4-2013

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Recommended Citation

Thatcher, J. B., Carter, M., Li, X., & Rong, G. (2013). A Classification and Investigation of Trustees in B-to-C e-Commerce: General vs. Specific Trust. *Communications of the Association for Information Systems*, 32, pp-pp. <https://doi.org/10.17705/1CAIS.03204>

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Communications of the Association for Information Systems

A Classification and Investigation of Trustees in B-to-C e-Commerce: General vs. Specific Trust

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Abstract:

Existing literature lacks a common taxonomy and systematic integration necessary for building cumulative knowledge on the nature of trust in an information systems context. Hence, this article explores online trust's multidimensional nature within the context of online stores. This article develops a framework for classifying trust dimensions and to investigate their influences on behaviors in new and familiar business-to-consumer (B-to-C) e-commerce environments. Specifically, we classify trust dimensions into two levels: general trust (beliefs toward the general e-commerce environment and infrastructure) and specific trust (beliefs regarding a specific e-commerce shopping experience). Specific trust is further delineated into trust in the merchant and trust in the technology artifact, i.e., the website. The integrative framework was tested in two separate empirical studies using e-commerce stores that were either new or familiar to the subjects. The results show that general trust mechanisms are important to consumers in a new e-commerce environment. In contrast, when shopping in a familiar e-commerce store, consumers pay more attention to the current Web experience, diminishing the salience of general trust. This article contributes to the literature by developing an integrative framework of trust and by providing insights into the influences of trust dimensions on purchase decisions in new and familiar e-commerce environments.

Keywords: B-to-C e-commerce, trust dimensions, general trust, specific trust, familiarity, purchase intention

Volume 32, Article 4, pp. 107-134, July 2012

The manuscript was received 22/05/2012 and was with the authors 1 month for 1 revision.

I. INTRODUCTION

Information Systems (IS) researchers have examined online trust using various theoretical lenses and in different contexts [Charki and Josserand, 2008; Gefen, Karahanna, and Straub, 2003; Lowry, Vance, Moody, Beckman, et al., 2008; McKnight, Choudhury, and Kracmar, 2002; Pavlou and Gefen, 2004]. However, despite recent meta-studies' attempts to consolidate online trust research in the B-to-C e-commerce environment [Beatty, Reay, Dick, and Miller, 2011; He, 2011], researchers have yet to develop an integrative framework that explains how the different forms of trust, such as trust in merchant, trust in a website and its enabling IT artifacts [Gefen et al., 2003], as well as trust in institutional mechanisms (e.g., seals of approval [Pennington, Wilcox, and Grover, 2003]), combine to influence consumers' e-commerce behaviors.

Such a framework is necessary because research has not clearly distinguished, conceptually or empirically, between trust in merchants and trust in enabling information technology (IT) artifacts. Most often, trust research has applied concepts of interpersonal trust such as competence, benevolence, and integrity [Beatty et al., 2011] to study consumers' trust in online merchants (see Appendix A). From this perspective, trust toward another rests on evaluations of parties who have volitional control over their actions. In the online environment, however, trust formation is more complicated. In this setting, various objects that lack volitional control, such as IT and institutional mechanisms, play an active role in shaping consumers' assessments of an online merchant's ability to complete an Internet transaction.

Consistent with recent work suggesting that trust in a technology's attributes influence IS use [McKnight, Carter, Thatcher, and Clay, 2011; Vance, Elie-die-cisaque, and Straub, 2008; Wang and Benbasat, 2008], we believe it is time to expand our understanding of online trust to incorporate distinctions between volitional actors and objects that act as their non-volitional agents. To advance online trust research, this article presents a framework that distinguishes between *interpersonal* trust in the online merchant and *impersonal* trust (relating to *objects without human qualities or characteristics*) in the merchant's website. Further, since the nature of trust is thought to evolve as relationships mature [Lewicki and Bunker, 1996; McKnight, Cummings, and Chervany, 1998; Zahedi and Song, 2008], it is important to examine whether the influences of these different trustees change over time. To illuminate this phenomenon, the proposed framework draws on trust literature that suggests classifying trust into two levels—*general* and *specific* [Barber, 1983]. *General trust* refers to a “general belief the trustor holds” about the trustworthiness of people or the broader environment. *Specific trust* refers to a person's willingness to make him- or herself vulnerable to the actions of a particular trustee. Because general trust provides people with a coping mechanism for dealing with unfamiliar situations, it can act as a starting point for forming specific trust, which varies with time [Barber, 1983; Beatty et al., 2011]. Through classifying online trustees and explaining the relationships between them at different times, our article provides researchers an integrative framework through which to interpret past trust research and advance future trust research.

To assess the utility of our framework, we develop and test a research model in two distinct contexts: (1) in an e-commerce store new to our respondents and (2) in a store with which our respondents are familiar. By examining our framework of trust using new and familiar e-commerce stores, we are able to evaluate the influences of general and specific trustees on consumers' purchase intentions at different points in their interaction with online merchants. Illuminating these relationships has implications for research and practice. From a research perspective, relatively little is known about the role of familiarity in influencing individuals' perceptions of websites [Nadkarni and Gupta, 2007]. Thus, by capturing differences between consumers' trust in unknown vs. known trustees, this study represents a logical step forward in trust research. From a practice perspective, explicating the dynamic nature of general and specific trust offers insights into measures online merchants can take to enhance trust and influence purchase intentions at different stages in a relationship with a consumer.

The article unfolds as follows. In the next section, we develop a classification framework that integrates four major trustees identified in trust research dealing with the B-to-C e-commerce environment: infrastructure, institutions, merchants, and websites. The framework proposes that these trustees exert distinct influences on purchase intention, as well as on interrelationships among them. Next, we conduct two empirical tests of this model in different contexts. The data analysis is described and a discussion of findings is provided. The article concludes with implications for research and practice.

II. CONCEPTUAL FRAMEWORK

Trust research often focuses on relationships among humans and human-driven institutions. Mayer, David, and Schoorman [1995] defined *trust* as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 712). The party who grants trust is usually called the trustor, while the party who receives trust is referred to as trustee or object of trust. IS research first studied trust between human actors (i.e., individuals, organizations, or both) in IS-enabled environments (e.g., trust in virtual team, online customers’ trust in e-vendors) [Jarvenpaa, Tractinsky, and Vitale, 2000; Piccoli and Ives, 2003].

Trust in Technology

Mayer et al.’s [1995] trust definition associates trust with the trustee’s volitional actions, which are important to the trustor. However, in contemporary society, many actions that were previously performed by human actors are now mediated, or enabled by, information technologies. Consequently, the role of IT artifacts in trust formation has become more salient [Li, Hess, and Valacich, 2008], particularly in B-to-C e-commerce environments, where purchase transactions are almost completely lacking in any human contact [Beatty et al., 2011]. In this environment, online merchants use IT artifacts—websites, enabled by IT infrastructure and incorporating institutional mechanisms—to replace salespersons and complete transactions across time and space. Although IT artifacts lack moral capability or volitional control, they serve as agents of, and perform actions on behalf of, human actors. As a result, consumers tend to ascribe actions or behaviors to them, blurring concepts of salespersons or of an actual merchant with the enabling IT artifacts [Wang and Benbasat, 2005]. Thus, recent IS trust research has examined IT artifacts as trustees and studied their implications on technology use.

IS researchers have taken three approaches to operationalizing trust in the IT artifact. The first approach focuses on trust in online institutional mechanisms, such as seal programs, credit card guarantees, and feedback and review systems [Pavlou and Gefen, 2004; Pennington et al., 2003]. These mechanisms are implemented by sponsors and their agents, who enact their moral capability and volitional control via the mechanisms. For example, when using product review systems, customers may choose to trust an independent system such as shopping.com over an internal system operated by the merchant because they perceive the sponsors of the former system as less biased. Thus, operationalization of trust in institutional mechanisms includes trustors’ perceptions of the volitional attributes of sponsors and their agents, including benevolence and integrity, in addition to performance metrics of the mechanisms, such as effectiveness.

The second approach, which personifies the IT artifact, is rooted in theories of social responses toward computing [Nass and Moon, 2000; Reeves and Nass, 1996]. These theories posit that people treat computers and computer-based technologies as social actors and apply social rules to them. For example, Wang and Benbasat [2005] treated the online recommendation agent (an IT artifact) as a “virtual advisor” (a human-like actor) and thus measured users’ trust in the recommendation agent in terms of “human” characteristics, which included benevolence, integrity, and technical competence. The underpinning assumption of this approach is that IT artifacts have moral agency (e.g., may behave benevolently, etc.) and, as such, have the capacity to act in the best interest of the trustor (e.g., by offering better or worse advice). Because of the implicit assumption of moral agency, personifying the IT artifact directly maps to interpersonal trust research [Gefen et al., 2003; Gefen and Straub, 2004; Vance et al., 2008]. But, when an IT artifact may not be personified as having moral agency (e.g., the IT infrastructure), this conceptualization may not readily translate to different contexts [McKnight et al., 2011; Thatcher, McKnight, Baker, Arsal, and Roberts, 2010].

The third approach treats trust in technology and trust in human actors as distinct but interrelated concepts [Corbitt, Thanasankit, and Yi, 2003; Lee and Turban, 2001; Lippert, 2007; McKnight et al., 2002; Ratnasingam, 2005]. Lee and Turban [2001], for example, modeled trust in online shopping as comprising two components—the medium and the merchant. Assessment of trust in the medium focuses on technical attributes such as technical competence and reliability, while assessment of trust in the online merchant focuses on volitional characteristics of the human actor. From this perspective, trust in both components influence consumers’ behaviors. Ratnasingam’s [2005] case study in B-to-B e-commerce provides empirical support for this view. Ratnasingam found that trust in IT infrastructure contributed to, and evolved into, relationship trust. Distinguishing trust in IT artifacts from trust in human actors offers potential for richer understanding of trust in the B-to-C e-commerce context because it allows relationships between, and influences of, multiple interpersonal and impersonal trustees to be explicated.

Purchase Intention and Multidimensional Trust

In the online B-to-C environment, trust affects consumers’ willingness to participate in various e-commerce activities. Prior online trust studies [Gefen and Straub, 2004; Jarvenpaa and Tractinsky, 1999; Pavlou, 2003; van der Heijden, Verhagen, and Creemers, 2003] have most often examined consumers’ purchase intention, since this is the

penultimate activity in the online purchasing process and involves greater risk than activities such as visiting websites or searching for products. Consistent with these studies, purchase intention—defined as *a consumer's willingness to complete a financial transaction with an online merchant*—is the dependent variable in this study.

Appendix A summarizes thirty prior studies that emphasize different aspects of trust formation in the B-to-C e-commerce environment. Because of the complexity of e-commerce activities, consumers must consider attributes of the merchant, the website, the IT infrastructure, and institutional mechanisms when forming purchase intentions. To incorporate the major trustees identified in this research stream into an integrative framework, Appendix A maps previously studied constructs to the trustees—merchant, website, infrastructure, and institutions—examined in this article. We propose that multiple trustees affect consumer purchase intentions. In the next section, we articulate the level of trust—general or specific—to which each trustee belongs. Following this, the attributes of trustees are discussed and their influences on consumers' purchase intentions proposed.

Levels of Trust: General Trust vs. Specific Trust

In interpersonal trust research, scholars argue that, to glean deeper insight into trustees' influences on individual behavior, one must carefully articulate the "level" of trust [Kracher, Corritore, and Wiedenbeck, 2005]. To this end, Barber [1983] distinguished between general trust and specific trust in social systems. In a social relationship, general trust deals with expectations of "persistence and fulfillment of the natural and moral social orders" (p. 9). Such generalized expectations reduce complexity in life and allow effective and moral human actions to continue. The objects of general trust are usually foundational and environmental elements.

