualizations of trust. In determining the name for each category, I then turned to the literature to apply the subdimension that best fit the coding schema.

Table 6. Categorization for Tripartite View of Trust

Coded Category	**Examples**	**Count**
Trust-competence	"Reliable", "Certainty", "Will send the right product"	20
Trust-benevolence	"Professionalism", "Excellent customer service"	12
Trust-integrity	"Merchant will inform me of updates and issues", "100 percent guarantee"	11
Trust-other	"I feel happy", "Website security", "SSL", "Confidential"	11
Distrust-incompetence	"Bad reputation", "They don't do what they promise"	17
Distrust-self-interest	"I would be more cautious in providing information", "Merchant says 'big things' about themselves"	13
Distrust-dishonesty	"Possibly harmful or unsafe", "Information contradicts with known information"	13
Distrust-other	"I feel disgusted", "angry", "smaller company", "unknown brand"	8
Abnormal events	"Ask for unusual personal information", "Bad review", "limited or missing information", "incorrect product information", "Bad Website	20

	quality", "New company", "Extraordinarily low price"	

The categorizations in Table 6 indicate that consumer attitudes towards trustworthy sellers have the following components: First, consumers generally have positive affect towards trustworthy others that can be captured as image or reputation. Second, beliefs about trustworthy sellers are in alignment with views of cognitive trust as explained in Mayer et al. (1995) and McKnight et al. (1998; 2002). Third, consumers generally intend to transact with trusted sellers and to return to these sellers in the future. These categorizations support the treatment manipulations and dependent variables that have been selected.

The categorizations in Table 6 indicate that consumer attitudes towards distrustworthy sellers have the following components. Similarly, consumers have a general negative affect that can be labeled as a bad image or negative reputation. Second, the conceptualizations of distrust as outlined in McKnight et al. (2003; 2004) are supported. Finally, consumers tend to have no intention to engage in any behaviors with these types of sellers and will inform friends and associates to avoid these sellers also. These categorizations indicate that the treatment manipulations and dependent variables are also appropriate and testable for the pilot study (see Table 7).

Table 7. Relation of Manipulation and Dependent Variable to Categorization

Manipulation/Variable	**Related Category**	**Explanation**
Process Abnormality—Input extra information	Expectation - Input shipping and billing information	Requiring information beyond shipping and billing is unexpected
Web Site Design Abnormality - Errors	Trust—Competence Distrust—Incompetence	Errors on a Web site imply that the seller lacks the

Manipulation/Variable	Related Category	Explanation
		competence to create an accurate Web site
Web Site Design Abnormality—Change in look-and-feel	Trust—Competence Distrust—Incompetence	Subjects indicated that part of competence was the ability of the seller to keep a coherent Web site
Informational Abnormality—Extreme price	Trust—Integrity and benevolence Distrust—Dishonesty and self-interest	Having an extremely high or low price serves as a signal of the seller's integrity and benevolence (the seller is proposing the best value for the buyer) or dishonesty and self-interest towards the buyer (the seller is charging a high price in order to extract higher profits)
Informational Abnormality—Missing information/Wrong picture	Trust—Competence Distrust- Incompetence	Lack of information on a Web site implies that the seller lacks the competence to create a complete description of the product
Information Abnormality—Low customer ratings	Trust—Competence, integrity and benevolence Distrust—Incompetence, dishonesty and self-interest	Negative customer reviews may indicate that the seller was unable to complete a transaction to the satisfaction of the buyer and thus may

Manipulation/Variable	Related Category	Explanation
		also not have the best intentions towards the buyer
Information Abnormality—No customer ratings	Trust—Competence, integrity and benevolence Distrust—Incompetence, dishonesty and self-interest	Having no reviews provides no information to allow the buyer to infer characteristics regarding the trustworthiness or distrustworthiness of the seller

4.2 PILOT STUDY

Having established the dimensionality of trust and distrust, and the expected buying process, I now describe the pilot study that was conducted. The pilot study consisted of a single treatment manipulation that contained both normal and abnormal conditions and a control condition.

Subjects were exposed to the entire experiment (except that only one product type, i.e., battery, was tested) and questions as proposed in the remainder of this section. However, additional questions, especially regarding the manipulations and their effects on subjects, were provided to ask for feedback on confusing areas, problems, and/or ideas that subjects believed might have been overlooked.

4.2.1 Subjects

Subjects were obtained from the Summer section of BUSMIS 1060 and BMIS 2411. A total of 44 responses were completed from 74 available responses from a graduate information systems course (59.5% response rate). 59% of the subjects were male and 41% female. The average age was 28.1, with a standard deviation of 5.6 years. The respondents reported an average of 7.1 completed collegiate semesters, with a standard deviation of 1.9 semesters.

4.2.2 Methodology

Subjects were asked to proceed through a simulated buying process for an 8-pack of AA batteries on Amazon.com. After viewing each of the webpages that depicted this process (from the item information screen to the purchased item page), the subject then completed an instrument to measure all of the constructs in the theoretical model (For a listing of this instrument, please see the instrument subsection below).

4.2.3 Analysis

I used STATA (IC 10.1 for Macintosh) to check the data quality, outliers and other assessments while both PLS Graph (version 3.0 build 1126) and Smart PLS (version 2.0) were used to test the proposed model.

4.2.3.1 Data Quality, Outlier and Normality Assessment

This section will briefly describe the data, provide summary tables and assess whether any outliers exist or whether the assumption of normality is appropriate.

Data Quality. Of the 44 total responses, 5 had incomplete data that required dropping missing responses from several analyses. However, before these data can be used to test various validities and biases, it is important to ascertain whether any problems exist with the data that would challenge the assumptions behind the structural equation model being tested later in this section.

First, it is important to detect whether any of the variables are highly correlated. Three checks were used to verify the correlations among the variables. First, a correlation matrix was created and is summarized in Table 8 (only correlations above .90 are shown in the table for indicators from different constructs; as over 60 indicator variables were correlated for this check). As the vast majority of the correlations are below the .90 level, with all high correlations being between measures of the same constructs excluding those listed in Table 8, the majority of the data pass this first verification. As described below, only two correlations fall into the high range, with both of these correlations being between measures of behavioral intentions that are expected to load on similar factors, so this is not considered to be a problem. Additionally, 16 other correlations were in a fairly high range of .80 to .90. Further, most of the significant correlations are within ideal ranges of between .20 and .60.

Table 8. Summary of High Correlations in Indicator Variables

Variable	Variable	Correlation
Make Purchase 2	Intention to Return	.9001
Intention to Recommend	Intention to Return	.9865

Second, I ran a graph matrix of each variable against all other variables to see their distribution. This matrix is useful in assessing correlation through visual scanning; potential problems or outliers can be easily identified. This matrix is not shown in this document due to its size. A quick scan of the matrix revealed no serious problems, and thus it provided additional support for the overall quality of the data.

Third, the variance inflation factor for each variable was computed (see Table 9). Due to the multidimensional nature of the data, collinearity diagnostics were run by super-ordinate constructs to test similar indicators, and to allow for analysis with limited data points. As few indicators have VIFs greater than 10, this procedure indicates that the data passed basic assumptions needed for analysis of the research model. Several indicators within the trusting beliefs construct scored above a 10, but this might be due to the limited number of observations and large number of indicators to test at one time. Additionally, the condition index was computed for each model and is within acceptable limits for each of the three groupings.

Table 9. Variance Inflation Factors

Trust Indicators		**Distrust Indicators**		**Other Indicators**	
Variable	**VIF**	**Variable**	**VIF**	**Variable**	**VIF**
Trusting Stance 1	5.24	Distrusting Stance 1	2.95	Ambivalence 1	1.46
Trusting Stance 2	2.33	Distrusting Stance 2	2.26	Ambivalence 2	3.42
Trusting Stance 3	5.47	Distrusting Stance 3	3.94	Ambivalence 3	3.13
TB- Benevolence 1	4.41	Distrusting Stance 4	4.93	Ambivalence 4	3.45
TB—Benevolence 2	3.96	DB—Competence 1	3.29	Ambivalence 5	2.02
TB—Benevolence 3	4.72	DB—Competence 2	2.14	Suspicion 1	1.44
TB—Integrity 1	6.53	DB—Competence 3	3.48	Suspicion 2	6.77

TB—Integrity 2	12.45	DB—Integrity 1	7.28	Suspicion 3	4.32
TB—Integrity 3	4.78	DB—Integrity 2	3.34	Suspicion 4	4.95
TB—Integrity 4	6.86	DB—Integrity 3	3.83	Suspicion 5	4.28
TB—Competence 1	11.66	DB—Benevolence 1	3.78	Suspicion 6	4.00
TB—Competence 2	5.03	DB—Benevolence 2	6.90		
TB—Competence 3	16.12	DB—Benevolence 3	9.74		
TB—Competence 4	2.09				
Mean VIF	6.55	Mean VIF	4.45	Mean VIF	3.57
Condition Index	67.23	Condition Index	53.14	Condition Index	35.73

Outlier Assessment. Beyond checking the collinearity of the data, it is important to identify if any data point is so extreme that it could overcome robustness assumptions for computed models. To identify outliers, several methods were utilized. First, as already described, the graph matrix was scanned to identify whether any points were uniquely distant from the group of the other points. No points appeared to be too extreme and thus this first general check indicates no potential outliers.

Second, residuals, leverage, and Cook's d were computed from a basic regression model. Extreme values were reviewed for each of these statistics. However, none of them exceeded standard levels to indicate serious problems with any of the indicated observations (Bruin, 2006). All residuals were less than the absolute value of 2; leverage was less than 2. Likewise, all Cook's d values were less than the acceptable level of .10 (Bruin, 2006).

Additionally, leverage plots were created by contrasting the leverage with the level of the residual. As shown in Figure 9, the plot is acceptable and within normal ranges (i.e., no extreme points are present).

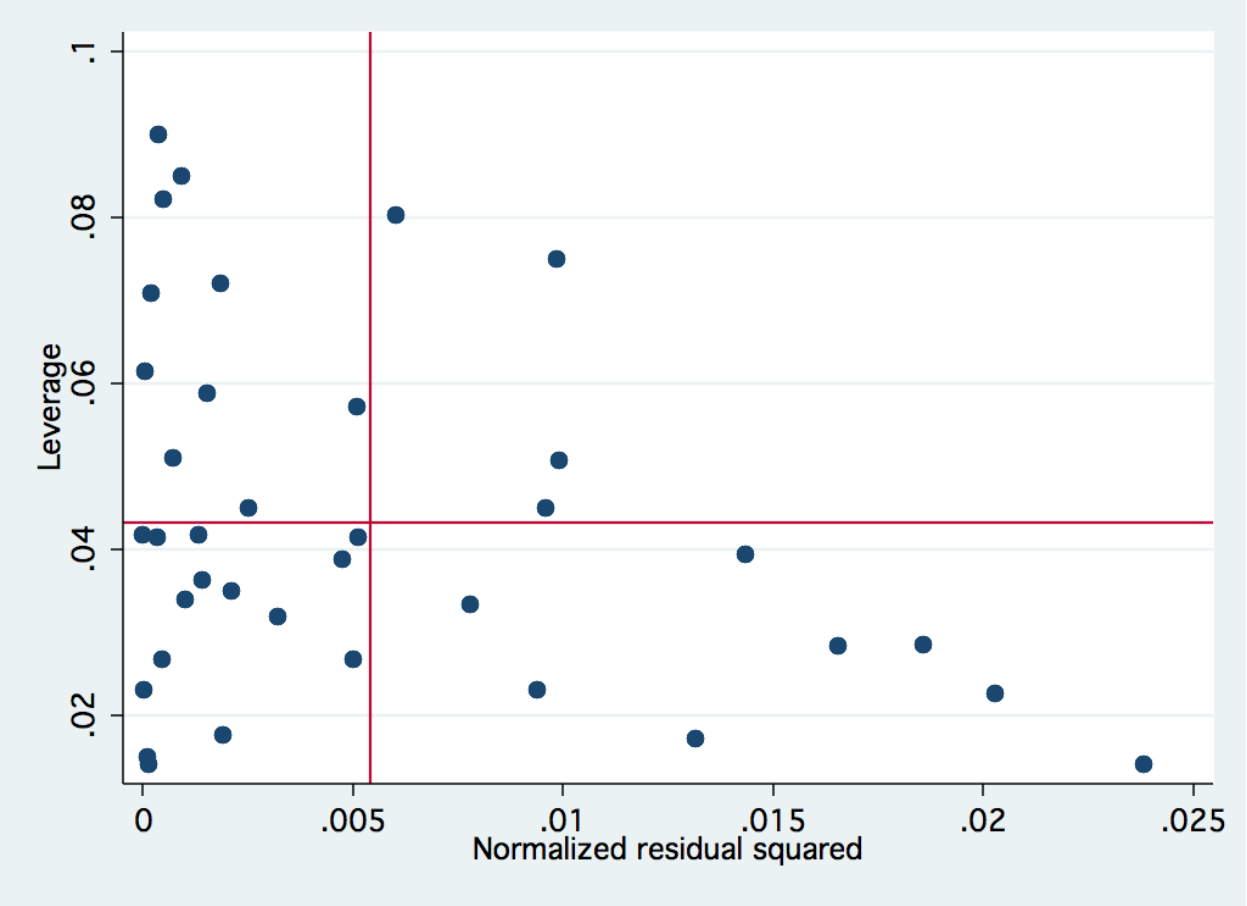


Figure 9. Leverage vs. Residual Plot

Finally, an inter-quartile range was computed for the variables. This analysis identifies severe outliers by identifying any data points that are three inter-quartile ranges above the third inter-quartile range, or three inter-quartile ranges below the first inter-quartile range. The test indicated that no any serious outliers were found in the data.

Based on these analysis, I conclude that no serious outliers were identified, which would warrant them being removed from the dataset.

Normality Assessment. Having ascertained that variables are not highly correlated and that no serious outliers are present in the data, it is now important to verify the normality of the data sample. Several tests were used to test the normality assumptions needed to analyze the final

model. First, the inter-quartile test is also used for normality, and as indicated above, all test results indicated that no problems existed with the data.

Second, several graphical methods were used to visually ascertain how the data was dispersed. The first of these three graphs displays kernel density (see Figure 10). As shown in Figure 10, the dispersion of the collected data is roughly normal and thus passes this visual inspection. Second, a standardized normal probability plot (see Figure 11) and a Q-Q plot were created (see Figure 12). Both of these plots were near the line and did not indicate drastic departures from normality (Bruin, 2006).

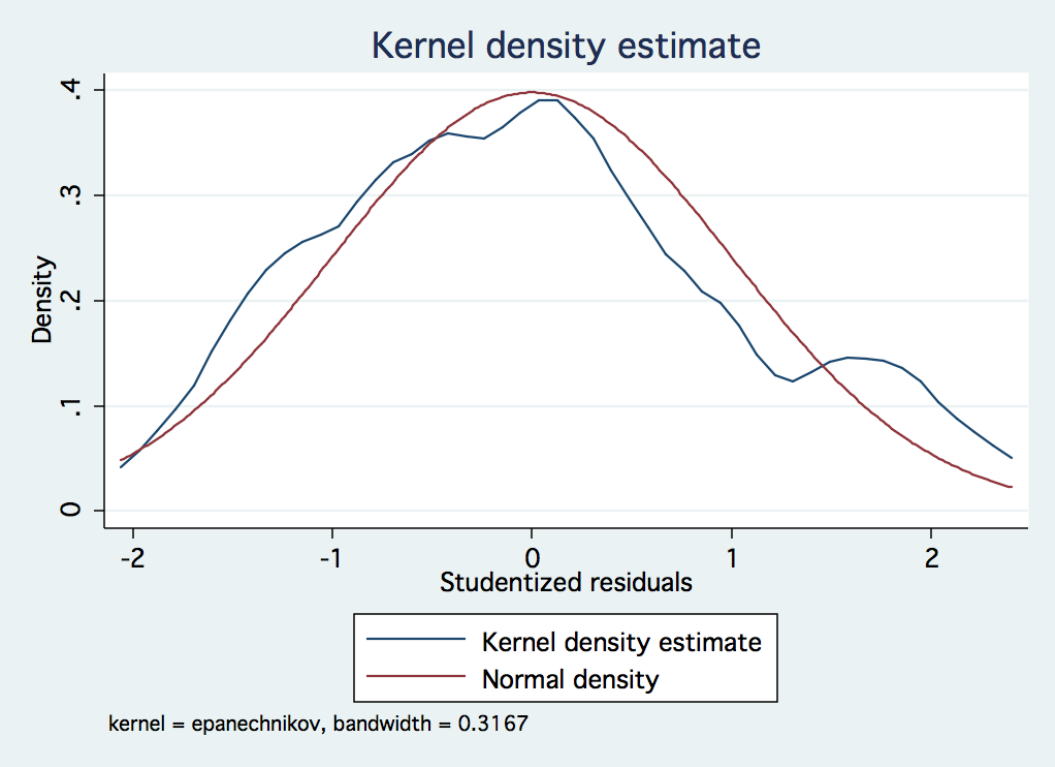


Figure 10. Kernel Density Graph

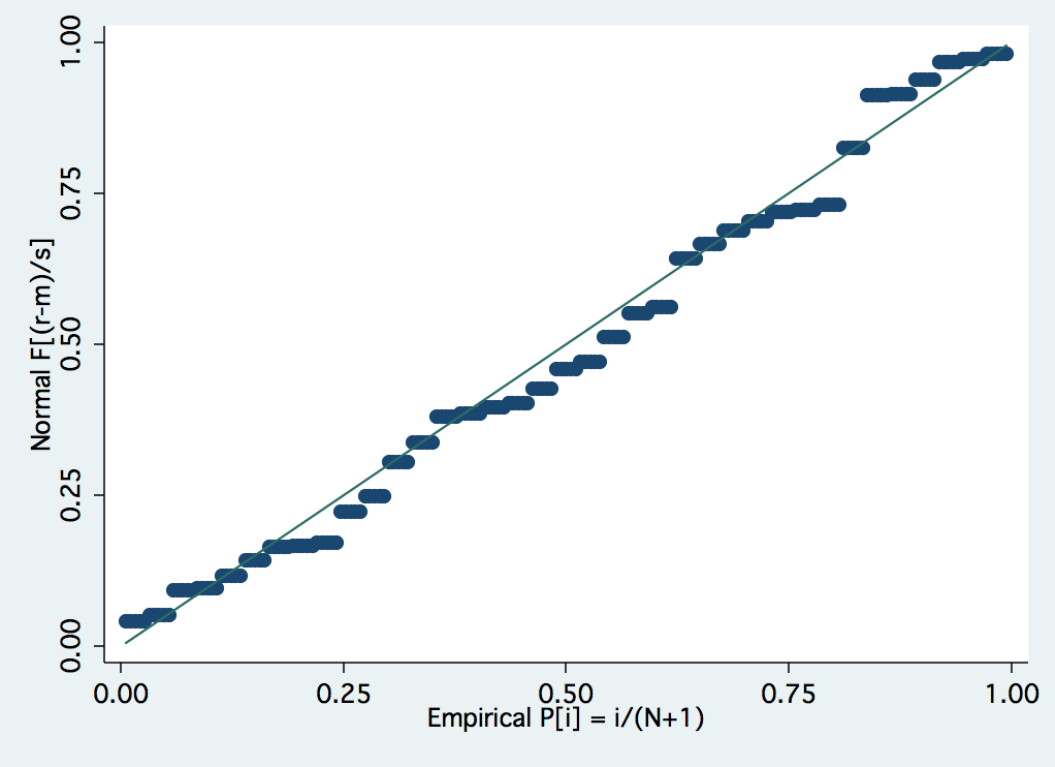


Figure 11. Standardized Normality Probability Plots

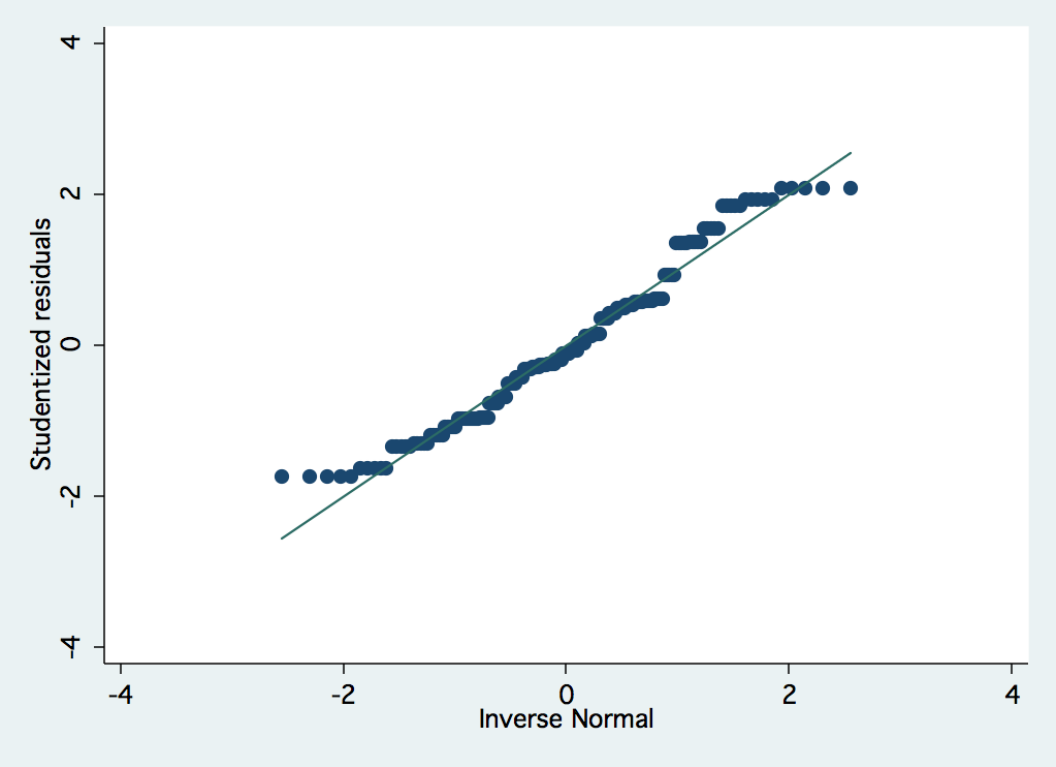


Figure 12. Q-Q Plot

Third, I computed the Shapiro-Wilk W test for normality of the data. The test results in a p level of .001, which is significant. Thus, I reject the null hypothesis of normal data distribution, but attribute this to the small sample size.

Finally, two tests were also computed to detect heteroscedasticity. Both White's test and the Breusch-Pagan test have null hypotheses that the variances of the residuals are not heteroscedastic. Thus, the significant results for both tests reject the null hypotheses and support the assumption against heteroscedasticity (p=0.000 for White's test, and p=0.000 for the Breusch-Pagan test).

These procedures indicate that the data is normally distributed, excluding the Shapiro-Wilk test, and that the residuals display homoscedasticity. I proceed to data analysis without performing any data transformations.

4.2.3.2 Convergent and Divergent Validity

Before assessing factorial validity, is important to determine which constructs are formative and which are reflective. Most of the measures were carefully validated in previous research, thus this analysis is largely confirmatory (Diamantopoulos and Winklhofer, 2001; Jarvis et al., 2003; Petter et al., 2007). Likewise, it is also critical to consider whether any of the constructs represent second-order constructs composed of first-order constructs (or dimensions), which can be either reflective or formative (Petter et al., 2007). Based on this literature, several of the constructs in this study are reflective, and can be assessed using traditional validity procedures, while others are formative and require other procedures.

To establish factorial validity of the indicators, the directions of Gefen and Straub (2005) were followed. First, to demonstrate convergent validity, a bootstrap with 200 resamples was generated. The t-values of the outer model loadings were then examined; all of the retained outer loadings were significant at the .05 α level (four factors were dropped from overall trust, one was dropped from ambivalence, and one was dropped from suspicion due to a nonsignificant loading on the construct; additionally, all of the items for the subconstruct malevolence (Distrusting Beliefs) were insignificant, and thus the subconstruct is dropped from further analysis; refer to Appendix C). These results indicated strong convergent validity for the model.

To demonstrate discriminant validity, two established techniques were used: (1) correlating the latent variable scores against the indicators and (2) calculating the square root of the average variance extracted (AVE). Both analyses indicated very strong discriminant validity, with the exception of 3 indicators that were dropped (two from Trusting Stance, and one from TI-Give Information). Items neither correlated with other constructs nor resulted in scores

exceeding the square root of the AVE. All of the constructs were highly discriminated, except where noted (Refer to Appendix B).

Finally, to establish reliability, Smart PLS computes a composite reliability score as part of its integrated model analysis (see Table 10). Each construct in our research model demonstrated high levels of reliability that exceed the standard thresholds. Given all of these results, it is concluded that the measurement model displays adequate levels of convergent and divergent validity and is suitable for PLS SEM analysis.

Table 10. Composite Reliability of Constructs

Construct	Composite Reliability
Situational Abnormality	.857
Distrusting Stance	.916
Trusting Stance	.318
Suspicion	.956
DB—Competence	.890
DB—Integrity	.923
TB—Benevolence	.911
TB—Competence	.945
TB—Integrity	.957
Ambivalence	.817
TI—Follow Advice	.953
TI—Give Information	.729
TI—Make Purchase	.886
TI—Other Intentions	.994
TI—Disclose Information	.919

4.2.3.3 Common Method Bias

All data were collected using a similar-looking online survey; thus, I tested for common method bias to establish that it is not a likely factor in the data collection. To do so, I used two accepted approaches.

The first approach, which is increasingly in dispute, was to conduct Harman's single factor test (Podsakoff et al., 2003). This test required that I run an exploratory unrotated factor analysis on all of the first-order constructs. The aim of the test is to see if a single factor emerges that explains the majority of the variance in the model. If so, then significant common method bias is likely to exist. This analysis identified 16 distinct factors with a minimum eigenvalue of 1.0, the largest of which only accounted for 32% of the variance of the model.

The second approach, which is more accepted, is simply to examine a correlation matrix of the constructs and to determine if any of the correlations are above 0.90, which is strong evidence that common method bias exists (Pavlou et al. 2007). In no case were the correlations near this threshold, as previously stated.

Given that the data passed both tests of common method bias, it is unlikely that the data exhibit negative effects from common method bias.

4.2.3.4 Manipulation Checks

To assess the manipulation validity of the experiment, manipulation check questions were added to the posttest to determine whether participants perceived their treatment manipulations. The manipulation check ascertained whether the participant had noticed the process abnormalities, Web site design abnormalities and informational abnormalities. Of the 44 participants, 12 did not notice the manipulation (excluding those in the control treatment group).

Although the 12 unmanipulated participants might add unexplained variance to the results, data for these individuals were retained for analysis, especially given the small sample size at this stage. Additionally, by retaining these unmanipulated participants, results from the entire datatset will provide a more conservative test of the hypotheses due to the additional unexplained variance (Straub et al. 2004). Having established that the majority of the participants in the pilot study were conscious of the manipulation, I chose to retain these subjects and perform a more conservative test of the model and my hypotheses.

4.2.3.5 Model Analysis

I performed the analysis using partial least squares (PLS) analysis. PLS is especially suited for early theory development (such as seen in this study) as opposed to situations where prior theory is highly developed and further testing and extension is the primary objective. In those cases, techniques such as maximum likelihood or generalized least squares are often preferred (Chin et al., 1996; Chin et al., 2003; Gefen and Straub, 2005). I used the package Smart PLS (2.0 beta version) for the analysis. Further, given the small sample size of the data, I also duplicated each observation five times to meet the general rule of 10 observations per construct. The model results are depicted in Figure 13.

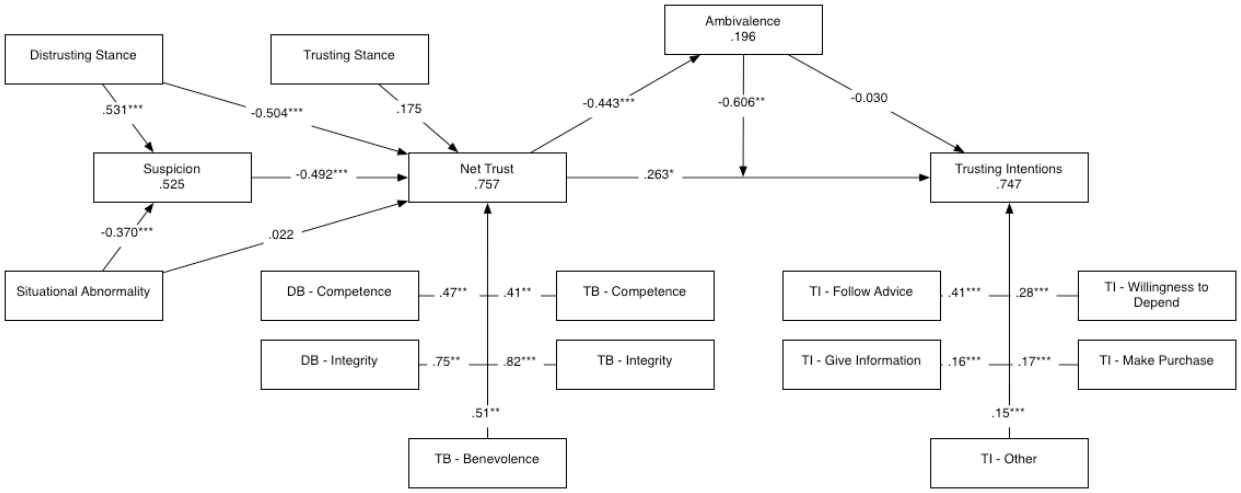


Figure 13. Pilot Model Results Summary

4.3 PILOT DISCUSSION

The initial results from the pilot study show initial support for several of the hypotheses. The results are summarized in Table 11.

Table 11. Summary of Pilot Hypotheses

#	Hypothesis	Support?
1	Situational normality –> Net Trust	No
2	Situational normality –> Suspicion	Yes
3	Suspicion –> Net Trust	Yes
4	Distrusting Stance –> Suspicion	Yes
5	Net Trust –> Ambivalence	Yes

6	Ambivalence will moderate Net Trust –> Trusting Intentions	Yes
7	Ambivalence –> Trusting Intentions	No
8	Previously supported relationships	Mixed

Situational normality might have failed to have any impact on net trust due to the full mediation that occurred when suspicion was added to the model. Previous to adding suspicion, situational normality had a strong and significant effect on net trust, however, suspicion, when entered into the model, completely mediates this relationship. Thus, it appears that situational normality alters the level of suspicion, which subsequently alters the level of net trust that the individual has towards an online seller.

These findings support the research on ambivalence as a moderator of established relationships, contrary to the predictions by Jonas et al. (1997) and Petty et al. (2006). This may indicate that individuals did not acquire sufficient levels of elaboration that may be required to form a significant relationship between ambivalence and trusting intentions.

These results have several potentially important contributions for IS research and practice. First, this is the first study that has proposed, tested, and found evidence for novel antecedents of distrust. Specifically, previous research in communications has proposed suspicion as the main antecedent of distrust, and this is the first study to provide evidence of this proposed relationship. Further, this study also demonstrates that errors and abnormalities under the control of a Web site owner might not directly impact the level of trust from a consumer, but initially impacts the level of suspicion.

Second, this study proposes a novel conceptualization of trust and distrust. Building on literature from both approaches to trust and distrust, this study proposes that trust and distrust coexist on a multidimensional level. However, only one valence of a particular attribute may exist at one time, thus positing that each individual characteristic is unidimensional with respect to trust and distrust. Further, unlike previous studies, this paper proposes that rather than modeling trust as a separate construct from distrust, they might in fact be combined to form an evaluative net trust construct that captures the complex trust judgments and beliefs of consumers. Further, building on literature from social psychology and marketing, this study adopts methods from those fields and introduces them to IS to enable the measurement of this model.

Third, this study both proposes and finds that distrust and trust have the potential for creating ambivalence and that ambivalence does alter the relationship between net trusting beliefs and trusting intentions. Unlike previous studies that have focused on the role of distrust in e-commerce, this study demonstrates that the effects of distrust might be more complex than previously believed.

