The outcomes of user interactions with retail websites: semantics and nomenclature

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ABSTRACT

Hundreds of studies have attempted to define, measure, or otherwise explain how website visitors think, feel, and behave during and after visits to transaction-oriented business-to-consumer retail websites. This article reviews the predominant endpoints described in the peer-reviewed literature over the past decade for user-website interactions with e-tail websites. Results suggest that although scores of user-website interaction outcomes have been reported in the peer-reviewed literature, most of those endpoints represent one of ten high-level user-website interaction outcomes (confirmation/disconfirmation, trust, perceived risk, engagement, purchase intentions, actual purchase behavior, satisfaction, repeat website visit intention or behavior, repeat purchase intention or behavior) either directly or indirectly. This article provides a new information technology systems-based taxonomy for relevant outcomes to define website outcomes, identifies their common characteristics, and summarizes the relationships so far reported in the peer-reviewed literature.

Keywords: User-website interaction, e-commerce, systematic review, outcomes

INTRODUCTION

The world wide web has emerged as one of the primary ways businesses connect with customers in the twenty-first century. This has resulted in a need for businesses and researchers to understand "user-website interaction" (UWI), specifically why UWIs result in (or fail to result in) customers making on-line purchases. In response to this question, hundreds of theoretical and empirical studies have identified and described many of the elements that comprise UWIs, the outcomes of UWIs, the antecedent factors that influence UWI outcomes, and how UWI elements, antecedents, and outcomes interact (e.g. Ba and Pavlou 2002, Fiore et al. 2005a, Lim et al. 2006, Pavlou 2003, Pavlou and Gefen 2004). Although the resultant growth of the UWI body of knowledge has greatly enhanced the abilities of researchers and practitioners to describe and to predict the course of UWIs, the rapid pace of discovery has precluded the development of a widely accepted, uniform, and consistent UWI nomenclature. As a result, the data elements gathered, definitions used, and distinctions between the terms assigned to many UWI constructs do not appear to be reliably reported, conceptually distinct or mutually exclusive. Consequently, fundamental irregularities have resulted from this ad-hoc nomenclature development process. The purpose of this study, therefore, is to identify the most commonly used UWI endpoints and characteristics based upon prevalence of terms reported in the peer-reviewed literature.

The literature review identified two of the most common types of nomenclature irregularities. The first irregularity, which is here defined as the "irregularity of multiple terms", refers to instances where multiple terms are used to describe what is essentially a single, distinct element, variable, or construct (Silverman 2006). For example, within the body of information systems literature that has explored "consumer trust", the definitions of "ability" and "competence" are often extremely similar, if not identical, and no meaningful differentiation between these terms has yet been theorized or empirically demonstrated. Yet, despite this lack of differentiation between the terms, no single term has yet been adopted as a standard, and the use of one term or the other is generally left to the preference of the author. Whenever new constructs are being explored, identified, described, and measured, inconsistent and over-lapping terminology is expected, and such inconsistencies do not diminish the contributions of exploratory work. However, as research into any significant topic continues, the lack of consistent terminology use within any body of literature is not inconsequential, for it leads readers to fruitlessly search for meaningful semantic differences where none exist. Inconsistent terminologies also limit the accuracy of key word searches performed on modern knowledge dissemination tools such as relational databases and the Internet. Perhaps the most far-reaching drawback of the irregularity of multiple terms is that it limits the advancement of the body of knowledge by inhibiting readers' abilities to make "apples to apples" comparisons between different studies (Simon 2006). In mature knowledge domains, where variable definitions and measurements have been standardized, systematic reviews are often used to compare and integrate the results of several studies that have investigated the relationships between a specific set of variables (Sood et al. 2008). In less mature knowledge domains, reviews can discuss and clarify nomenclature and measurement (Hasley et al. 2008).

The second irregularity, which is here defined as the "irregularity of terminology overlap", refers to instances where a construct that has demonstrated theoretical and empirical independence is depicted as a sub-dimension of a supposed super-construct, when in fact that construct is more accurately depicted as a moderating factor. In statistics, moderation may be best represented by an external variable (e.g., a covariate) that alters the relationship between the

primary variables of interest (e.g., the dependent and independent variables of study). The importance of the moderator is the impact that this variable may have upon the study outcome(s) of interest – either uniquely or in interaction with other characteristics (e.g., independent variable and/or other covariates). For example, several models have included "trust" as a subdimension of perceived website quality (e.g. Barnes and Vidgen 2002, Cao et al. 2005, Kim and Stoel 2004; Kim and Kim 2006, Loiacono et al. 2007, Seethamraju 2006, van der Heijden and Verhagen 2004), despite the fact that trust can easily and meaningfully be measured independently of perceived website quality, and no studies have demonstrated the theoretical or empirical advantage of measuring trust as a dimension of perceived website quality, rather than as an independent moderating factor that interacts with various dimensions of perceived website quality.

To date, these types of irregularities have not been investigated in the IS literature; however, it is an area of rigorous research in medicine (Silverman 2006). For example, in 1980 the publication of an approved list of bacterial names reduced the number of names from approximately 30,000 to 2,000 (Baron et al. 1995). Thus, this current study applied the systematic review methodologies found in medical literature to advance the development and use of a standard nomenclature for the UWI domain.