Prior IS research has classified trust into three sets of concepts: (1) a propensity, or disposition, to trust other social objects, (2) trust in a social context or in a class of trustees (referred to as *institution-based trust*), and (3) trust in a specific trustee [McKnight et al., 2011]. The first of these, propensity to trust, is not tied to a specific social context or situation. Rather, it implies a general tendency on the part of the individual to extend trust to social objects across situations [McKnight et al., 2011]. Applied to B-to-C e-commerce, institution-based trust maps to general trust as consumers' trust in aspects of the broad online environment, including the *IT infrastructure* and *institutional mechanisms*. The enabling IT infrastructure and institutional mechanisms such as seal programs [McKnight, Kacmar, and Choudhury, 2004; Pennington et al., 2003] have been widely studied in online trust literature focusing on B-to-C e-commerce. These studies have found that trust in IT infrastructure and trust in institutional mechanisms reflect consumers' beliefs about the broad online environment that influences their perceptions about completing online transactions. For example, trust in IT infrastructure shapes whether one believes the environment facilitates processing of e-commerce transactions [Kim, Shin, and Lee, 2009; Ratnasingam, 2005], while trust in institutional mechanisms relates to beliefs about whether such transactions will be completed successfully [McKnight et al., 2002]. Consequently, although government interventions and regulations also apply to the broad B-to-C e-commerce environment, we believe that the IT infrastructure and institutional mechanisms are the most salient for understanding our outcome of interest—consumer purchase intention.

Trust in a specific trustee, which reflects beliefs that another party has the "attributes necessary to perform as expected in a given situation in which negative consequences are possible" [McKnight et al., 2011, p. 7] maps to Barber's [1983] notions of specific trust. *Specific trust* refers to trust-based expectations of "technically competent performance" and "fiduciary obligations and responsibilities" of a specific party with which a trustor interacts [Barber, 1983, p. 14]. These expectations determine the trustor's attitude and actions toward a specific party. Applied to the online context, specific trust directs consumers' attention to *individual merchants* and *websites* with which they interact. When a merchant is perceived as competent and responsible and the website as usable and reliable, online consumers will report higher purchase intentions and will complete transactions.

General and specific trusts are distinct in nature and serve different purposes. Simply put, general trust provides a coping mechanism for dealing with unfamiliar situations, while specific trust is extended toward an actual partner in a social relationship [Barber, 1983]. These two levels of trust are also connected: because general trust can act as a starting point for forming specific trust, they collectively enable social interactions [Barber, 1983; Beatty et al., 2011]. In e-commerce, for example, consumers who do not trust the online environment would not trust any merchant or website in it. However, even when they trust the online environment, consumers will not transact with specific partners they think are not trustworthy.

In a given context, a trustor's general and specific trusting beliefs form differently. On the one hand, once formed, general trust can be extended easily and quickly based on many predetermined factors. For example, trust in an e-commerce environment usually derives from the individual's past experience with the Internet and other Internet activities (e.g., e-mailing, instant messaging, or searches) that have been formed before this person encounters a specific online merchant. On the other hand, specific trust relies on situational factors and requires information processing germane to the specific trustee. Consequently, formation of specific trust requires relationship-specific

beliefs. Because of their emphasis on specific trustees i.e., online merchants and their websites, many prior trust studies focused on specific trust formation and neglected general trust altogether. To provide a deeper understanding of trust's implications, it is necessary to study the influence of both general trust (in the IT infrastructure and institutional mechanisms) and specific trust (in an online merchant and website) on consumers' purchase intentions.

The Role of Familiarity

Prior trust research has examined the relationship between familiarity and trust [Bhattacharjee, 2002; Gefen et al., 2003; McCoy, Everard, and Loiacono, 2009; Pavlou, 2002]. Familiarity refers to *a person's degree of knowledge of, and experience with, the objects of interest*. It facilitates trust formation by reducing uncertainty within trust contexts [Luhmann, 1988]. Familiarity is germane to understanding the influence of general versus specific trust on consumers' assessments [Gefen et al., 2003; McKnight et al., 1998]. General trust results from prior experiences in similar situations. In contrast, the influence of specific trust rests on the trustor's familiarity with particular merchants and their websites. When a trustor has no direct knowledge or experience with a merchant or a website, they may rely on general trust to make inferences toward specific trustees.

Consistent with related concepts of trust transference [Doney, Cannon, and Mullen, 1998; Stewart, 2003] and brand-association-trust [Lowry et al., 2008], consumers may extend generalized expectations about the transaction environment to another unknown target (e.g., the online merchant) when the consumer perceives that the unknown target is related to the trusted entity. For example, consumers may trust a specific online merchant operating within the broader marketplace environment offered by eBay or Amazon.com because they hold generalized expectations about the mechanisms underpinning transactions within eBay or Amazon.com. In contrast, when trustors are dealing with familiar merchants, there is less need to depend on general trust, and specific trust can be extended based on direct knowledge and experience of interacting with merchant and/or website. Because transacting with a familiar online merchant does not involve making inferences about an unfamiliar or novel situation, the relationship between general trust and specific trust may disappear.

III. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

Based on the taxonomy of general vs. specific trusts, we specify four major trustees in the domain of e-commerce: (1) specific trust—trust in merchant, (2) specific trust—trust in website, (3) general trust—trust in IT infrastructure, and (4) general trust—trust in institutional mechanisms. Consumers' evaluation of these trustees involves assessing different aspects of these objects of trust. Table 1 provides definitions for the trustees specified to in this study. Figure 1 presents our research model and hypotheses. We propose that purchase intention is primarily determined by specific trusting beliefs, consisting of trust in merchant and trust in website. General trusting beliefs—trust in IT infrastructure and trust in institutional mechanisms—indirectly affect purchase intention through the effects of specific trusting beliefs. These indirect effects are moderated by consumers' familiarity with the trustees.

Specific Trust: Trust in Merchant

Trust in merchant is the most frequently examined trustee in the online trust literature [Beatty et al., 2011]. This reflects online trust research' foundation in interpersonal trust research, which assumes that merchants (or sellers) are the most direct and salient object of trust influencing consumers' intended behavior [Doney and Cannon, 1997; Ganesan, 1994]. We propose trust in merchant as a form of specific trust. In this study, we focus on pure Internet merchants who lack a physical presence. Pure Internet merchants substantially differ from their brick and mortar counterparts. Online consumers may lack the ability to observe the merchant through a physical storefront or via direct human contact, but they can still assess its business operations and capabilities to fulfill transactions through a unique interface—the website.

Consistent with interpersonal trust research [Mayer et al., 1995], e-commerce researchers treat an online merchant as a human actor and examine consumers' perceptions of its competence, integrity, and benevolence [Bhattacharjee, 2002; Gefen, 2002b; McKnight et al., 2002]. Jarvenpaa and Tractinsky [1999] comment that "in order for a consumer to place any order, the consumer must trust the merchant first" (p. 1). More specifically, to become a paying customer, a consumer must believe that this merchant is knowledgeable and capable of completing transactions, that she is honest and keeps her promises, and that she cares for her customers and would act in their best interests. Empirical studies on online trust found that trusting beliefs of competence, benevolence, and integrity in a merchant affect online consumers' attitudes, purchase intentions, and actual purchase behaviors [Gefen et al., 2003; Jarvenpaa et al., 2000; McKnight et al., 2002]. Hence, consistent with interpersonal trust and e-commerce literature, we propose a positive relationship between trust in merchant—operationalized as trusting beliefs in a merchant's competence, benevolence, and integrity—and online consumers' purchase intention. Hence,

H1: Trust in merchant positively affects purchase intention.

Table 1: General and Specific Trustees

General Level Trust: Consumers' trust in aspects of the <i>broad</i> online environment, including the IT infrastructure and institutional mechanisms		Specific Level Trust: Trust-based expectations of "technically competent performance" and "fiduciary obligations and responsibilities" of a <i>specific</i> party with which a trustor interacts [Barber, 1983, p. 14]	
<i>Trust in IT infrastructure</i> [Corbitt et al., 2003; Kim, 2008; Kracher et al., 2005; Lee and Turban, 2001; Ratnasingam, 2005]	The beliefs that the underlying technology infrastructure is capable of facilitating transactions [Ratnasingam, 2005], specifically beliefs in capability, reliability, and security	<i>Trust in merchant</i> [Bhattacharjee, 2002; Gefen, 2002a; Gefen et al., 2003; Kim, 2008; Koufaris and Hampton-Sosa, 2004; McKnight et al., 2002; Pavlou, 2003; van der Heijden and Verhagen, 2004; van der Heijden et al., 2003]	Consistent with Mayer et al. [1995], trust in merchant reflects beliefs about a specific online merchant's <i>benevolence</i> , <i>competence</i> , and <i>integrity</i> .
<i>Trust in institutional mechanisms</i> (seal programs) [Gefen, 2004; McKnight et al., 2004; Pennington et al., 2003]	The beliefs that necessary structural conditions are in place to ensure successful online transactions [McKnight et al., 2002; Pennington et al., 2003], specific beliefs in the effectiveness, benevolence, and integrity of seal programs	<i>Trust in website</i> [Koufaris and Hampton-Sosa, 2004; Li et al., 2006; Pavlou and Fygenson, 2006; Suh and Han, 2003; Van der Heijden and Verhagen, 2004; van der Heijden et al., 2003; Van Slyke et al., 2004]	Beliefs about a specific website's <i>capability</i> (i.e. capacity and features to complete a required task) and <i>reliability</i> (i.e., operates properly and consistently) [Thatcher et al., 2010]

Figure 1. A Classification Framework of B-to-C e-Commerce Trust

Specific Trust: Trust in Website

Websites are the specific object with which customers directly interact. A website is a technological artifact that an online merchant uses to enable online transactions. In e-commerce, online merchants are the human or organizational component with which consumers transact, while websites are the technological component that enables online transactions. Although little research has empirically distinguished between trust in merchant from trust in website, many studies incorporating technological attributes have theoretically distinguished between these two trustees (see Appendix A). For example, models integrating trust with TAM variables (e.g., Benamati, Fuller, Serva, and Baroudi, 2010; Gefen et al., 2003; Palvia, 2009; Qureshi, Fang, Ramsey, McCole, et al., 2009; and others) have examined online consumer behavior from two theoretical perspectives—the trust assessment of the seller and the technical assessment of the website (i.e., perceived ease of use and usefulness). These studies found that consumers' perceptions of a merchant and a website jointly determine online purchase intention. Although these studies did not label technical assessment of the website or technical attributes as trusting beliefs, these perceptions do constitute consumers' judgment on the trustworthiness of the website as a key agent in online transactions. In this study, we model trust in merchant and trust in website as distinct beliefs and propose that they have separate influences on purchase intention. We believe conceptual and empirical clarifications of these two dimensions will provide additional insights into our understanding of consumers' purchase decisions.

Consumers' trust perceptions of a website differ from perceptions of a human trustee. Intentional and moral attributes such as benevolence and integrity are not applicable to a technological artifact [McKnight et al., 2011]. In lieu of interpersonal trusting attributes, trust in website involves assessing technical attributes in terms of whether a website has the features necessary to complete a transaction and whether it functions in a consistent manner. Thus, we operationalize trust in website by measuring consumers' beliefs about the website's capability (i.e., capacity and features to complete a required task) and reliability (i.e., operates properly and consistently) [McKnight and Thatcher, 2006].

Websites play two distinct roles in e-commerce—they enable transactions and they represent merchants. Accordingly, we propose two influences of trust in website on purchase intention. The first reflects consumers' perceptions of website features, which in turn influence purchase intention [Corbitt et al., 2003; Wakefield, Stocks, and Wilder, 2004]. For example, a website may provide product search and comparison features to help online consumers easily locate and select products. It may also ensure that transactions are safely and quickly processed. These features and applications facilitate consumers' positive perceptions of this website, and thus consumers are more likely to complete transactions via the website. Thus,

H2a: Trust in website positively affects purchase intention.