Although this study has several important potential contributions, these results are only preliminary, based upon a small dataset obtained from a pilot study. Based on feedback from open-ended responses and the results of manipulation checks, several improvements for the main study were made. The following section describes these improvements.

4.3.1 Outcomes from the Pilot Study

Due to the results of this study, several changes/modifications were made for the main data collection. First, the number of treatments was increased to eight. This change was due to an

increased number of abnormality treatments. Rather than simply trying to increase the level of distrust through abnormal features and signals during the experiment, three additional treatments were made in an attempt to manipulate each of the three dimension of distrust separately. Making four abnormality treatments (abnormal, abnormal-incompletence, abnormal-malevolence, and abnormal-deceit).

Second, given the number of treatment conditions, it was determined that no testing of the sofa condition would be performed in the main data collection. This was set aside as a future research extension that could be performed with this model, once it had been tested with the battery-only conditions.

Third, rather than creating ambivalence from the difference scores between trust and distrust, it was determined to subjectively measure ambivalence with its own instrument. This instrument is described in the instrumentation section of the main study.

Fourth, rather than utilizing the instrumentation from McKnight et al. (2002) for the measurement of situational abnormality, I created a new instrument to measure situational abnormality, with the three subdimensions as described in this paper (This instrument is described in the main study instrumentation section). Building on the initial instrument, subscales were created for information, design and process abnormalities.

Having identified these areas for improvement and largely validating the methodology to test the theoretical model, I now turn to describing the main data collection and its analysis.

5.0 MAIN STUDY METHODOLOGY

This study uses the same procedures, instruments and design as the pilot study, except the changes that were previously noted, and any other changes as described in this section. The study utilized a 3 (situational abnormality) x 3 (distrust manipulation) between subject randomized experimental design. Situational abnormality was manipulated through groupings of Web site factors to induce situational normality, situational abnormality, and a mixed situational normality (ambivalent condition). In an effort to avoid any product preferences or previous knowledge, a commodity good (i.e., AA battery 8-pack) was used as the product in this study.

5.1 FACTORS AND MANIPULATIONS

The situational abnormality manipulations targeted process, information, and Web site design abnormality. Each of these dimensions will contain two levels of abnormality: present or absent.

1. Process abnormality: an aspect of the typical buying process is disrupted.

    - Present: The buying process involves providing additional information that is not usually collected (e.g., mother's maiden name, sexual orientation)

- Absent: Shopping cart with credit card payment option as typically offered through most sites

2. Information abnormality: information regarding the desired item/service is abnormal.

    - Present: Extremely low or high price in comparison to listed other sellers, missing product description, highly negative review and rating score, product description and name do not match displayed picture, or no sales history for the given seller

    - Absent: Comparable price to other listed sellers, commonly available description, expected customer reviews and ratings (average for sellers of this product)

3. Web site design abnormality: can include extremely poor Web site design, errors and/or broken links that are not specifically relevant to the product/service information.

    - Present: Frequent and blatant misspellings, look-and-feel of Web page changes during the process

    - Absent: Consistent appearance throughout the entire process

Distrust manipulations consists of three levels: malevolence, incompetence and deceit.

5.2 SUBJECTS

Subjects were recruited from sections of BUSMIS 1060 and introductory psychology courses during Fall 2009 and Spring 2010. Based on the 3x2 nature of the study, at least 120 subjects were needed to meet PLS standards. A power analysis was performed to ascertain the desirable sample size for this study. By assuming small effect sizes of the manipulations (.15) and assuming a power of .80, I determined that, given the power of this study, a sample of at least 393 subjects needed to be obtained. Therefore, my goal was to include at least 400 subjects, which was achieved (n = 513).

5.3 INSTRUMENTS

This section describes and lists the instruments that were utilized to measure constructs of interest in this study.

5.3.1 General Behavioral Intentions

This study includes six general trusting intentions that are important to the vast majority of Web sites. These intentions were measured on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree.” Additionally, instructions with the instruments informed each subject to consider the scenario that he or she just viewed and to answer the questions with respect to the seller of the product in the given scenario. All references to the trustee were referred to as “the

seller." These scales have been utilized and developed in previous research regarding general trusting intentions. The questions are included here:

1. General e-Commerce Trusting Intentions (Second-order formative construct) (McKnight et al., 2002)
    a. Willingness to Depend
        i. When an important issue or problem arises, I would feel comfortable depending on the information provided by the seller.
        ii. I could always rely on the seller in a tough situation.
        iii. I feel that I could count on the seller to help with a crucial problem.
        iv. Faced with a difficult situation that required me to buy a given product right now, I would use the seller.
    b. Willingness to Follow Advice
        i. If I had a challenging problem, I would want to use the seller again.
        ii. I would feel comfortable acting on the information given to me by the seller.
        iii. I would not hesitate to use the information the seller supplied me.
        iv. I would confidently act on the information I was given by the seller.
        v. I would feel secure in using the information from the seller.

vi. Based on the scenario I just reviewed, I would buy the product, and be assured that the correct item, in good condition would be sent to me.

c. Willingness to Give Information

i. (Instructions) Suppose you wanted more specific information about a given product and you could consult (one time only) by telephone with a salesman from the seller for 15--30 minutes (free of charge). For this service, please answer the following:

ii. I would be willing to provide information like my name, address, and phone number to the seller's representative.

iii. I would be willing to provide my social security number to the seller's representative.

iv. I would be willing to share the specifics of my product needs with the seller's representative.

d. Willingness to Make Purchases

i. (Instructions) Suppose the Amazon.com was not free, but charged to access product information on the site. Answer the following questions:

ii. Faced with a difficult situation, I would be willing to pay to access information about the product.

iii. I would be willing to provide credit card information to the seller.

iv. Given a tough issue, I would be willing to pay for a 30-minute phone consultation with the seller's representative.

2. General Web Site Related Intentions (Galletta et al. 2004)

    a. Intentions to Recommend Site to Others

        i. How readily would you recommend that others buy from this seller?

    b. Intentions to Return to Site

        i. How likely is it that you would want to buy from this seller again?

5.3.2 Ambivalence

Ambivalence was derived from the hybrid model of trust and distrust, as outlined in this paper. Following the semantic differential method pioneered by Kaplan (1972), ambivalence was calculated within the hybrid model of trust and distrust using three commonly accepted formulas for calculating ambivalence (Jost and Burgess, 2000.

Second, to confirm the ability of the hybrid model of trust and distrust to compute actual ambivalence, a second independent measure of ambivalence was utilized, as developed by Priester et al., (2007). Subjects were instructed to indicate the extent to which they agreed with the following statements as indicated by the scale for each question.

1. Possessed reactions that were mixed versus one-sided

    (0: ``completely one-sided" to 10: ``completely mixed")

2. Felt conflict in their reactions

    (0: ``not at all conflicted" to 10: ``completely conflicted")

3. Experienced behavioral indecision

(0: ``not at all indecisive'' to 10: ``completely indecisive'')

4. Felt tension in their thoughts and feelings

(0: ``not at all tense'' to 10: ``completely tense'')

5. Felt ambivalence

(0: ``not at all ambivalent'' to 10: ``completely ambivalent'')

5.3.3 Distrusting Beliefs

The distrusting beliefs instrument was adapted from two previous instruments developed by McKnight et al. (2002, 2006). The first McKnight et al. study created a trusting beliefs instrument, and the second focused on creating a distrusting beliefs instrument. As established by McKnight et al. (2002, 2006) distrusting beliefs, and its disposition, are second-order formative constructs; each with three sub dimensions, as previously discussed in this paper. However, building upon the ambivalence literature stream, these instruments have been adapted as suggested by Priester and Petty (1996). Subjects were instructed to only consider the negative aspects of the seller and to respond to the following questions on a semantic differential 4-point Likert scale.

Attitudinal research has created the semantic differential technique for measuring and assessing the negative and positive valences of a given construct. First, a subject must be cued to consider only negative aspects of the attitude object. Then, negatively focused questions will be asked of the subject. Likewise, for the positive instantiation, subjects would then be cued to consider only the positive aspects of the attitude object and respond to questions that are reversed

from the negative instantiation (meaning, that the direction of the question would be reversed to indicate positive characteristics of the seller). However, unlike bidimensional approaches to trust and distrust, semantic differentiation does not involve a continuum scale ranging from strongly disagree to strongly agree, but rather only allows directions along one side of the continuum. This means that subjects are typically given a 4-point scale that ranges from “Do not agree” to “Strongly agree” (Kaplan 1972; Priester and Petty, 1996) Thus, each instantiation consists of a half scale that can be combined to form overall magnitude for construct, if needed.

1. Malevolence
    a. I worry that the seller is only concerned about his or her own interests.
    b. It concerns me a lot that the seller pretends to care more about me than he or she really does.
    c. I fear that the seller inwardly dislikes putting himself or herself out to help other buyers.
2. Deceit
    a. Unfortunately, the seller would tell a lie if he or she could gain by it.
    b. It’s a troubling fact that the seller won’t always hold to the standard of honesty he or she claims.
    c. Sadly, the seller would cheat on his or her financial statements if he or she thought they could get away with it.
3. Incompetence

a. I am troubled that the seller is not as knowledgeable in his or her field as I would expect.

b. I am cautious because I believe that the seller does a haphazard job at what he or she does.

c. Concern is justified, since the seller is not really competent in his or her area of expertise.

5.3.4 Trusting Beliefs

This study adopts the instrument utilized by McKnight et al. (2002) for all trust constructs. Again, trusting beliefs, and its disposition, are second-order formative constructs as established by McKnight et al. (2002) with their three respective dimensions that are described in this paper. However, the measurement of trusting beliefs is adopted as per the recommendations by Priester and Petty (1996) for the measurement of rival attitudes and ambivalence. Subjects were asked to only consider the positive characteristics of the seller when responding to the following questions on a 4-point Likert scale as previously described.

1. Benevolence

    a. I believe that the seller would act in my best interest.

    b. If I required help, the seller would do his or her best to help me.

    c. The seller is interested in my well-being, not just his or her own.

2. Integrity

a. The seller would be truthful in his or her dealings with me.

b. I would characterize the seller as honest.

c. The seller would keep his or her commitments.

d. The seller would be sincere and genuine.

3. Competence

a. The seller would be competent and effective in providing the product.

b. The seller would perform his or her role of providing opportunities for the product very well.

c. Overall, the seller would be a capable and proficient provider of the product.

d. In general, the seller would be very knowledgeable about the product.

5.3.5 Disposition to Distrust

The disposition to distrust was measured in a pre-experiment survey. Subjects were cued to only consider their negative inclinations regarding e-commerce sellers when answering these questions. Each item was measured on a 4-point Likert scale from “do not agree” to “very strongly agree.” This scale was adapted from McKnight et al. (2003) for the context of this study. The items are listed here:

1. Malevolence

a. I worry that online merchants are usually concerned about their own good.

b. It concerns me a lot that of online merchants pretend to care more about their customers than they really do.

c. I fear that most online merchants inwardly dislike putting themselves out to help out their customers.

2. Deceit

a. Unfortunately, most online merchants would tell a lie if they could gain by it.

b. It's a troubling fact that online merchants don't always hold to the standard of honesty they claim.

c. Sadly, most online merchants would cheat their customers if they thought they could get away with it.

3. Incompetence

a. I am troubled that many online merchants are not as knowledgeable in their product/service area as you would expect.

b. I am cautious because I believe that most online merchants do a haphazard job at what they do.

c. Concern is justified, since many online merchants are not really competent in their area of expertise.

4. Distrusting Stance

a. I'm usually cautious about relying on people when I first work with them.

b. When I first meet people, I tend to watch their actions closely.

c. I typically have suspicious feelings towards new acquaintances until they prove to me that I can trust them.

d. I am hesitant to trust people until they have shown themselves to be reliable.

5.3.6 Disposition to Trust

The disposition to trust used the instrument as created by McKnight et al. (2002), following the standard 4-point Likert-type semantic differential scale (Kaplan, 1972). As before with the disposition to distrust, subjects were asked to only consider their positive inclinations in regards to others. This construct was also measured in the pre-experiment survey. The items are listed here:

1. Benevolence
    a. In general, people really do care about the well-being of others.
    b. The typical person is sincerely concerned about the problems of others.
    c. Most of the time, people care enough to try to be helpful, rather than just looking out for themselves.
2. Integrity
    a. In general, most folks keep their promises.
    b. I think people generally try to back up their words with their actions.

c. Most people are honest in their dealings with others.

3. Competence

   a. I believe that most professional people do a very good job at their work.

   b. Most professionals are very knowledgeable in their chosen field.

   c. A large majority of professional people are competent in their area of expertise.

4. Trusting Stance

   a. I usually trust people until they give me a reason not to trust them.

   b. I generally give people the benefit of the doubt when I first meet them.

   c. My typical approach is to trust new acquaintances until they prove I should not trust them.

5.3.7 Suspicion

This study adapted the instrument created to assess state suspicion in communications between partners in a relationship developed by McCornack and Levine (1990). Items have been modified to pertain to an e-commerce setting where potential deception may occur as in the context of this study. Each item is measured on the typical 7-point Likert scale. Items are listed here:

1. When I viewed the scenario about the seller and the product, I initially believed the information*.
2. I believed that the seller was potentially being dishonest.
3. I suspected that the seller was lying to me.
4. I knew "something fishy" was going on when I viewed the scenario.
5. I knew the seller was lying or withholding information by the end of the scenario.
6. When I first viewed the scenario, I had the feeling that something was wrong with what was being presented.

5.3.8 Other Measures

Other measures were collected concerning subject age, level of education, nationality and gender, as potential control variables in the model.

5.4 EXPERIMENTAL DESCRIPTION

Participants were recruited from the two readily available subject pools: BUSMIS 1060 and introductory psychology courses. Initially, subjects were asked to complete a pre-experiment survey to gather stable personality characteristics (e.g., demographics, Internet experience, and the dispositions to trust and distrust). Once participants have completed the initial survey, they

* Reverse coded item

proceeded to an online survey that contains the experimental manipulations, manipulation checks and post-manipulation survey.

Participants were told to imagine that they were buyers of a given product (i.e., battery pack) and that a given search provided the following scenario. They were asked to review the indicated screenshots and to respond to several questions concerning their attitudes and intentions that they would have, if they had been performing such a purchase. Each Web page was listed and described in the order that they appeared (Screen shots of the Web pages are shown in Appendix B).

First, participants viewed the main product page for the item that he or she was purchasing. This page contained an item picture, price, description, etc. that is normally found on a product page. An initial view of the page was presented, and then additional zoomed-in portions of the page were presented to assure that subjects became familiar with the information there (i.e., product description, price, and seller information).

Second, customer reviews and ratings were also displayed along with several comments from previous customers, such as those commonly found on Amazon.com. Like the product information page, portions of the customer ratings were zoomed-in to increase the likelihood of subjects being familiar with those portions of that page.

Third, subjects were then shown a buyer's information page that requested personal and shipping information.

Fourth, subjects were then shown a page where buyers would enter credit card and billing information.

Finally, subjects were then shown a product confirmation page that summarized the item, price, shipping and billing information

To increase the likelihood of coexisting rival attitudes and potential ambivalence, several different, yet important, product attributes and dimensions were manipulated to be either abnormal or normal. Following research in ambivalence, several versions of the purchase process were utilized to focus on an overall attempted manipulation for normality, abnormality and ambivalence rather than focusing on specific manipulations of Web site factors. The abnormality manipulation groupings are summarized in Table 12.

Table 12. Summary of Experimental Manipulations

	Normal Features	**Abnormal Features**				**Ambivalent Features**		
Treatment condition	(1) Normal	(2) Abnormal	(3) Incompetence	(4) Malevolence	(5) Deceit	(6) Ambiv 1	(7) Ambiv 2	(8) Ambiv 3
Process	Normal	Change to google look-and-feel	Sex orient Maiden name	Sex orient Maiden name	Change to google look-and-feel	Normal	Sex orient Maiden name	Sex orient Maiden name
Web Site Design	Normal	Wrong pic	Misspellings	Misspellings	Wrong pic	Misspellings Wrong pic	Normal	Normal
Informational	Normal	Price high Wrong prod desc. No ratings	Low price Missing prod desc. Incomp rating	Low price Missing prod desc. Malev rating	Price high Wrong prod desc. Deceit ratings	Normal price Right prod desc. Deceit rating	High price Right prod desc. Incomp rating	High price Right prod desc. Malev rating

Finally, subjects then proceeded to the instruments to respond to questions about distrusting and trusting beliefs, intentions and ambivalence in regards to this situation if they would imagine being buyers in this situation. They were also asked to provide their intentions towards the seller and the Web site.

6.0 ANALYSIS

This section reviews the quality of the data, its normality, convergent and divergent validities, testing for common methods bias, effectiveness of the manipulations, mediation tests, and model analysis.

6.1 OPERATIONALIZATION OF THE MODEL OF TRUST AND DISTRUST

Having explained the model in general terms, it now becomes important to explain how it was implemented and operationalized. First, I will discuss distrust (n.b., the operationalization of distrust applies equally to trust as its opposite valence within this hybrid model). Then I will describe how both trust and distrust form net trusting beliefs.

6.1.1 Operationalizing Distrust (and Trust)

Distrust consists of three negative valence instantiations: incompetence, malevolence, and deceit as was previously defined. *Incompetence* refers to the negative instantiation of the ability component of net trust. *Malevolence* pertains to the negative instantiation of the orientation component of net trust. Finally, *deceit* refers to the negative instantiation of the dependability component of net trust. Each of these instantiations is a general characteristic of the seller, rather

than a specific characteristic of a component that could be proposed (e.g., specific instances of incompetence like poorly or incompletely describing the product, failing to pack the product carefully or shipping it to the wrong address, or receiving payment without shipping the product at all).

Further, the negative instantiation consists only of questions that attempt to measure the negative aspect of the component using the semantic differential technique (Kaplan, 1972; Priester and Petty, 1996). The use of half-scales within a semantic differential technique allows for more complex relationships beyond the absolute magnitude of an instantiation of a component, or its overall magnitude. The variance of each instantiation can also be used as an indicator of the strength of each instantiation, and can be used to create normalized scores, which would place more weight on items that have both high magnitude and contain less variation (Jost and Burgess, 2000). This practice would provide more accurate measurement of this instantiation due to the decreased variance within the measurement of the instantiation (Kaplan, 1972; Jost and Burgess, 2000).

To indicate how the second-order formative construct of distrust is to be measured, an example is useful. Subjects were cued to consider only the negative aspects of the seller and respond to questions regarding the general incompetence, malevolence, and deceit of the seller. Each of these instantiations is a reflective construct, and as such, each item will be loaded as a reflective indicator of each of these subconstructs. Thus, the measurement of each negative instantiation is relatively straight forward and follows general procedures for assessing reflective indicators as found in other research.

Each of the first-order reflective subconsructs is then loaded on its corresponding second-order formative distrust construct, following the repeated indicator approach in PLS. Thus, the

measurement of distrust is based only on the negative instantiation of each component within the model. Likewise, trust would be formed in the same way, but only using the positive items related to trust.

6.1.2 Forming Net Trusting Beliefs

Net trusting beliefs can be calculated once both trust and distrust have been formed from their respective first-order reflective instantiations of the general components of net trust (ability, orientation and dependability). Prior to assessing net trusting beliefs, the potential for ambivalence must be determined. Basic ambivalence scores must be ascertained for both intra- and intercomponent ambivalence.

To calculate intracomponent ambivalence, the procedures outlined in Jost and Burgess (2000) were followed. First, the items from each instantiation of a continuum were summed to form an overall magnitude for that instantiation. The overall magnitudes were then compared and the following three measures were used to calculate ambivalence for each component based on the smaller conflicting magnitude score (represented by C), and the dominant magnitude score (represented by D).

Similarity Intensity Model (SIM): 3C - D

Conflicting Reactions Model (CRM): 2C

Gradual Threshold Model (GTM): 5(C+1)^.5 – (D+1)^(1/C)

This will result in three measures of intracomponent ambivalence, based on three prominent models of ambivalence (Priester and Petty, 1996; Jost and Burgess, 2000), for each of the three components of net trust.

To calculate intercomponent ambivalence, the same magnitude scores should be formed for each instantiation in each of the three components. A component pair is first selected, for example, ability and orientation. Then, the positive instantiation score on one component is compared to the negative instantiation score on the other component, and vice versa. Within each of these two pairings, the score of larger magnitude is assigned the dominant label, with the smaller being assigned to the conflicting label. Each of these two pairs was then used to calculate ambivalence based on the three models. However, the final score consists of the absolute sum of the two scores for the two pairs. This method was performed for all three pairings found between the three components.

Once measures for ambivalence were derived from the items within the model, the net trusting beliefs measure was calculated. Again, the standardized magnitudes for each instantiation within a component were used. Within the given component, the standardized, instantiation magnitude (e.g., incompetence) was multiplied by negative 1 and then averaged with the standardized, positive instantiation (e.g., competence). This result represents the base score for the individual on this component and the same procedure was performed for all three components.

Having computed the underlying scores for each component, and with trust and distrust measures already formed, the measure of net trusting beliefs was derived from the calculated scores for distrust, trust and the three general component scores. This results in net trusting beliefs being modeled as a second-order formative construct with calculated distrust (first-order formative construct), calculated trust (first-order formative construct), and the three calculated general component scores serving as its formative measures.

6.2 SAMPLE DESCRIPTION

A total of 540 responses were completed by subjects in introductory business and psychology courses at the University of Pittsburgh during the Fall 2009 semester. 56.5% of the subjects were male and 43.5% female. The average age was 20.9, with a standard deviation of 3.2 years. The respondents reported an average of 4.1 completed collegiate semesters, with a standard deviation of 2.5 semesters. I used STATA (IC 10.1 for Macintosh) to check the data quality, outliers and other assessments while Smart PLS (version 2.0) was used to test the proposed model.

Of the 540 total responses, 27 had incomplete data that required that the subject be dropped from analysis, leaving the total sample size for analysis at 513.

6.3 DATA QUALITY, OUTLIER, AND NORMALITY ASSESSMENT

This section briefly describes the data, provides summary tables and assesses whether any outliers exist or whether the assumption of normality is appropriate.

Data Quality. It is important to detect whether any of the constructs are highly correlated. Three checks were used to verify the correlation between the constructs. A correlation matrix was created and is summarized in Table D3. As all of the construct correlations are below the .90 level, this passes this first verification.

Then I ran a graph matrix of each construct against all other constructs to see the distribution of constructs in relation to each other. This matrix is ideal in that correlation can be loosely assessed through visual scanning, potential problems or outliers can be easily identified.

A quick scan of the matrix (See Figure 14) shows no serious problems, and thus supports further analysis of the data.

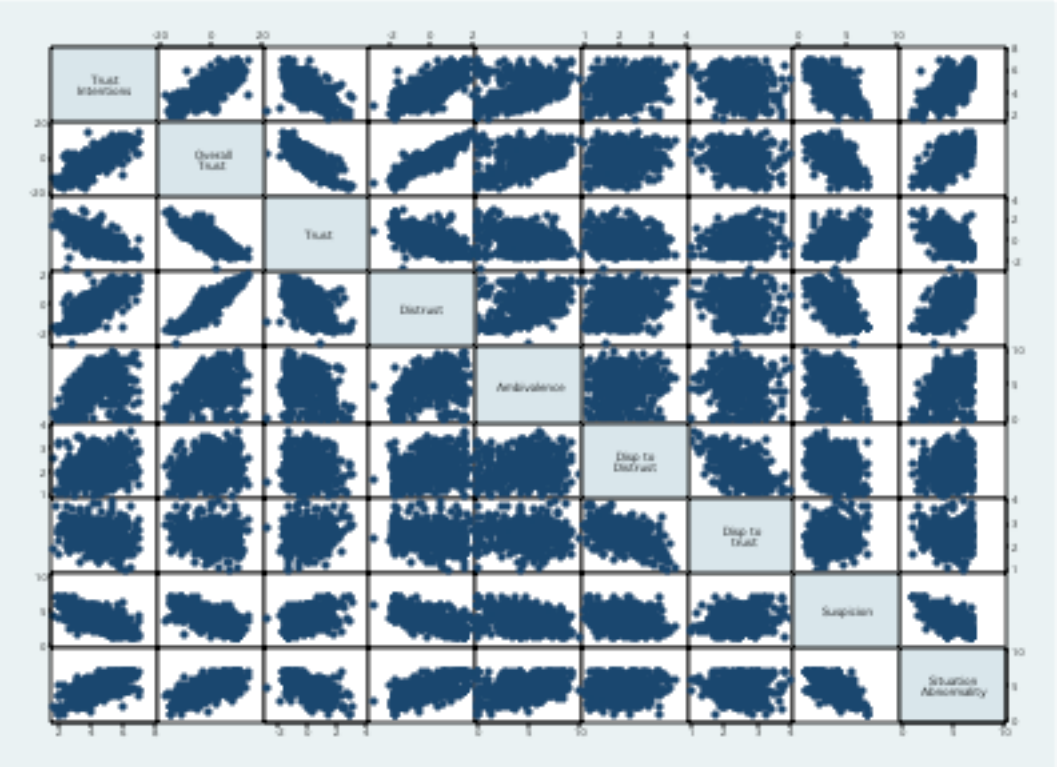


Figure 14. Graph Matrix of Constructs in Final Data Collection

Finally, the variance inflation factors for the constructs were computed. Due to the higher order factors involved with trust, only overall trust was used in this test. The VIF scores are shown in Table 13. As no indicators have VIFs greater than 10, this test also supports further analysis of the model. Additionally, a condition index was computed for each model and was found to be within acceptable limits for each of the three groupings.

Table 13. VIF Results for Constructs in Final Data Collection

Construct	VIF
Situational abnormality	2.22

Overall trust	2.21
Suspicion	2.08
Disposition to distrust	1.42
Disposition to trust	1.42
Ambivalence	1.23
Mean VIF	1.76
Condition Index	40.27

Outlier Assessment. Beyond checking the collinearity of the data, it is important to identify any data points that are so extreme that they could overcome robustness assumptions for computed models. To identify outliers, several methods were utilized. First, as already described, the graph matrix was scanned to identify whether any points were uniquely distant from the group of other points. No points appeared to be too extreme and thus this first general check indicates no potential outliers (This was also run at the variable level to detect problems with any individual indicators, however this graph is too large for this document and is not included).

Second, residuals, leverage, and Cook's d were computed from a basic regression model. Extreme values for each of these created statistics were reviewed. A few residuals exceeded maximum standard levels, but not with any extreme values to indicate any serious problems with any of the indicated observations (Bruin, 2006). Only six residuals were larger than the absolute value of 2; with only one scoring above 3 (id=40). However, all Cook's d values were less than the maximum acceptable level of .10 (Bruin, 2006).

Additionally, leverage plots were created by contrasting the leverage with the level of the residual. As shown in Figure 15, the plot is acceptable excluding subject 40 (i.e., only one extreme point is present. Its residual/leverage ratio is roughly .1 larger than the remainder of the sample).

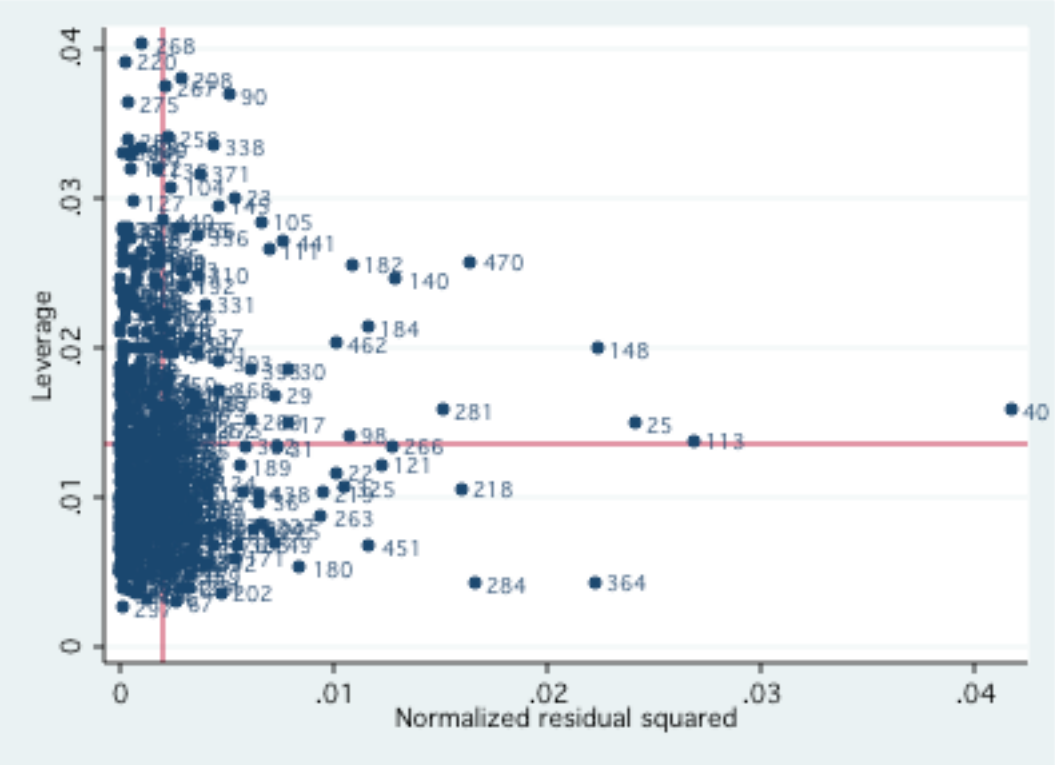


Figure 15. Leverage vs. Residual Plot of Final Data Collection

Finally, an inter-quartile range was computed for the variables. This analysis identifies severe outliers by identifying any data points that are three inter-quartile ranges above the third inter-quartile range, or three inter-quartile ranges below the first inter-quartile range. The test indicated that subject 40 was an extreme outlier and was removed from the final analysis. Several other moderate outliers were identified in this test, but these were retained for further analysis.

Based on these analyses, I conclude that no remaining serious outliers were identified beyond subject 40, which would warrant removal from the dataset.

Normality Assessment. Having ascertained that constructs are not highly correlated and that no remaining serious outliers are present in the data, it is now important to verify the normality of the data sample. Several tests were used to examine the normality assumptions needed to analyze the final model. First, the inter-quartile test is also used for normality, and as indicated above, all test results indicated that no remaining problems exist within the data.

Second, several graphical methods were used to visually ascertain how the data were dispersed. The first of these three graphs displays kernel density (see Figure 16). As shown in Figure 16, the dispersion of the collected data is roughly normal and thus passes this visual inspection. Second, a standardized normal probability plot (see Figure 17) and a Q-Q plot were created (see Figure 18). The first plot (Standardized normalized probability; See Figure 17) was near the desired line and did not drastically depart and thus supports normality (Bruin, 2006). However, the second plot (Q-Q, see Figure 18) did show some potential departures at the extreme upper and lower bounds of the plot. Given that the other two tests show no serious problems, this test is also tentatively accepted pending the third check described below.