The second influence of trust in website relates to its representation of a merchant. Since consumers lack the ability to directly observe a pure Internet merchant, their trust decision about the merchant is based on inferences from the website [Corbitt et al., 2003; Wang and Emurian, 2005]. Prior studies provide evidence that consumers make trust-related inferences in regard to online merchants based on their perceptions of a website's characteristics [McKnight et al., 2002]. Consistent with this, recent work has applied signaling theory to extend understanding of how website characteristics influence consumers' perceptions in the B-to-C e-commerce environment [Wells, Valacich, and Hess, 2011]. Signaling theory suggests that, in the absence of face-to-face contact, merchants can manipulate website characteristics to reduce uncertainty about product and/or service quality and facilitate purchases [Wells et al., 2011]. This suggests that incorporating advanced applications, clean design, accurate and updated information, as well as clearly stated policies into a website is an important mechanism for conveying that a merchant is dedicated, responsible, and cares about its customers. Thus, we propose an indirect relationship between trust in website and consumer purchase intention: i.e., a consumer's trust in website influences their trust in merchant, which then affects purchase intention (cf. H1).

H2b: Trust in website positively affects trust in merchant.

General Trust: Trust in IT Infrastructure

A technological component underpinning the online environment is the IT infrastructure. IT infrastructure refers to networked hardware and software that connects people and computer systems. Prior research defined trust in IT infrastructure (also called *technology trust*) as the beliefs that the underlying technology infrastructure is capable of facilitating transactions [Ratnasingam, 2005]. Transactions here include not only online purchases, but all kinds of online activities such as e-mail, file transfers, and bill payments. IT infrastructure facilitates these transactions in general, regardless of specific partners that people transact with. Since trust in IT infrastructure is concerned with the technical capability and normality of the broad online environment, we classify trust in IT infrastructure as a form of general trust.

In this framework, we model trust in IT infrastructure with respect to technical attributes. Human characteristics such as benevolence or integrity are not included, because the IT infrastructure (i.e., Internet technology) is a shared technological artifact, which functions mostly independent of individual user' intentions. Reliability and security of the Internet, for example, are not under control of an individual merchant. Akin to trust in websites, consumers tend to extend trust when they view the enabling technology as capable and reliable [Lee and Turban, 2001; McKnight and Thatcher, 2006]. Additionally, due to extensive application of data transmission and communication in e-commerce, consumers also require security of transactions [Corbitt et al., 2003; Ratnasingam, 2005]. Thus, in this research, we operationalize trust in IT infrastructure as trusting beliefs in three technical attributes—capability, reliability, and security.

Trust in IT infrastructure influences online consumers' perceptions and behavior in e-commerce. Kracher et al. [2005] argue that beliefs about the IT infrastructure support consumers' willingness to purchase online. More specifically, a recent case study reveals that trust in IT infrastructure contributes to and evolves into specific trust (i.e., trust between the transaction parties), which then affects the transaction decision [Ratnasingam, 2005]. In e-commerce, because a website replaces salespersons and physical stores and completes transactions with consumers, trust in IT infrastructure may affect specific trust in online merchants and their websites. Consistent with prior research, we hypothesize that trust in IT infrastructure directly influences specific trust (trust in merchant and trust in website) and exerts mediated influences on consumers' purchase intention (H1 and H2a). Thus,

H3a: Trust in IT infrastructure positively affects trust in merchant.

H3b: Trust in IT infrastructure positively affects trust in website.

General Trust: Trust in Institutional Mechanisms

The fourth trustee that we examine is trust in institutional mechanisms (also called *institutional trust*, *institution-based trust*, or *system trust*), which refers to the belief that necessary structural conditions are in place to ensure successful online transactions [McKnight et al., 2002; Pennington et al., 2003]. Early research studied institutional trust at an abstract level, examining general awareness of the safeguards and mechanisms (structural assurance) and general perceptions of the institutional context (situational normality) on consumer beliefs [Gefen et al., 2003; McKnight et al., 2002].

In e-commerce, institutional mechanisms are used to ensure safe and successful transactions. A representative and frequently examined mechanism in the literature is third-party seal programs (see, for example, McKnight et al., 2002, or Gefen et al., 2003). Well-known seal programs include the TRUSTe privacy seal designed to protect consumer privacy, BBB Accreditation to promote reliable business practices, and VeriSign trust seal that authenticates the website. Prior research indicates that third-party seal programs authenticate trustworthy companies, safeguard transactions, and protect consumers' interests [Benassi, 1999; Pennington et al., 2003]. While other mechanisms, such as customer feedback, insurance programs, escrow services, and credit card guarantees, exist, they are not widely researched seal programs in a regular B-to-C environment. For instance, insurance programs and escrow services are mostly used in online auctions or B-to-B contexts [Ba, Whinston, and Zhang, 2003; Pavlou and Gefen, 2004] and credit card guarantees, while allaying some concerns relating to transaction security, do little to resolve consumers' fears over sharing sensitive information in unfamiliar online environments [Miyazaki and Fernandez, 2000].

Institutional mechanisms occupy an intermediate position between impersonal and interpersonal trustees. With respect to impersonal trustees, prior research has found that the perceived effectiveness of technology-mediated mechanisms influences trust in sellers [Pavlou and Gefen, 2004]. At the same time, often consumers are aware of powerful sponsoring organizations behind such mechanisms, e.g., the council of Better Business Bureau and TRUSTe. As a result, interpersonal attributes such as benevolence or integrity associated with the sponsoring organizations may be ascribed to the institutional mechanism (e.g., "the BBB Online will act in my best interests" or "TRUSTe is honest in dealing with me"). Thus, in this study, trust in institutional mechanisms is operationalized as consumers' beliefs in effectiveness, benevolence, and integrity of seal programs.

Prior research posits that trust in institutional mechanisms facilitates formation of trust in specific transaction partners. McKnight et al. [2002] and Gefen et al. [2003] found that institution-based trust positively influenced trust in a B-to-C e-vendor. Further, a study of Amazon's online auction marketplace showed that perceived effectiveness of institutional mechanisms significantly influences consumers' trust in a community of sellers [Pavlou and Gefen, 2004]. Consistent with prior research, we believe that trust in institutional mechanisms such as seal programs exert similar influences on consumers' trust in websites and merchants because their purpose is to safeguard website operations. Thus, we propose the following hypotheses, which posit that trust in institutional mechanisms has positive influences on specific trust—i.e., trust in merchant and trust in website—and exerts mediated influence on consumers' purchase intentions (cf. H1 and H2a).

H4a: Trust in institutional mechanisms positively affects trust in merchant.

H4b: Trust in institutional mechanisms positively affects trust in website.

The Moderating Effect of Familiarity

The moderating effect of familiarity on trust, or the so-called longitudinal nature of trust [Gefen, Benbasat, and Pavlou, 2008], has been noted in prior research on initial vs. developed trust. However, there is a lack of research examining the varying impacts of familiarity on trust within the same research context. In this study, we posit that familiarity with the specific online shopping context—i.e., the merchant and/or the website—will moderate all relationships between general and specific trust in the same manner. This is because general trust substitutes for direct knowledge or experience when the specific target of trust is an unknown entity. When consumers are less familiar with a merchant and a website, they rely more on their beliefs about general trustees when forming trusting judgments. Consistent with general trust's role as a coping mechanism in unfamiliar situations [Barber, 1983; Beatty et al., 2011], as well as notions of trust transference [Doney et al., 1998; Stewart, 2003], consumers may extend trust to an unknown merchant and website because they hold general beliefs about the reliability and security of Internet technology and institutional mechanisms underpinning transactions within the online environment. However, as consumers report increasing familiarity with the merchant and website, their trusting beliefs are based on direct knowledge or experience of the merchant or website, rendering general trust unnecessary. An implication of this is

that familiarity with a specific online shopping context moderates the influences of *all* relationships between general trust and specific trust in the same way. Specifically, when familiarity is low, general trust is strongly related to specific trust. When familiarity is high, these relationships diminish or disappear. Hence:

H5: Familiarity moderates the relationships between general trust and specific trust (i.e., H3 and H4). When familiarity is low, these relationships are strong. When familiarity is high, they are weak.

In addition to moderating the relationships between general trust and specific trust, familiarity should also moderate the effects of trust in merchant and trust in website on purchase intention. Prior online trust research suggests that, in initial trust formation (i.e., when the merchant *and* the website are unfamiliar), trust in merchant is the most salient direct predictor of consumer purchase intentions [Doney and Cannon, 1997, Ganesan, 1994]. This follows because, regardless of the technical attributes of a website, consumers will not make purchases from online merchants they do not trust [Jarvenpaa and Tractinsky, 1999]. In contrast, when dealing with familiar online merchants, consumers' knowledge and experience allows them to develop a generalized expectancy that a specific merchant will behave in a predictable way and "act trustworthily" [Lewicki and Bunker, 1996, p. 121]. Since a consumer is more able to predict the behavior of a familiar merchant, the perceived risk associated with transacting with that merchant is reduced [McCoy et al., 2009]. This, in turn, should diminish the importance of trust in merchant as a predictor of purchase intention and increase the salience of website attributes, such that trust in website becomes the most salient predictor of purchase intention. Hence:

H6: Familiarity moderates the relationships between specific trustees and purchase intention (i.e., H1 and H2a). When familiarity is low, the relationship between trust in merchant and purchase intention will be stronger than the relationship between trust in website and purchase intention. When familiarity is high, the relationship between trust in website and purchase intention will be stronger than the relationship between trust in merchant and purchase intention.

Besides the main constructs and hypotheses, trust propensity (i.e., general willingness to trust others [Mayer et al., 1995]), also referred to as disposition to trust [McKnight et al., 2002] or trusting disposition [Gefen and Straub, 2004], is included as a control variable. Prior trust research has emphasized that trust is subjective and people differ in their tendency to trust others in general [McKnight et al., 2002]. Although many researchers have posited trust propensity as an antecedent of trust, we view it as a personal dimension of trust that relates to a broad spectrum of contexts, and thus propose a relationship of trust propensity with purchase intention. By controlling for trust propensity's influence, we can better understand the antecedents to purchase intention.

IV. METHOD

We conducted two studies to test the research model. Study 1 examined trustees' relationships to purchase intention (H1–H4) in a new online shopping context (i.e., trust in new merchant and website). Study 2 examined these trustees' influences in a familiar online shopping context (i.e., trust in familiar merchant and website). A comparison of the study results tested the moderation effects of familiarity (H5 and H6). The method section provides detail on both studies.

Measures

We adapted the measures from prior research. Each measurement item was measured using a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). Scales are presented in Appendix B. In the following paragraphs, we provide detail on our measures.

Purchase Intention and Trust Propensity

Purchase intention was measured using four items adapted from Pavlou's series of work [Pavlou, 2003; Pavlou and Gefen, 2004]. Trust propensity was measured using six items suggested by Gefen and Straub [2004]. These constructs were operationalized as first-order and reflective.

Trust

We followed Gefen et al. [2003] to measure trust in terms of trustor's beliefs about several attributes of a trustee. Positive beliefs of the attributes indicate the trustee can be trusted. We operationalized each trustee as a second-order construct with two or three attributes as first-order sub-dimensions. Unlike prior research, we treated these sub-dimensions as formative indicators, since each sub-dimension represents a distinct trust-causing attribute, and these attributes are not interchangeable (i.e., in the absence of a sub-dimension, we could not meaningfully measure trust) [Diamantopoulos and Winklhofer, 2001; Jarvis, Mackenzie, and Podsakoff, 2003]. First-order sub-dimensions were directly measured by three or four reflective items adapted from published measures.

Because of the distinct nature of the trustees, different set of attributes were assessed for each one. To measure trust in merchant, three attributes—competence, benevolence, and integrity—that have been widely used in traditional trust research were assessed. For this construct, we adapted McKnight et al.'s [2002] trusting beliefs' scales. Websites are a technological artifact. Therefore, to measure trust in website, two technological attributes were assessed: capability and reliability [McKnight and Thatcher, 2006]. Trust in IT infrastructure was measured using consumers' perceptions of capability, reliability, and security of the Internet technology. The scales of capability and reliability were adapted from McKnight and Thatcher [2006]. The scale of security was adapted from McKnight et al.'s [2002] scale of structural assurance that focused on technical control mechanisms used to give assurances of Internet security. Trust in institutional mechanisms was evaluated using measures of consumers' perceptions of the effectiveness (adapted from Pavlou and Gefen, 2004), benevolence, and integrity of seal programs' providers (adapted from McKnight et al., 2002).

Study Procedure

Study 1 and Study 2 used a similar three-step procedure—a pre-survey, an online task, and a post-survey. First, the subjects were asked to complete the pre-survey consisting of trust propensity, trust in IT infrastructure, and trust in institutional mechanisms, as these constructs should be assessed independently of specific shopping contexts. Then the subjects were assigned an online shopping task, in which they were asked to shop for a gift for a significant other. No actual purchase was required in the shopping task. After completion of the task, subjects completed a post-survey about their experience. The post-survey included scales of trust in merchant, trust in website, purchase intention, and demographic information. Collecting data using separate surveys reduces the chance of common method bias [Podsakoff, Mackenzie, Lee, and Podsakoff, 2003].

The studies used different websites for the shopping task. In the first study, we assigned an unfamiliar e-vendor—Overstock.com. When subjects reported past experience with or knowledge of Overstock.com, they were excluded from the analysis. Thus, for the first study, we used data from subjects who lacked familiarity with the online merchant. In the second study, subjects were provided a list of well-known e-vendors, such as Amazon and Buy.com. They were asked to choose one that they were most familiar with for shopping. Thus, for the second study, the research model was tested using data from subjects who were familiar with the online merchant.

Sample

Subjects were recruited from undergraduate business programs of three public universities in the southeastern United States. Extra credit was offered to encourage voluntary participation. Pilot studies were conducted at one of the universities to validate the instrument and the study design. In general, the instrument was well received by the pilot groups. Minor changes were made in wording and item order. Full data collection was then conducted at the three universities with new subjects. In Study 1, a total of 281 responses were collected. Among them, thirteen were excluded due to missing data. Forty-four subjects reported shopping experience with OverStock.com, and seventy-two subjects indicated they had heard of the website previously. These subjects were excluded. The final sample included 152 respondents. In Study 2, a total of 235 responses were collected. After excluding thirty-seven due to missing data, the final sample consisted of 198 data points. T-tests revealed no significant differences with respect to demographic information or major constructs among subjects from the three universities. Table 2 presents sample characteristics for Studies 1 and 2. Respondent characteristics were similar to consumers examined in prior online research and should be generalizable to the broader populations [Gefen et al., 2003]. To compare the samples across studies, we estimated Wilks' Lambdas. We found that our samples were not significantly different in terms of age, gender, or Internet expertise (see Table 3). Thus, we were comfortable moving forward with data analysis of our measurement and structural models.

V. DATA ANALYSIS

Partial Least Squares (PLS) was used for data analysis. We used PLS for two reasons. First, PLS estimates models that include reflective and formative constructs. As previously mentioned, we have both reflective (purchase intention, trust propensity) and formative constructs in the research model. Second, PLS readily handles second-order constructs such as trust in website [Wetzels, Odekerken-Schroder, and van Oppen, 2009]. In the following sections, we describe our data analysis process for both studies, including measurement validation and structural model testing.

Measurement Models

To assess the validity of the first order measurement model for both studies, we evaluated the indicator loadings, reliability, convergent validity, and discriminant validity. Loadings greater than 0.7 and p-values below 0.01 were used as cutoffs for the indicators [Fornell and Larcker, 1981]. Reliability was assessed with Cronbach's alpha and composite reliability. A reliability score greater than 0.7 indicates construct validity [Nunally and Bernstein, 1994].

Table 2: Sample Characteristics				
Characteristics	Study 1 (Sample size: 152)		Study 2 (Sample size: 198)	
	Number	Percentage	Number	Percentage
<i>Gender</i>				
Female	87	57.24%	98	49.49%
Male	65	42.76%	100	50.51%
<i>Age</i>				
Under 21	58	38.16%	118	59.60%
21–45	89	58.55%	80	40.40%
Above 45	5	3.29%	0	0.00%
<i>Internet expertise</i>				
Beginner	1	0.66%	2	1.01%
Intermediate	20	13.16%	36	18.18%
Proficient	101	66.45%	130	65.66%
Expert	30	19.73%	30	15.15%

Table 3: Tests of Equality of Group Means					
	Wilks' Lambda	F	df1	df2	Sig.
Age	1.000	0.074	1	349	0.786
Gender	1.000	0.004	1	349	0.951
Internet expertise	1.000	0.006	1	349	0.940

Convergent and discriminant validity is established when (1) all indicators load much more highly on their hypothesized constructs than on other constructs and (2) the square root of each construct's Average Variance Extracted (AVE) is larger than its correlations with other constructs [Agarwal, 2000; Chwelos, Benbasat, and Dexter, 2001; Rai, Patnayakuni, and Seth, 2006]. Both studies yielded similar results. All direct indicators loaded significantly on the corresponding constructs ($p < 0.00$). Each construct had Cronbach's alpha and composite reliability above 0.7. Detailed factor loadings and internal consistency scores are presented in Appendix C. Every indicator loaded much higher on its corresponding construct than on other constructs and the square root of each construct's AVE was greater than its correlations with other constructs. Our results indicate that the measurement model is valid and reliable in both study contexts.

Next, we evaluated the second-order measurement model. To do so, we estimated a model that operationalized beliefs about the trustees as formative second-order constructs using the dimensions' factor scores derived from our first order measurement model. Table 4 compares the weights of the formative indicators between the two studies.

Table 4: The Comparison of Indicator Weights Between Study 1 and 2			
Construct	1 st -Order	Formative indicators' weights	
	Indicator	Study 1 (New context)	Study 2 (Familiar context)
Trust in merchant	MCom	.546***	.627***
	MBen	.187	.278**
	MInt	.373**	.195*
Trust in website	WCap	.314**	.505***
	WRel	.741***	.556***
Trust in IT infrastructure	ITCap	.509***	.493**
	ITRel	.315*	.296*
	ITSec	.493***	.468**
Trust in seal programs	SLEff	.400**	.454*
	SLBen	.095	.008
	SLInt	.621***	.608*

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

A weight of formative indicator can be interpreted in a similar manner to a β coefficient in a standard regression model. In this model, the weights represent the importance of attributes in predicting trust in a particular trustee. In both study contexts, most indicators had significant weights on corresponding constructs. However, benevolence of merchant affected only trust in merchant in the familiar shopping context. One possible explanation for this is that it might be more difficult for consumers to assess an unknown merchant's benevolence than it is attributes such as ability to complete transactions (competence) or honesty (integrity). Additionally, perceived benevolence of authorization seal program providers did not affect trust in these programs in either context. This suggests that effectiveness of such programs and the perceived integrity of program providers are more salient predictors of consumers' trust.

Structural Models

Bootstrap analyses were used to estimate path coefficients and significance in both study contexts. PLS does not provide an overall goodness-of-fit index. The explained variances and path coefficients help us assess validity of the model. Figure 2 presents the path coefficients and explained variances in the research model. The upper set of numbers in the model refers to results from the new shopping context; the lower set refers to the familiar shopping context.

Within a new shopping context, general trust (trust in IT infrastructure and trust in institutional mechanisms) explains 34.5 percent of the variance in trust in website. General trust and trust in website together explain 64.7 percent of the variance in trust in merchant. Specific trust, including trust in merchant and trust in website, explains 34.1 percent of the variance in purchase intention. In the familiar shopping context, the three explained variances are 19.1 percent, 60.3 percent and 51.1 percent, respectively. Both studies confirm that this model explains significant variances in the constructs of interest.

Path coefficients with $p < 0.05$ are interpreted as significant relationships and supporting hypotheses. In both study contexts, trust propensity does not show a significant effect on purchase intention. As illustrated in Figure 2, trust in merchant significantly influences purchase intention in both new and familiar shopping contexts (H1: .459, $p < 0.001$ vs. .228, $p < 0.05$)¹; whereas trust in website only exhibited a significant effect on purchase intention in the familiar shopping context (H2a: .526, $p < .001$). Trust in website exerts a strong positive influence on trust in merchant in both contexts (H2b: .689, $p < 0.001$ vs. .706, $p < 0.001$). Hypotheses 1, and 2b were supported in both studies; Hypothesis 2a was partially supported.

Mixed results were obtained with respect to the paths between general trust and specific trust. In both shopping contexts, trust in IT infrastructure demonstrates a significant positive relationship with trust in website (H3b: .302, $p < 0.01$ vs. .359, $p < 0.001$). However, it does not have a significant effect on trust in merchant. Thus, Hypothesis 3b was supported while 3a was not.

The influence of trust in institutional mechanisms such as seals programs is contingent on context. In the new shopping context, trust in institutional mechanisms has significant positive relationships with trust in merchant (H4a: .182, $p < 0.01$) and trust in website (H4b: .352, $p < .001$). However, these relationships were not found in the familiar shopping context. Thus, Hypothesis 4 was supported in the new shopping context but not in the familiar shopping context.

¹ Hypothesis results are reported in the text in the format of (H#: path coefficient, p-value in the new context vs. those in the familiar context) when the hypotheses were supported in both study contexts.

To examine the moderating effect of familiarity, we used the parametric approach introduced by Chin [2000] to test for significant between-group differences [Qureshi and Compeau, 2009]. With the exception of the relationship between trust in institutional mechanisms and trust in websites ($p < 0.05$), t-tests of the relationships between general and specific trustees revealed non-significant between-group differences. Thus, hypothesis 5 was only partially supported. As expected, t-tests with pooled standard errors revealed significant between-group differences ($p < 0.05$) in the relationships between specific trustees and purchase intention. As illustrated by the path weights (see Figure 2), trust in merchant is a more important predictor in new shopping contexts (S1: .459, $p < 0.001$ vs. S2: .185, $p = ns$), while trust in website is more important in familiar shopping contexts (S1: .228, $p < 0.05$ vs. .526, $p < 0.001$). Thus, Hypothesis 6 is supported.

In summary, our analysis supports the notion that specific and general trustees exert distinct effects on consumer purchase intention in different shopping contexts. Trust in merchants and trust in websites are specific trusting beliefs tied to actual transaction parties. Specific trust directly relates to consumers' purchase intentions. Trust in IT infrastructure and trust in institutional mechanisms are examples of general trust beliefs about the online environment. General trust indirectly influences consumer purchase intention in a new shopping context, and this impact diminishes with increased experience. The hypotheses testing results are presented in Table 5.

Table 5: Hypotheses Testing Results

	Hypothesis	Study 1 (New)	Study 2 (Familiar)
H1	Trust in merchant positively affects purchase intention.	Supported	Supported
H2a	Trust in website positively affects purchase intention.	No	Supported
H2b	Trust in website positively affects trust in merchant.	Supported	Supported
H3a	Trust in IT infrastructure positively affects trust in merchant.	No	No
H3b	Trust in IT infrastructure positively affects trust in website.	Supported	Supported
H4a	Trust in institutional mechanisms positively affects trust in merchant.	Supported	No
H4b	Trust in institutional mechanisms positively affects trust in website.	Supported	No
H5	Familiarity moderates the relationships between general trust and specific trust (i.e., H3 and H4). When familiarity is low, these relationships are strong. When familiarity is high, they are weak.	Partially supported	
H6	Familiarity moderates the relationships between trust in merchant and purchase intention (i.e., H1 and H2a). When familiarity is low, the relationship between trust in merchant and purchase intention will be stronger than the relationship between trust in website and purchase intention. When familiarity is high, the relationship between trust in website and purchase intention will be stronger than the relationship between trust in merchant and purchase intention.	Supported	

To further probe the relationship between general trust, specific trust, and purchase intention, two additional analyses were conducted with extra paths from the general trustees to purchase intention added to the model. In the familiar shopping context, as we expected, the nested model resulted in no increase of variance explained in purchase intention. The additional paths were found to be insignificant. However, in the new shopping context, trust in institutional mechanisms showed a significant direct impact on purchase intention ($p < 0.05$), thus, its impact on purchase intention was partially mediated by trust in merchant and not by trust in website. The additional paths increased the variance explained in purchase intention by 3.8 percent (see Table 6). These results suggest that when considering a familiar merchant, trust in website mediates the effects of trust in IT Infrastructure on purchase intention; however, when considering an unknown merchant, consumers' trust in institutional mechanisms such as seal programs exert direct and indirect effects on intention to purchase.