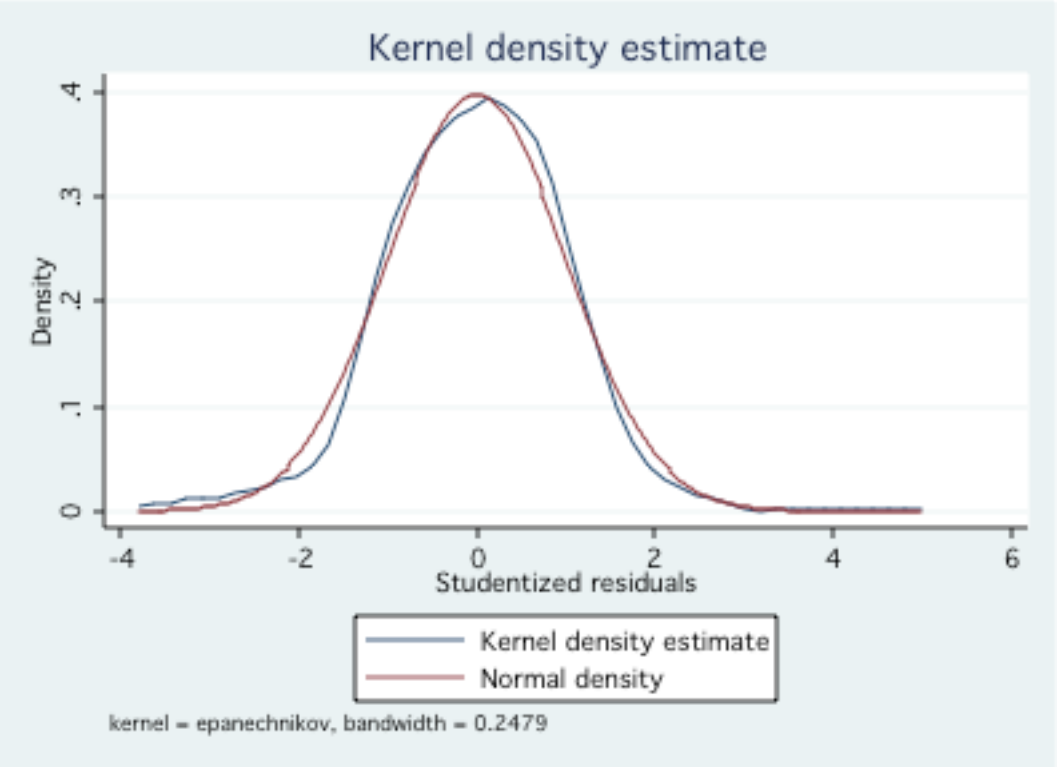


Figure 16. Kernel Density of Final Data Collection

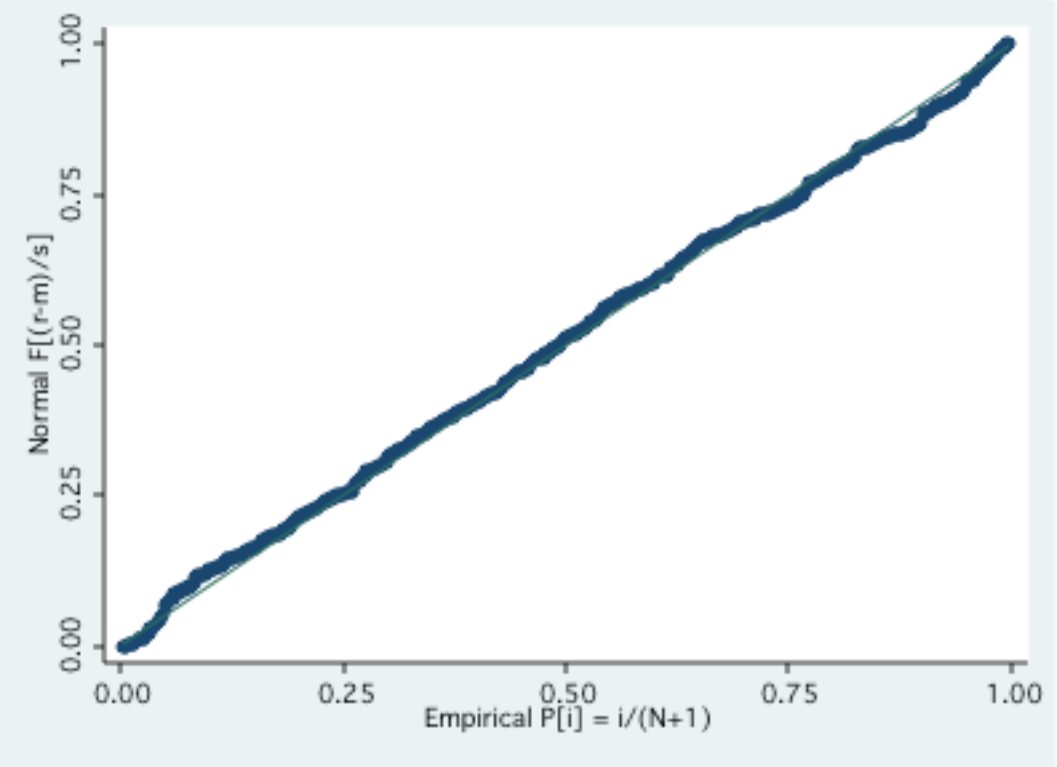


Figure 17. Standardized Normality Probability Plot of Final Data Collection

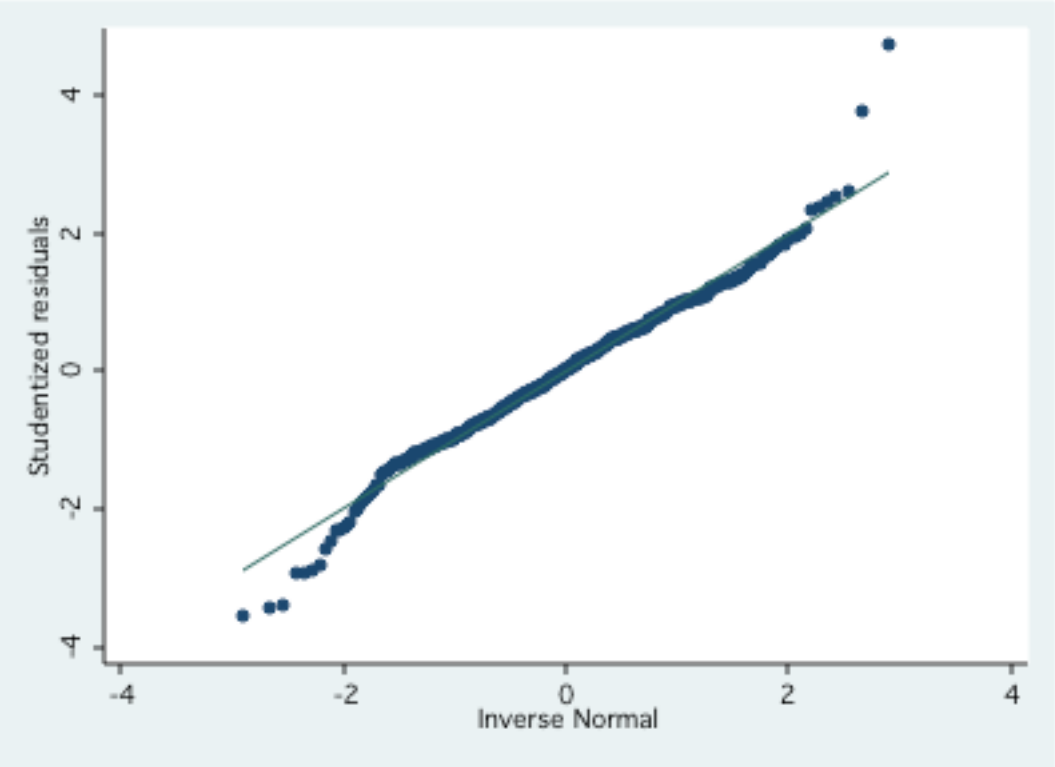


Figure 18. Q-Q Plot of Final Data Collection

Third, I computed the Shapiro-Wilk W test for normality of the residuals. The test results in a p level of .983, which is not significant. Thus, I fail to reject the null hypothesis that the data is normally distributed.

Finally, two tests were also computed to examine the data for heteroscedasticity. Both White's test and the Breusch-Pagan test have null hypotheses that the variance of the residuals is homogeneous. Thus, the insignificant results for both tests fail to reject the null hypotheses and support the assumption of homoscedasticity ($p=0.175$ for White's test, and $p=0.989$ for the Breusch-Pagan test).

These tests provide support that the data is normally distributed, excluding the Q-Q plot. However, given that all other tests do not indicate any significant problems with normality and heteroscedasticity, the concerns from the Q-Q plot are judged to be minor.

6.4 CONVERGENT AND DIVERGENT VALIDITY

Before assessing factorial validity, is important to determine which constructs are formative and which are reflective. Most of the measures were carefully validated in previous research, thus this analysis is largely confirmatory (Diamantopoulos and Winklhofer, 2001; Jarvis et al., 2003; Petter et al., 2007). Likewise, it is also critical to consider whether there are any second-order constructs that are composed of first -order constructs (or dimensions), which can be either reflective or formative (Petter et al., 2007). Based on this literature, several of the constructs in this study are reflective, and can be assessed using traditional validity procedures, while others are formative (based on being higher order, formative factors; i.e., trust and distrust) and require other procedures.

To establish factorial validity of the indicators, the directions of Gefen and Straub (2005) were followed. First, to demonstrate convergent validity, a bootstrap with 200 resamples was generated. The t-values of the outer model loadings were then examined; all of the retained outer loadings were significant at the .05 α level (One factor was dropped from Ambivalence due to a non significant loading on the construct; refer to Appendix D). These results indicated strong convergent validity for the model.

To demonstrate discriminant validity, two established techniques were used: (1) correlate the latent variable scores against the indicators and (2) calculate the square root of the average variance extracted (AVE). Both analyses indicated very strong discriminant validity, with the exception of four indicators that were dropped (two from Ambivalence, one from Suspicion, and one from Distrusting stance). Items neither correlated with other constructs nor resulted in scores

exceeding the square root of the AVE. All of the constructs show discriminant validity, except where already noted (Refer to Appendix D).

Finally, to establish reliability, Smart PLS computes a composite reliability score as part of its integrated model analysis (see Table 14). Each construct in our research model demonstrated high levels of reliability that exceeded the standard thresholds. Given all of these results, it is concluded that the measurement model displays adequate levels of convergent and discriminant validity and is suitable for PLS SEM analysis.

Table 14. Composite Reliability of Constructs

Construct	Composite Reliability
Ambivalence	.8340
Benevolence (TB)	.9106
Competence (TB)	.9355
Deceit (DB)	.9546
SA—Design	.8126
Follow advice (TI)	.9471
Give info (TI)	.7430
Incompetence (DB)	.9449
Integrity (TB)	.9436
SA—Info	.8911
Make purchase (TI)	.8682
Malevolence (DB)	.9106
SA—Product	.8344
SA—General	.8246
Suspicion	.9289
Will to disclose info (TI)	.9306
Benevolence (DT)	.8626

Competence (DT)	.8544
Distrusting stance (DD)	.9196
Deceit (DD)	.8901
Incompetence (DD)	.8927
Integrity (DT)	.8883
Malevolence (DD)	.8634
Trusting stance (DT)	.8929

6.5 COMMON METHOD BIAS

Although this study has different manipulations, all data were collected using a similar-looking online survey; thus, I tested for common method bias to establish that it is not a likely factor in the data collection. To do so, I used three different approaches.

The first approach, which as stated earlier is increasingly in dispute, was to conduct Harman's single factor test (Podsakoff et al., 2003). This test required that I run an exploratory unrotated factor analysis on all of the first-order constructs. The aim of the test is to see if a single factor emerges that explains the majority of the variance in the model. If so, then significant common method bias likely exists. This factor analysis produced 21 distinct factors with a minimum eigenvalue of 1.0, the largest of which accounted for 47% of the variance of the model.

The second approach, which is more accepted, is simply to examine a correlation matrix of the constructs and to determine if any of the correlations are above 0.90, which is strong

evidence that common method bias exists (Pavlou et al. 2007). In no case were the correlations near this threshold, as previously stated.

The third, and most recent and accepted test for common methods bias (Liang et al., 2007) is to compare the substantively explained variance of the items against average methods-based variance. To do this, all items were loaded onto a reflective first-order construct to represent the methods variance and it was related to all items in the model. All items were loaded onto their own, single-item indicator constructs, which were also predicted by the original construct with its multiple items. A bootstrap of this entire model was performed to extract the significance of all relationships in the model, and the loadings of all relationships. Based on this analysis the average substantively explained variance of the items is .833, while the average method-based variance is -.001. This makes a ratio of 637:1. In addition, most of the relationships between the items and the method-based construct were insignificant; thus I conclude that method-based variance is not a serious concern for this study.

Given that the data passed all tests of common method bias, it is unlikely that the data exhibit negative effects from common method bias.

6.6 MANIPULATION CHECKS

To assess the manipulation validity of the experiment, manipulation check questions were added to the posttest to determine whether participants perceived their treatment manipulations. The manipulation check ascertained whether the participants had noticed the process abnormalities, Web site design abnormalities and informational abnormalities. The results of

these manipulation questions are shown in Table 15[2]. As can be seen, when asked whether subjects perceived the manipulations, usually a majority was aware of the manipulation.

Table 15. Summary of Manipulation Checks — Qualitative Assessment

Treatment #	Manipulation	Expected	Correct?	Wrong?	Unsure?	Total
1	Product info	Normal	81% (54)	3% (2)	16% (11)	67
	Price	Normal	81% (54)	3% (2)	16% (11)	67
	Reviews	Positive only	96% (64)	3% (2)	1% (1)	67
	Reviews	Absent	73% (49)	7% (5)	18% (12)	66
	Information	Normal	72% (48)	16% (11)	12% (8)	67
2	Product info	Abnormal	27% (15)	57% (32)	16% (9)	56
	Price	Abnormal	54% (30)	18% (10)	29% (16)	56
	Reviews	Absent	86% (48)	2% (1)	13% (7)	56
	Reviews	Absent	88% (49)	0% (0)	13% (7)	56
	Information	Normal	55% (31)	18% (10)	27% (15)	56
3	Product info	Abnormal	49% (31)	38% (24)	13% (8)	63
	Price	Abnormal	65% (41)	24% (15)	10% (6)	62
	Reviews	Positive present	76% (48)	19% (12)	5% (3)	63
	Reviews	Negative present	95% (60)	0% (0)	3% (2)	62
	Information	Abnormal	59% (37)	24% (15)	17% (11)	63

[2] Expected: the type of manipulation being employed for that part of the study.
Correct: indicates the percentage (number) of participants that correctly identified the manipulation in the expected direction.
Wrong: indicates the percentage (number) of participants that incorrectly specified the manipulation in the unexpected direction.
Unsure: indicates the percentage (number) of participants that indicated they were unsure of any manipulation of that particular type in the study
Total: total number of responses
Highlighted row indicates a manipulation type that was not correctly identified by the majority of subjects presented with that type of manipulation.

Treatment #	Manipulation	Expected	Correct?	Wrong?	Unsure?	Total
4	Product info	Abnormal	48% (29)	34% (21)	18% (11)	61
	Price	Abnormal	59% (36)	26% (16)	15% (9)	61
	Reviews	Positive present	62% (38)	30% (18)	8% (5)	61
	Reviews	Negative present	93% (57)	3% (2)	3% (2)	61
	Information	Abnormal	48% (29)	28% (17)	25% (15)	61
5	Product info	Abnormal	52% (30)	29% (17)	19% (11)	58
	Price	Abnormal	36% (21)	41% (24)	22% (13)	58
	Reviews	Positive present	88% (51)	7% (4)	7% (4)	59
	Reviews	Negative present	95% (55)	2% (1)	5% (3)	59
	Information	Abnormal	34% (20)	40% (23)	26% (15)	58
6	Product info	Normal	49% (34)	26% (18)	25% (17)	69
	Price	Normal	72% (50)	4% (3)	23% (16)	69
	Reviews	Positive present	90% (62)	4% (3)	6% (4)	69
	Reviews	Negative present	91% (63)	1% (1)	7% (5)	69
	Information	Normal	48% (33)	25% (17)	28% (19)	69
7	Product info	Normal	72% (49)	12% (8)	15% (10)	67
	Price	Abnormal	45% (30)	30% (20)	25% (17)	67
	Reviews	Positive present	91% (61)	7% (5)	1% (1)	67
	Reviews	Negative present	94% (63)	4% (3)	1% (1)	67
	Information	Abnormal	48% (32)	28% (19)	24% (16)	67
8	Product info	Normal	68% (48)	17% (12)	15% (11)	71

Treatment #	Manipulation	Expected	Correct?	Wrong?	Unsure?	Total
	Price	Abnormal	51% (36)	28% (20)	21% (15)	71
	Reviews	Positive present	93% (66)	4% (3)	3% (2)	71
	Reviews	Negative present	92% (65)	4% (3)	4% (3)	71
	Information	Abnormal	48% (34)	24% (18)	27% (19)	71

Several of the manipulations were relatively weak in comparison to the majority that was correctly perceived (highlighted in pink). Specifically, this refers to all manipulations that were perceived with less than 50% accuracy. The most frequently under perceived manipulation was the request for sexual orientation and mother's maiden name (Information abnormalities for treatment #s 4, 7 & 8). This manipulation was only accurately recalled once (Treatment #3, 59%). It appears that subjects largely did not recall this manipulation although later analysis revealed that this type of abnormality did produce changes in overall trust. Perhaps other manipulations of this type of abnormality would be more blatant and produce stronger results (Everard and Galletta, 2005).

Additionally, two other treatments had less than expected perceived manipulations for informational abnormalities (#5 and #6). For the fifth treatment group, subjects did not perceived the subtle shift from an Amazon shopping cart to that of Google, which is akin to a finding found in the literature on change blindness[3] (Simons and Levin, 1997; Simons and Rensink, 2005). Perhaps the change from two of the most major e-commerce shopping carts was too subtle for subjects to perceive, again, later analysis indicates an effect from this manipulation despite the

[3] *Change blindness* refers the inability of individuals to notice changes in their current settings.

inability of subjects to perceive it. Likewise, subjects did not correctly recall that no informational abnormalities existed, potentially because various other abnormalities were present. It is possible that the mixed signals in other areas resulted in a faulty recall of this one area that was not anomalous.

Higher than market prices were also incorrectly perceived in two treatment groups (#5 and #7), while they were correctly perceived in two other groups (#2 and #8). Perhaps since the manipulation of high price was only marginal in comparison to the low price, it may explain why subjects incorrectly perceived this manipulation (50% of the total), whereas all low price manipulations were correctly perceived. In the instances where the high price manipulation was not perceived: it is possible that such a manipulation may be due to other abnormalities present in the process that may have interfered with subjects' memories regarding the price.

Finally, half of the treatment groups incorrectly recalled whether production-related information was being manipulated (Groups # 2, 3, 4 and 6). Groups 2, 3 and 4 incorrectly recalled that information was present about their products, despite the absence of such information (or the inclusion of information focusing deliberately on the wrong product: a car battery). Such inattention to detail may be attributed to the nature of the product being 'purchased' by the subjects (i.e., rechargeable AA batteries). As subjects are expected to be highly familiar with such items, it is possible that they largely ignored this information as it would not factor into a buying decision of an item that is well-known to the subjects.

Given that large portions of the subject sample were not aware of the manipulations, this study also relies upon means comparisons between treatment groups to assess the effectiveness of the manipulations. The means of the relevant constructs that were manipulated by the

treatment groups are shown in Table 16. As shown in the table, each of the treatments does significantly alter the levels of situational abnormality, which follows the study design. Specifically, the abnormality treatments (2-5) report even higher scores than the ambivalence treatments (6-8). Table 16 indicates that all abnormality manipulations were significant and in the correct direction.

Table 16. Summary of Situational Abnormality Manipulation Tests

Treatment #	SA—Design			SA—Info			SA—Prod			SA—General		
	Mean	***St dev.***	***t***	***Mean***	***St dev.***	***t***	***Mean***	***St dev.***	***t***	***Mean***	***St dev.***	***t***
1	2.985	1.089	---	3.183	1.206	---	2.817	1.145	---	3.300	1.201	---
2	4.304	1.126	8.52	4.794	1.464	8.23	3.432	1.547	2.98	4.753	1.349	8.06
3	4.501	1.248	9.64	4.625	1.302	8.79	4.042	1.387	7.01	5.118	1.209	11.93
4	4.623	1.164	10.99	4.586	1.102	9.94	4.482	1.320	9.85	4.964	1.167	11.14
5	3.899	1.281	5.38	4.559	1.388	7.61	3.856	1.458	5.48	4.982	1.391	9.28
6	3.660	1.164	4.81	4.154	1.207	6.68	3.653	1.410	4.93	4.951	1.284	10.68
7	3.792	0.945	8.04	3.898	1.220	4.79	3.920	1.240	7.28	4.639	1.130	9.70
8	3.966	1.012	8.17	4.199	1.150	7.44	3.895	1.449	6.27	4.640	1.366	8.32
All	3.949	1.223	---	4.225	1.338	---	3.758	1.436	---	4.656	1.370	---

Additionally, the same procedure was used to verify the trust manipulations found in treatments 3-5. These results are shown in Tables 17 and 18. Tables 17 and 18 indicate that all trust manipulations were significant and in the intended direction. For the ease of the reader, the

trust dimension is highlighted with the corresponding manipulation, which is expected to be the lowest mean in the given column.

Table 17. Summary of Trust Manipulations

	Benevolence				Competence				Integrity			
	Mean	St Dev	t value	p value	Mean	St Dev	t value	p value	Mean	St Dev	t value	p value
1 (Control)	2.325	0.068	n/a	n/a	2.726	0.070	n/a	n/a	2.576	0.072	n/a	n/a
2 (Abnormal)	1.729	0.085	5.497	0.000	1.832	0.084	8.287	0.000	1.754	0.081	7.798	0.000
3 (Incompetence)	1.719	0.075	6.005	0.000	1.751	0.085	8.962	0.000	1.731	0.085	7.775	0.000
4 (Malevolence)	1.650	0.074	6.714	0.000	1.797	0.071	9.456	0.000	1.752	0.079	7.918	0.000
5 (Deceit)	1.729	0.084	5.504	0.000	1.812	0.094	7.897	0.000	1.740	0.089	7.459	0.000
6 (Ambiv 1)	1.773	0.074	5.482	0.000	1.839	0.075	8.781	0.000	1.810	0.082	7.204	0.000
7 (Ambiv 2)	1.949	0.083	3.503	0.001	2.129	0.085	5.473	0.000	1.964	0.077	5.982	0.000
8 (Ambiv 3)	1.737	0.069	6.070	0.000	2.017	0.072	7.141	0.000	1.869	0.067	7.427	0.000

Table 18. Summary of Distrust Manipulations

	Malevolence				Incompetence				Deceit			
	Mean	St Dev	t value	p value	Mean	St Dev	t value	p value	Mean	St Dev	t value	p value
1 (Control)	1.874	0.078	n/a	n/a	1.522	0.081	n/a	n/a	1.672	0.086	n/a	n/a
2 (Abnormal)	2.664	0.113	5.746	0.000	2.717	0.130	7.805	0.000	2.718	0.121	7.030	0.000

3 (Incompetence)	2.727	0.089	7.221	0.000	2.937	0.089	11.753	0.000	2.856	0.090	9.486	0.000
4 (Malevolence)	2.735	0.102	6.713	0.000	2.736	0.102	9.327	0.000	2.829	0.092	9.181	0.000
5 (Deceit)	2.823	0.119	6.685	0.000	2.719	0.123	8.125	0.000	2.865	0.132	7.589	0.000
6 (Ambiv 1)	2.775	0.086	7.765	0.000	2.791	0.087	10.708	0.000	2.864	0.085	9.855	0.000
7 (Ambiv 2)	2.466	0.087	5.070	0.000	2.416	0.095	7.160	0.000	2.446	0.093	6.114	0.000
8 (Ambiv 3)	2.522	0.073	6.039	0.000	2.430	0.084	7.806	0.000	2.530	0.077	7.434	0.000

These results indicate that, with the notable exception of the deceit manipulation on integrity), the manipulations tended to produce the most pronounced results on their intended subdimensions of both trust and distrust. However, I note that all manipulations that contained some distrusting or negative cue (i.e., treatments 2-8) all resulted in higher levels of distrust when compared with the control treatment. This indicates that the effects of the manipulation for a specific subdimension of distrust tend to bleed over to the other subdimensions. This supports the assumption that intraattribute ambivalence is likely not to be present in such relationships, as trusters do not distinguish between the subdimensions in great detail required for such ambivalence.

6.7 MAIN THEORETICAL MODEL ANALYSIS

I performed the analysis using partial least squares (PLS) analysis. PLS is especially suited for models that have both reflective and formative constructs. Given the multiple second-order

formative constructs in the model, I rely upon PLS to estimate my results. I used the package Smart PLS (2.0 beta version) for the analysis. The model results are depicted in Figure 19.

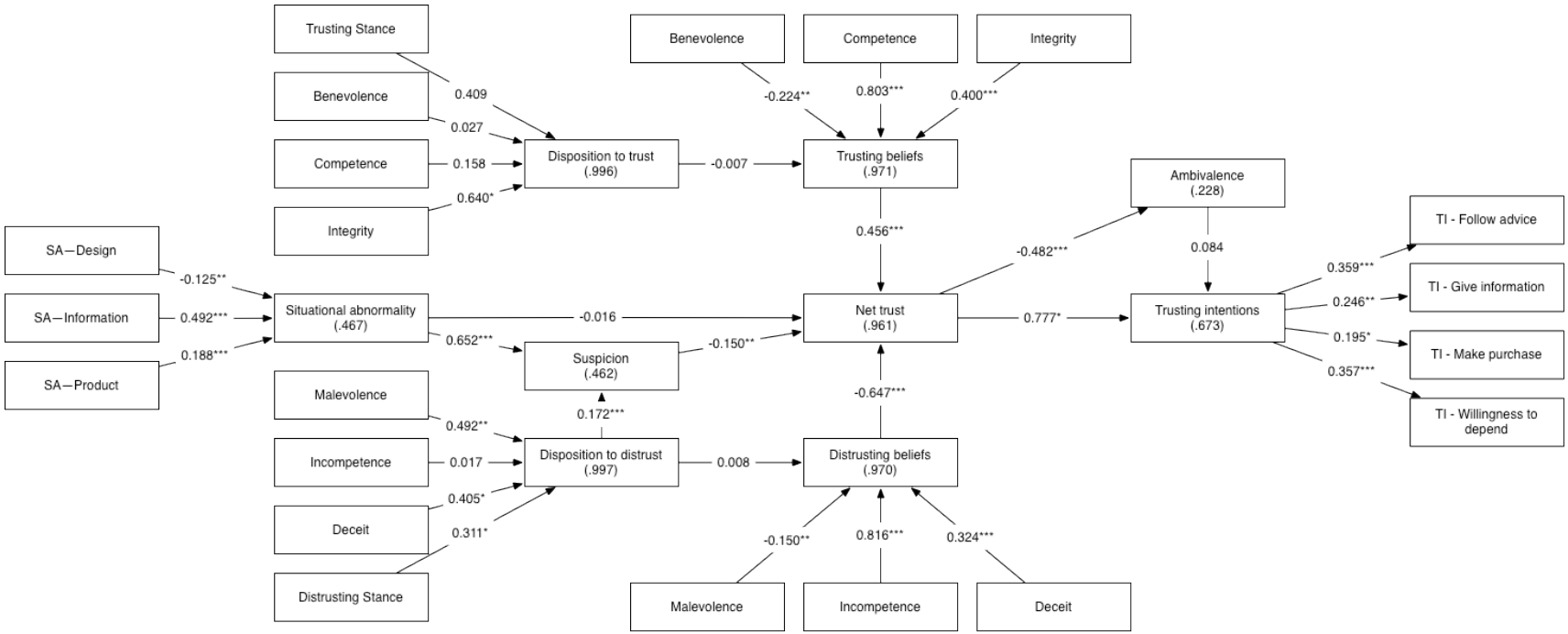


Figure 19. Final Model Results

6.8 ADDITIONAL MODEL ANALYSES

Given that the main theoretical model has been tested, this section will evaluate various portions of the model to explore additional insights that can be gained from these ad-hoc analyses. This section will begin with a focus on additional insights into changes in the trust model. The section will continue with additional insights into the relationships between ambivalence, trusting beliefs and intentions. The section will then examine the experimental manipulations and their effects on the subdimensions of trust and distrust. The section will conclude with an examination of the increased explanatory power of this model in comparison to other models of trust that have been reported.

6.8.1 Additional Specifications of Trust

Given the unexpected relationships between the disposition to trust (distrust) and trusting (distrusting) beliefs, I now explore the effects of the dispositions on the dimensions of trust and distrust to explore what effects these constructs may have with each other. The results of this model test are shown in Figure 20.

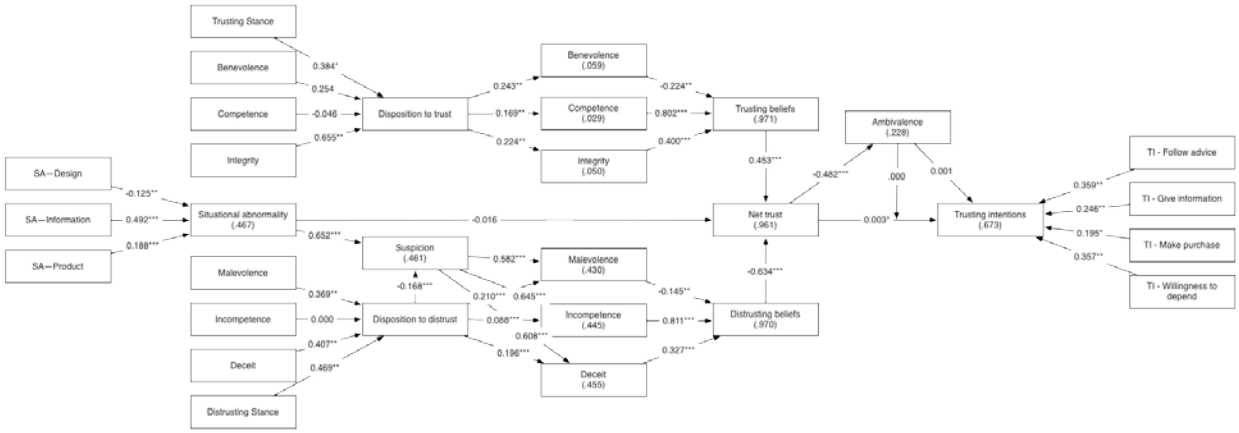


Figure 20. Summary of Trust Respecification

This initial respecification of the model to explore whether the dispositions to trust and distrust have differential effects on the subdimensions of trust and distrust, respectively, provides little new insights from the model that was originally tested. First, we find that the dispositions to trust and distrust do significantly predict the subdimensions of trust and distrust, respectively. This improves upon the original model and shows that the dispositions to trust and distrust do have significant effects on both trusting and distrusting beliefs through their subdimensions.

Interestingly, the predictive powers of the disposition to trust on the subdimensions of trust are not very strong. The R^2 values of the subdimensions of trust are all below .06; however, the R^2 values of the subdimensions of the disposition to distrust are significantly higher. These subdimensions also seem to be predicted by suspicion. As a result, an additional run of this model was performed removing the relationships between suspicion and the subdimensions of distrust. The R^2 values of these models are shown in Table 19 below.

Table 19. Summary of Predictive Power of the Dispositions on (Dis)Trust Subdimensions

Construct	R^2	
	With Suspicion	Without Suspicion
Benevolence	.059	.059

Competence	.029	.029
Integrity	.050	.050
Malevolence	.430	.105
Incompetence	.445	.046
Deceit	.455	.099

As can be seen, when suspicion is removed as an antecedent of the subdimensions of distrust, the predictive power of the disposition to distrust on these subdimensions is also very small. This indicates that as expected, and explained later on in the discussion section, the explanatory power of the dispositions to trust and distrust on the subdimensions of trust and distrust are small when more powerful predictors of these variables are present in the model.

Following the directions of Cenfetelli and Bassillier (2009), I performed a correlation analysis of the subdimensions of trust and distrust in an effort to test for a suppressor effect between the variables. Given the formative nature of trust and distrust, it is possible that their formative subdimensions may overlap in their coverage of the variance of the formative construct. By exploring the correlation between the indicators, it is possible to identify such overlap and potential remove any suppressor effects that exist between formative indicators. The results of these correlations and variance inflation factors are shown in Tables 20 and 21.