Additional mediation analyses were conducted using guidelines suggested by Subramani [2004] and Rai et al. [2006]. While the nested model analysis above assessed the additional explanatory power of the competing model, this analysis provides complementary information on the magnitude and significance of the mediation effects. The magnitude (m) and significance (z) of a mediation effect were computed using Formula (1) and (2), where p_1 is the coefficient of the path from general trust to the mediator—specific trust; p_2 is the coefficient of the path from the mediator to purchase intention; s_1 and s_2 are the corresponding standard deviations.

$$m = p_1 \times p_2 \quad (1)$$

$$z = \frac{p_1 \times p_2}{\sqrt{p_1^2 \times s_2^2 + p_2^2 \times s_1^2 + s_1^2 \times s_2^2}} \quad (2)$$

Table 6: Direct Effects of General Trust on Purchase Intention			
		Study 1 (New context)	Study 2 (Familiar context)
Coefficient of paths to Purchase Intention	Trust in IT infrastructure	-0.032	0.006
	Trust in institutional mechanisms	-0.232*	0.001
Increase of R ² in Purchase Intention		3.80%	0.00%
* p < .05			

The magnitudes and z-statistics of the observed mediation relationships in the model are presented in Table 7. The analysis confirms that the effects of the general trust on purchase intention are fully mediated by either trust in merchant or trust in website in the familiar context, and, in the new context, the effects of trust in IT infrastructure on purchase intention is fully mediated by specific trust. All the mediation effects are significant at p-value < 0.05.

Table 7: Mediation Analysis Results				
	Mediator	Mediated relationship with purchase intention	Magnitude	z-statistic*
Study 1	Trust in merchant	Trust in institutional mechanisms	0.084	1.889
Study 2	Trust in website	Trust in IT infrastructure	0.189	2.730
* When z-statistic > 1.645, p-value < 0.05				

VI. DISCUSSION AND IMPLICATIONS

In this article, we advanced the literature on trust and e-commerce through examining the interrelationships among trustees (general and specific) and whether familiarity moderates those relationships. To do so, we drew on e-commerce research that directed attention to different trustees (e.g., infrastructure [Corbitt et al., 2003], institutional mechanisms [McKnight et al., 2002], online merchants [Bhattacharjee, 2002], and website [van der Heijden et al., 2003]), to develop an integrative framework of online trust. Understanding the relationships between trustees is important, because as e-commerce has matured, online consumers may be more apt to distinguish among different types of trustees. To achieve a more nuanced understanding of our framework's implications, we examined whether familiarity influences the nature of general and specific trustees' influence on purchase intention.

To evaluate our framework, we completed two studies that integrated online consumers' perceptions of general with specific trustees and then tested their interrelationships in new vs. familiar shopping contexts. Consistent with our expectations, we found that general trustees (e.g., IT infrastructure and institutional mechanisms) influenced specific trustees (e.g., online merchants and websites) and that, together, trusting beliefs about general and specific trustees explain a large amount of variance in purchase intention (Study 1: R² = 34.1 percent; Study 2: R² = 51.1 percent). These findings provide robust support for our framework and offer opportunities for deepening understanding of trustees' relative influence on online consumers' trust and intentions.

Importantly, our analysis suggests that familiarity does moderate the relationship between institutional mechanisms and trust in online merchants or their websites. As consumers gain more knowledge and experience of specific online partners, the impact of seal programs diminishes. We also found evidence that familiarity influences the relative influence of specific trustees on consumers' purchase intentions. Specifically, in a new shopping context, trust in an online merchant is the most salient predictor of purchase intention, while, in a familiar shopping context, trust in the website is the stronger predictor of purchase intention. This finding illustrates how trust's influence may change as consumers' interaction with specific online merchants evolves. In the following paragraphs, we discuss our findings and their implications for research and practice.

Specific Trust and Purchase Intention

In both studies, trust in merchant demonstrated a consistent significant, positive relationship with purchase intention. Trust in website, on the other hand, influenced purchase intention only in the familiar shopping context. When considered separately, these findings generally support the notion that specific trust positively influences purchase intention [Bhattacharjee, 2002; Gefen et al., 2003; Jarvenpaa et al., 2000]. This study breaks new ground by examining the interplay among trust in merchant, trust in website, and familiarity. More specifically, subjects in a new shopping context reported that their trust in merchant was a stronger driver of purchase intention, while those in familiar shopping context valued trust in website more when forming their intentions. Hence, our findings suggest that familiarity is a boundary condition for understanding specific trustees' relationship with online consumers' intentions.

Beyond familiarity, it is important to note that our analysis offers support for our conceptualization of trust in merchant and trust in website as distinct constructs. Although related, we found that these trustees exerted different

effects on purchase intention and had different antecedents. Moreover, we found evidence that they have distinct psychological underpinnings, with trust in merchant having roots in interpersonal trust [Gefen et al., 2003] and trust in website having connections to perceptions of the technology artifact's functionality and reliability [Thatcher et al., 2010]. Due to their distinct sources, we believe it is important for future research to include each construct, because they capture a broader spectrum of consumers' perceptions of online merchants and enabling technologies than prior research.

These findings have important implications for online trust research, which has shown great variation in how beliefs about trustees influence consumer behavior. Some researchers have examined the influence of one or the other specific trustee on consumer behavioral intention [Bhattacharjee, 2002; Flavian, Guinaliu, and Gurrea, 2006; McKnight et al., 2002]. Others have used a single trust construct to measure consumers' trust perceptions of both merchant and website [Walczuch and Lundgren, 2004]. While recent studies have incorporated website attributes when studying trust in merchant [Gefen et al., 2003; van der Heijden et al., 2003], few studies actually represent trust in merchant and trust in website as separate trustees in an overarching model of trust. In this study, we tease out the conceptual and empirical differences in these constructs and their operationalization. Thus, modeling them separately provides additional insight into understanding trust and online consumer behaviors.

General Trust and Purchase Intention

Although we hypothesized that general trust would affect trust in merchant and trust in website, we found that trust in IT infrastructure and trust in institutional mechanisms exerted distinct influences on specific trustees.

In both studies, trust in IT infrastructure demonstrated a significant influence on specific trust in the website, but it did not influence the organizational component—the online merchant. The link between IT infrastructure and website may be explained by both constructs being focused on IT artifacts—albeit at different levels of specificity and analysis. This finding extends understanding of how trust in IT infrastructure shapes consumers' perceptions of online merchants [Ratnasingam, 2005]. Specifically, it suggests that consumers who perceive the IT infrastructure as capable, reliable, and secure are more likely to believe that a website is trustworthy, and consequently, indirectly form purchase intentions.

The role of trust in institutional mechanisms differed across new vs. familiar shopping context. In the new shopping context, trust in institutional mechanisms significantly influenced trust in merchant and trust in website. These relationships became insignificant in the familiar shopping context. Additionally, trust in institutional mechanisms exerted different types of influence on purchase intention. In the new shopping context, seal programs directly impacted consumers' purchase intentions. Moreover, in this context, authorization seals programs had a greater impact on purchase intentions than trust in website. In the familiar shopping context, the effects of seals programs were diminished. These results indicate that when consumers are not familiar with a specific online shopping context, third party, institutional-based mechanisms are important determinants of trust formation and purchase intention. However, with increasing knowledge of the merchant and website, experienced consumers' purchase decisions are likely to be based on direct assessment of the merchant and the website, rather than on third party verification.

Familiarity's Moderating Effect on Trust

We examined two moderating effects of familiarity. First, we hypothesized that familiarity moderates the relationships between general trust and specific trust. We found that regardless of context, consumers' trust in IT infrastructure exerts similar influence on specific trust. Familiarity did not moderate these relationships. This suggests that trust in infrastructure may be a foundational belief for online consumers. Absent trust in the infrastructure's ability to perform, consumers are less likely to express trust in merchants' websites. For future research, this suggests that as the Internet continues to evolve, researchers should consider examining how consumers' confidence in changing infrastructures relates to their trust in familiar as well as unfamiliar online merchants.

Trust in institutional mechanisms had strong and significant effects on trust in merchant and trust in website in the new shopping context, but not in the familiar shopping context, which suggest a moderating effect of familiarity. To confirm moderation, we ran a parametric analysis and compared the paths from trust in institutional mechanisms to specific trust constructs across the two studies. The results confirmed a significant moderating effect of familiarity on the influence of seal programs on consumers' trust in website, while not on trust in merchant.

Although the moderating role of familiarity was not fully supported, we found interesting results with implications for research and practice. Our analysis suggests that the two forms of general trust had different pattern of relationships with forms of specific trust across familiar and unfamiliar shopping contexts. Trust in IT infrastructure consistently

related to trust in website across shopping contexts. However, our results suggest that familiarity moderates the influence of trust in institutional mechanisms on perceptions of websites. Our finding that consumers seek third-party assurance such as seal programs when they encounter a new website but not when interacting with a familiar website is consistent with the notion of trust transference alluded to in our theoretical development (see hypothesis development section, "The Moderating Effects of Familiarity" [Doney et al., 1998; Stewart, 2003]). By way of contrast, experienced consumers rely on actual experience with merchants and their websites when forming purchase intention. This suggests that understanding trust transference and its implications for online consumers' intentions and behavior in a variety of contexts such as social networking or use of mobile devices may be a useful point of inquiry for future research.

Second, we hypothesized that familiarity would moderate the relative influence of trust in merchant and trust in website on purchase intention. We found that when online consumers were familiar with a merchant, their trust in the website was the more powerful predictor of purchase intention. This finding is interesting in that, most frequently, researchers have directed attention to factors such as systems quality as a driver of initial decisions to use technology [Delone and McLean, 1992]. In an online environment, where websites change at rapid rates, this finding underscores the importance of enabling technologies for building and maintaining relationships with consumers. In future research, it would be interesting to examine whether failures in technology, related to updating websites, resulted in distrust in an online merchant and have an enduring influence on purchase intention.

Collectively, our analysis of familiarity suggests that consumers transfer trust in the broad environment to merchants to justify first and future purchases. Once consumers become familiar with the merchant, direct and more specific knowledge and experience about the website diminishes the influence of trust in a merchant. These findings underscore the importance of distinguishing among online consumers' perceptions of different trustees in new, as well as existing, relationships.

Limitations

One limitation of the study is the use of student samples. Nevertheless, meta-analytic research suggests students do not significantly differ from other individuals when making technology use decisions [Sen, King, and Shaw, 2006]. Students are active online consumers and thus a valid sample for the current study. While student samples may include less variance of age, occupation, and Internet experiences/knowledge, e-commerce research has extensively used student samples when examining online consumer behavior. In fact, McKnight et al.'s [2002] seminal study on the relationship between seals and initial trust in an online service provider used a student sample. Given much of this research has used student samples, we believe it is reasonable to assume that students are familiar with these institutional mechanisms used to foster trust.

The other limitation relates to the dependent variable. The current study examined purchase intention as a proxy for actual behavior. A practical reason for this is that our research design made it unfeasible to examine actual transactions—we lacked the resources to offer our participants the funds necessary to complete a transaction. While our use of purchase intention is consistent with prior trust research in the B-to-C context (see Appendix A), future research should extend this study longitudinally to explore the influence of general and specific trust on actual purchase behavior.