Table 20. Summary of Correlations and VIF for Trust Indicators

Indicator	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**VIF[1]**
tbc1 (1)	1.000											3.88
tbc2 (2)	0.822	1.000										4.75
tbc3 (3)	0.797	0.846	1.000									4.53

tbc4 (4)	0.570	0.622	0.636	1.000								1.94
tbi1 (5)	0.686	0.705	0.709	0.589	1.000							3.84
tbi2 (6)	0.690	0.706	0.713	0.597	0.786	1.000						3.57
tbi3 (7)	0.746	0.734	0.742	0.549	0.736	0.745	1.000					3.44
tbi4 (8)	0.673	0.682	0.676	0.589	0.743	0.744	0.719	1.000				3.16
tbb1 (9)	0.641	0.645	0.642	0.577	0.704	0.660	0.636	0.700	1.000			2.92
tbb2 (10)	0.641	0.637	0.662	0.552	0.703	0.645	0.672	0.663	0.722	1.000		2.73
tbb3 (11)	0.548	0.567	0.586	0.496	0.680	0.641	0.608	0.623	0.650	0.607	1.000	2.20

[1]: Indicates the VIF score obtained through a basic regression of all indicators on the trust construct. Subsequent VIF scores discussed in the section are not shown here.

Cenfetelli and Bassillier (2009) suggest that suppression effects can be determined by discovering multicollinearities between indicators of formative constructs. Given the correlations above, and based on the VIF scores, four indicators were removed from the model (tbc1, tbc2, tbc3, and tbi1), which all had scores above 3.3[4]. The trust portion of the model was performed with this new set of indicators and resulted in different coefficients between the trust subdimensions and trust, which were all significant at the $p < .01$ level. The new scores were: benevolence, 0.064 (Original coefficient of -0.224); competence, 0.180 (Original coefficient of 0.802); and integrity, 0.786 (Original coefficient of .400).

The changes in the loadings of the subdimensions of trust on trust have significantly changed, and demonstrate that a suppression effect was mainly occurring within the competence subdimension. Be removing the majority of the multicollinear indicators from competence, all of the subdimensions now seem to be positive predictors of trust, with integrity being the most

[4] After an indicator was dropped, the regression was performed to retest the VIF scores. This procedure was repeated until all scores were below 3.3.

powerful predictor. Additionally, the effect of competence is greatly reduced as it was accounting for much of the variance in the other two subdimensions. The modifications in these subdimension scores is significant as all subdimensions are now positively predictive of trust, and their power ranges from integrity at the high end, to competence and finally to benevolence at the low end. This finding is in alignment with previous research using these subdimensions (McKnight et al., 2002; 2006).

Table 21. Summary of Correlations and VIF for Distrust Indicators

Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	VIF[1]
dbi1 (1)	1.000											5.63
dbi2 (2)	0.884	1.000										6.07
dbi3 (3)	0.848	0.859	1.000									5.42
dbi4 (4)	0.624	0.637	0.646	1.000								2.13
dbd1 (5)	0.744	0.749	0.768	0.653	1.000							4.50
dbd2 (6)	0.684	0.708	0.748	0.621	0.814	1.000						4.09
dbd3 (7)	0.693	0.724	0.760	0.631	0.764	0.772	1.000					3.83
dbd4 (8)	0.709	0.706	0.751	0.652	0.811	0.796	0.796	1.000				4.40
dbm1 (9)	0.651	0.680	0.679	0.597	0.730	0.728	0.743	0.752	1.000			3.21
dbm2 (10)	0.656	0.663	0.654	0.622	0.695	0.685	0.687	0.698	0.684	1.000		2.58
dbm3 (11)	0.613	0.593	0.601	0.557	0.666	0.666	0.625	0.638	0.684	0.612	1.000	2.29

The same procedures were performed with the indicators of the distrust subdimensions, which resulted in the removal of the following indicators: dbi1, dbi2, dbi3, dbd1, dbd3, and dbd4. This resulted in the following coefficients of the subdimensions of distrust with distrust, which were all significant at the $p < .01$ level again: malevolence, 0.456 (Original coefficient of -0.145); incompetence, 0.245 (Original coefficient of 0.811); and deceit, 0.351 (Original coefficient of 0.327).

Similar to the results of the analysis on the trust subdimensions, I find that all subdimensions of distrust are now positively related to distrust. The suppression effect here was more straightforward than that found in the trust subdimensions. In the distrust subdimensions incompetence accounted for much of the variance in malevolence, which resulted in a previously negative relationship of that construct with distrust. By removing the suppressive indicators, this effect is removed and all of the subdimensions are more in alignment with previous research (McKnight et al., 2002). Given these results, it shows that malevolence is the most powerful predictor of distrust, followed by deceit and finally incompetence.

6.8.2 Additional Analyses of Ambivalence

Given that different treatments were meant to engender greater levels of ambivalence over others, it is more appropriate to test whether these different conditions were able to significantly increase ambivalence, and whether these various levels of ambivalence created different effects on the relationship between overall trust and trusting intentions. The levels of ambivalence by treatment condition are summarized in Table 22.

Table 22. Summary of Average Ambivalence by Treatment Condition

Treatment #	Mean	St Err	t value	p value
1	2.581	0.276	n/a	n/a
2	4.812	0.289	5.579	0.000
3	5.794	0.268	8.356	0.000
4	5.235	0.225	7.456	0.000
5	4.812	0.331	5.177	0.000
6	5.474	0.213	8.291	0.000
7	4.834	0.275	5.781	0.000
8	5.292	0.225	7.613	0.000

This initial analysis reveals that all treatment conditions that had negative signals resulted in higher scores of ambivalence in relation to the control group. Subsequent analysis reveals that three other conditions were also significantly different, namely: treatment 3 has higher levels of ambivalence than treatment 2 ($t = 2.492$, $p = .015$), treatment 5 ($t = 2.308$, $p = .024$), and treatment 7 ($t = 2.500$, $p = .015$). Having established that by including negative signals within the buying process, ambivalence is increased, I now explore whether the different levels of ambivalence created differential effects on the relationships between overall trust and trusting intentions. These model results are summarized in Table 23.

Table 23. Summary of Model Results for Overall Trust and Ambivalence on Trusting Intentions by Treatment Condition

Construct	All	#1	#2	#3	#4	#5	#6	#7	#8
Overall trust	.142***	.030	.140***	.210***	.179***	.150***	.171***	.156***	.165***
Ambivalence	.012	.187**	-.052	.145**	.002	.010	.105	-.016	.018
Overall trust x ambivalence	-.004*	.005	.000	-.022**	-.010	-.004	-.010	-.005	-.010
Constant	4.437***	3.135***	4.975***	3.951***	4.516***	4.522***	3.877***	4.434***	4.218***
R^2	.627	.425	.747	.525	.613	.598	.545	.672	.511

* p < .05; ** p < .01; *** p < .001

These results how that overall, subjects tended to trust the online vendor, and their trusting beliefs increased their intentions to trust this vendor. Additionally, higher levels of ambivalence had a slight dampening effect on this relationship. However, by looking at the results of this relationship by treatment condition, several interesting results emerge. First, overall trust with only one exception has a positive relationship with trusting intentions. Supporting the TRA-based model that beliefs and attitudes serve as strong predictors of intentions.

The exception was the control condition where overall trust had a non significant relationship and where the most powerful relationship of ambivalence with trusting intentions was found. Thus, given a lack of intended negative signals, subjects with ambivalent attitudes were more inclined to trust the online vendor. This finding is in support of Priester et al. (2007) that proposed that increased levels of ambivalence would have a positive effect on reliance or trust within a relationship. They proposed that individuals who had ambivalence would spend

more cognitive effort in evaluating signals and cues and thereby be able to form strong and more accurate intentions than subjects who did not evaluate their attitudes as heavily. To date, this is the first study to find support for these findings. It is interesting to note that this finding only applied in the absence of obvious negative cues found in other conditions. Perhaps the lack of suspicious materials in an experimental condition caused subjects to spend more time and cognitive effort on evaluating their attitudes and intentions towards the website, and given the lack of obvious problems, subjects spent more time finding and evaluating the available cues.

Second, only the incompetence manipulation condition revealed significant relationships of all antecedents to trusting intentions. Perhaps the obvious cues that indicated that the seller was unable to perform basic functions served as additional cues that the seller would be unable to perform in their duties and thus more heavily impacted trusting intentions than any other condition.

6.8.3 Analysis of the Experimental Manipulations on Trust and Distrust Subdimensions

Having verified the effectiveness of the experimental manipulations on the subdimensions of trust and distrust, this section will explore the effects of the experimental manipulation constructs (Situational abnormality and its subdimensions) on the subdimensions of trust and distrust. The results of this model test are shown in Table 24 (Given the number of relationships in this model, it is summarized in a table rather than a figure).

Table 24. Summary of Experimental Manipulations on the Subdimensions of Trust and Distrust

Abnormality	Benevolence	Malevolence	Competence	Incompetence	Integrity	Deceit
Design	0.023	-0.068	0.008	-0.106*	0.006	-0.08

Informational	-0.192***	0.143*	-0.259***	0.160**	-0.231***	0.151**
Product	-0.042	0.018	-0.069	0.022	-0.048	0.027
General	-0.307***	0.436***	-0.396***	0.493***	-0.368***	0.469***

* $p < .05$; ** $p < .01$; *** $p < .001$

The results of this analysis clearly indicate that informational signals heavily influence the subdimensions of trust and distrust alongside general situational abnormality, which was probably due to the influence of informational abnormality in the generalized construct. Also all of the significant relationships were in the predicted directions. Given that the majority of cues that dealt with information were customer reviews, this study provides support in the relevance and importance of customer reviews in e-commerce.

6.8.4 Comparing the UTDM to other Trust Models

Having proposed that UTDM increases the predictive power when compared to previous models of trust and distrust, and that distrust provides more predictive power in such models, this section explores the changes in predictive power of such models that can be found within the dataset used to test the UTDM model in this study. Analysis was performed for several models: for a trust model as proposed by McKnight et al. (2002), the trust and distrust model proposed by McKnight et al. (2006), only the trust portion of the model in UTDM, adding in distrust, and then adding in the situational abnormality portion of the model. The changes in R^2 of the dependent variable trusting intentions is shown in Table 25 below, along with the significance of such changes in R^2 that each model provides.

Table 25. Explanatory Power per Various Models of Trust

Model	**R^2**	**ΔR^2**	**F**	**p value**
McKnight et al. (2002) trust model	.527	n/a	n/a	n/a
UTDM trust-only model	.585	.058	7.20	0.000
UTDM trust-distrust only model	.668	.083	10.30	0.000
UTDM model (partial)	.682	.014	1,75	0.05
McKnight et al. (2006) trust–distrust model	.730	.048	6.00	0.00
UTDM model (complete)	.755	.025	3.13	0.00

The results of these tests indicate that the predictive power of UTDM is greater than that of previous models of trust and distrust. The increased predictive power of the model is major, and significant. It should be noted that these models were tested with all of the same data, and as the UTDM model is based on previous models of trust and distrust, larger changes in R^2 should not be expected. It is also important to note that the largest predictive increase is due to the addition of distrust to the model, demonstrating that distrust has a greater predictive power over trust in such models.

7.0 DISCUSSION

The results of the hypothesis tests are summarized in Table 26. This section will briefly review the results and will follow by explaining the contributions that this study provides to both research and practice. Finally, limitations and conclusions will be proffered.

7.1 SUMMARY OF RESULTS

Table 26. Summary of Hypotheses Testing

#	Hypothesis	Support?
1	Benevolence, Competence & Integrity –> Trusting beliefs	Yes*
2	Deceit, Incompetence & Malevolence –> Distrusting beliefs	Yes*
3	Trust –> Net trust	Yes
4	Distrust –> Net trust (-)	Yes
5	Situational abnormality –> Net trust	No
6	Situational abnormality –> Suspicion	Yes
7	Suspicion –> Net trust (-)	Yes

#	Hypothesis	Support?
8	Disposition to distrust –> Suspicion	Yes
9	Derived ambivalence –> Perceived ambivalence	Yes**
10a	Disposition to distrust –> Distrusting beliefs	No
10b	Disposition to trust –> Trusting beliefs	No
10c	Net trust –> Trusting intentions	Yes

* Although the relationships were significant as predicted, each second-order formative construct displayed an unexpected negative relationship with one of the first-order reflective subconstructs (i.e., benevolence for trusting beliefs, and malevolence for distrusting beliefs)

** Correlations between the two were estimated at .757 ($p<.001$)

The results largely validate the theoretical model with a few exceptions. First, the relationship between situational abnormality and net trust was not supported (H5). The lack of significance of this relationship might be due to the presence of suspicion in the model, which fully mediates the effects of situational abnormality on net trust. Mediation testing of this relationship showed that situational abnormality has both a strong and significant effect on net trust when suspicion was not part of the model. Given the powerful relationship with suspicion and its subsequent effect on net trust, it is clear that situational abnormality is an important part of the model and produces mediation effects on trust-related outcomes.

The only other relationships that were found to be non-significant were both the relationships between the disposition to trust/distrust on trusting (distrusting) beliefs (H10a and H10b). Although these have been found in other studies, as previously discussed, McKnight et

al. (1998, 2002) also proposed that these relationships may become insignificant given the presence of significant other predictors of trust in the same model. With the absence of significant findings for these two relationships, it is likely that the other predictors in the model overcame the minimal effects of these two constructs and instead provided more robust predictions of net trust and subsequent trusting intentions.

7.2 GENERAL CONTRIBUTIONS

This study has several important general contributions to the IS field. First, the results indicate that both trust and distrust can coexist within a truster-trustee relationship. This builds upon the debate that has been ongoing for several years within IS regarding the relationship between trust and distrust (See Dimoka, 2010) and supports the assertion that trust and distrust can coexist.

Second, this study extends the known nomological network for distrust by including situational abnormality and suspicion. Previous work had highlighted the importance of the disposition to distrust in explaining distrusting beliefs (McKnight et al., 2003; 2006), but extant research had yet to expand our knowledge of the distrust nomological network. Building upon communication research, this study proposes and finds that both situational abnormality and suspicion play important roles in the engenderment of distrust.

Third, this study finds that anomalous design features or anomalous information regarding a product impact the level of suspicion felt by the truster. Previous work in communication research proposed that distrust is largely created due to suspicion on the part of the truster that the trustee may not fulfill the truster's expectations. This is the first known study

in this area to test such a relationship and show support for the powerful influence that anomalous features and information have in producing suspicion and subsequently impacting the level of perceived distrust.

Fourth, building on the work of Kaplan (1972) and Kahneman and Tversky (1979), this study shows support for the stronger effects of negative attitudes (distrusting beliefs) upon intentions than related positive attitudes (trusting beliefs). Building on this work, this study supports the stronger effect of distrust on net trust than trusting beliefs. This finding has also been found in more recent work on trust and distrust and confirms these results (Dimoka, 2010).

Finally, this is the first study in IS to propose and find the engenderment of ambivalence in an e-commerce setting, due to concurrent levels of trust and distrust. This is an important contribution to the literature as ambivalence has been found to attenuate the relationships between intentions and related behaviors (Kaplan, 1972; Preister and Petty, 2001; Conner et al., 2003; Petty et al., 2006; Priester et al., 2007). By introducing and including ambivalence into e-commerce models of trust, eventual behaviors can be predicted more accurately.

7.3 CONTRIBUTIONS TO RESEARCH

7.3.1 Contributions to IS Research

This study has several contributions that apply to researchers in the IS field. First, this study finds that ambivalence is likely to be engendered whenever decisions need to be reached by an individual, particularly in contexts where negative emotions or attitudes have the potential

to be present. Several research streams could benefit greatly by considering ambivalence and how it affects major dependent variables in their research streams. For example, group decision-making or group decision support researchers should consider how the interfaces of such systems may cause decision makers to become more prone, or less prone, towards ambivalence. Further, research could determine what effect ambivalence has on group satisfaction, group performance, decision quality and quantity, and time required to make a decision. Examples of other research streams that may benefit from the inclusion and future research that includes ambivalence include e-commerce, project or portfolio of project management, and IS strategy. These streams are all dependent upon groups or individuals evaluating several options and arriving at an eventual decision. Being focused on such elaborate decision-making processes, such research streams should consider variables that may impact whether or not ambivalence is engendered and what effects it produces in their specific contexts.

This study highlights the significance of distrust and how its influence on attitudes and intentions is stronger than that of trust. This is significant for the IS field as trust has been heavily studied in many research streams; however, little research has been done on distrust in these respective research streams. Distrust may increase our understanding of several important variables that have been studied; such as system usage and satisfaction, outsourcing and IS contracts/negotiations, IS governance and control, software management and maintenance, technology adoption and diffusion, and social engineering.

Each of these streams has spawned some research that has focused on trust and how it has impact decision-making, relationships, reliance and credibility, and other constructs that are central foci within their respective fields. However, by focusing on trust and ignoring the potentially more powerful influence of distrust, these research streams lack the richness that may

be discovered by incorporating trust into these same models. Future research may establish how various antecedents are able to influence distrust and thereby improve the potential for success in their respective areas, which may be more important indicators than those that build trust. This study has shown that negative cues and signals are able to quickly unravel trust building efforts and thereby derail the entire objective of a system. It behooves future research to identify whether distrust has similar effects in other contexts and how such violations are perceived and can be avoided.

7.3.2 Contributions to Other Research Streams

This study has direction implications for several other research streams that are commonly studied in IS journals. Being that trust is the emphasis of this study, it has important relations to research on control. Control literature focuses on how managers are able to monitor, oversee and ascertain that desired processes and outcomes are achieved. However, the performance of such oversight can provide the impression that managers distrust their employees and thus engage in monitoring and controlling mechanisms in order to ensure compliance, rather than relying on less formal mechanisms such as trust or social contracts (Mulder et al., 2006; Vlaar et al., 2007). This study demonstrates that negative signals, which may be conveyed due to control and monitoring practices, will provide more powerful effects on attitudes and intentions than those offered by maintaining the current processes. The negative signals may engender suspicion and undermine the purposes for such practices. Future research could determine whether the use of such mechanisms leads to suspicion or other forms of distrust and how this impacts employees who are being monitored.

Systems are often developed and used by teams, and trust is one of the underlying mechanisms that allow teams to operate with lower levels of conflict. This study highlights that the best way to maintain trust, and also avoid distrust, is to avoid signals and cues that may arouse suspicion. Research on group formation, management, IS development, etc. may benefit from these findings by focusing future research on identifying specific cues that may create suspicion and undermine group stability necessary for coordination, work, avoidance of conflict and team satisfaction. By minimizing suspicion and distrust, groups will have greater abilities to avoid conflict, which will allow the development of a group identity that may allow the group to withstand external pressures and challenges in the environment.

Recent research in security and privacy has attempted to understand why individuals ignore security policies and guidelines. This study enlightens this discussion by elucidating that cues and signals may conflict with each other and result in ambivalence, and thereby severely reduce an individual's intention to engage in secure practices. For example, if the security policy states to change passwords monthly, but no peers or managers are perceived to be doing this, and the practice is ridiculed during training or in casual conversation, many individuals will receive these mixed signals and may potentially become ambivalent in regard to this given policy. Given that negative messages about the policy have been received, the importance of engaging in the practice is diminished and the individual may simply fail to form an opinion one way or another, due to the mixed signals.

Knowledge management and repositories depend upon the submission and codification of knowledge from others that are willing to impart of their knowledge to the community or repository. As such systems are dependent upon the trust that the community places in the system and the quality of knowledge it contains, it is important to identify and remove cues and

features of the system that may undermine the credibility of the system and encourage the engenderment of suspicion. Further, such systems rely upon knowledge holders contributing to the system. Research could also identify features that may signal to these contributors that their knowledge may not be valued, accessible or trusted within the community. By identifying negative cues that may be undermining the system, these systems would increase their chances of success and continuity.

7.3.3 Contributions to Trust and e-Commerce Research

This study has several important contributions for IS research related to trust and e-commerce. First, this study proposes a new model for the coexistence of trust and distrust. Unlike previous models of trust and distrust, this model does not propose distrust as an equivalent mirror-image of trust, but that each subconstruct of trust and distrust are instead opposite ends on a continuum for each subconstruct. Trust and distrust are then formed of distinct subconstructs from their respective ends of their continua. Net trust is then formed of both trusting and distrusting beliefs.

This unified model of trust and distrust is built upon the attitudinal research first developed by Kaplan (1972) to explain ambivalence and the concurrent existence of related positive and negative attitudes. Applying trust as a positive attitude, and distrust as a negative attitude, it allows both trust and distrust to be based on either positive or negative beliefs regarding the trustee. Thus, unlike previous models of trust and distrust, distrust may only be composed of beliefs that the trustee is unable to perform the expected behavior rather than requiring that all subconstructs of distrust be present in the truster-trustee relationship. This paper

also explains how this model can be implemented in both an experimental and online setting, measured and used to predict behavioral intentions.

Further, this study builds upon the work of Dimoka (2010) who demonstrated the separability of trust and distrust. Although Dimoka (2010) found that trust activated some areas of the brain while distrust activated others; it does not prove that the constructs are separable. UTDM proposes that the different activation of brain centers found in her study may be due to the particular sub-constructs that are being manipulated in the information being presented to subjects. UTDM proposes that trust is not in one region of the brain, nor distrust, but that different sub-constructs associated with each may be associated with different parts of the brain, which will ultimately help in the calculation of overall trust. For example, the negative emotions evoked by the amygdala within the brain were associated with distrust, but may in fact be the result of perceptions of malevolence on the part of the trustee, while other brain areas are being activated by other subconstructs of trust (e.g., competence, integrity). UTDM thus provides the framework that could eventually explain how different portions of the truster's brain can be activated during the process of forming overall trust.

Second, building on the foundations for this unified model of trust and distrust, this study also introduces the construct ambivalence to the IS trust and e-commerce research streams. Ambivalence was first introduced in 1972 by Kaplan, and has become a common construct in marketing and consumer behavior research. However, IS research has yet to introduce and use this construct in e-commerce research studies. This study seeks to rectify this oversight and introduces it in the context of an e-commerce trust model. By introducing ambivalence into more e-commerce studies, the true impact of IS-related features and designs on Web sites can be more correctly measured.

This study indicates two ways that ambivalence may be measured in an e-commerce context. First, building on ambivalence research (Conner et al., 2002), the unified trust and distrust model can be used to calculate several generally-accepted measures of ambivalence. Second, an independent instrument was used to assess the level of perceived ambivalence, which was shown to be highly and significantly correlated with all calculated measures in this study.

Third, this study expands the distrust nomological network by including suspicion and situational abnormality as predictors of distrust. Building on communication research (Hilton et al., 1993; Fein and Hilton, 1994), this study proposes and finds that both of these constructs are significant predictors of distrust. This expands our knowledge of distrust, as extant research had only ascertained the effect of the disposition to distrust on distrusting beliefs (McKnight et al., 2004; 2006). The introduction of suspicion and situational abnormality provides additional ways that researchers can focus on methods for altering and producing different levels of distrust. Unlike the disposition to distrust, both of these constructs can be manipulated and are not general personality traits that are relatively constant over time.

7.4 CONTRIBUTIONS TO PRACTICE

This study has several important contributions for practice. First, it identifies several common Web site design elements, and the buying process that can affect the level of suspicion and subsequently impact the net trust and intentions that the truster forms towards a Web site. These anomalous descriptions, elements and information indicate that perceived errors on Web sites about a product will negatively impact the truster and lead to heightened levels of suspicion.

Thus, if Web site owners desire to increase overall sales, it is important to identify and correct any such errors that customers may find on a Web site.

Second, this study also finds that customer reviews of the trustee in a relationship are important sources of information. More specifically, unexpected negative comments regarding the seller of an item are strongly considered and increase the level of distrusting beliefs. Like previous research on customer reviews (Pavlou and Dimoka, 2006), this study also finds that negative reviews are more powerful and influential in predicting eventual intentions than positive reviews. This study proposes that such negative reviews are unexpected and thus become more salient in the mind of the potential buyer when deciding whether to buy from the given seller or not. Given the strong influence that negative reviews have on future buyers, it is imperative that sellers focus on such negative reviews and attempt to have them removed through contacting the buyer, or through some other method that posts more current, yet positive reviews regarding the product or seller.

Third, this study demonstrates that first impressions are important in business relationships. When first-time customers, business partners or other stakeholders first encounter signals from the business, it is vital that negative signals be identified and/or corrected so as to minimize the negative effects of such signals. Practitioners could identify, within the context of their business, where such signals or cues could originate and develop methods to minimize the occurrences of such signals. For example, when developing interfaces for CRM packages, developers should be concerned with how customers are able to submit information and what information about their account is visible to them. If customers are unable to see their account history, they may believe that either the company has information to hide, or is incapable of accurately providing desired information.

Fourth, this study demonstrates the importance of both intended and unintended cues available on websites and how these cues impact attitudes and intentions. Features of the website (including design elements, look-and-feel, and both product- and customer-related information) were shown to have direct impact on suspicion, trust, distrust and ambivalence; demonstrating that design features of systems play an important role in usage and user impact. This study specifically shows that research on interfaces can show that trust, distrust, suspicion and ambivalence are all influenced by changes in the design of the system.

Further, when individuals' expectations regarding a system are violated, their interaction with the system influences attitudes and intentions. Specifically, as explained by expectancy violation theory (Burgoon et al., 1995), when such violations are negative (e.g., overly negative customer reviews, erroneous information and unexpected information requests) results in overly negative attitudes and intentions towards the source of the negative violations. This can mean that, even with minor negative cues that cause such violations, the change in an individual's attitude or intentions may be of a greater magnitude than the actual violation. It is important to account for, identify and remove erroneous cues and information that may violate the expectations of individuals using the website. In other words, it is essential that all features and cues that may trigger suspicion be identified, corrected and/or removed.

Building on this notion, this study highlights that negative cues and signals are most likely to disrupt the intended purpose of the system when they cause users to become suspicious of the system or its owner/designer. This study shows that the expected route from negative cues to negative attitudes and intentions is suspicion. Once the user of a system has perceived enough cues, or a cue of great enough magnitude to trigger suspicion, it is likely that distrust, or another similar negative attitude, be engendered, which may undermine the given system. For example,

in negotiating the outsourcing of an IS process to an outsourcing partner, future research could identify whether specific terms, or previous word-of-mouth from past customers, initial impressions, etc. will serve to engender suspicion in the outsourcing company. In managing the outsourcing relationship, it is possible that by insisting on significant oversight, presence of managers at the outsourcing site, etc. that the outsourcing partner begins to lose the confidence of the company in regards to their ability to provide the outsourced process. This suspicion may cause a self-fulfilling prophecy and affect the performance of the service due to perceived friction with the outsourcing company.

This study highlights that the most important type of negative cue or signal that produces negative attitudes or intentions towards the system are those that are attributed to be deceitful. In other words, if the individual believes that the system or its owner is intentionally lying or attempting to cheat the system for the benefit of his or herself. This builds on the concept of hard and soft distrust as set forth by Ullman-Margalit (2002). She proposes that individuals divide distrust into two basic types: soft refers to distrust that is attributed to external agents and causes. Typically, an individual is more forgiving of behaviors that are seen to be motivated by or attributed to a type of soft distrust. In other words, the distruster attributes the negative signals from the distrustee as results of simple mistakes, errors or bad luck.

However, hard distrust, referring to actions that are attributed to internal characteristics that are meant to hurt the distruster, produces large, negative changes in intentions and attitudes. The distruster, believing that the distrustee engaged in the negative cue or signal in an effort to cause harm, immediately has great cause for suspicion in all signals and cues from the distrustee. Such negative signals and cues are more heavily weighted as the distrustee believes that there was intention behind the act, and that it cannot be explained away to other sources. With the

knowledge and intention of the act being attributed to the distrustee, the distruster can not rely upon any of the signals being received and will instead believe that most to all actions are meant to harm them.

7.5 LIMITATIONS & FUTURE RESEARCH

This study has several limitations that can be improved upon in future research. First, generalizability of this study might be limited to the types of products that were used in the experimental procedures. This study involved the intended purchase of a commodity product (i.e., battery pack), so it is possible that the subjects were not strongly involved in the study due to their lack of interest in batteries. Future research could utilize other products that require higher levels of involvement by the subjects (e.g., car, flat-screen TV, laptop, etc.). Future research could also generalize these results by testing this model with services that are sold or offered online rather than limit the investigation to the products found in this study.

Second, this study used an online shopping process/design (i.e., Amazon.com) that is well-known to its subjects and may not extend to all online stores. Given the dominant nature of Amazon.com in this market it is possible that other Web sites that are less known, or new Web sites may not produce the same results given the loyalty and trust that Amazon.com has already accrued during the past decade of operations. Other e-commerce sellers cannot rely upon their own established reputations that may artificially increase trusting beliefs and minimize suspicion. Further, unknown Web sites may also have an advantage in that potential buyers may be unable to spot some anomalous features given their unfamiliarity with the given Web site. Thus, future

research should verify whether these same results hold with less well-known or new Web sites that offer similar products as were tested with the Amazon.com look-and-feel.

Third, this study is further limited due to the nature of the experiment. Given the experimental nature of this study, subjects were not asked to use their own money to purchase an actual product, but were merely reporting their intentions based on several screenshots they saw that illustrated a buying process. This is a further limitation in that subjects were unable to interact with the Web site, and instead were relying only upon pictorial representations of the process. Future research could expand upon this study by studying actual buying behaviors of online consumers.

Fourth, this study relied upon the use of student subjects, which may not accurately reflect the entire population of e-commerce buyers. In fact, students may over-represent this population given their increased usage of the Internet in their daily lives when compared with the general population. Future research could expand upon these findings by testing a randomly-selected sample of e-commerce buyers, or by focusing on other groups that may provide a more balanced view of the e-commerce population.

Finally, this study relies upon previously validated instruments, especially those of McKnight et al. (2002). In the final data collection and analysis, it was determined that several of the items did not display adequate convergent and/or divergent validity and were subsequently dropped from later analyses. This is a limitation of this study, as dropping previously validated items from the instrument may have altered the nature of the instrument. However, given that all such dropped items were from reflective constructs, the dropped items did not systematically differ from those that were retained. Previous research with these instruments have failed to

identify any subdimensions within these scales, so it is not anticipated that dropping these items altered the nature of the operationalized constructs.

8.0 CONCLUSION

Research in e-commerce has largely focused on trust (Gefen and Straub, 2004; Pavlou and Fygenson, 2006; Komiak and Benbasat, 2008) while minimally addressing the important influence that distrust may have within this arena (McKnight et al., 2003; Dimoka, 2010; Dimoka et al., 2010). Extant research on trust and distrust has provided two opposing views regarding their relationship (i.e., opposites on one continuum, or two opposite continua), which are inherently contradictory. This study adds to this discussion by proposing a unified model of trust and distrust to reconcile these two views of trust and distrust. Building upon ambivalence and attitudinal research (Kaplan, 1972), this study proposes that trust and distrust are oppositely-valenced attitudes that can coexist by being built upon observed negative and positive beliefs regarding the trustee.

This study further explains the relationship of trust and distrust by expanding the nomological network of distrust to include both suspicion and situational abnormality. By expanding the nomological network of distrust, distrust can be better explained, predicted, manipulated and measured. The effect of distrust on net trust is shown to be more powerful than trust. These two novel antecedents of distrust are thus very important for both researchers and practitioners, as the designer of a Web site can manipulate them and thereby alter the level of distrust felt by the truster.

The relative importance of distrust and trust in e-commerce is further elucidated by the incorporation of ambivalence into the research model. Research on ambivalence has often found that it weakens the likelihood that a truster will enter into a trusting relationship with the trustee, despite having high intentions to do so (Conner et al., 2003; Priester et al., 2007). Given the ability of trust and distrust to coexist, the possibility of the truster developing ambivalence towards the trustee is further heightened. This study aims to explain this unified model and its ability to predict both ambivalence and behavioral intentions in an effort to improve the success of e-commerce by further elaborating the buying process.