Because we used surveys to collect data in our studies, common method bias may be a potential problem of our work. To assess common method bias, Harman's single factor test was first performed with both datasets using exploratory factor analysis in SPSS [Podsakoff et al., 2003]. In Study 1, the unrotated factor solution resulted in eight factors with no general factor accounting for the majority of the variance—the first factor accounted for 42.2 percent of the variance, while all twelve factors accounted for 80.7 percent of variance. The Study 2 dataset resulted in a similar pattern: the first factor accounted for 41.4 percent of the variance with a total of 81.6 percent of variance explained by eight factors. Therefore, our analysis suggests that common method bias is not a significant limitation in this study.

Contributions to Research

This study makes three important contributions to online trust research. First, it broadens the nomological net that describes online trust research. While prior studies focused on either individual or a limited number of objects of trust, we tease out the conceptual and empirical differences of the constructs, their operationalization, and offer a theoretical explanation for their interrelationships. Our findings suggest that these trustees possess distinct attributes and have different effects on online consumers' purchase intention. Of particular interest, is the distinct influence that general trustees in the e-commerce environment (i.e., the IT infrastructure and institutional mechanisms) exert on specific trustees. Trust in IT infrastructure influences only trust in website, and its influence is consistent in new and familiar shopping contexts. The influence of trust in institutional mechanisms, on the other hand, diminishes as

consumers become more familiar with the merchant. Thus, our study extends understanding of the nature of trust and provides a foundation for future integrative research that ties trustees to online consumers' beliefs and behavior.

Second, by modeling trustees separately in an overarching model of trust, this research ties together the diverse strands of prior online trust research, e.g., trust between human actors in IT-enabled environments, institution-based trust, and trust in technological artifacts. We proposed and found empirical support for our framework, which integrates different strands of prior research, including general vs. specific trust, and initial vs. developed trust (familiarity). This framework provides a foundation to integrate findings from prior studies and to build a cumulative body of knowledge about online trust.

Third, although there have been calls to examine differences between initial trust and developed trust, little effort has been made to study both of them using the same research design. If familiarity is viewed as a continuum ranging from no knowledge and no experience to full knowledge and full experience, initial and developed trusts form at points toward the two extremes respectively. In the current research, we include familiarity as a moderator to develop a richer understanding of how initial and developed differ. Our studies in different shopping contexts indicate that consumers extend initial trust to an unfamiliar online merchant based on their general trust in the online environment, and, as they gain familiarity with transaction partners, they switch from general to specific trust based on direct knowledge and experience. With the inclusion of familiarity in future research, we should be able to develop a richer understanding of trust's implications for different types of online consumers.

Future Research Directions

The current research focused on developing a classification framework for trust and investigating its influence on consumer purchase intention toward familiar and unfamiliar online merchants. Prior research suggested that trust in different objects may be formed through different trust-building processes and be affected by different sets of antecedents [Doney and Cannon, 1997]. While the current research has identified diverse trustees and sets of attributes, it has not investigated the antecedents to these attributes. We believe that such research that investigates specific mechanisms for fostering interpersonal and impersonal trusting beliefs is necessary to understand online consumer behavior. Future research in this direction will provide more concrete implications to the practitioners.

Another direction for future research is that to use our conceptualization of trustees as being general or specific might offer additional explanatory power for individuals' interaction with online technologies. Besides the relationship between trust and behavioral intention, prior literature has examined trust's relation to Web experience [McKnight et al., 2002; Pavlou and Gefen, 2004], risk [Pavlou and Gefen, 2004], privacy concerns [Liu et al., 2005], customer satisfaction, and loyalty [Gefen, 2002a], to name a few. Prior online research does not delineate between general and specific forms of trust or risk. For example, researchers typically assert that trust diminishes risk and that increased risk makes trust more important. However, they do not examine the interplay between general forms of trust or risk and specific forms of trust or risk. Future research examining the interplay of trust and risk within the general vs. specific trustee model may help clarify their relationship. In summary, integrating the diverse trustees into the broader nomological net may lead to different ways of understanding their influence, resulting in theoretical extensions of our understanding of online consumer behavior.

A third direction for future research is examining whether institutional mechanisms' influence varies with the nature of the service or product delivered by an online merchant. It would be interesting to see if institutional mechanisms' influence varied with whether one is delivering an intangible information good or a tangible product. Such research could be particularly important for the financial services industry, where perceptions of trust and risk shape consumers' willingness to use e-services [Featherman, Wright, Thatcher, Zimmer, and Pak, 2011]. If differences were found based on product or service delivered, this would offer insight to practitioners seeking to identify the most effective trust-building cues to embed their websites.

Recommendations for Practice

Our finding that trust in merchant is the most significant driver of new customers' purchase intentions suggests that to encourage new customers to complete transactions, an online store should give priority to fostering positive perceptions of the merchant's trustworthiness. Thus, leveraging traditional marketing tools like TV commercials to promote brand-name recognition in conjunction with online resources such as banner ads could be effective methods to increase consumers' familiarity with an online merchant. In contrast, customers who are familiar with an online store are more concerned about the enabling technology. To retain existing customers, companies should direct attention to website attributes that engender customer confidence in their ability to complete transactions. For example, these companies should focus on online customer services such as streamlining the purchasing process while fostering confidence in the security and functionality of the website.

Our findings offer the practicing professional insight into how technical and institutional mechanisms shape consumers' trust in online merchants and their websites. The significant influence exerted by trust in the IT infrastructure on specific trust in the website suggests that to foster trust, vendors should consider providing explicit technology statement describing the IT infrastructure and technical control mechanisms that underpin the website and offer an explanation for how these mechanisms assure secure and successful transactions. With respect to trust in institutional mechanisms, our finding that consumers transfer general trust in the environment to a specific merchant and website in the new shopping context suggests that small and new online merchants, without an established reputation, can use external sources of legitimacy to inform first-time customers that they are reliable product/service providers. To foster customer trust and purchase intention, online merchants could link to brief, visible, and easy to understand tutorials that explain the value of trust-building mechanisms, such as seal programs.

VII. CONCLUSION

This article integrates trustees and trusting attributes in online B-2-C into a classification framework based on whether they relate to general or specific trust. Further, it elaborates on whether trust is extended based on interpersonal or impersonal attributes. Two empirical studies were conducted to investigate trust's influence on consumer purchase intention in unfamiliar and familiar online contexts. Findings confirmed that consumers tend to transfer their trust in the general e-commerce environment to the specific merchant and website to justify purchases. If familiar with a shopping context, rather than trust in the online merchant, consumers' purchase intentions were based primarily on direct knowledge of, and experiential interactions with, the website.

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Editor's Note: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the article on the Web, can gain direct access to these linked references. Readers are warned, however, that:

1. These links existed as of the date of publication but are not guaranteed to be working thereafter.
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APPENDIX A: TRUST STUDIES IN THE B-TO-C E-COMMERCE CONTEXT

Table A–1: Representative Studies

Studies (in chronological order)	Constructs examined	Level(s) of trust	Trust object(s)	Roles in model/empirical relationships
[Jarvenpaa et al., 2000].	▪ Trust in Internet store	Specific	TMC	▪ Trust in the Internet store is positively related to attitude and negatively related to perceptions of
[Lee and Turban, 2001]	▪ Trustworthiness of Internet shopping medium	General	TIT	▪ <i>Dimensions of trust (No empirical test)</i>
	▪ Trustworthiness of Internet merchant	Specific	TMC	
[Bhattacharjee, 2002]	▪ Trust in an online firm	Specific	TMC	▪ Trust in an online firm affects willingness to transact.
[Kim and Prabhakar, 2002]	▪ Structural assurances	General	TIM	▪ Trust in institutional mechanisms affects trust in the e-channel. ▪ Trust in the e-channel affects intention to use Internet banking.
	▪ Trust in the e-channel	Specific	TIT	
	▪ Trust in bank	Specific	TMC	
[McKnight et al., 2002]	▪ Institution-based trust	General	TIM	▪ Institution-based trust and perceived site quality affect trust in vendor. ▪ Trust in vendor affects behavioral intention
	▪ Trusting beliefs	Specific	TMC	
	▪ Perceived site quality	Specific	TWS	
[Tan and Thoen, 2002]	▪ Trust in control	General	TIM	▪ <i>Dimensions of trust (No empirical test)</i>
	▪ Trust in the other party	Specific	TMC	
[Corbitt et al., 2003]	▪ Perceived trust in merchant	Specific	TMC	▪ Perceived technical trustworthiness and perceived site quality affect trust in merchant. ▪ Trust in merchant determines participation in e-commerce.
	▪ Perceived technical trustworthiness	Specific	TWS	
	▪ Perceived site quality			
[Corritore, Kracher, and Wiedenbeck, 2003]	▪ External factors	General	TIM	▪ <i>Dimensions of trust (No empirical test)</i>
	▪ Credibility	Specific	TMC	
	▪ PEOU	N/A		
[Gefen et al., 2003]	▪ Institution-based trust	General	TIM	▪ Institution-based trust affects trust (in merchant) and PEOU/PU. ▪ Trust (in merchant) and PEOU/PU interact to jointly determine intended behavior.
	▪ Trust	Specific	TMC	
	▪ PEOU, PU	N/A		
[Pavlou, 2003]	▪ Trust in e-retailer	Specific	TMC	▪ Trust and PU affect intention to transact.
	▪ PEOU, PU	N/A		
[Pennington et al., 2003]	▪ System trust	General	TIM	▪ System trust affects trust in vendor.
	▪ Trust in vendor	Specific	TMC	▪ Trust in vendor determines attitude and purchase intention.
[Suh and Han, 2003]	▪ Perceived strength of controls	General	TIT	▪ Trust in security controls positively influences trust in a website.
	▪ Trust in e-commerce site	Specific	TWS

Table A-1: Representative Studies – Continued

[van der Heijden et al., 2003]	<ul style="list-style-type: none">Trust in online storePEOU, PU	Specific	TMC	<ul style="list-style-type: none">Trust in online store and PEOU/PU jointly determine online purchasing intention.
[Van der Heijden and Verhagen, 2004]	<ul style="list-style-type: none">Store trustworthinessPEOU, PUSettlement performance	Specific	TWS	<ul style="list-style-type: none">Trust in online store, PEOU/PU, and settlement performance jointly determine online purchasing intention.
[Van Slyke, Belanger, and Comunale, 2004]	<ul style="list-style-type: none">Trust in Web merchantComplexityCompatibilityRelative advantage	Specific	TMC	<ul style="list-style-type: none">Trust in Web merchant, perceptions of complexity, compatibility, and relative advantage jointly affect purchase intentions.
[Koufaris and Hampton-Sosa, 2004]	<ul style="list-style-type: none">Perceptions of the companyPerceptions of the website	Specific	TMC	<ul style="list-style-type: none"><i>Dimensions of trust (No empirical test)</i>
[Pavlou and Gefen, 2004]	<ul style="list-style-type: none">Effectiveness of institutional mechanismsTrust in a community of sellers	General	TIM	<ul style="list-style-type: none">Institutional mechanisms affect trust in community of sellers.Trust in community of sellers determines transaction intention.
		Specific	TMC	
[Walczuch and Lundgren, 2004]	<ul style="list-style-type: none">Trust in e-retailing	General	TIM	<ul style="list-style-type: none">Trust in the institution of e-retailing is a requirement for trust in an individual e-retailer.
[Kim, Song, Braynov, and Rao, 2005]	<ul style="list-style-type: none">Institutional dimensionTechnology dimensionInformation dimension	General	TIM	<ul style="list-style-type: none"><i>Dimensions of trust (No empirical test)</i>
		General	TIT	
	<ul style="list-style-type: none">Product dimensionTransaction dimensionBehavior dimension	Specific	TMC	
[Li, Browne, and Wetherbe, 2006]	<ul style="list-style-type: none">Trust in the website	Specific	TWS	<ul style="list-style-type: none">Trust in the website positively influences commitment and continuance intention.
[Pavlou and Fygenson, 2006]	<ul style="list-style-type: none">Trust in Web vendorPEOU, PUTechnological characteristics	Specific	TMC	<ul style="list-style-type: none">Trust in Web vendor, PEOU/PU, and technological characteristics determine online consumer behavior.
		N/A		
[Kim, 2008]	<ul style="list-style-type: none">Third-party sealSecurity protectionSystem reliability	General	TIM	<ul style="list-style-type: none">Security protection and system reliability positively affect trust in vendor.Third party seals positively affect trust in vendor for Korean subjects but not U.S. subjects.
	<ul style="list-style-type: none">Trust in e-vendor	General	TIT	
		Specific	TMC	
[Kim et al., 2009]	<ul style="list-style-type: none">Propensity to trustRelative benefits	N/A		<ul style="list-style-type: none">Institution-based trust, propensity to trust, and relative benefits influenced trust in mobile banking.Trust in mobile banking influences usage intention.
	<ul style="list-style-type: none">Structural assurances	General	TIM	
	<ul style="list-style-type: none">Initial trust in mobile banking	General	TIT	
	<ul style="list-style-type: none">Firm reputation	Specific	TMC	
[Palvia, 2009]	<ul style="list-style-type: none">PU, PEOUTechnology attitude	N/A		<ul style="list-style-type: none">Trusting beliefs influence perceived trustworthiness of Web vendor, which together with PEOU/PU influences attitude toward using vendor website.Trustworthiness of Web vendor, PU, and attitude jointly influence intention.Intention influences dependence on the relationship.
	<ul style="list-style-type: none">Trusting beliefsTrustworthiness of Web vendor	Specific	TMC	
	<ul style="list-style-type: none">IntentionSatisfactionValueCustomer loyaltyWord-of-mouth	N/A		

Table A–1: Representative Studies – Continued

[Qureshi et al., 2009]	<ul style="list-style-type: none">▪ Perceived website quality▪ Perceived capability of order fulfillment▪ Reputation	N/A		<ul style="list-style-type: none">▪ Perceptions of website quality and of the vendor's capability and reputation influence trust in vendor.▪ Trust in vendor influences repurchasing intention.
	<ul style="list-style-type: none">▪ Trust in e-vendor	Specific	TMC	
[Benamati et al., 2010]	<ul style="list-style-type: none">▪ PU, PEOU▪ Technology attitude	N/A		<ul style="list-style-type: none">▪ Trusting attitude, determined by trusting beliefs, and technology attitude, determined by PU and PEOU, jointly predict intention.
	<ul style="list-style-type: none">▪ Trusting beliefs in e-vendor▪ Trusting attitude	Specific	TMC	
[Van Slyke, Lou, Belanger, and Sridhar, 2010]	<ul style="list-style-type: none">▪ Trust in Web merchant	Specific	TMC	<ul style="list-style-type: none">▪ Trust in a Web merchant, as well as culture and perceptions of the technology influence use intention.
	<ul style="list-style-type: none">▪ Culture▪ Relative advantage▪ Ease of use▪ Result demonstrability▪ Image	N/A		
[Beatty et al., 2011]	<ul style="list-style-type: none">▪ PU, PEOU▪ Risk▪ Previous actions▪ Cognitive enjoyment▪ Reputation▪ Predictability	N/A		<ul style="list-style-type: none">▪ <i>Qualitative meta-study of antecedents/consequents of online trust</i>
	<ul style="list-style-type: none">▪ Trust▪ Integrity▪ Benevolence▪ Competence	Specific	TMC	
[He, 2011]	<ul style="list-style-type: none">▪ Personal characteristics▪ Knowledge/experience▪ Deterrence▪ Social influence▪ Technological attributes▪ Vendor image	N/A		<ul style="list-style-type: none">▪ <i>Quantitative meta-analysis of antecedents/consequents of online trust</i>
	<ul style="list-style-type: none">▪ Institutional influence	General	TIM	
	<ul style="list-style-type: none">▪ Trust in e-vendor	Specific	TMC	

APPENDIX B: MEASURES

Table B–1: Constructs and Measures

Construct	Items	Measure Source
Pre-survey		
<i>Please evaluate the following statements based on your general experience.</i>		
Trust propensity	I generally trust other people.	[Gefen and Straub, 2004]
	I tend to count on other people.	
	I generally have faith in humanity.	
	I feel that people are generally well meaning.	
	I feel that people are generally trustworthy.	
	I feel that people are generally reliable.	
<i>In the e-commerce world, reliable and stable IT infrastructure is needed to support the Web applications and transaction activities. IT infrastructure refers to the hardware, transmission media, and software used to interconnect computers and users. The Internet is the major IT infrastructure to enable e-commerce activities. Please evaluate the following statements based on your past experiences with the Internet.</i>		
Trust in IT infrastructure—capability	I think the Internet has the functionality I need.	[McKnight and Thatcher, 2006]
	The Internet has the ability to do what I want it to do.	
	Overall, the Internet has the capabilities I need.	
Trust in IT infrastructure—reliability	I think the Internet is very reliable.	[McKnight and Thatcher, 2006]
	To me, the Internet is very dependable.	
	The Internet behaves in a predictable way.

Table B-1: Constructs and Measures – Continued

Trust in IT infrastructure—security	The Internet has enough safeguards to make me feel comfortable using it to transact personal business.	[McKnight et al., 2002]
	I feel assured that technological structures adequately protect me from problems on the Internet.	
	I feel confident that encryption and other technological advances on the Internet make it safe for me to do business there.	
	In general, the Internet is now a robust and safe environment in which to transact business.	
<i>To promote trust and confidence on the Internet and e-commerce, some third-party organizations provide seal programs to certify their members in terms of reliability, privacy, or security. E-commerce companies are allowed to display the seals on their websites once they have been evaluated and confirmed to meet the program requirements. The seals assure the online customers that the websites are authentic and reliable. The third-party organizations will also help in resolving disputes that might arise between the member companies and the customers. Please evaluate the following statements based on your perceptions of the third-party seal programs.</i>		
Trust in institutional mechanisms (seal programs)—effectiveness	The authorization seal programs protect me from inappropriate behaviors of e-vendors.	[Pavlou and Gefen, 2004]
	The authorization seal programs make my online shopping safe and secure.	
	The authorization seal programs guarantee that the certified e-vendors are reliable and dependable.	
	The authorization seal programs ensure that the certified e-vendors are trustworthy.	
Trust in institutional mechanisms (seal programs)—benevolence	I believe that the authorization seal programs would act in customers' best interests.	[McKnight et al., 2002]
	The authorization seal programs are interested in customers' well-being.	
	If customers require help, the authorization seal programs would do its best to help them.	
Trust in institutional mechanisms (seal programs)—integrity	The authorization seal programs are truthful in their dealings with customers.	[McKnight et al., 2002]
	I would characterize the authorization seal programs as honest.	
	The authorization seal programs would keep their commitments.	
	The authorization seal programs are sincere and genuine.	
Post-survey		
<i>Every online store has a behind-the-scene actor—the back merchant. The back merchant is the actual party with which you do a transaction. Although the back merchant is often invisible to the consumers, you can “feel” it through the website design, transaction policies, transaction process, and customer support. Please evaluate the following statements based on your perceptions about the back merchant of the online store that you have just visited.</i>		
Trust in merchant—competence	I believe this merchant is effective in assisting and fulfilling my purchases.	[McKnight et al., 2002]
	This merchant performs its role of e-vendor very well.	
	Overall, this merchant is a capable and proficient e-vendor.	
	In general, this merchant is very knowledgeable about the business it operates.	
Trust in merchant—benevolence	I believe that this merchant would act in my best interest.	[McKnight et al., 2002]
	If I required help, this merchant would do its best to help me.	
	This merchant is interested in my well-being, not just its own.	
Trust in merchant—integrity	This merchant is truthful in its dealings with me.	[McKnight et al., 2002]
	I would characterize this merchant as honest.	
	This merchant would keep its commitments.	
	This merchant is sincere and genuine.	
<i>Every online store has an electronic interface—the website. A website is the major technological component of an online store to perform the functions and activities needed in a business transaction. The performance of the website is a key to the e-commerce success. Please evaluate the following statements based on your feelings about the website of the online store that you have just visited.</i>		
Trust in website—capability	I think this website has the functionality I need.	[McKnight and Thatcher, 2006]
	This website has the ability to do what I want it to do.	
	Overall, this website has the capabilities I need.	

Table B-1: Constructs and Measures – Continued

Trust in website—reliability	I think this website is very reliable.	[McKnight and Thatcher, 2006]
	To me, this website is dependable.	
	This website performs in a predictable way.	
Please evaluate the following statements based on your overall perceptions of the online store that you have just visited.		
Intention	Given the need, I intend to transact with OverStock.com*.	[Pavlou, 2003, Pavlou and Gefen, 2004]
	Given the chance, I think that I would consider making purchases from OverStock.com*.	
	I would probably purchase from OverStock.com* when I have a need.	
	It is likely that I will actually buy products from OverStock.com* in the near future.	

* The store name was replaced by the subject selected stores in Study 2.

APPENDIX C: PLS MEASUREMENT MODELS

Table C-1: STUDY 1: Construct Loadings and Cross Loadings Estimated in PLS

		1	2	3	4	5	6	7	8	9	10	11	12
1	Intent1	0.937	0.466	0.476	0.471	0.432	0.451	0.139	0.231	0.065	0.166	0.163	0.106
	Intent2	0.954	0.540	0.512	0.535	0.518	0.519	0.178	0.223	0.133	0.254	0.215	0.167
	Intent3	0.960	0.510	0.510	0.512	0.452	0.469	0.094	0.185	0.066	0.190	0.152	0.097
	Intent4	0.913	0.385	0.487	0.388	0.369	0.397	0.085	0.187	0.028	0.084	0.082	0.010
2	MCom1	0.450	0.887	0.528	0.532	0.542	0.591	0.362	0.220	0.263	0.274	0.276	0.400
	MCom2	0.511	0.949	0.644	0.641	0.693	0.720	0.360	0.277	0.257	0.348	0.351	0.422
	MCom3	0.437	0.940	0.692	0.690	0.628	0.709	0.363	0.357	0.317	0.366	0.433	0.509
	MCom4	0.476	0.930	0.688	0.665	0.619	0.703	0.402	0.407	0.343	0.385	0.394	0.476
3	MBen1	0.513	0.654	0.928	0.730	0.546	0.585	0.178	0.258	0.327	0.409	0.445	0.438
	MBen2	0.460	0.655	0.918	0.684	0.519	0.610	0.265	0.386	0.365	0.366	0.453	0.472
	MBen3	0.491	0.605	0.928	0.740	0.419	0.550	0.152	0.240	0.305	0.332	0.413	0.366
4	MIInt1	0.503	0.610	0.762	0.913	0.451	0.619	0.154	0.289	0.315	0.358	0.349	0.399
	MIInt2	0.519	0.680	0.737	0.950	0.583	0.688	0.223	0.287	0.352	0.463	0.466	0.489
	MIInt3	0.347	0.615	0.643	0.890	0.432	0.645	0.250	0.299	0.330	0.391	0.423	0.441
	MIInt4	0.493	0.610	0.716	0.929	0.523	0.638	0.158	0.293	0.343	0.444	0.427	0.461
5	WCap1	0.456	0.643	0.535	0.544	0.961	0.723	0.409	0.328	0.297	0.364	0.381	0.451
	WCap2	0.438	0.645	0.503	0.514	0.960	0.740	0.393	0.333	0.285	0.377	0.362	0.452
	WCap3	0.470	0.653	0.510	0.508	0.973	0.729	0.396	0.323	0.284	0.363	0.364	0.405
6	WRel1	0.459	0.715	0.658	0.696	0.671	0.935	0.338	0.366	0.388	0.441	0.364	0.436
	WRel2	0.466	0.659	0.607	0.675	0.664	0.942	0.312	0.335	0.346	0.478	0.411	0.463
	WRel3	0.426	0.662	0.470	0.572	0.765	0.889	0.364	0.368	0.343	0.422	0.403	0.393
7	ITCap1	0.112	0.347	0.208	0.188	0.375	0.338	0.931	0.421	0.211	0.198	0.269	0.310
	ITCap2	0.176	0.408	0.235	0.222	0.440	0.368	0.953	0.353	0.243	0.221	0.193	0.310
	ITCap3	0.087	0.383	0.166	0.194	0.361	0.333	0.957	0.366	0.200	0.188	0.184	0.269
8	ITRel1	0.224	0.365	0.336	0.302	0.302	0.334	0.354	0.924	0.512	0.414	0.359	0.480
	ITRel2	0.239	0.325	0.265	0.300	0.362	0.380	0.358	0.937	0.439	0.432	0.387	0.472
	ITRel3	0.129	0.234	0.264	0.259	0.258	0.335	0.381	0.859	0.398	0.411	0.355	0.418
9	ITSec1	0.072	0.281	0.292	0.308	0.254	0.315	0.222	0.468	0.929	0.551	0.432	0.449
	ITSec2	0.058	0.334	0.334	0.360	0.275	0.402	0.269	0.499	0.926	0.570	0.453	0.468
	ITSec3	0.047	0.327	0.377	0.357	0.306	0.380	0.213	0.390	0.937	0.554	0.471	0.437
	ITSec4	0.113	0.243	0.333	0.329	0.278	0.352	0.153	0.491	0.928	0.553	0.468	0.443
10	SLEff1	0.139	0.340	0.355	0.409	0.354	0.420	0.238	0.482	0.587	0.896	0.614	0.573
	SLEff2	0.220	0.292	0.309	0.399	0.365	0.438	0.176	0.387	0.507	0.914	0.606	0.511
	SLEff3	0.203	0.355	0.403	0.429	0.347	0.443	0.206	0.418	0.564	0.922	0.664	0.584
	SLEff4	0.113	0.367	0.388	0.406	0.325	0.469	0.160	0.398	0.528	0.916	0.624	0.573
11	SLBen1	0.143	0.368	0.444	0.424	0.374	0.368	0.206	0.401	0.481	0.660	0.924	0.718
	SLBen2	0.104	0.327	0.380	0.391	0.279	0.356	0.164	0.318	0.421	0.621	0.920	0.635
	SLBen3	0.200	0.380	0.468	0.421	0.393	0.441	0.250	0.388	0.438	0.596	0.887	0.680
12	SLInt1	0.112	0.411	0.428	0.425	0.396	0.379	0.245	0.476	0.425	0.510	0.645	0.890
	SLInt2	0.095	0.458	0.422	0.464	0.438	0.477	0.291	0.488	0.478	0.568	0.685	0.928
	SLInt3	0.099	0.467	0.427	0.448	0.429	0.437	0.308	0.483	0.449	0.591	0.700	0.930
	SLInt4	0.061	0.427	0.385	0.422	0.369	0.394	0.287	0.373	0.394	0.550	0.662	0.868