APPENDIX A

SUMMARY OF STUDIES ON DISTRUST AND TRUST AND THEIR CONTRIBUTIONS

Author(s)	Year	Summary of Contribution
Rotter	1967	Instrument to measure trust and distrust
Constantinople	1969	Based on Erikson's model of psychological development. Reported that trust and mistrust were separate constructs
Gurtman & Lion	1982	Individuals with high and low trust become more/less suspicious given they perceived the trustee to be less trustworthy. Additionally, low trusters would be more vigilant in a transaction with the trustee than high trusters
Scheussler	1982	Instrument to measure the disposition to trust and distrust
Hurley et al.	1990	Attempted to identify eating disorder patients based on the level of distrust
Levine & McCornack	1991	Individuals had different dispositions to distrust communication from others. Additionally, identified a state distrust of communication that altered based on situational characteristics
Whitbourne et al.	1992	Follow-up piece to Constantinople (1969)—supported that individuals' levels of distrust and trust were distinct and variable throughout life

Gurtman	1992	High and low trusters had different tendencies to engage in Machiavellian behaviors
Sitkin & Roth	1993	Proposed a 2 x 2 framework to explain why legalistic remedies to trust violations failed to produce trust: -- Type of violation: violation was due to different values OR ability to complete the task -- Pervasiveness of violation: specific occurrence or generalized to occur no matter the context Trust was reduced if the violation was context-specific and based on the reliability of the violator Distrust was engendered when the violation was attributed to different, persistent values or motives of the violator
Kramer	1994	Self-conscious persons or individuals who felt they were under increased scrutiny over-estimated how much he or she was the target of others' attention. This over-evaluation led to paranoid cognition and general distrust of others
Clark & Payne	1997	Employees felt both distrust and trust towards management
Baba	1999	Distrust and trust altered the adoption rates of IT systems. Proposed a 2 (Other: trusted vs. distrusted) x 2 (Trust relationship: fiduciary-based vs. competence) to explain how trust relationships would affect implementation and adoption patterns
McKnight & Chervany	2001	First IS distrust model. Indicated that the disposition to distrust and institution-based distrust would increase distrusting beliefs, which in turn increased distrusting intentions and then distrusting behaviors to Internet-based vendors
McKnight et al.	2003	Demonstrated the distinction of the dispositions to trust and distrust in an e-commerce setting and their effects on e-commerce related behaviors

Hsiao	2003	Built upon and supported the Sitkin and Roth (1993) framework and supported it in an IS context: electronic marketplaces
McKnight et al.	2004	Built upon the 2003 model and incorporated other Internet-related behaviors that expanded beyond e-commerce
Schul & Mayo	2004	Individuals required more cognitive resources to encode information if they distrusted the source of the information
Ziegler & Lausen	2005	Model to measure the level of trust and distrust of a node in a social network
Wiethoff & Lewicki	2005	Reported on trust and distrust in work relationships. Categorized the types of trust and distrust and demonstrated that trust was built over a long process, whereas distrust was determined by given episodes. Reputation, especially inferred from third parties, was a stronger determinant of distrust, whereas personal experience was a strong determinant of trust
Gallardo et al.	2006	Validated the 2 x 2 framework developed by Lewicki et al. (1998)
Conchie & Donald	2006	Different types of employees had different levels of trust and distrust towards management. Further, distrust was a strong predictor of safety levels
Cho	2006	Trust and distrust are different constructs. Competence was a stronger antecedent of trust, while benevolence was for distrust. Both affected the intention of a customer to disclose information and buy products/services online
Ou	2006	Web site features were divided into motivational (inspire one to use the Web site) and hygienic (basic design functions that need to exist) factors that affected the level of trust or distrust in an e-commerce setting
Tomlinson & Lewicki	2006	Divided distrust into functional (setting of boundaries to allow interactions) or dysfunctional (cynical relation with another that interferes with interactions). Showed that conflicts can be resolved successfully only when functional distrust

		was involved
Benamati et al.	2006	Distinctiveness of trust and distrust in e-commerce
McKnight et al.	2006	Expanded model of trust and distrust (dispositional and beliefs) and their effects on e-commerce-related intentions
McKnight & Kacmar	2006	Showed how disposition to distrust and trust affected perceived information credibility of a Web site
Wu et al.	2006	Method for creating a trust and distrust score for Web sites to rank them in a given network
Vlaar et al.	2007	Proposed a theoretical model to explain how the use of control and coordination methods in an organization affected levels of trust and distrust and the outcomes that this produced in performance
Schul et al.	2008	Distrust signals that individuals should have employed new strategies for solving a situation, whereas trust implied routinization
Komiak & Benbasat	2008	Demonstrated that trust and distrust were built through distinct, related, yet concurrent processes

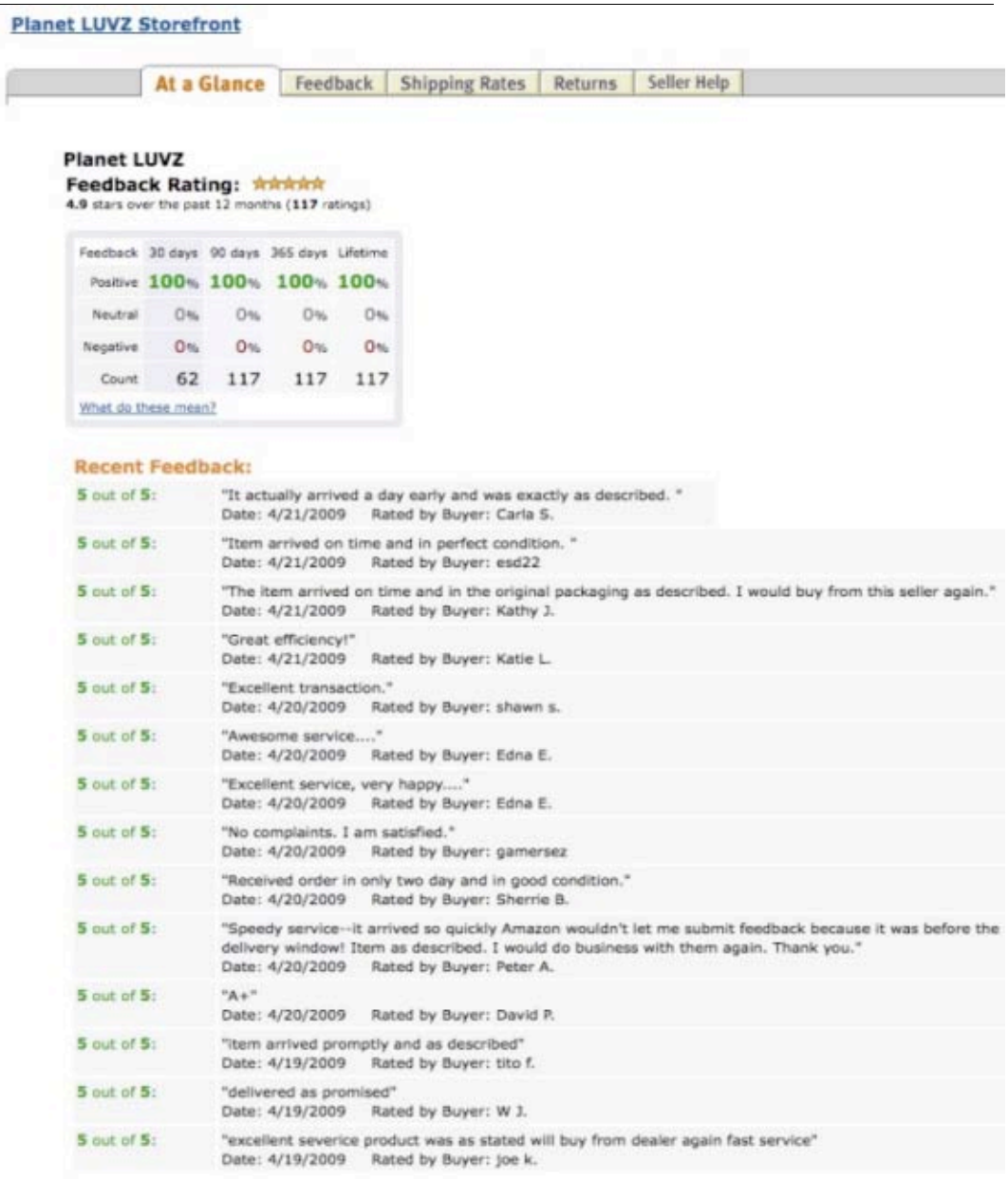
APPENDIX B

EXPERIMENTAL WEB PAGES

Table 27. Control Treatment—No Abnormalities

Product Info Page	

Customer Review Page



Planet LUVZ Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

Planet LUVZ

Feedback Rating: ☆☆☆☆☆

4.9 stars over the past 12 months (**117** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	100%	100%	100%	100%
Neutral	0%	0%	0%	0%
Negative	0%	0%	0%	0%
Count	62	117	117	117

What do these mean?

Recent Feedback:

5 out of 5:	"It actually arrived a day early and was exactly as described. " Date: 4/21/2009 Rated by Buyer: Carla S.
5 out of 5:	"Item arrived on time and in perfect condition. " Date: 4/21/2009 Rated by Buyer: esd22
5 out of 5:	"The item arrived on time and in the original packaging as described. I would buy from this seller again." Date: 4/21/2009 Rated by Buyer: Kathy J.
5 out of 5:	"Great efficiency!" Date: 4/21/2009 Rated by Buyer: Katie L.
5 out of 5:	"Excellent transaction." Date: 4/20/2009 Rated by Buyer: shawn s.
5 out of 5:	"Awesome service...." Date: 4/20/2009 Rated by Buyer: Edna E.
5 out of 5:	"Excellent service, very happy....." Date: 4/20/2009 Rated by Buyer: Edna E.
5 out of 5:	"No complaints. I am satisfied." Date: 4/20/2009 Rated by Buyer: gamersez
5 out of 5:	"Received order in only two day and in good condition." Date: 4/20/2009 Rated by Buyer: Sherrie B.
5 out of 5:	"Speedy service--it arrived so quickly Amazon wouldn't let me submit feedback because it was before the delivery window! Item as described. I would do business with them again. Thank you." Date: 4/20/2009 Rated by Buyer: Peter A.
5 out of 5:	"A+" Date: 4/20/2009 Rated by Buyer: David P.
5 out of 5:	"item arrived promptly and as described" Date: 4/19/2009 Rated by Buyer: tito f.
5 out of 5:	"delivered as promised" Date: 4/19/2009 Rated by Buyer: W J.
5 out of 5:	"excellent severice product was as stated will buy from dealer again fast service" Date: 4/19/2009 Rated by Buyer: joe k.

Info Entry Page

Order Confirmation Page

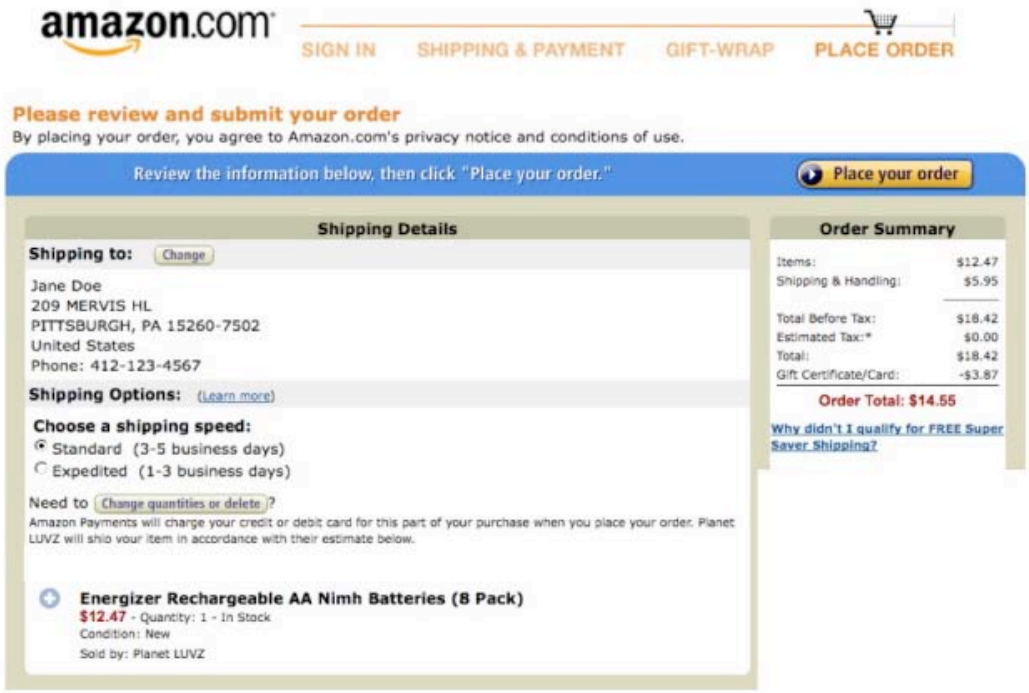
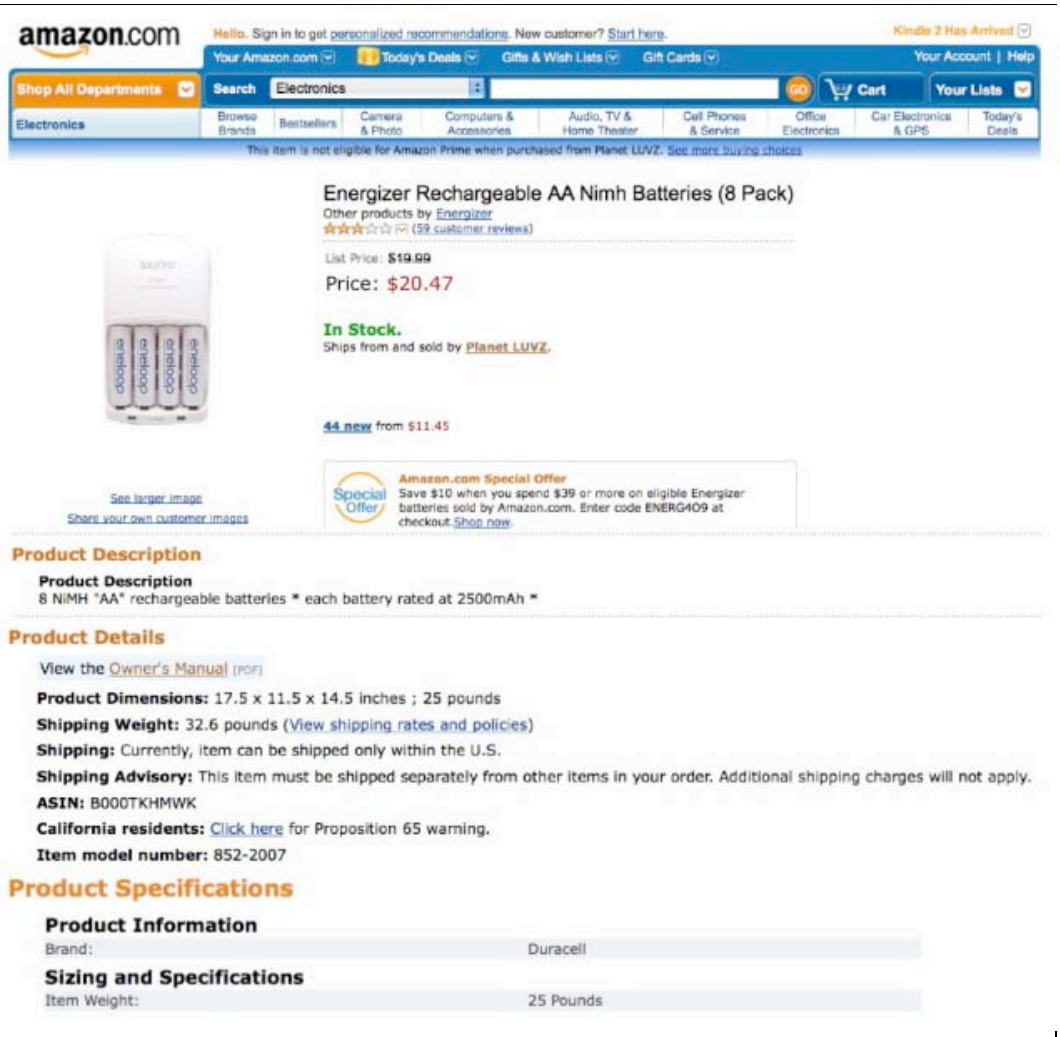
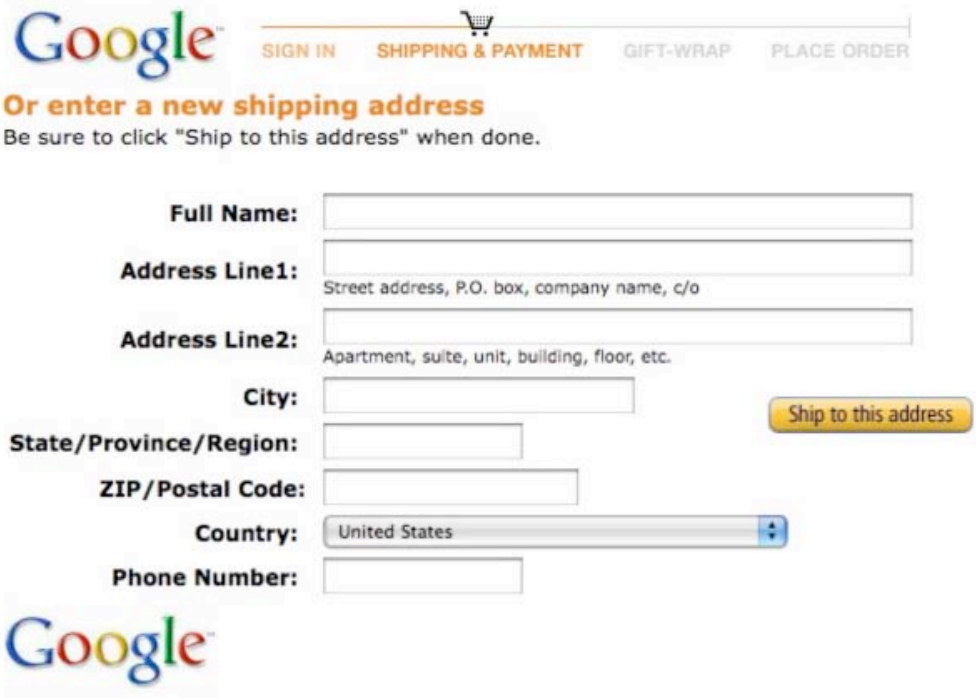


Table 28. Abnormal Treatment—No Trust Manipulation

Product Info Page	

Customer Review Page

Info Entry Page



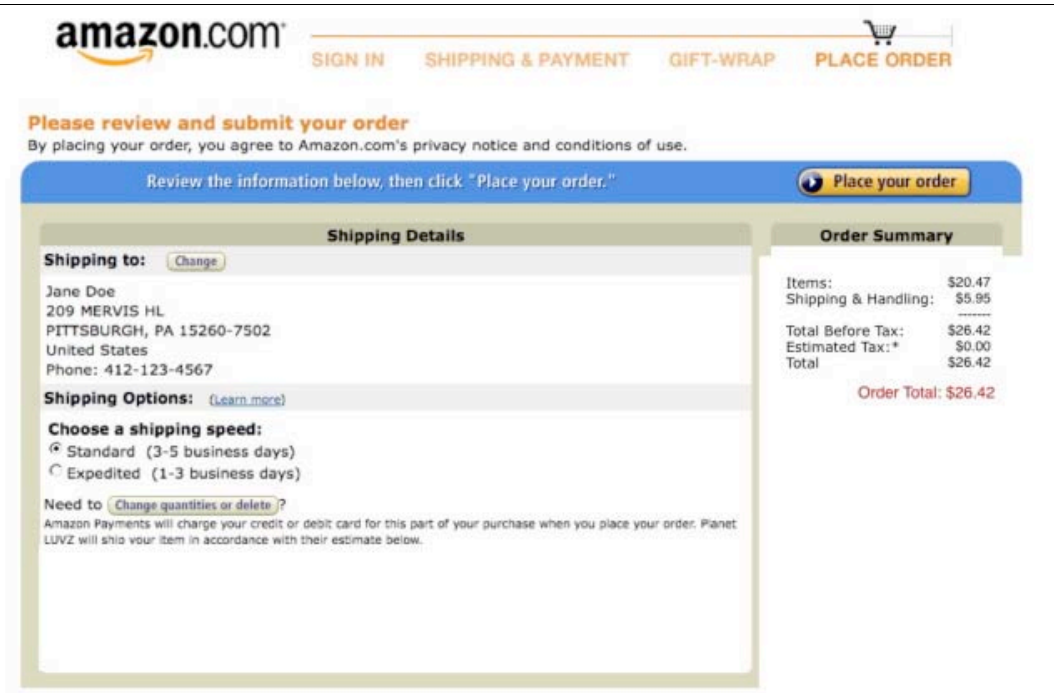
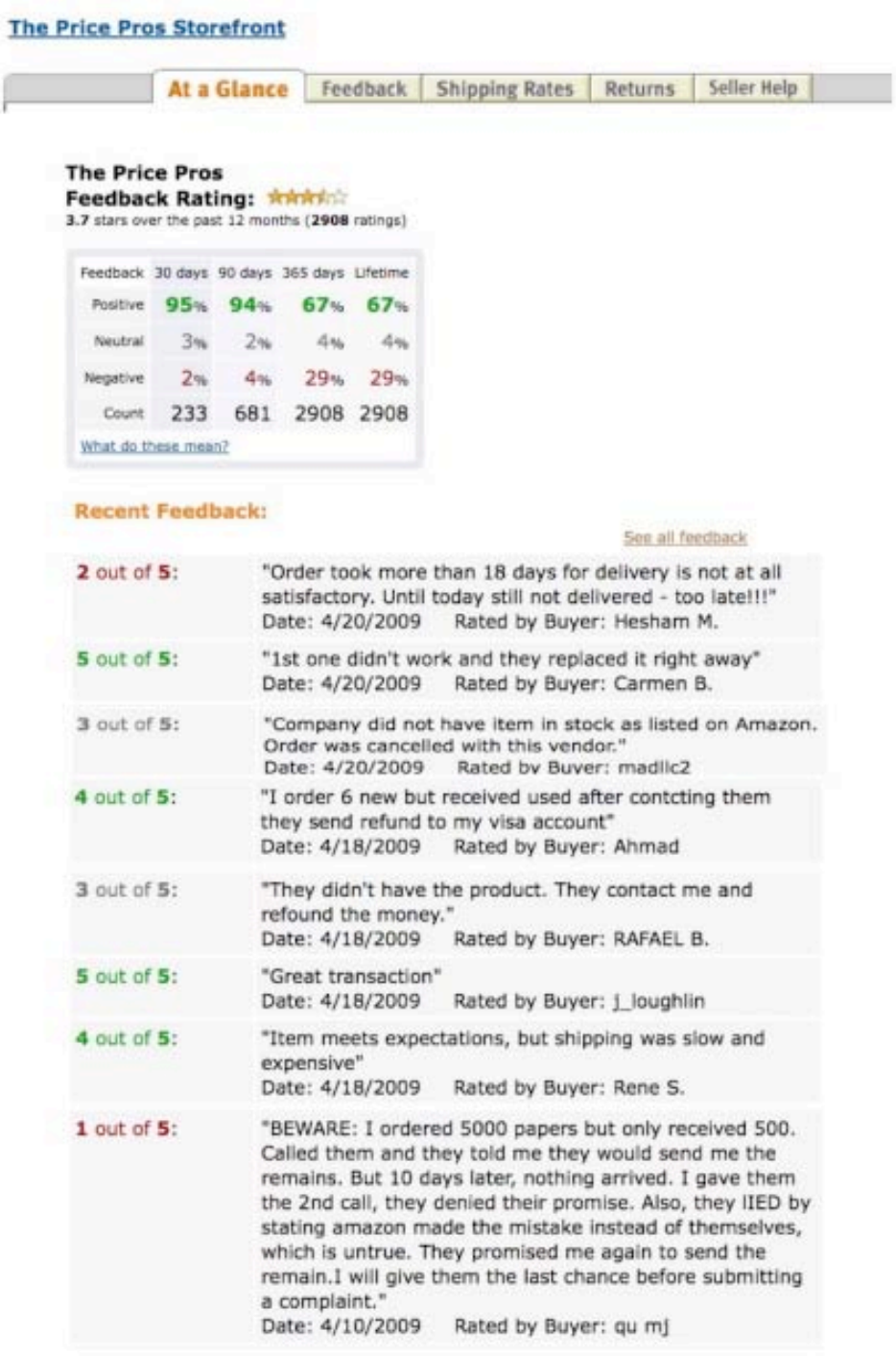
Order Confirmation Page	

Table 29. Abnormal Treatment—Incompetence Manipulation

Product Info Page	

Customer Review Page



The Price Pros Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

The Price Pros
Feedback Rating: ★★★★☆
3.7 stars over the past 12 months (**2908** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	95%	94%	67%	67%
Neutral	3%	2%	4%	4%
Negative	2%	4%	29%	29%
Count	233	681	2908	2908

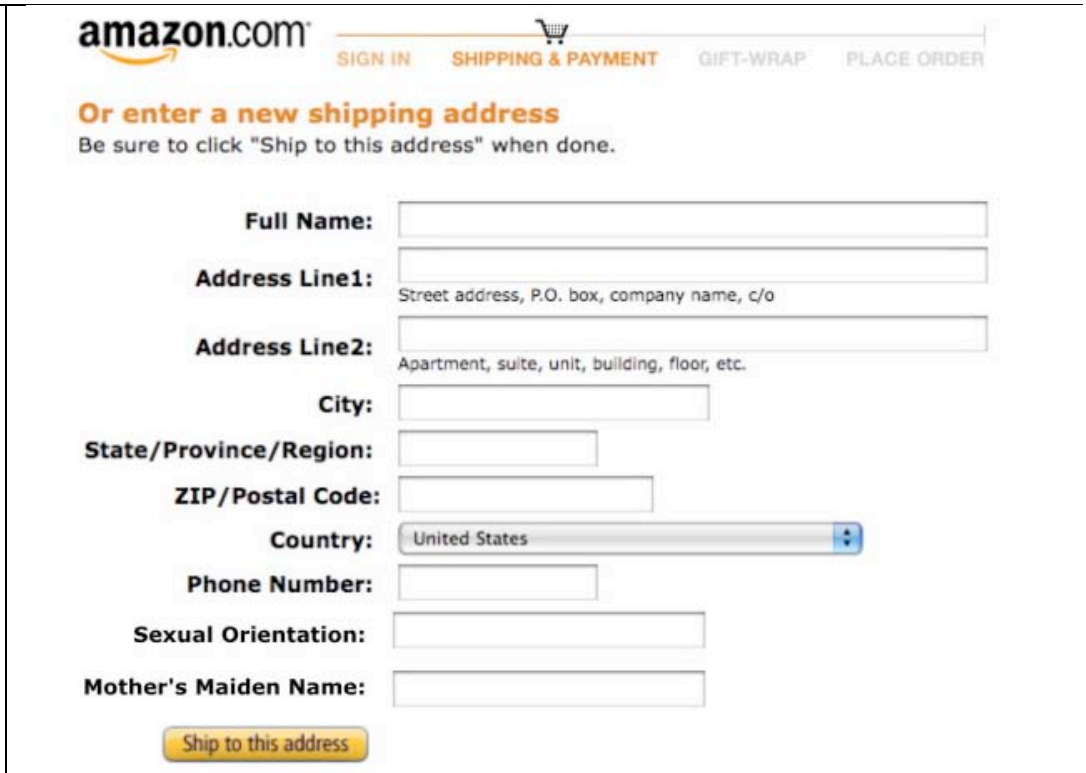
What do these mean?

Recent Feedback:

See all feedback

2 out of 5:	"Order took more than 18 days for delivery is not at all satisfactory. Until today still not delivered - too late!!!" Date: 4/20/2009 Rated by Buyer: Hesham M.
5 out of 5:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
3 out of 5:	"Company did not have item in stock as listed on Amazon. Order was cancelled with this vendor." Date: 4/20/2009 Rated by Buyer: madlic2
4 out of 5:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
3 out of 5:	"They didn't have the product. They contact me and refound the money." Date: 4/18/2009 Rated by Buyer: RAFAEL B.
5 out of 5:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of 5:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of 5:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they IIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

Info Entry Page



Order Confirmation Page

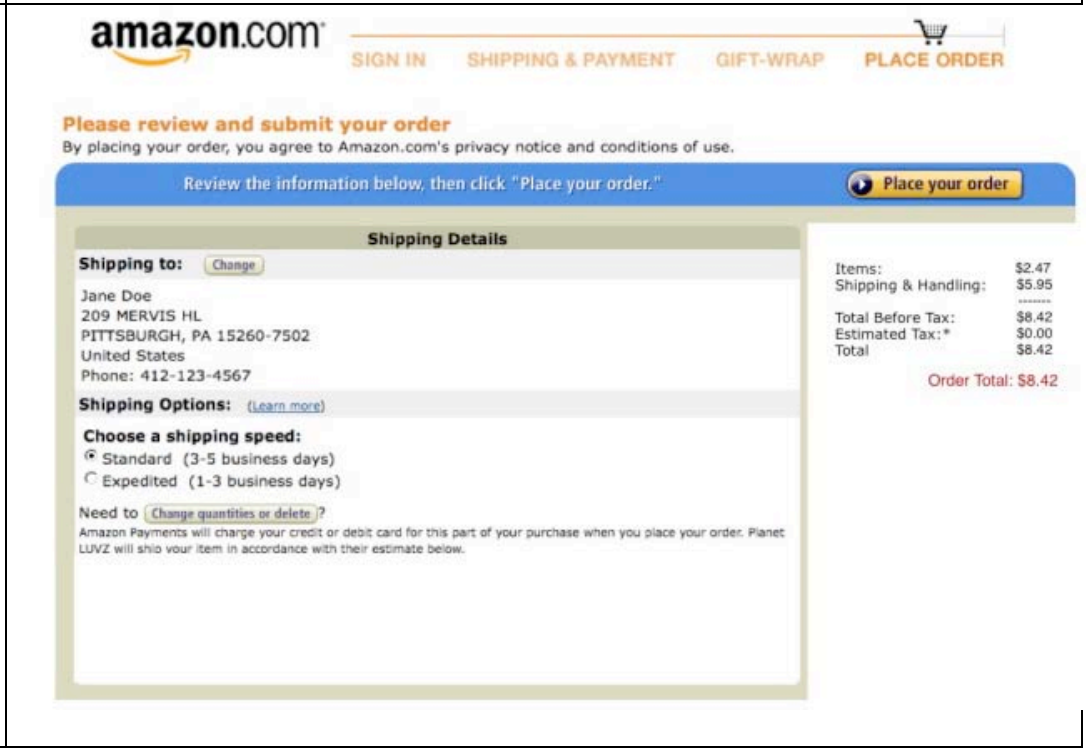
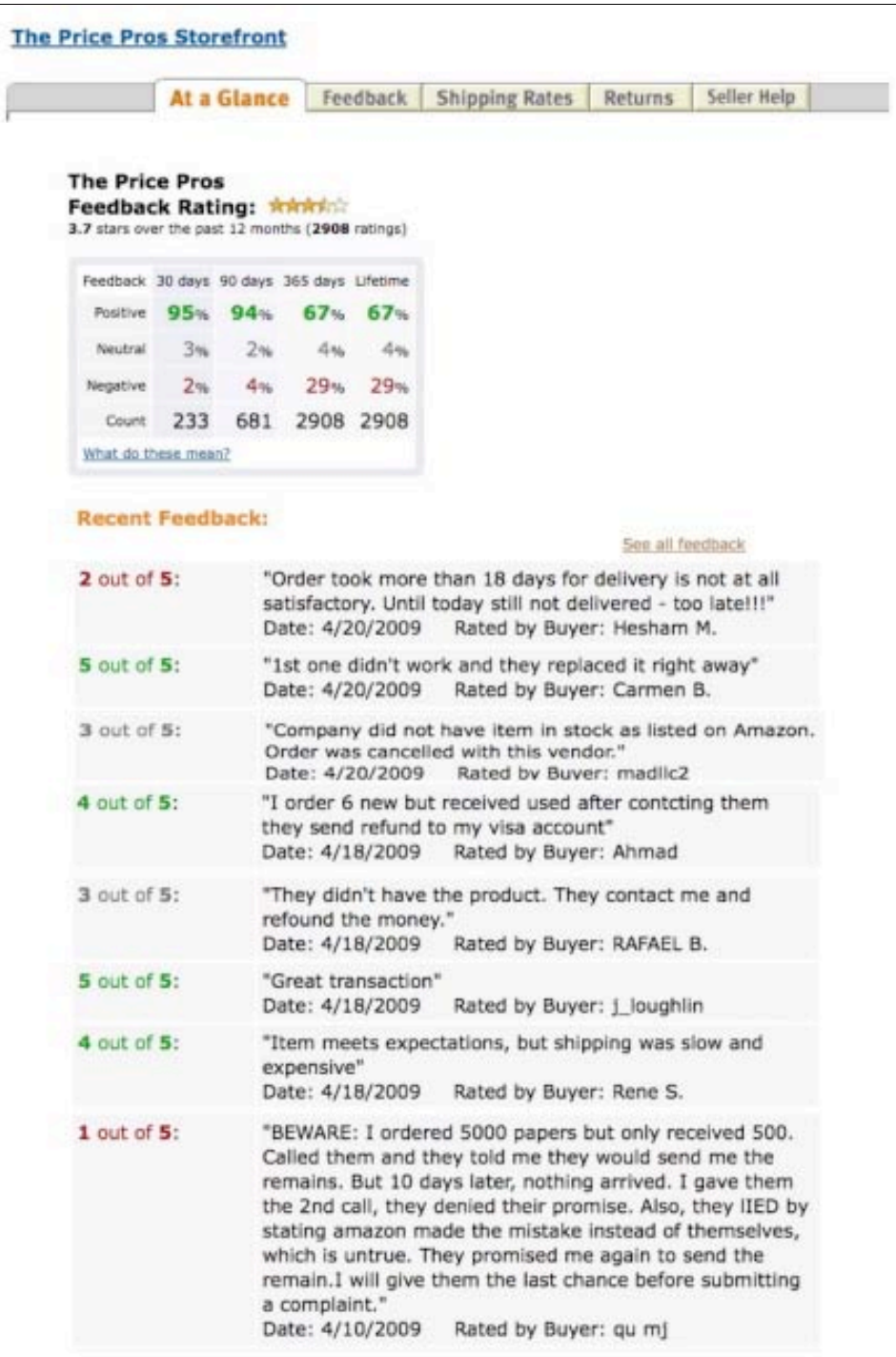


Table 30. Abnormal Treatment—Malevolence Manipulation

Product Info Page	

Customer Review Page



The Price Pros Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

The Price Pros
Feedback Rating: ★★★★½☆
3.7 stars over the past 12 months (**2908** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	95%	94%	67%	67%
Neutral	3%	2%	4%	4%
Negative	2%	4%	29%	29%
Count	233	681	2908	2908

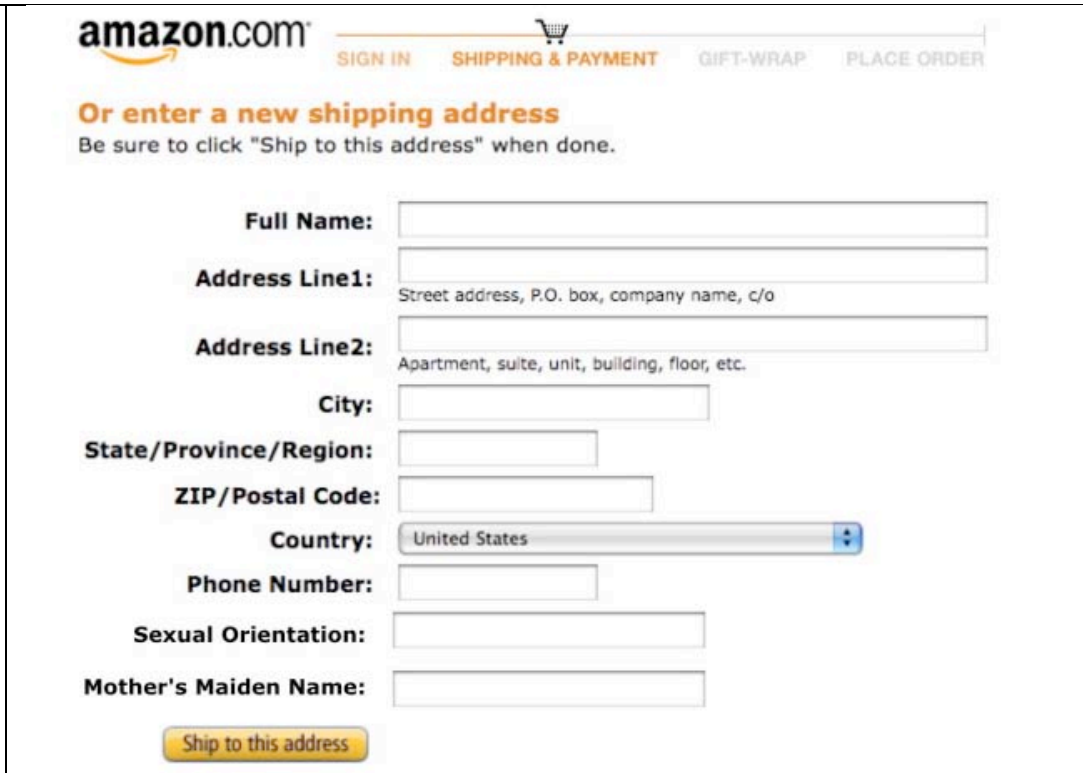
What do these mean?

Recent Feedback:

See all feedback

2 out of **5**:	"Order took more than 18 days for delivery is not at all satisfactory. Until today still not delivered - too late!!!" Date: 4/20/2009 Rated by Buyer: Hesham M.
5 out of **5**:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
3 out of 5:	"Company did not have item in stock as listed on Amazon. Order was cancelled with this vendor." Date: 4/20/2009 Rated by Buyer: madilc2
4 out of **5**:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
3 out of 5:	"They didn't have the product. They contact me and refound the money." Date: 4/18/2009 Rated by Buyer: RAFAEL B.
5 out of **5**:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of **5**:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of **5**:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they lIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

Info Entry Page



Order Confirmation Page

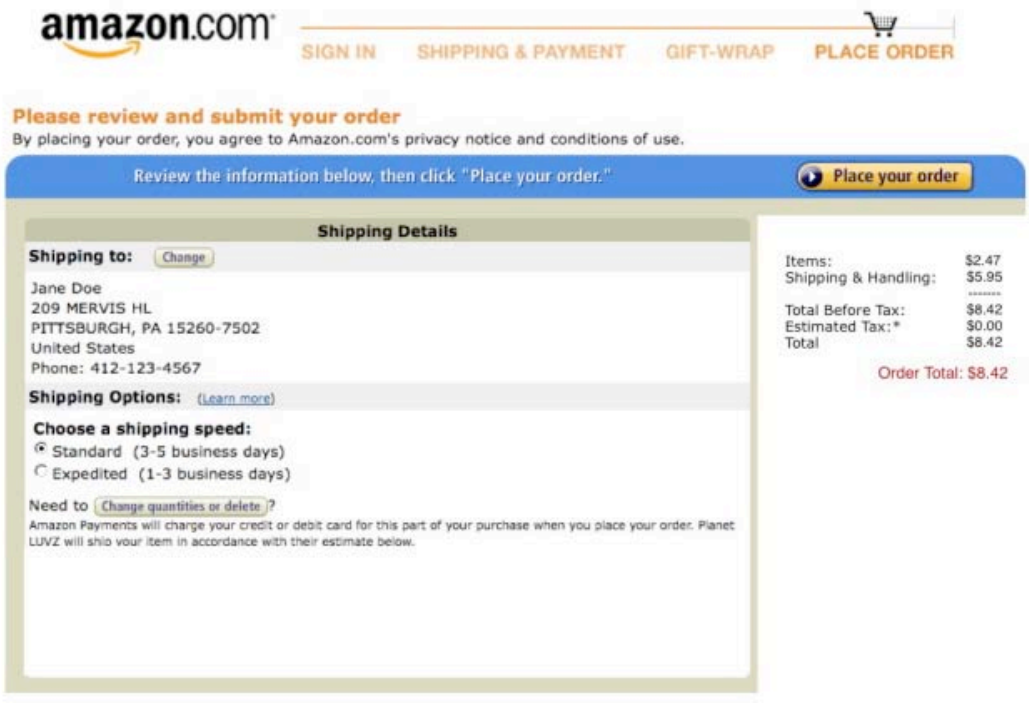
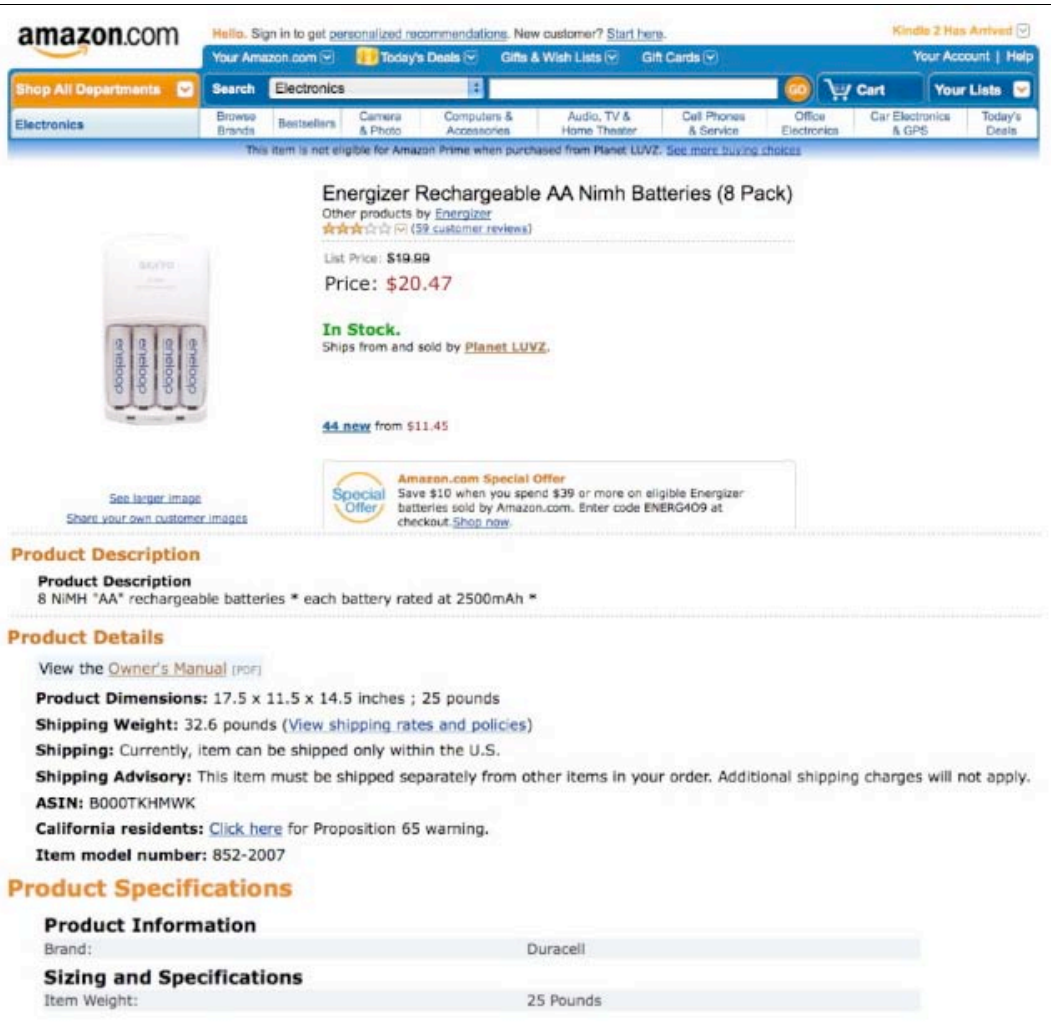


Table 31. Abnormal Treatment—Deceit Manipulation

Product Info Page	

Customer Review Page

The Price Pros Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

The Price Pros
Feedback Rating: ★★★★½☆
3.7 stars over the past 12 months (**2908** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	95%	94%	67%	67%
Neutral	3%	2%	4%	4%
Negative	2%	4%	29%	29%
Count	233	681	2908	2908

What do these mean?

Recent Feedback:

See all feedback

2 out of **5**:	"Order took more than 18 days for delivery is not at all satisfactory. Until today still not delivered - too late!!!" Date: 4/20/2009 Rated by Buyer: Hesham M.
5 out of **5**:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
3 out of 5:	"Company did not have item in stock as listed on Amazon. Order was cancelled with this vendor." Date: 4/20/2009 Rated by Buyer: madlic2
4 out of **5**:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
3 out of 5:	"They didn't have the product. They contact me and refound the money." Date: 4/18/2009 Rated by Buyer: RAFAEL B.
5 out of **5**:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of **5**:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of **5**:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they lIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

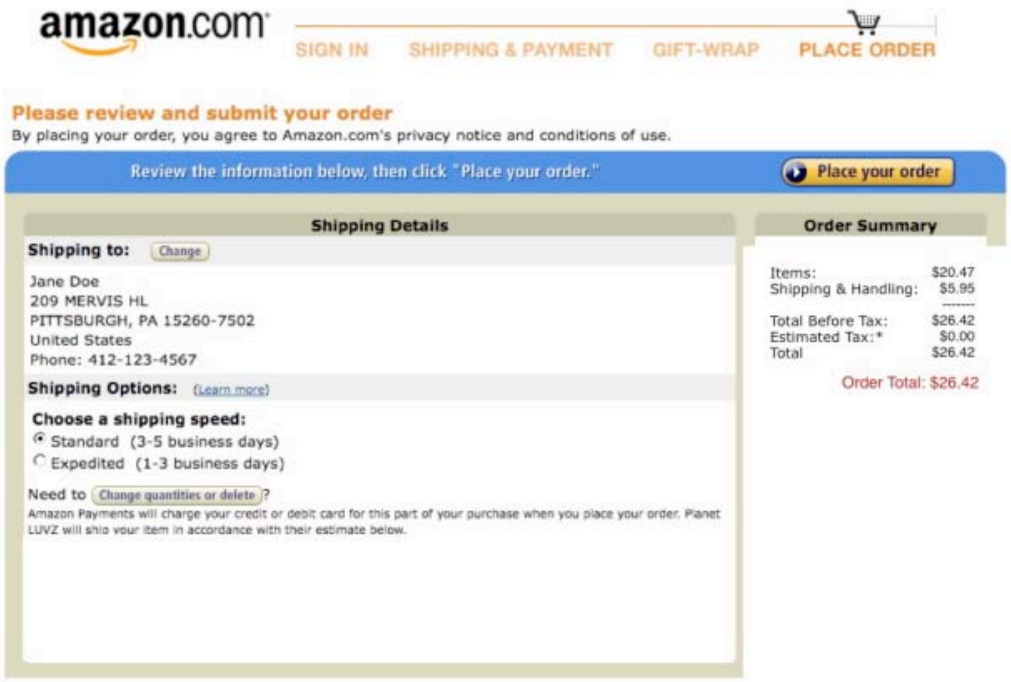
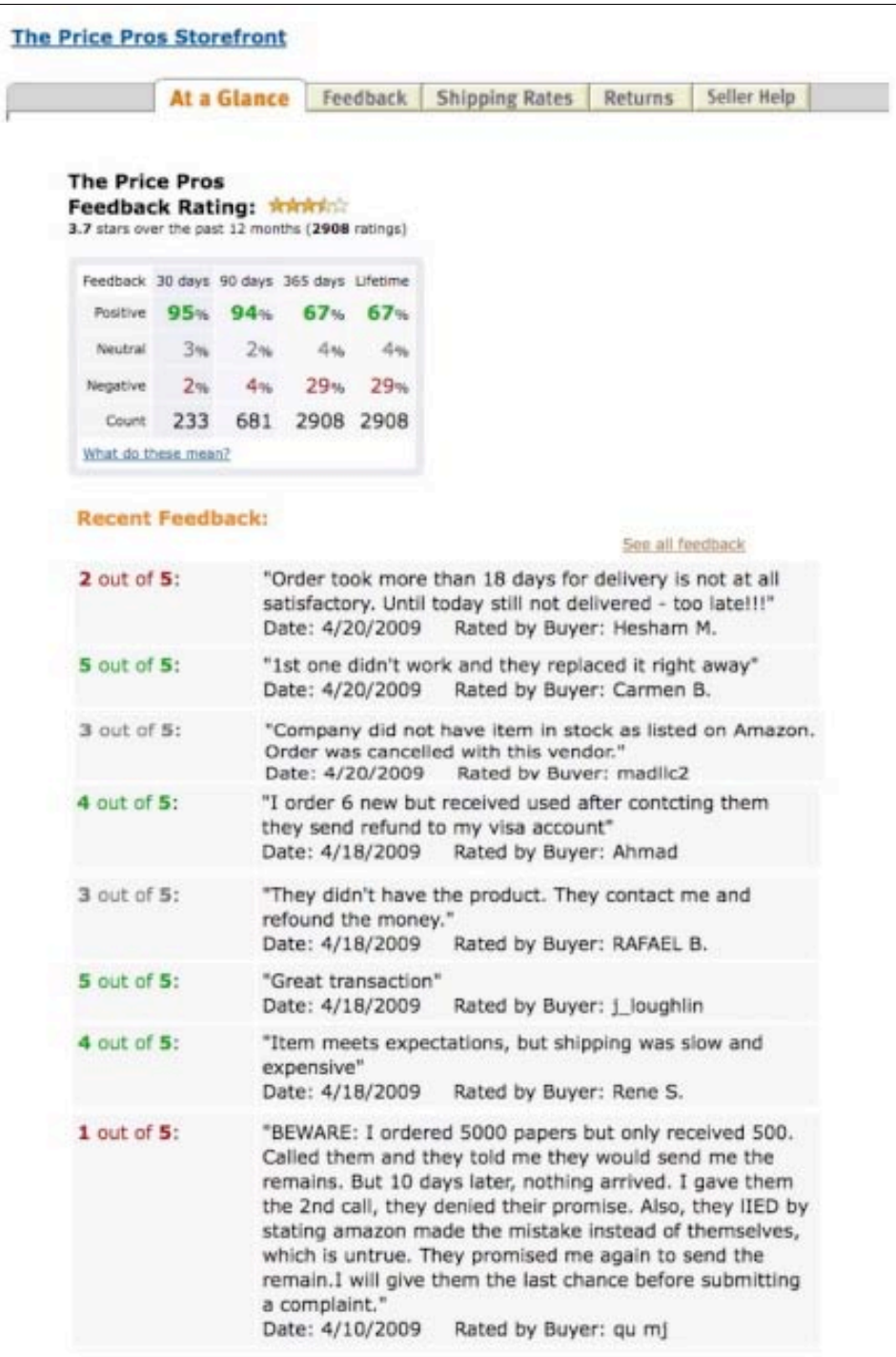
Info Entry Page	
Order Confirmation Page	

Table 32. Ambivalence I Treatment

Product Info Page	

Customer Review Page



The Price Pros Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

The Price Pros
Feedback Rating: ★★★★½☆
3.7 stars over the past 12 months (**2908** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	95%	94%	67%	67%
Neutral	3%	2%	4%	4%
Negative	2%	4%	29%	29%
Count	233	681	2908	2908

What do these mean?

Recent Feedback:

See all feedback

2 out of 5:	"Order took more than 18 days for delivery is not at all satisfactory. Until today still not delivered - too late!!!" Date: 4/20/2009 Rated by Buyer: Hesham M.
5 out of 5:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
3 out of 5:	"Company did not have item in stock as listed on Amazon. Order was cancelled with this vendor." Date: 4/20/2009 Rated by Buyer: madilc2
4 out of 5:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
3 out of 5:	"They didn't have the product. They contact me and refound the money." Date: 4/18/2009 Rated by Buyer: RAFAEL B.
5 out of 5:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of 5:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of 5:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they lIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

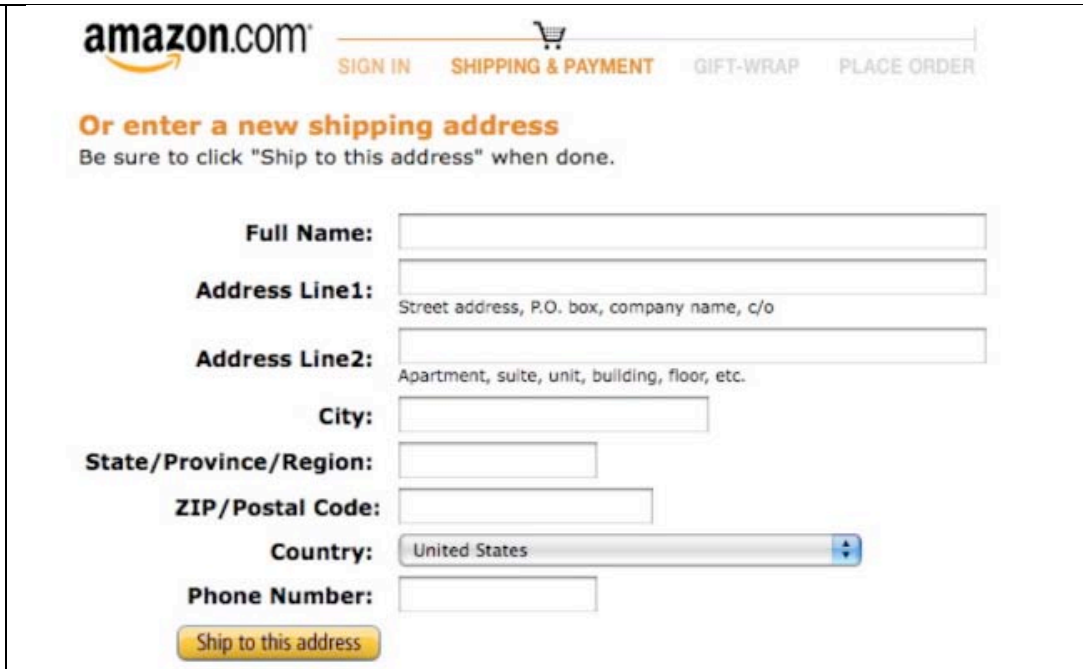
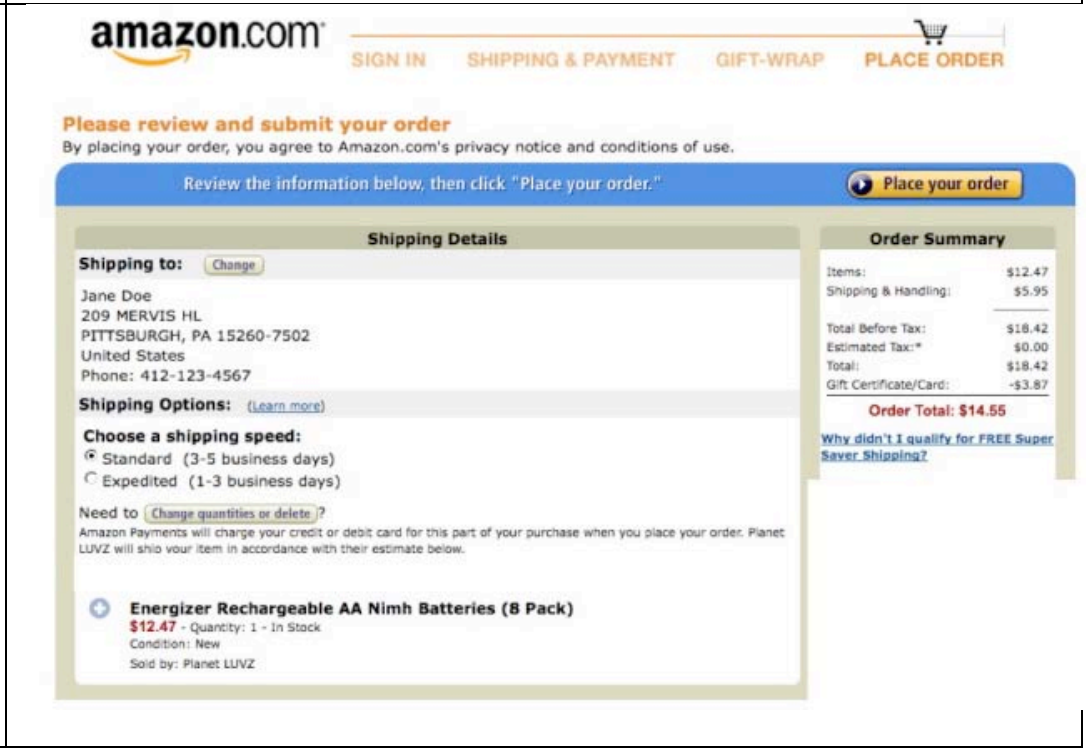
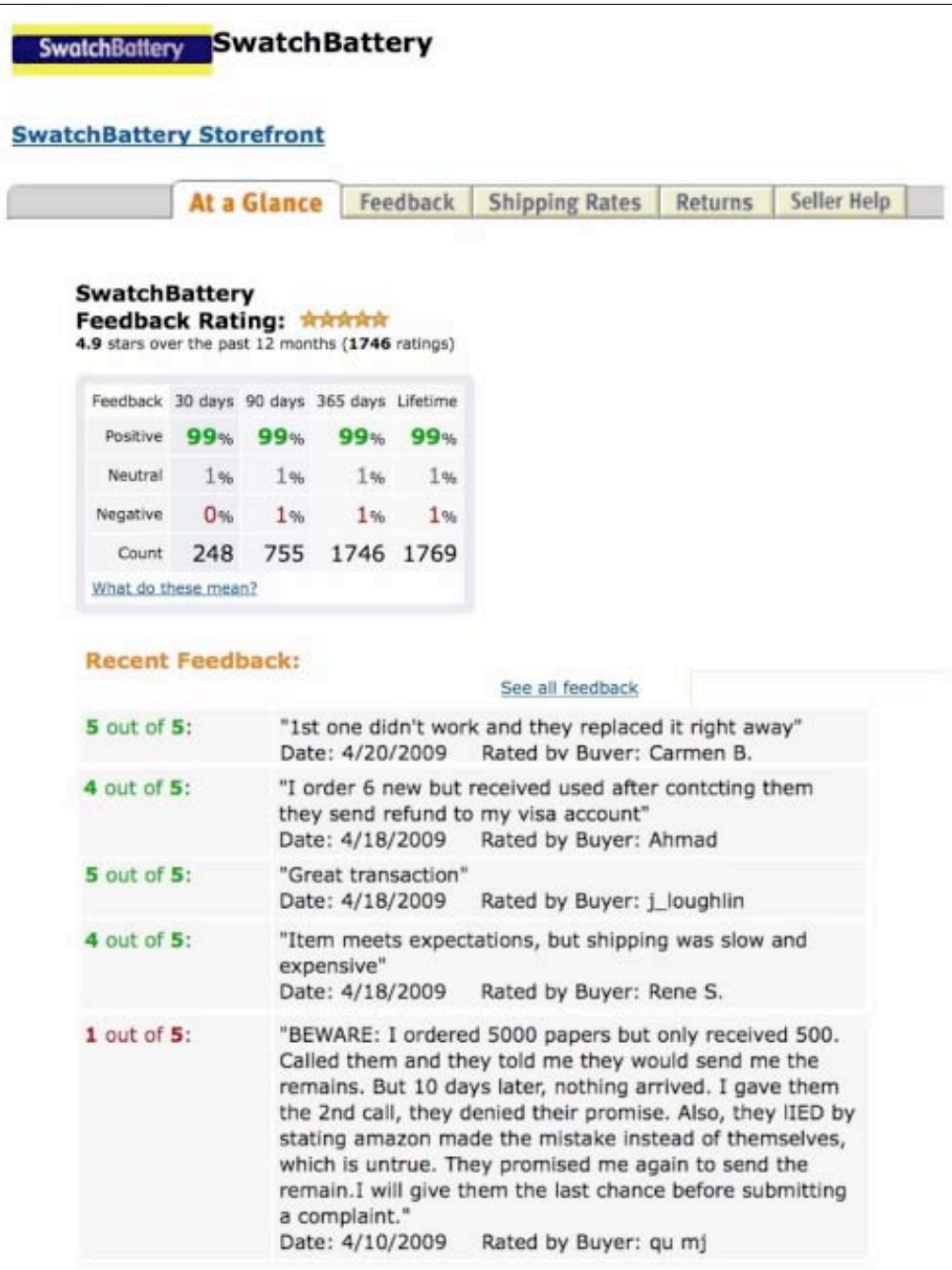
Info Entry Page	
Order Confirmation Page	

Table 33. Ambivalence II Treatment

Product Info Page	

Customer Review Page



SwatchBattery SwatchBattery

SwatchBattery Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

SwatchBattery
Feedback Rating: ★★★★★
4.9 stars over the past 12 months (**1746** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	99%	99%	99%	99%
Neutral	1%	1%	1%	1%
Negative	0%	1%	1%	1%
Count	248	755	1746	1769

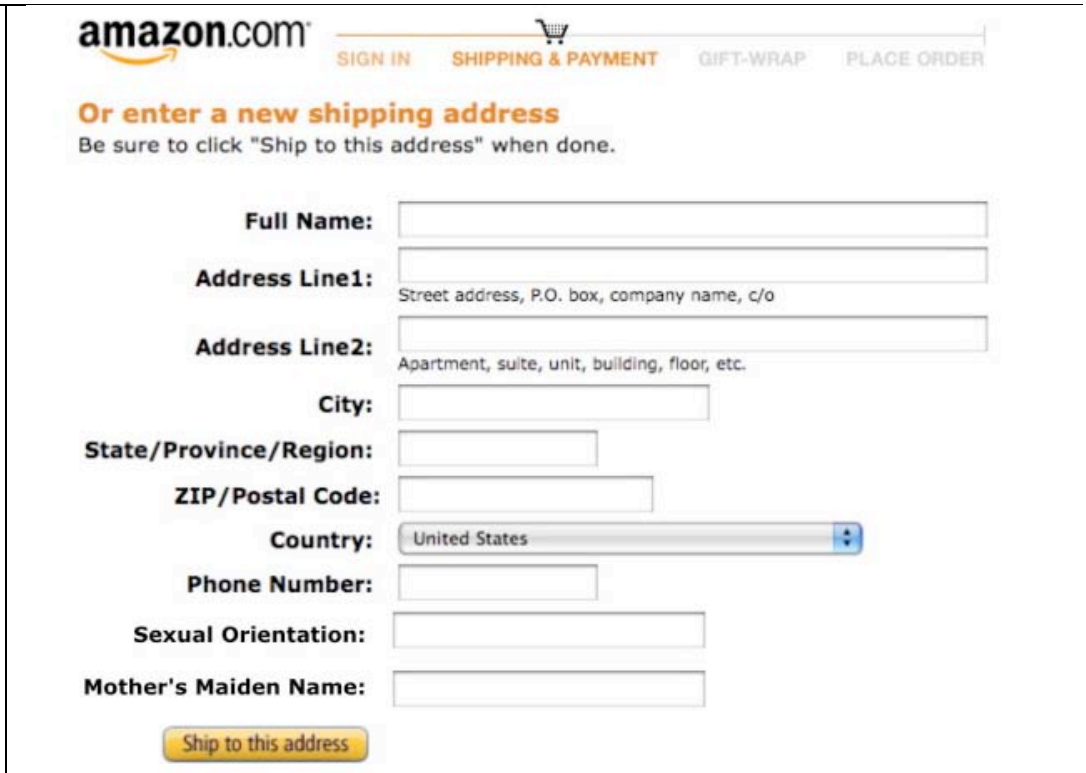
What do these mean?