Table C-2: STUDY 2: Construct Loadings and Cross Loadings Estimated in PLs

		1	2	3	4	5	6	7	8	9	10	11	12
1	Intent1	0.937	0.544	0.535	0.461	0.604	0.621	0.272	0.243	0.212	0.175	0.252	0.224
	Intent2	0.951	0.576	0.555	0.500	0.678	0.650	0.294	0.303	0.241	0.232	0.300	0.265
	Intent3	0.957	0.580	0.524	0.527	0.653	0.626	0.224	0.260	0.234	0.184	0.257	0.235
	Intent4	0.897	0.500	0.527	0.471	0.532	0.556	0.164	0.280	0.170	0.126	0.180	0.174
2	MCom1	0.573	0.921	0.650	0.685	0.648	0.678	0.287	0.251	0.292	0.287	0.313	0.341
	MCom2	0.557	0.942	0.603	0.644	0.653	0.688	0.280	0.230	0.279	0.263	0.291	0.329
	MCom3	0.556	0.934	0.617	0.660	0.648	0.698	0.274	0.237	0.299	0.242	0.239	0.271
	MCom4	0.486	0.899	0.628	0.681	0.589	0.606	0.233	0.248	0.266	0.217	0.246	0.260
3	MBen1	0.538	0.634	0.933	0.724	0.550	0.520	0.232	0.256	0.324	0.243	0.280	0.302
	MBen2	0.547	0.657	0.928	0.713	0.557	0.550	0.286	0.347	0.327	0.300	0.304	0.300
	MBen3	0.517	0.601	0.940	0.653	0.509	0.529	0.261	0.314	0.279	0.252	0.273	0.257
4	MIInt1	0.483	0.693	0.691	0.946	0.594	0.576	0.336	0.324	0.366	0.352	0.362	0.396
	MIInt2	0.508	0.690	0.722	0.947	0.604	0.579	0.303	0.364	0.383	0.324	0.309	0.356
	MIInt3	0.486	0.699	0.708	0.930	0.600	0.558	0.287	0.357	0.344	0.304	0.303	0.309
	MIInt4	0.476	0.610	0.662	0.908	0.525	0.535	0.292	0.291	0.315	0.298	0.254	0.284
5	WCap1	0.640	0.670	0.549	0.614	0.956	0.756	0.392	0.326	0.326	0.294	0.192	0.253
	WCap2	0.623	0.662	0.561	0.608	0.963	0.732	0.347	0.307	0.290	0.291	0.224	0.237
	WCap3	0.643	0.651	0.554	0.576	0.966	0.748	0.283	0.256	0.248	0.232	0.156	0.171
6	WRel1	0.612	0.708	0.552	0.587	0.702	0.960	0.338	0.307	0.305	0.296	0.220	0.311
	WRel2	0.638	0.700	0.561	0.594	0.756	0.960	0.342	0.308	0.293	0.313	0.236	0.315
	WRel3	0.617	0.649	0.510	0.533	0.748	0.926	0.336	0.222	0.226	0.266	0.201	0.295
7	ITCap1	0.198	0.242	0.255	0.289	0.290	0.300	0.947	0.484	0.364	0.368	0.322	0.403
	ITCap2	0.286	0.309	0.291	0.345	0.390	0.391	0.966	0.489	0.354	0.374	0.346	0.393
	ITCap3	0.252	0.286	0.254	0.307	0.338	0.336	0.967	0.508	0.391	0.393	0.382	0.414
8	ITRel1	0.267	0.272	0.364	0.374	0.274	0.261	0.503	0.911	0.391	0.328	0.328	0.341
	ITRel2	0.260	0.197	0.272	0.267	0.276	0.255	0.449	0.906	0.388	0.382	0.376	0.384
	ITRel3	0.219	0.203	0.197	0.281	0.244	0.247	0.365	0.751	0.380	0.244	0.267	0.258
9	ITSec1	0.238	0.288	0.295	0.335	0.296	0.280	0.419	0.401	0.934	0.500	0.411	0.440
	ITSec2	0.195	0.293	0.317	0.354	0.286	0.257	0.317	0.447	0.931	0.508	0.410	0.425
	ITSec3	0.256	0.324	0.365	0.392	0.319	0.314	0.362	0.394	0.926	0.504	0.412	0.408
	ITSec4	0.165	0.237	0.258	0.324	0.212	0.228	0.335	0.426	0.926	0.504	0.345	0.404
10	SLEff1	0.202	0.282	0.263	0.327	0.294	0.291	0.389	0.342	0.504	0.924	0.714	0.696
	SLEff2	0.149	0.217	0.248	0.316	0.214	0.255	0.351	0.300	0.509	0.949	0.678	0.711
	SLEff3	0.172	0.258	0.267	0.316	0.268	0.294	0.395	0.370	0.531	0.949	0.690	0.689
	SLEff4	0.201	0.274	0.290	0.332	0.292	0.319	0.351	0.397	0.501	0.947	0.715	0.711
11	SLBen1	0.267	0.326	0.315	0.312	0.209	0.250	0.380	0.338	0.422	0.710	0.923	0.734
	SLBen2	0.275	0.310	0.306	0.335	0.207	0.224	0.307	0.313	0.373	0.666	0.931	0.750
	SLBen3	0.184	0.171	0.218	0.257	0.125	0.160	0.315	0.393	0.371	0.661	0.893	0.675
12	SLInt1	0.214	0.293	0.275	0.339	0.236	0.307	0.445	0.383	0.453	0.705	0.736	0.934
	SLInt2	0.276	0.310	0.295	0.332	0.226	0.334	0.383	0.346	0.411	0.692	0.746	0.950
	SLInt3	0.149	0.269	0.241	0.286	0.162	0.263	0.361	0.303	0.392	0.699	0.698	0.926
	SLInt4	0.259	0.344	0.336	0.395	0.232	0.306	0.385	0.407	0.431	0.691	0.763	0.932

Table C-3: STUDY 1: Descriptive Analysis, Reliabilities, Correlations and Square Roots of AVEs

	M	SD	CR	α	1	2	3	4	5	6	7	8	9	10	11	12
1.Intent	6.15	0.89	0.969	0.941	0.941											
2.MCom	5.45	1.04	0.961	0.884	0.506	0.927										
3.MBen	4.65	1.33	0.947	0.946	0.528	0.690	0.925									
4.MInt	4.91	1.19	0.957	0.933	0.507	0.683	0.776	0.921								
5.WCap	5.17	1.05	0.976	0.897	0.471	0.671	0.535	0.541	0.964							
6.WRel	5.02	0.99	0.945	0.925	0.488	0.736	0.629	0.704	0.757	0.922						
7.ITCap	5.54	0.93	0.963	0.910	0.132	0.401	0.214	0.213	0.414	0.366	0.947					
8.ITRel	5.72	1.07	0.933	0.963	0.219	0.341	0.318	0.317	0.340	0.386	0.401	0.907				
9.ITSec	5.57	0.98	0.962	0.944	0.078	0.319	0.359	0.364	0.299	0.389	0.230	0.496	0.930			
10.SLEff	5.03	1.05	0.952	0.914	0.185	0.371	0.399	0.450	0.381	0.485	0.213	0.461	0.599	0.912		
11.SLBen	5.21	0.95	0.936	0.940	0.163	0.393	0.472	0.453	0.383	0.426	0.227	0.405	0.491	0.688	0.910	
12.SLInt	5.09	1.38	0.947	0.956	0.102	0.488	0.460	0.487	0.452	0.467	0.313	0.504	0.483	0.614	0.744	0.904

Table C-4: STUDY 2: Descriptive Analysis, Reliabilities, Correlations and Square Roots of AVEs

	M	SD	CR	α	1	2	3	4	5	6	7	8	9	10	11	12
1.Intent	6.09	0.80	0.966	0.957	0.936											
2.MCom	5.17	0.90	0.959	0.811	0.588	0.924										
3.MBen	4.83	1.19	0.953	0.947	0.572	0.675	0.933									
4.MInt	4.99	1.08	0.964	0.958	0.523	0.722	0.746	0.933								
5.WCap	5.18	1.04	0.974	0.904	0.661	0.687	0.577	0.623	0.962							
6.WRel	5.02	1.03	0.964	0.952	0.656	0.723	0.571	0.603	0.775	0.949						
7.ITCap	6.13	0.86	0.972	0.944	0.256	0.291	0.278	0.327	0.354	0.357	0.960					
8.ITRel	6.13	0.92	0.894	0.959	0.290	0.261	0.328	0.358	0.308	0.295	0.514	0.860				
9.ITSec	5.98	0.90	0.962	0.943	0.230	0.307	0.332	0.378	0.299	0.290	0.385	0.449	0.930			
10.SLEff	5.52	1.05	0.969	0.925	0.192	0.273	0.284	0.343	0.283	0.307	0.394	0.374	0.543	0.942		
11.SLBen	5.74	0.95	0.940	0.950	0.265	0.295	0.306	0.330	0.198	0.231	0.365	0.379	0.425	0.742	0.915	
12.SLInt	5.87	1.20	0.966	0.949	0.240	0.325	0.306	0.361	0.229	0.324	0.420	0.385	0.451	0.745	0.786	0.936

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Communications of the Association for Information Systems

ISSN: 1529-3181

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