Recent Feedback:

See all feedback

5 out of 5:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
4 out of 5:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
5 out of 5:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of 5:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of 5:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they lIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

Info Entry Page



Order Confirmation Page

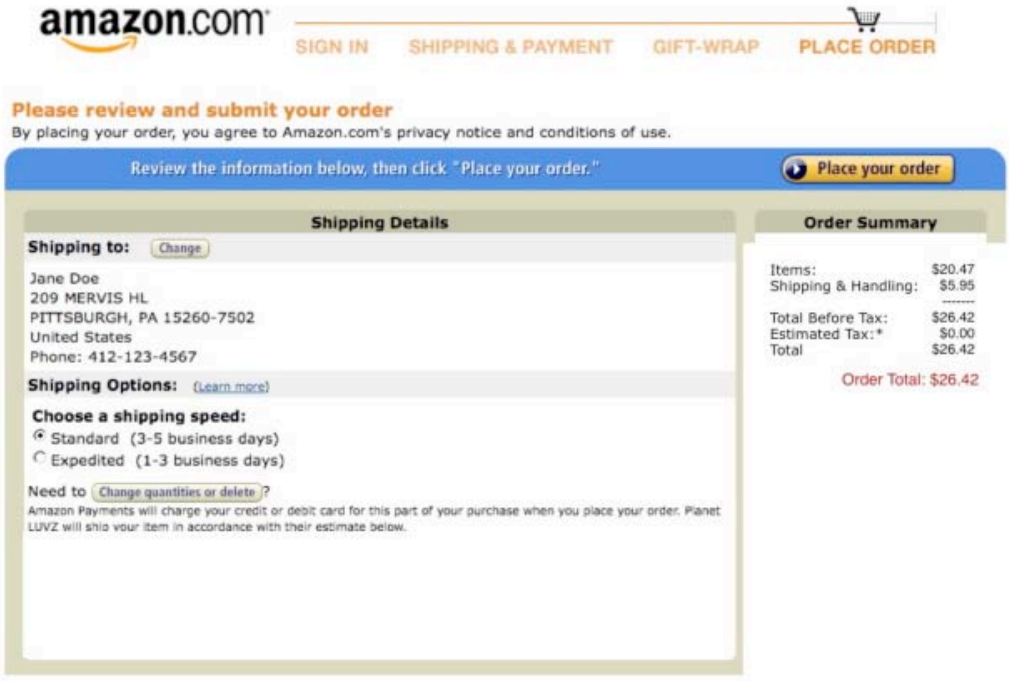
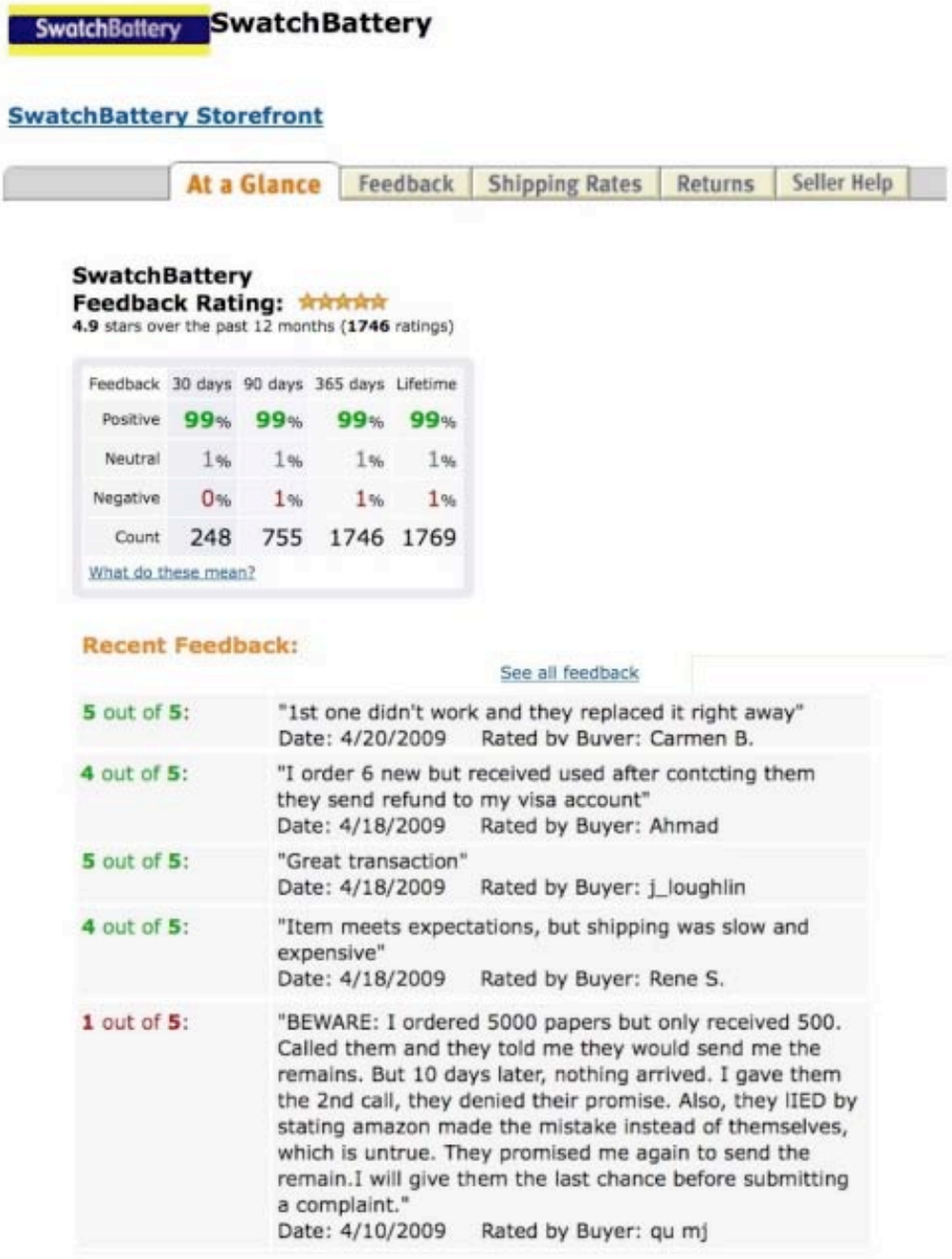


Table 34. Ambivalence III Treatment

Product Info Page	

Customer Review Page



SwatchBattery SwatchBattery

SwatchBattery Storefront

At a Glance | Feedback | Shipping Rates | Returns | Seller Help

SwatchBattery
Feedback Rating: ★★★★★
4.9 stars over the past 12 months (**1746** ratings)

Feedback	30 days	90 days	365 days	Lifetime
Positive	99%	99%	99%	99%
Neutral	1%	1%	1%	1%
Negative	0%	1%	1%	1%
Count	248	755	1746	1769

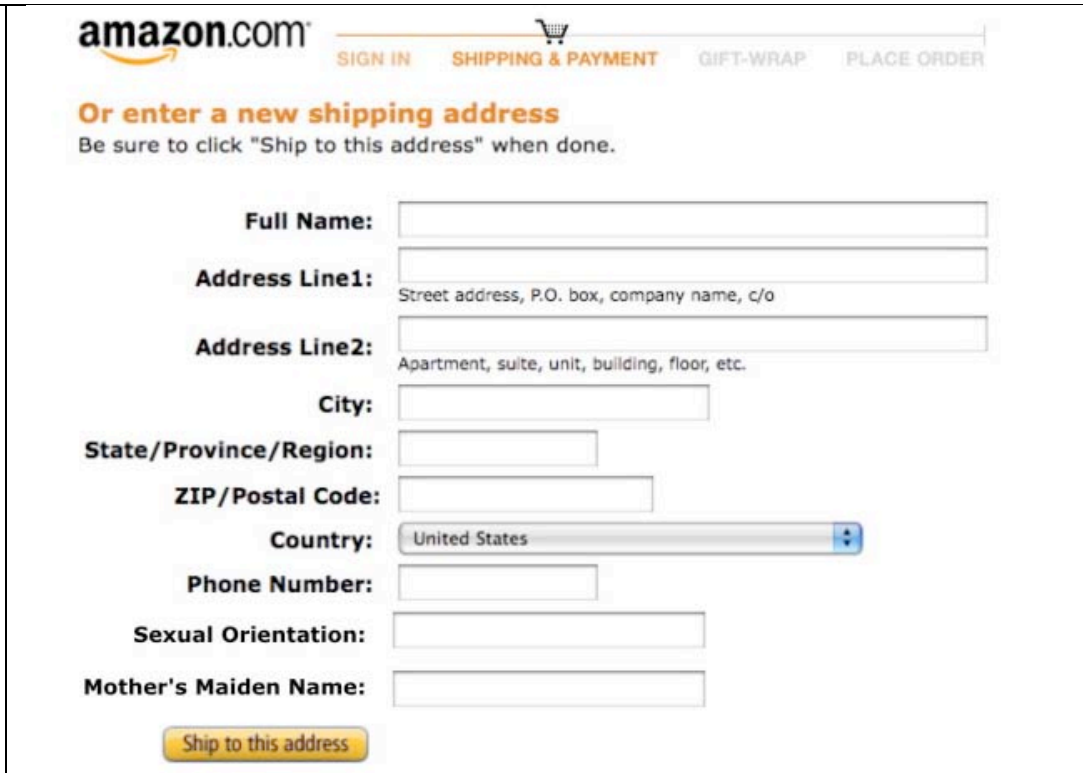
What do these mean?

Recent Feedback:

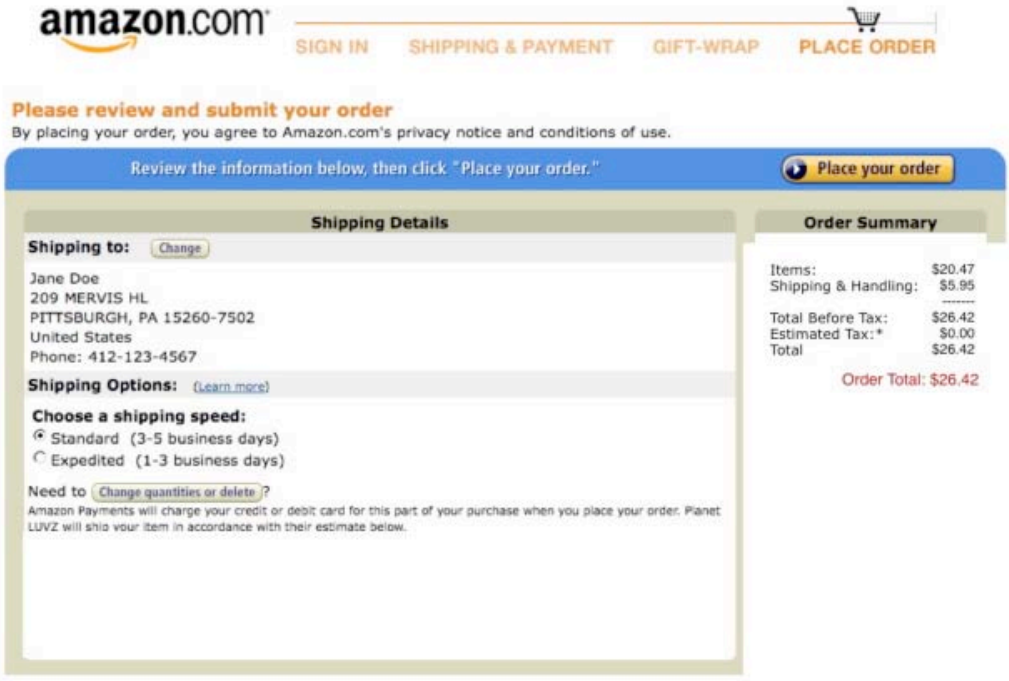
See all feedback

5 out of 5:	"1st one didn't work and they replaced it right away" Date: 4/20/2009 Rated by Buyer: Carmen B.
4 out of 5:	"I order 6 new but received used after contcting them they send refund to my visa account" Date: 4/18/2009 Rated by Buyer: Ahmad
5 out of 5:	"Great transaction" Date: 4/18/2009 Rated by Buyer: j_loughlin
4 out of 5:	"Item meets expectations, but shipping was slow and expensive" Date: 4/18/2009 Rated by Buyer: Rene S.
1 out of 5:	"BEWARE: I ordered 5000 papers but only received 500. Called them and they told me they would send me the remains. But 10 days later, nothing arrived. I gave them the 2nd call, they denied their promise. Also, they lIED by stating amazon made the mistake instead of themselves, which is untrue. They promised me again to send the remain.I will give them the last chance before submitting a complaint." Date: 4/10/2009 Rated by Buyer: qu mj

Info Entry Page



Order Confirmation Page



APPENDIX C

VALIDATION TABLES (PILOT STUDY)

Table 35. T-statistics for Convergent Validity (Pilot)

Latent Construct	Subconstruct	Indicator	t-statistic
Trusting Stance	n/a	ts1	4.48***
		ts2	4.12***
		ts3	4.75***
Distrusting Stance	n/a	dts1	25.71***
		dts2	18.30***
		dts3	43.21***
		dts4	69.07***
Situational Abnormality (Formative)	n/a	error	7.63***
		review	16.75***
		info	21.75***

Latent Construct	**Subconstruct**	**Indicator**	**t-statistic**
		price	7.27***
Suspicion	n/a	sus1	1.59 (dropped)
		sus2	78.29***
		sus3	34.09***
		sus4	37.45***
		sus5	45.73***
		sus6	30.51***
Overall Trust (Formative)	TB—Benevolence	tbb1	28.11***
		tbb2	22.83***
		tbb3	33.81***
	TB—Competence	tbc1	65.29***
		tbc2	42.19***
		tbc3	134.41***
		tbc4	13.48***
	TB - Integrity	tbi1	27.75***
		tbi2	93.54***
		tbi3	46.40***
		tbi4	57.07***

Latent Construct	**Subconstruct**	**Indicator**	**t-statistic**
	DB—Malevolence	dbb1	.90 (dropped)
		dbb2	1.15 (dropped)
		dbb3	1.11 (dropped)
	DB—Incompetence	dbc1	1.85*
		dbc2	1.57 (dropped)
		dbc3	1.82*
	DB—Deceit	dbi1	1.71*
		dbi2	1.80*
		dbi3	1.70*
Ambivalence (Formative	n/a	beliefs	4.23***
		feelings	3.49***
		overall	.211 (dropped)
Trusting Intentions	Willingness to Depend	wd1	29.39***
		wd2	66.24***
		wd3	27.11***
		wd4	19.97***
	Give Information	gi1	23.68***
		gi2	1.91*

Latent Construct	Subconstruct	Indicator	t-statistic
		gi3	10.25***
	Follow Advice	fa1	11.08***
		fa2	69.42***
		fa3	31.96***
		fa4	44.35***
		fa5	50.32***
		fa6	44.37***
	Make Purchase	mp1	27.10***
		mp2	90.08***
	General Intentions	intret	11.74***
		intrec	12.04***

Table 36. Discriminant Validity with Latent Scores (Pilot)

Indicator	Sit Abnorm	DistStnc	Suspicion	TrustStnc	DBC	DBI	TBB	TBC	TBI	Ambiv	FA	GI	MP	Other	WD
info	0.903	-0.193	-0.374	0.069	-0.389	-0.288	0.272	0.301	0.244	0.006	0.378	0.110	0.352	0.216	0.298
error	0.683	-0.134	-0.433	-0.028	-0.367	-0.251	0.271	0.351	0.336	0.047	0.392	0.088	0.404	0.249	0.250
Price	0.873	-0.227	-0.341	0.131	-0.398	-0.310	0.308	0.286	0.225	0.018	0.322	0.109	0.297	0.213	0.280
Reviews	0.616	-0.262	-0.407	0.164	-0.454	-0.361	0.452	0.372	0.354	0.116	0.261	0.090	0.290	0.293	0.211
dts1	-0.148	0.837	0.548	-0.298	0.402	0.544	-0.474	-0.459	-0.525	0.433	-0.323	-0.165	-0.416	-0.299	-0.298
dts2	-0.265	0.773	0.555	-0.044	0.421	0.482	-0.313	-0.362	-0.484	0.526	-0.428	-0.136	-0.334	-0.283	-0.189
dts3	-0.286	0.889	0.508	-0.190	0.541	0.599	-0.486	-0.492	-0.542	0.187	-0.400	-0.111	-0.334	-0.279	-0.283
dts4	-0.217	0.917	0.543	-0.214	0.498	0.536	-0.394	-0.483	-0.498	0.247	-0.342	0.007	-0.328	-0.228	-0.231
Sus2	-0.476	0.621	0.940	-0.108	0.592	0.654	-0.730	-0.639	-0.798	0.353	-0.645	-0.379	-0.691	-0.576	-0.514
Sus3	-0.473	0.402	0.889	-0.109	0.436	0.563	-0.707	-0.478	-0.621	0.235	-0.488	-0.410	-0.646	-0.495	-0.441
Sus4	-0.406	0.653	0.904	-0.194	0.509	0.577	-0.667	-0.603	-0.674	0.346	-0.644	-0.205	-0.591	-0.545	-0.540
Sus5	-0.565	0.537	0.900	-0.121	0.641	0.652	-0.735	-0.745	-0.801	0.251	-0.644	-0.297	-0.731	-0.624	-0.496

Indicator	Sit Abnorm	DistStnc	Suspicion	TrustStnc	DBC	DBI	TBB	TBC	TBI	Ambiv	FA	GI	MP	Other	WD
Sus6	-0.405	0.603	0.877	-0.076	0.542	0.564	-0.617	-0.511	-0.642	0.237	-0.478	-0.338	-0.527	-0.369	-0.474
TS1	0.137	0.389	0.078	-0.329*	0.035	0.046	-0.030	0.064	0.061	-0.090	0.076	-0.006	0.060	0.025	-0.032
TS2	-0.019	0.399	0.069	.064*	-0.021	0.040	0.121	0.013	0.041	0.022	0.041	-0.114	-0.062	-0.013	0.125
TS3	-0.021	0.434	0.144	-0.769	0.145	0.088	-0.182	-0.053	-0.036	-0.022	-0.038	-0.136	-0.130	-0.197	-0.136
dbc1	-0.546	0.431	0.534	-0.166	0.874	0.613	-0.654	-0.609	-0.581	0.046	-0.504	-0.207	-0.452	-0.406	-0.530
dbc3	-0.420	0.538	0.558	-0.207	0.917	0.650	-0.631	-0.653	-0.679	0.257	-0.595	-0.293	-0.488	-0.425	-0.572
dbi1	-0.347	0.612	0.638	-0.174	0.812	0.902	-0.728	-0.558	-0.672	0.187	-0.525	-0.151	-0.451	-0.348	-0.419
dbi2	-0.356	0.474	0.516	-0.050	0.522	0.866	-0.567	-0.600	-0.632	0.262	-0.417	-0.165	-0.476	-0.325	-0.266
dbi3	-0.366	0.610	0.643	-0.003	0.554	0.914	-0.626	-0.566	-0.602	0.248	-0.532	-0.211	-0.459	-0.317	-0.382
tbb1	0.371	-0.485	-0.655	0.434	-0.610	-0.613	0.887	0.687	0.736	-0.118	0.675	0.367	0.635	0.669	0.635
tbb2	0.423	-0.375	-0.706	0.109	-0.612	-0.598	0.845	0.607	0.728	-0.206	0.505	0.471	0.597	0.493	0.576
tbb3	0.353	-0.421	-0.670	0.277	-0.666	-0.682	0.907	0.610	0.739	-0.157	0.571	0.247	0.570	0.581	0.573
tbc1	0.458	-0.446	-0.611	0.064	-0.645	-0.578	0.618	0.943	0.837	-0.265	0.739	0.367	0.703	0.680	0.638

Indicator	Sit Abnorm	DistStnc	Suspicion	TrustStnc	DBC	DBI	TBB	TBC	TBI	Ambiv	FA	GI	MP	Other	WD
tbc2	0.241	-0.520	-0.563	0.081	-0.574	-0.529	0.616	0.903	0.786	-0.400	0.733	0.193	0.597	0.623	0.652
tbc3	0.449	-0.520	-0.689	0.147	-0.666	-0.629	0.734	0.966	0.849	-0.266	0.757	0.416	0.769	0.749	0.654
tbc4	0.437	-0.401	-0.544	0.179	-0.673	-0.588	0.646	0.779	0.683	-0.178	0.599	0.346	0.629	0.530	0.587
tbi1	0.415	-0.604	-0.785	0.226	-0.681	-0.692	0.777	0.697	0.899	-0.323	0.678	0.409	0.713	0.646	0.565
tbi2	0.426	-0.617	-0.779	0.074	-0.681	-0.671	0.814	0.834	0.953	-0.330	0.675	0.320	0.714	0.656	0.629
tbi3	0.317	-0.427	-0.634	0.071	-0.571	-0.597	0.705	0.839	0.900	-0.387	0.713	0.410	0.748	0.663	0.603
tbi4	0.283	-0.566	-0.723	0.055	-0.674	-0.662	0.779	0.859	0.932	-0.351	0.707	0.250	0.664	0.608	0.672
Ambiv-Bel	0.126	0.295	0.326	-0.032	0.047	0.205	-0.223	-0.245	-0.293	0.823	-0.327	-0.261	-0.328	-0.258	-0.280
Ambiv-Feel	-0.013	0.378	0.206	0.013	0.248	0.225	-0.079	-0.273	-0.335	0.839	-0.308	-0.287	-0.341	-0.192	-0.150
FA1	0.589	-0.265	-0.476	0.067	-0.459	-0.355	0.423	0.658	0.534	-0.301	0.691	0.161	0.545	0.599	0.606
FA2	0.347	-0.317	-0.606	0.020	-0.484	-0.410	0.571	0.666	0.661	-0.299	0.926	0.425	0.682	0.702	0.700
FA3	0.375	-0.415	-0.547	0.084	-0.587	-0.539	0.623	0.590	0.667	-0.332	0.898	0.322	0.623	0.648	0.658
FA4	0.348	-0.463	-0.532	0.036	-0.572	-0.604	0.598	0.699	0.678	-0.351	0.936	0.291	0.635	0.621	0.652

Indicator	Sit Abnorm	DistStnc	Suspicion	TrustStnc	DBC	DBI	TBB	TBC	TBI	Ambiv	FA	GI	MP	Other	WD
FA5	0.345	-0.521	-0.663	0.190	-0.579	-0.560	0.637	0.746	0.710	-0.475	0.924	0.443	0.746	0.704	0.708
FA6	0.403	-0.304	-0.595	0.258	-0.569	-0.422	0.650	0.801	0.708	-0.255	0.879	0.356	0.737	0.789	0.727
GI1	0.121	-0.081	-0.301	0.089	-0.269	-0.185	0.377	0.321	0.338	-0.361	0.378	0.873	0.491	0.404	0.439
GI2	-0.037	-0.106	-0.175	0.154	-0.232	-0.250	0.181	0.203	0.135	-0.072	0.023	.301*	0.213	0.113	0.057
GI3	0.110	-0.108	-0.293	0.142	-0.183	-0.114	0.304	0.281	0.293	-0.194	0.285	0.818	0.568	0.460	0.384
MP1	0.406	-0.278	-0.588	0.192	-0.403	-0.431	0.483	0.497	0.572	-0.471	0.535	0.624	0.847	0.536	0.533
MP2	0.398	-0.434	-0.673	0.178	-0.519	-0.487	0.704	0.792	0.774	-0.290	0.776	0.521	0.936	0.893	0.689
IntRec	0.307	-0.314	-0.576	0.324	-0.444	-0.352	0.668	0.697	0.674	-0.257	0.750	0.486	0.815	0.994	0.694
IntRet	0.337	-0.319	-0.588	0.289	-0.479	-0.382	0.655	0.738	0.715	-0.279	0.784	0.516	0.844	0.995	0.694
WD1	0.254	-0.242	-0.526	0.261	-0.487	-0.259	0.624	0.530	0.532	-0.202	0.567	0.439	0.524	0.477	0.847
WD2	0.271	-0.269	-0.419	0.250	-0.523	-0.383	0.589	0.647	0.605	-0.201	0.692	0.256	0.589	0.606	0.916
WD3	0.163	-0.214	-0.382	0.265	-0.571	-0.390	0.584	0.511	0.564	-0.198	0.550	0.533	0.569	0.508	0.847
WD4	0.427	-0.271	-0.542	0.120	-0.537	-0.334	0.547	0.684	0.593	-0.268	0.779	0.442	0.680	0.747	0.829

* - Item dropped to improve discriminant validity

Table 37. Correlations of Latent Constructs and Square Root of the AVE on the Diagonal—Discriminant Validity Check (Pilot)

	Ambiv	DB-Ben	DB-Int	DisStnc	FA	GI	MP	Sit Abnorm	Other	Suspicion	TB-Ben	TB-Comp	TB-int	TrstStanc	WD
Ambiv	0.831														
DB-Ben	0.180	0.896													
DB-Int	0.259	0.705	0.894												
DisStnc	0.406	0.545	0.633	0.856											
FA	-0.382	-0.617	-0.550	-0.436	0.880										
GI	-0.330	-0.283	-0.196	-0.117	0.386	0.712									
MP	-0.403	-0.525	-0.517	-0.413	0.755	0.625	0.892								
Sit Abnorm	0.066	-0.531	-0.398	-0.268	0.447	0.130	0.446	0.779							
Other	-0.270	-0.464	-0.369	-0.318	0.772	0.504	0.834	0.324	0.995						
Suspicion	0.319	0.609	0.670	0.630	-0.650	-0.357	-0.710	-0.518	-0.585	0.902					
TB-Ben	-0.180	-0.715	-0.717	-0.488	0.668	0.410	0.684	0.433	0.665	-0.767	0.880				

TB-Comp	-0.312	-0.705	-0.642	-0.526	0.788	0.365	0.749	0.436	0.721	-0.669	0.724	0.901			
TB-int	-0.378	-0.707	-0.710	-0.599	0.753	0.376	0.770	0.390	0.699	-0.791	0.834	0.878	0.921		
TrstStanc	-0.011	-0.210	-0.085	-0.219	0.126	0.145	0.204	0.107	0.308	-0.136	0.319	0.127	0.113	0.485	
WD	-0.257	-0.616	-0.399	-0.293	0.769	0.480	0.696	0.340	0.698	-0.549	0.678	0.702	0.671	0.251	0.860

APPENDIX D

VALIDATION TABLES (MAIN STUDY)

Table 38. T-statistics for Convergent Validity (Main)

Latent Construct	Subconstruct	Indicator	t-statistic
Disposition to trust (2nd Order formative)	Benevolence (Reflective)	dtB1	27.06***
		dtB2	32.36***
		dtB3	35.20***
	Competence (Reflective)	dtC1	26.46***
		dtC2	31.79***
		dtC3	35.01***
	Integrity (Reflective)	dtI1	69.72***
		dtI2	55.49***
		dtI3	51.36***
	Trusting stance	dtTS1	61.78***

Latent Construct	Subconstruct	Indicator	t-statistic
	(Reflective)	dtTS2	31.56***
		dtTS3	42.91***
Disposition to distrust	Malevolence	ddM1	48.14***
(2nd Order formative)	(Reflective)	ddM2	65.37***
		ddM3	32.91***
	Incompetence	ddI1	43.37***
	(Reflective)	ddI2	58.99***
		ddI3	70.08***
	Deceit	ddD1	73.10***
	(Reflective)	ddD2	46.17***
		ddD3	61.95***
	Distrusting stance	ddDS1	51.42***
	(Reflective)	ddDS2	15.38***
		ddDS3	114.17***
		ddDS4	90.66***
Trusting beliefs	Benevolence	tbB1	88.21***
(2nd Order formative)	(Reflective)	tbB2	78.76***
		tbB3	48.30***

Latent Construct	Subconstruct	Indicator	t-statistic
	Competence (Reflective)	tbC1	95.94***
		tbC2	137.67***
		tbC3	140.10***
		tbC4	37.21***
	Integrity (Reflective)	tbI1	96.87***
		tbI2	92.29***
		tbI3	89.13***
		tbI4	92.82***
Distrusting beliefs (2^{nd} Order formative)	Malevolence (Reflective)	dbM1	90.29***
		dbM2	70.02***
		dbM3	73.62***
	Incompetence (Reflective)	dbI1	131.73***
		dbI2	154.31***
		dbI3	176.26***
		dbI4	39.99***
	Deceit (Reflective)	dbD1	114.31***
		dbD2	106.29***
		dbD3	105.30***

Latent Construct	**Subconstruct**	**Indicator**	**t-statistic**
		dbD4	117.03***
Overall trust (Reflective)	na	ztrust	25.36***
		zdistrust	40.99***
		zBenv	15.38***
		zComp	28.57***
		zInteg	21.38***
Ambivalence (Reflective)	na	ambiv1	1.12 (Dropped)
		ambiv2	8.41***
		ambiv3	9.87***
		ambiv4	51.61***
		ambiv5	6.14***
Trusting intentions (2nd Order formative)	Follow advice (Reflective)	fa1	35.31***
		fa2	126.30***
		fa3	47.93***
		fa4	112.80***
		fa5	66.06***
		fa6	60.61***
	Give information	gi1	52.56***

Latent Construct	Subconstruct	Indicator	t-statistic
	(Reflective)	gi2	17.63***
		gi3	12.97***
	Make purchase (Reflective)	mp1	38.20***
		mp2	140.28***
	Willingness to disclose information (Reflective)	wd1	71.59***
		wd2	88.54***
		wd3	88.15***
		wd4	56.82***
Suspicion (Reflective)	na	sus1	16.53***
		sus2	37.20***
		sus3	71.56***
		sus4	88.99***
		sus5	50.67***
		sus6	46.94***
Situational abnormality—General (Reflective)	na	saG1	113.73***
		saG2	18.32***
Situational abnormality—	na	saD1	119.29***

Latent Construct	**Subconstruct**	**Indicator**	**t-statistic**
Design (Reflective)		saD2	54.99***
Situational abnormality—Information (Reflective)	na	saI1	118.99***
		saI2	50.41***
Situational abnormality—Product (Reflective)	na	saP1	43.91***
		saP2	36.89***

Table 39. Discriminant Validity with Latent Scores (Main)

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
ambiv1	**0.139(d)**	0.097	0.069	0.111	-0.073	-0.058	-0.128	-0.047	-0.069	0.053	0.005
ambiv2	**0.687**	-0.064	-0.143	-0.126	0.160	0.174	0.120	-0.178	0.139	0.111	0.219
ambiv3	**0.685**	-0.087	-0.137	-0.130	0.147	0.159	0.113	-0.147	0.104	0.117	0.178
ambiv4	**0.947**	-0.348	-0.470	-0.435	0.516	0.550	0.486	-0.371	0.389	0.348	0.510
ambiv5	**0.548 (d)**	-0.038	-0.092	-0.067	0.139	0.128	0.110	-0.138	0.108	0.116	0.138
tbB1	-0.278	**0.903**	0.705	0.747	-0.491	-0.438	-0.505	0.287	-0.374	-0.254	-0.428
tbB2	-0.277	**0.888**	0.698	0.741	-0.467	-0.457	-0.485	0.261	-0.403	-0.310	-0.426
tbB3	-0.225	**0.845**	0.619	0.707	-0.470	-0.404	-0.493	0.217	-0.316	-0.191	-0.359
tbC1	-0.384	0.692	**0.901**	0.773	-0.562	-0.585	-0.527	0.340	-0.480	-0.351	-0.533
tbC2	-0.419	0.699	**0.930**	0.782	-0.597	-0.613	-0.559	0.339	-0.493	-0.346	-0.578
tbC3	-0.395	0.714	**0.926**	0.788	-0.575	-0.596	-0.519	0.310	-0.495	-0.354	-0.551

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
tbC4	-0.255	0.612	**0.778**	0.646	-0.429	-0.480	-0.439	0.314	-0.470	-0.294	-0.455
tbI1	-0.327	0.782	0.755	**0.905**	-0.569	-0.531	-0.557	0.286	-0.419	-0.317	-0.480
tbI2	-0.377	0.734	0.763	**0.910**	-0.561	-0.548	-0.515	0.310	-0.467	-0.311	-0.528
tbI3	-0.340	0.725	0.783	**0.890**	-0.552	-0.528	-0.506	0.278	-0.454	-0.268	-0.457
tbI4	-0.342	0.751	0.737	**0.888**	-0.558	-0.492	-0.516	0.304	-0.418	-0.302	-0.487
dbD1	0.435	-0.505	-0.567	-0.587	**0.917**	0.797	0.785	-0.363	0.459	0.351	0.571
dbD2	0.400	-0.493	-0.538	-0.573	**0.919**	0.766	0.789	-0.332	0.467	0.341	0.557
dbD3	0.435	-0.501	-0.564	-0.568	**0.908**	0.777	0.787	-0.386	0.460	0.304	0.564
dbD4	0.414	-0.485	-0.583	-0.557	**0.923**	0.774	0.796	-0.371	0.470	0.325	0.572
dbI1	0.463	-0.444	-0.585	-0.531	0.775	**0.936**	0.736	-0.404	0.493	0.374	0.618
dbI2	0.469	-0.459	-0.600	-0.538	0.783	**0.937**	0.732	-0.394	0.463	0.361	0.627

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
dbI3	0.462	-0.452	-0.591	-0.547	0.814	**0.934**	0.729	-0.383	0.480	0.340	0.622
dbI4	0.346	-0.424	-0.545	-0.489	0.683	**0.789**	0.657	-0.397	0.528	0.311	0.493
dbM1	0.384	-0.477	-0.531	-0.520	0.798	0.710	**0.898**	-0.305	0.407	0.277	0.506
dbM2	0.424	-0.500	-0.523	-0.504	0.754	0.717	**0.876**	-0.355	0.418	0.332	0.524
dbM3	0.311	-0.506	-0.469	-0.511	0.715	0.661	**0.862**	-0.288	0.401	0.248	0.467
saD1	0.305	0.293	0.365	0.336	0.360	0.417	0.343	**0.926**	0.552	0.468	0.477
saD2	0.316	0.226	0.290	0.246	0.356	0.367	0.303	**0.876**	0.383	0.419	0.374
saI1	0.327	-0.462	-0.573	-0.523	0.523	0.552	0.488	-0.492	**0.919**	0.449	0.634
saI2	0.301	-0.266	-0.389	-0.338	0.370	0.407	0.331	-0.453	**0.874**	0.381	0.514
saP1	0.226	-0.267	-0.376	-0.324	0.337	0.341	0.307	-0.364	0.418	**0.864**	0.425
saP2	0.291	-0.219	-0.263	-0.236	0.269	0.310	0.242	-0.478	0.368	**0.828**	0.383

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
saG1	0.450	-0.457	-0.588	-0.530	0.592	0.654	0.579	-0.463	0.635	0.465	**0.903**
saG2	0.306	-0.296	-0.391	-0.358	0.423	0.416	0.339	-0.319	0.419	0.319	**0.768**
fa1	0.379	-0.475	-0.539	-0.534	0.516	0.574	0.542	-0.319	0.390	0.254	0.496
fa2	0.377	-0.549	-0.647	-0.593	0.645	0.695	0.616	-0.362	0.536	0.377	0.597
fa3	0.309	-0.445	-0.536	-0.469	0.528	0.553	0.494	-0.298	0.471	0.292	0.482
fa4	0.374	-0.501	-0.606	-0.537	0.593	0.635	0.569	-0.319	0.515	0.328	0.547
fa5	0.378	-0.533	-0.643	-0.575	0.633	0.668	0.594	-0.330	0.524	0.359	0.560
fa6	0.468	-0.554	-0.693	-0.624	0.713	0.788	0.669	-0.430	0.561	0.441	0.691
gi1	0.155	-0.334	-0.370	-0.348	0.420	0.450	0.447	-0.210	0.357	0.246	0.347
gi2	0.118	-0.220	-0.281	-0.257	0.205	0.201	0.207	-0.149	0.180	0.088	0.236
gi3	0.069	-0.301	-0.282	-0.251	0.191	0.206	0.235	-0.067	0.188	0.127	0.163

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
mp1	0.222	-0.357	-0.405	-0.388	0.499	0.512	0.461	-0.301	0.389	0.283	0.426
mp2	0.387	-0.573	-0.670	-0.626	0.668	0.728	0.639	-0.386	0.547	0.369	0.619
wd1	0.380	-0.492	-0.581	-0.556	0.593	0.647	0.571	-0.379	0.454	0.396	0.591
wd2	0.417	-0.541	-0.604	-0.589	0.613	0.630	0.615	-0.357	0.423	0.313	0.542
wd3	0.397	-0.567	-0.601	-0.588	0.629	0.652	0.612	-0.346	0.441	0.308	0.547
wd4	0.414	-0.498	-0.640	-0.564	0.584	0.648	0.557	-0.317	0.453	0.333	0.559
sus1	0.238	-0.281	-0.340	-0.289	0.315	0.355	0.277	-0.293	0.402	0.273	0.284
sus2	-0.372	0.417	0.457	0.473	-0.555	-0.517	-0.509	0.332	-0.487	-0.352	-0.476
sus3	-0.340	0.440	0.456	0.470	-0.568	-0.550	-0.550	0.428	-0.507	-0.452	-0.525
sus4	-0.371	0.454	0.506	0.495	-0.559	-0.594	-0.548	0.456	-0.579	-0.441	-0.606
sus5	-0.386	0.442	0.529	0.516	-0.587	-0.627	-0.573	0.457	-0.627	-0.462	-0.648

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
sus6	-0.332	0.335	0.396	0.358	-0.470	-0.514	-0.458	0.447	-0.592	-0.368	-0.528
dtB1	-0.021	0.143	0.065	0.084	-0.048	0.020	-0.081	-0.042	0.006	0.022	-0.013
dtB2	-0.060	0.162	0.075	0.138	-0.058	0.005	-0.085	0.038	-0.028	0.020	0.000
dtB3	-0.056	0.159	0.095	0.130	-0.085	-0.027	-0.119	0.056	-0.053	-0.020	-0.009
dtC1	-0.049	0.112	0.130	0.142	-0.075	-0.045	-0.080	-0.022	-0.077	0.037	0.016
dtC2	-0.003	0.052	0.074	0.067	-0.007	-0.004	-0.019	-0.021	-0.049	0.057	-0.036
dtC3	-0.004	0.122	0.100	0.113	-0.053	-0.025	-0.062	-0.046	-0.060	0.049	-0.018
dtI1	-0.040	0.159	0.083	0.145	-0.130	-0.047	-0.122	-0.011	0.000	0.046	0.052
diI2	-0.109	0.202	0.158	0.183	-0.160	-0.098	-0.184	0.033	-0.064	-0.029	-0.027
dtI3	-0.066	0.194	0.157	0.200	-0.153	-0.074	-0.137	0.040	-0.095	-0.045	-0.003
dtTS1	-0.071	0.159	0.146	0.172	-0.185	-0.139	-0.145	-0.046	-0.099	-0.011	-0.086

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
dtTS2	-0.002	0.122	0.100	0.120	-0.120	-0.102	-0.110	-0.059	-0.032	0.021	-0.059
dtTS3	-0.003	0.104	0.084	0.100	-0.132	-0.093	-0.088	-0.052	-0.076	0.005	-0.049
ddD1	0.088	-0.126	-0.062	-0.125	0.213	0.129	0.232	-0.015	0.047	-0.066	0.030
ddD2	0.077	-0.070	-0.052	-0.089	0.220	0.153	0.229	-0.070	0.076	0.025	0.043
ddD3	0.013	-0.122	-0.067	-0.124	0.234	0.137	0.243	0.013	0.030	-0.071	0.004
ddI1	-0.010	-0.010	0.042	0.011	0.112	0.062	0.141	-0.006	0.045	-0.064	-0.027
ddI2	0.048	-0.082	-0.015	-0.056	0.178	0.102	0.165	-0.054	0.045	-0.012	-0.017
ddI3	0.029	-0.051	-0.008	-0.043	0.184	0.133	0.189	-0.035	0.080	-0.022	0.002
ddM1	0.136	-0.144	-0.114	-0.158	0.230	0.186	0.247	-0.086	0.117	0.047	0.090
ddM2	0.083	-0.085	-0.065	-0.066	0.173	0.101	0.197	0.007	0.053	-0.006	0.004
ddM3	0.059	-0.087	-0.022	-0.078	0.162	0.130	0.198	-0.042	0.069	0.024	0.002

Indicator	Ambiv	Ben	Comp	Int	Deceit	Incomp	Malev	SA—Design	SA—Info	SA—Prod	SA—Gen
ddDS1	0.103	-0.131	-0.116	-0.149	0.251	0.175	0.230	-0.019	0.049	0.015	0.047
ddDS2	0.074	-0.024	-0.043	-0.045	0.138	0.102	0.107	-0.042	0.020	0.003	0.018
ddDS3	0.077	-0.102	-0.077	-0.109	0.246	0.158	0.240	-0.036	0.051	-0.022	0.015
ddDS4	0.106	-0.072	-0.064	-0.098	0.217	0.152	0.202	0.002	0.023	-0.056	0.032

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
ambiv1	-0.115	-0.162	-0.116	-0.073	0.018	0.015	0.013	0.052	0.025	-0.036	-0.005	-0.029	-0.034
ambiv2	0.122	-0.010	0.111	0.151	-0.189	-0.034	0.022	0.015	0.051	-0.029	-0.027	0.040	0.030
ambiv3	0.137	-0.050	0.062	0.133	-0.146	-0.036	-0.073	-0.083	-0.056	0.019	0.054	0.079	0.083
ambiv4	0.508	0.223	0.418	0.529	-0.474	-0.048	-0.020	-0.081	-0.052	0.093	0.024	0.103	0.121
ambiv5	0.072	-0.032	0.061	0.088	-0.128	-0.040	-0.014	-0.056	0.055	0.007	0.045	0.100	-0.027

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
tbB1	-0.534	-0.380	-0.495	-0.531	0.422	0.179	0.088	0.168	0.133	-0.116	-0.054	-0.101	-0.108
tbB2	-0.531	-0.373	-0.499	-0.549	0.464	0.110	0.102	0.180	0.125	-0.072	-0.017	-0.067	-0.071
tbB3	-0.491	-0.310	-0.439	-0.494	0.422	0.214	0.129	0.230	0.141	-0.146	-0.085	-0.176	-0.102
tbC1	-0.651	-0.431	-0.564	-0.625	0.485	0.095	0.124	0.172	0.125	-0.072	-0.001	-0.104	-0.100
tbC2	-0.651	-0.394	-0.574	-0.642	0.527	0.081	0.076	0.143	0.104	-0.078	0.001	-0.093	-0.100
tbC3	-0.665	-0.400	-0.596	-0.654	0.517	0.071	0.112	0.143	0.144	-0.063	0.034	-0.071	-0.106
tbC4	-0.533	-0.346	-0.493	-0.520	0.459	0.095	0.151	0.085	0.086	-0.034	-0.015	-0.015	-0.015
tbI1	-0.584	-0.378	-0.558	-0.620	0.503	0.136	0.124	0.193	0.142	-0.133	-0.020	-0.110	-0.144
tbI2	-0.600	-0.359	-0.542	-0.586	0.526	0.102	0.076	0.140	0.093	-0.107	-0.023	-0.111	-0.095
tbI3	-0.575	-0.357	-0.561	-0.581	0.470	0.134	0.133	0.209	0.154	-0.106	-0.056	-0.118	-0.113
tbI4	-0.552	-0.377	-0.471	-0.566	0.468	0.140	0.159	0.200	0.170	-0.131	-0.031	-0.099	-0.105
dbD1	0.655	0.398	0.634	0.634	-0.590	-0.100	-0.057	-0.166	-0.154	0.245	0.187	0.226	0.232

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
dbD2	0.645	0.375	0.605	0.628	-0.603	-0.075	-0.053	-0.156	-0.175	0.239	0.161	0.195	0.236
dbD3	0.611	0.348	0.625	0.628	-0.565	-0.047	-0.050	-0.160	-0.141	0.226	0.174	0.186	0.230
dbD4	0.661	0.380	0.615	0.637	-0.599	-0.062	-0.055	-0.152	-0.163	0.243	0.159	0.230	0.276
dbI1	0.720	0.409	0.691	0.702	-0.634	0.029	-0.003	-0.053	-0.107	0.129	0.069	0.131	0.158
dbI2	0.704	0.386	0.684	0.702	-0.612	0.021	0.000	-0.047	-0.122	0.124	0.068	0.139	0.182
dbI3	0.692	0.370	0.670	0.677	-0.612	-0.004	-0.030	-0.085	-0.139	0.170	0.094	0.154	0.174
dbI4	0.606	0.395	0.541	0.556	-0.528	-0.059	-0.095	-0.131	-0.105	0.167	0.202	0.188	0.141
dbM1	0.584	0.362	0.574	0.573	-0.550	-0.096	-0.096	-0.184	-0.111	0.274	0.183	0.232	0.252
dbM2	0.629	0.423	0.578	0.632	-0.540	-0.065	-0.029	-0.116	-0.125	0.159	0.129	0.188	0.179
dbM3	0.558	0.383	0.528	0.564	-0.535	-0.150	-0.058	-0.157	-0.120	0.295	0.199	0.267	0.218
saD1	-0.398	-0.214	-0.382	-0.388	0.510	0.044	-0.024	0.020	-0.063	-0.032	-0.028	-0.044	-0.021
saD2	0.310	0.163	0.329	0.325	-0.389	0.012	0.043	-0.024	0.044	0.015	0.044	0.042	0.026

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
saI1	0.607	0.384	0.561	0.540	-0.666	-0.060	-0.111	-0.079	-0.119	0.044	0.077	0.089	0.069
saI2	0.415	0.250	0.397	0.347	-0.517	0.011	-0.019	-0.026	-0.020	0.065	0.038	0.083	0.004
saP1	0.379	0.252	0.362	0.357	-0.445	-0.032	-0.003	-0.041	-0.042	-0.032	-0.010	0.040	0.009
saP2	0.290	0.136	0.271	0.292	-0.387	0.050	0.106	0.027	0.055	-0.046	-0.054	0.001	-0.049
saG1	0.649	0.375	0.601	0.617	-0.635	-0.027	-0.040	-0.005	-0.078	0.024	0.013	0.056	0.082
saG2	0.411	0.215	0.389	0.429	-0.430	0.021	0.034	0.028	-0.047	0.027	-0.052	-0.001	-0.050
fa1	**0.741**	0.414	0.579	0.704	-0.445	-0.036	-0.003	-0.042	-0.118	0.046	-0.050	0.022	0.097
fa2	**0.919**	0.512	0.680	0.784	-0.603	-0.095	-0.070	-0.125	-0.143	0.093	0.036	0.100	0.133
fa3	**0.849**	0.425	0.555	0.636	-0.492	-0.053	-0.048	-0.075	-0.135	0.069	0.072	0.081	0.117
fa4	**0.908**	0.462	0.612	0.707	-0.563	-0.090	-0.087	-0.118	-0.188	0.087	0.036	0.072	0.149
fa5	**0.914**	0.491	0.650	0.722	-0.572	-0.089	-0.066	-0.116	-0.180	0.113	0.079	0.114	0.165
fa6	**0.851**	0.442	0.720	0.766	-0.656	-0.001	0.010	-0.041	-0.115	0.058	0.000	0.061	0.096

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
gi1	0.479	**0.860**	0.581	0.452	-0.389	-0.079	-0.129	-0.129	-0.145	0.151	0.096	0.135	0.120
gi2	0.285	**0.607**	0.334	0.303	-0.174	-0.030	-0.022	0.013	-0.064	0.023	-0.132	0.037	0.066
gi3	0.331	**0.620**	0.274	0.242	-0.211	-0.089	-0.088	-0.121	-0.045	0.087	0.133	0.097	0.025
mp1	0.500	0.510	**0.842**	0.480	-0.443	-0.054	-0.086	-0.126	-0.169	0.137	0.103	0.098	0.151
mp2	0.757	0.527	**0.909**	0.718	-0.615	-0.064	-0.050	-0.100	-0.090	0.098	0.026	0.098	0.096
wd1	0.739	0.458	0.634	**0.874**	-0.526	-0.001	0.006	-0.036	-0.129	0.006	-0.042	0.029	0.095
wd2	0.719	0.412	0.587	**0.894**	-0.494	-0.097	-0.039	-0.091	-0.218	0.102	-0.029	0.061	0.193
wd3	0.729	0.406	0.590	**0.901**	-0.501	-0.092	-0.045	-0.106	-0.205	0.081	-0.001	0.072	0.166
wd4	0.736	0.432	0.640	**0.840**	-0.514	0.004	-0.020	-0.020	-0.112	0.020	-0.040	-0.016	0.105
sus1	0.414	0.298	0.365	0.356	**-0.569 (d)**	-0.085	-0.184	-0.155	-0.140	0.130	0.203	0.139	0.149
sus2	-0.507	-0.289	-0.465	-0.463	**0.791**	0.099	0.087	0.122	0.159	-0.119	-0.123	-0.137	-0.154
sus3	-0.531	-0.329	-0.518	-0.471	**0.876**	0.088	0.079	0.107	0.089	-0.158	-0.164	-0.170	-0.159

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
sus4	-0.568	-0.315	-0.539	-0.524	**0.900**	0.045	0.018	0.101	0.056	-0.114	-0.048	-0.133	-0.088
sus5	-0.581	-0.329	-0.569	-0.539	**0.829**	0.047	0.020	0.083	0.049	-0.101	-0.088	-0.126	-0.075
sus6	-0.499	-0.318	-0.479	-0.424	**0.826**	0.109	0.100	0.130	0.039	-0.184	-0.151	-0.217	-0.111
dtB1	-0.030	-0.085	-0.049	0.000	0.038	**0.801**	0.326	0.438	0.215	-0.278	-0.165	-0.269	-0.165
dtB2	-0.069	-0.066	-0.042	-0.049	0.097	**0.842**	0.284	0.431	0.166	-0.257	-0.149	-0.283	-0.140
dtB3	-0.076	-0.079	-0.074	-0.080	0.096	**0.825**	0.318	0.455	0.235	-0.283	-0.189	-0.277	-0.206
dtC1	-0.073	-0.115	-0.097	-0.062	0.077	0.358	**0.803**	0.567	0.451	-0.338	-0.311	-0.274	-0.309
dtC2	-0.014	-0.082	-0.024	0.005	0.060	0.266	**0.820**	0.365	0.329	-0.152	-0.330	-0.105	-0.130
dtC3	-0.030	-0.092	-0.051	0.000	0.075	0.280	**0.817**	0.394	0.350	-0.204	-0.387	-0.167	-0.211
dtI1	-0.042	-0.091	-0.092	-0.022	0.058	0.451	0.479	**0.870**	0.330	-0.402	-0.334	-0.364	-0.293
diI2	-0.123	-0.139	-0.133	-0.110	0.151	0.511	0.448	**0.863**	0.296	-0.393	-0.302	-0.391	-0.246
dtI3	-0.095	-0.075	-0.099	-0.053	0.145	0.411	0.501	**0.823**	0.336	-0.389	-0.324	-0.361	-0.283

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
dtTS1	-0.173	-0.112	-0.159	-0.178	0.123	0.257	0.458	0.418	**0.886**	-0.198	-0.241	-0.191	-0.484
dtTS2	-0.138	-0.099	-0.109	-0.172	0.059	0.180	0.344	0.265	**0.801**	-0.138	-0.083	-0.094	-0.437
dtTS3	-0.122	-0.125	-0.090	-0.136	0.073	0.202	0.403	0.268	**0.884**	-0.111	-0.121	-0.119	-0.436
ddD1	0.060	0.123	0.126	0.026	-0.126	-0.284	-0.267	-0.404	-0.161	**0.875**	0.441	0.525	0.412
ddD2	0.108	0.114	0.086	0.061	-0.165	-0.251	-0.268	-0.378	-0.123	**0.818**	0.464	0.488	0.322
ddD3	0.067	0.106	0.122	0.067	-0.129	-0.315	-0.226	-0.404	-0.167	**0.869**	0.449	0.460	0.382
ddI1	0.002	0.019	-0.001	-0.040	-0.085	-0.163	-0.354	-0.274	-0.095	0.466	**0.823**	0.435	0.265
ddI2	0.038	0.061	0.069	-0.029	-0.142	-0.192	-0.360	-0.378	-0.209	0.471	**0.861**	0.441	0.430
ddI3	0.046	0.066	0.101	-0.014	-0.154	-0.169	-0.363	-0.306	-0.152	0.420	**0.886**	0.437	0.366
ddM1	0.126	0.156	0.138	0.098	-0.190	-0.292	-0.197	-0.397	-0.173	0.434	0.375	**0.830**	0.360
ddM2	0.055	0.111	0.071	0.000	-0.150	-0.286	-0.220	-0.396	-0.138	0.505	0.442	**0.864**	0.349
ddM3	0.036	0.062	0.066	0.006	-0.123	-0.252	-0.160	-0.280	-0.086	0.483	0.447	**0.775**	0.287

Indicators	Advice	Give info	purchase	Will disc	Suspicion	dBen	dComp	dInt	dTS	dDeceit	dIncomp	dMal	dDTS
ddDS1	0.142	0.119	0.136	0.149	-0.126	-0.175	-0.246	-0.279	-0.474	0.363	0.367	0.342	**0.813**
ddDS2	0.090	0.039	0.080	0.122	-0.097	-0.003	-0.026	-0.078	-0.233	0.147	0.100	0.136	**0.599 (d)**
ddDS3	0.126	0.093	0.119	0.116	-0.143	-0.227	-0.272	-0.310	-0.490	0.421	0.437	0.398	**0.909**
ddDS4	0.119	0.090	0.106	0.140	-0.108	-0.212	-0.289	-0.319	-0.476	0.428	0.376	0.380	**0.908**

* - Item dropped to improve discriminant validity

Table 40. Correlations of Latent Constructs and Square Root of the AVE on the Diagonal—Discriminant Validity Check (Main)

Indicators	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Ambiv	0.657											
(2) Ben	-0.297	0.879										
(3) Comp	-0.414	0.768	0.886									
(4) Deceit	0.459	-0.541	-0.614	0.917								

Indicators	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
(5) SA—Design	-0.343	0.291	0.367	-0.396	0.901							
(6) Follow advice	0.441	-0.590	-0.708	0.701	-0.397	0.866						
(7) Give info	0.167	-0.405	-0.444	0.409	-0.212	0.530	0.705					
(8) Incompetence	0.486	-0.493	-0.644	0.849	-0.437	0.757	0.432	0.901				
(9) SA—Info	0.351	-0.416	-0.546	0.506	-0.528	0.580	0.360	0.542	0.897			
(10) Int	-0.386	0.832	0.846	-0.623	0.328	-0.643	-0.409	-0.584	-0.490	0.898		
(11) Make Purchase	0.358	-0.544	-0.630	0.676	-0.397	0.733	0.590	0.720	0.543	-0.594	0.876	
(12) Malevolence	0.426	-0.562	-0.579	0.861	-0.360	0.673	0.443	0.793	0.465	-0.582	0.638	0.879
(13) SA—Prod	0.303	-0.289	-0.381	0.360	-0.494	0.398	0.233	0.385	0.465	-0.333	0.377	0.326
(14) SA—Gen	0.462	-0.462	-0.600	0.618	-0.477	0.652	0.366	0.658	0.646	-0.543	0.608	0.569
(15) Suspicion	-0.427	0.496	0.561	-0.643	0.505	-0.645	-0.386	-0.664	-0.667	0.547	-0.614	-0.616
(16) Will Discl	0.458	-0.597	-0.691	0.689	-0.399	0.833	0.487	0.734	0.505	-0.655	0.698	0.671

Indicators	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(17) dBen	-0.055	0.188	0.096	-0.078	0.021	-0.071	-0.094	-0.002	-0.031	0.142	-0.068	-0.116
(18) dComp	-0.026	0.120	0.128	-0.059	-0.036	-0.052	-0.121	-0.033	-0.078	0.136	-0.075	-0.069
(19) dDTS	0.110	-0.106	-0.094	0.265	-0.026	0.147	0.108	0.182	0.045	-0.127	0.136	0.246
(20) dDeceit	0.070	-0.125	-0.071	0.260	-0.027	0.091	0.134	0.163	0.059	-0.132	0.131	0.275
(21) dIncomp	0.028	-0.058	0.006	0.186	-0.038	0.034	0.058	0.116	0.066	-0.036	0.068	0.193
(22) dInt	-0.084	0.217	0.155	-0.173	0.024	-0.101	-0.120	-0.086	-0.061	0.206	-0.127	-0.173
(23) dMal	0.113	-0.128	-0.082	0.228	-0.048	0.088	0.134	0.168	0.096	-0.122	0.111	0.259
(24) dTS	-0.033	0.151	0.130	-0.173	-0.060	-0.170	-0.131	-0.132	-0.083	0.155	-0.142	-0.135

Indicators	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(13) SA—Prod	0.846											
(14) SA—Gen	0.478	0.838										
(15) Suspicion	-0.493	-0.651	0.806									

(16) Will Discl	0.385	0.638	-0.580	0.878								
(17) dBen	0.008	-0.009	0.094	-0.053	0.823							
(18) dComp	0.057	-0.012	0.088	-0.028	0.377	0.813						
(19) dDTS	-0.022	0.034	-0.145	0.159	-0.208	-0.277	0.817					
(20) dDeceit	-0.046	0.030	-0.163	0.059	-0.332	-0.297	0.437	0.854				
(21) dIncomp	-0.036	-0.016	-0.149	-0.032	-0.205	-0.419	0.417	0.528	0.857			
(22) dInt	-0.010	0.009	0.138	-0.072	0.537	0.558	-0.321	-0.463	-0.375	0.852		
(23) dMal	0.026	0.039	-0.188	0.042	-0.336	-0.234	0.404	0.575	0.510	-0.437	0.824	
(24) dTS	0.005	-0.077	0.102	-0.189	0.251	0.472	-0.529	-0.177	-0.181	0.376	-0.161	0.858

Table 41. Results of Common Methods Bias Test

	Construct Variance			**Method Variance**		
Indicators	**Coef.**	**t stat**	**p value**	**Coef.**	**t stat**	**p value**

Ambiv2	0.9146	40.4629	0.000	-0.1572	4.771	0.000
Ambiv3	0.9184	39.0449	0.000	-0.1656	5.3721	0.000
Ambiv4	0.6545	12.0202	0.000	0.3502	6.4198	0.000
tbB1	0.9025	26.969	0.000	0.0022	0.0571	0.955
tbB2	0.8632	21.8147	0.000	-0.027	0.589	0.557
tbB3	0.8715	23.3909	0.000	0.0256	0.5457	0.586
tbC1	0.8834	21.1531	0.000	-0.0211	0.4512	0.653
tbC2	0.9179	21.793	0.000	-0.0144	0.2997	0.765
tbC3	0.9203	25.0175	0.000	-0.0064	0.1533	0.878
tbC4	0.8193	15.665	0.000	0.0492	0.9022	0.369
dbD1	0.8788	18.8487	0.000	0.043	0.876	0.383
dbD2	0.9448	25.2341	0.000	-0.0297	0.7271	0.469

dbD3	0.9209	22.6864	0.000	-0.0148	0.3457	0.730
dbD4	0.9221	24.9129	0.000	0.0015	0.0357	0.972
saD1R	0.879	47.3255	0.000	-0.0528	2.0551	0.042
saD2	-0.9269	50.8291	0.000	-0.0545	2.0247	0.046
FA1	0.6225	6.6289	0.000	0.1249	1.2956	0.198
FA2	0.8851	16.3183	0.000	0.0368	0.647	0.519
FA3	1.1355	23.2122	0.000	-0.3193	5.1708	0.000
FA4	1.0739	21.0032	0.000	-0.1835	2.9823	0.004
FA5	0.9736	20.347	0.000	-0.0647	1.1055	0.272
FA6	0.4587	5.4772	0.000	0.4423	5.1792	0.000
Gi1	0.7793	25.4728	0.000	0.0956	2.1071	0.038
Gi2	0.6338	8.1904	0.000	-0.0485	0.8616	0.391

Gi3	0.7015	8.4192	0.000	-0.0758	1.1416	0.256
dbI1	0.9538	22.6623	0.000	-0.0199	0.4219	0.674
dbI2	0.968	27.1897	0.000	-0.0353	0.8872	0.377
dbI3	0.9546	28.5339	0.000	-0.0241	0.659	0.511
dbI4	0.7054	8.2069	0.000	0.0943	1.1499	0.253
saI1R	0.7899	27.035	0.000	0.1683	4.9619	0.000
saI2	1.0096	39.0442	0.000	-0.1755	4.7769	0.000
tbI1	0.8901	22.1627	0.000	-0.0203	0.4205	0.675
tbI2	0.906	21.5741	0.000	-0.0053	0.111	0.912
tbI3	0.8783	19.3467	0.000	-0.0099	0.199	0.843
tbI4	0.9191	21.1347	0.000	0.0359	0.7474	0.457
MP1	1.1239	28.1373	0.000	-0.3124	5.965	0.000

MP2	0.631	13.0974	0.000	0.3124	5.965	0.000
dbM1	0.909	26.0511	0.000	-0.0144	0.3555	0.723
dbM2	0.8119	16.3312	0.000	0.0716	1.2837	0.202
dbM3	0.9157	17.4172	0.000	-0.057	0.9918	0.324
saP1R	0.823	39.5937	0.000	0.053	1.6413	0.104
saP2	0.8701	37.2824	0.000	-0.0536	1.6065	0.111
saG1R	0.7155	16.8904	0.000	0.2077	3.543	0.001
saG2	0.9929	18.7338	0.000	-0.2433	3.0482	0.003
Sus2	0.8054	14.6727	0.000	-0.0066	0.1003	0.920
Sus3	0.9215	21.354	0.000	0.0504	0.918	0.361
Sus4	0.9257	21.5754	0.000	0.0247	0.4715	0.638
Sus5	0.7002	9.9757	0.000	-0.1664	2.2166	0.029

Sus6	0.8965	17.5802	0.000	0.097	1.6124	0.110
WD1	0.874	15.333	0.000	-0.0025	0.0421	0.967
WD2	0.9359	21.4061	0.000	-0.0451	0.8666	0.388
WD3	0.9368	20.3708	0.000	-0.0385	0.7163	0.475
WD4	0.757	10.3598	0.000	0.0927	1.2672	0.208
dtB1	0.7969	24.1955	0.000	0.0263	0.6677	0.506
dtB2	0.8597	39.9952	0.000	0.0029	0.097	0.923
dtB3	0.8112	30.728	0.000	-0.0286	0.8646	0.389
dtC1	0.7241	17.9369	0.000	-0.0555	1.3291	0.187
dtC2	0.8664	54.005	0.000	0.0428	1.3338	0.185
dtC3	0.8529	44.2316	0.000	0.0043	0.1363	0.892
ddDS1	0.7984	35.0153	0.000	0.0409	1.2019	0.232

ddDS2	0.6412	12.0988	0.000	-0.0315	0.6106	0.543
ddDS3	0.8984	67.1358	0.000	0.0024	0.0796	0.937
ddDS4	0.9045	72.0852	0.000	-0.0169	0.6373	0.525
ddD1	0.8711	48.2212	0.000	-0.0075	0.2221	0.825
ddD2	0.8174	33.774	0.000	0.0136	0.3886	0.698
ddD3	0.8732	47.859	0.000	-0.0053	0.1775	0.859
ddI1	0.8395	33.1067	0.000	-0.043	1.3508	0.180
ddI2	0.8427	34.0033	0.000	0.0229	0.6286	0.531
ddI3	0.8895	52.4464	0.000	0.0185	0.7173	0.475
dtI1	0.8818	50.0325	0.000	0.0499	1.8496	0.067
dtI2	0.8594	41.0626	0.000	-0.0315	1.1725	0.244
dtI3	0.8141	31.5633	0.000	-0.0198	0.6511	0.516

ddM1	0.8185	30.5551	0.000	0.0601	1.599	0.113
ddM2	0.8705	41.3112	0.000	-0.0332	1.1476	0.254
ddM3	0.7799	23.8911	0.000	-0.0275	0.6746	0.501
dtTS1	0.8612	41.3646	0.000	-0.0438	1.2375	0.219
dtTS2	0.8134	26.9656	0.000	0.0091	0.2264	0.821
dtTS3	0.8978	57.8462	0.000	0.0346	1.0597	0.292

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