User-Website Interactions and Outcomes

As described by Zhang and Li (2005), Human Computer Interactions (HCIs) are the interactions between humans and the computer technology employed to accomplish a given task within a specific context (Appendix J, Figure 1), and each scenario of users, technologies, tasks, and contexts can be viewed as a unique type of HCI.

As a general term, "User-Website Interaction" could be used to describe any interaction between a user and a website. In the context of this paper, the term "UWI outcome" refers to the thought, emotion, and behavior that a user experiences as the result of a UWI. When framed in the context of the Zhang and Li model, UWIs are the interaction between users who visit and possibly make purchases from (tasks) transaction oriented (context) retail websites (technologies). This article focuses on consequential user interactions with transaction-oriented business-to-consumer websites. Here, a "consequential interaction" refers to activities such as Web-surfing, browsing, information-seeking, online shopping, or other activities that can lead to on-line transactions. Transaction-oriented business-to-consumer (B2C) websites are defined as websites that draw revenue directly from transactions with users. Under this definition, web portals and search engines are not considered transaction-oriented websites because their income is drawn from advertisers, not directly from users purchases. The antecedents to and outcomes of retail e-commerce have received a great deal of attention from researchers, in part due to its increasing importance to the global economy (e.g. Ahn et al. 2007, Karson and Fisher 2005a, Kim and Stoel 2004a, Pavlou 2003). In 2007, retail e-commerce was $136 billion in the U.S. alone (US Census Bureau 2008). The results of scores of peer-reviewed empirical studies demonstrate how understanding UWI antecedents and outcomes may be one of the most practical and cost-effective paths toward creating sustainable competitive advantages in the on-line environment. For example, research suggests that numerous antecedent factors significantly influence consumer impressions of e-businesses (e.g. Barnes and Vidgen 2001, Kim and Stoel 2004, Shchiglik and Barnes 2004), their trust in the e-business (e.g. McKnight et al. 1998, Pavlou, and Gefen 2004), their willingness to transact with the e-business (e.g. Ranganathan and

Ganapathy 2002) and ultimately, the prices they are able to charge for their goods and services (e.g. Ba and Pavlou 2002, Gregg and Walczak 2008). One limitation of these and other investigationsof UWI outcomes is that the terms assigned to many UWI constructs and variables are not used consistently.

In mature disciplines, such as the biomedical research field, formal nomenclatures commonly result from suggestions arrived at by governing professional bodies (Abe 1962), or through iterative discourse in the peer-reviewed literature (O'Carroll et al. 1996, Silverman et al. 2007a, Silverman et al. 2007b). To initiate a future dialogue, this article pursues the later peer-reviewed approach.

High quality systematic reviews often seek to aggregate the results of empirical studies that have examined well-defined and carefully crafted constructs and associated variables (Hasley et al., 2008, Hulley, Cummings, Browner, Grady, Hearst, and Newman, 2001).The primary objective of this article, therefore, is to initiate a discussion of the UWI nomenclature by taking the first step forward -- to describe the variations of how UWI outcomes have been represented in the historical literature and identify the main outcomes of UWIs.

Specifically, the goals of this study are:
- Identify the historical terms used in the peer-reviewed UWI literature over the past decade to describe UWI outcomes in the literature..
- Based on literature review findings of emerging patterns identified, catalog a set of UWI outcomes that are mutually exclusive and exhaustive – representing performance metrics that may assess the success of the B2C e-tail transactions studied.
- Within this set of UWI outcomes, define the key terms in a manner to eliminate overlap (e.g., type 1 irregularities).
- Clarify UWI elements such as to assure only independent constructs are included as outcomes (e.g., differentiate moderating variables associated with type 2 irregularities).
- Briefly summarize the UWI interrelationships among outcomes that have been reported in the literature.

Although a well-defined nomenclature is a fundamental component on which to build a classification schema, this investigation does not propose methods of measuring UWI outcomes, nor an unambiguous, comprehensive, and ordered model of all possible UWI outcomes, such as would be required for a classification scheme (Silverman 2006). Rather, by examining word and phrase counts to identify prominent constructs, and then examining the literature to identify the relationships between these constructs, the authors hope to identify the constructs, variables, and elements that are most commonly studied and which have proven to be the most significant to understanding UWIs.

The rest of this paper is organized as follows: in the next section, the strategy used to perform the systematic review and the nomenclature development process are described. In the following section, definitions and descriptions of central UWI outcomes are presented. The next section reviews past studies that have investigated the relationships between UWI outcomes. The article concludes by discussing its limitations, implications, and future opportunities for research.

Nomenclature development

One of the primary goals of this study is to identify a set of high-level or "first-order" UWI outcome constructs. Towards this objective, a systematic review of the literature was

performed in order to identify the prevalence of common terms that have been used to describe the consequents of UWIs in the peer-reviewed literature.

To identify possibly relevant articles, we followed the methodology suggested by Webster and Watson (2002), which is briefly summarized in Appendix J, Figure 2.

The abstracts of peer-reviewed articles published between January 1996 and October 2008 in the journals Management Information Systems Quarterly, Information Systems Research, the Journal of Management Information Systems, the International Journal of Electronic Commerce, Electronic Markets, Information & Management, the Journal of Human-Computer Interactions, the Journal of Marketing, the Journal of Consumer Research, the Journal of Marketing Research, the Journal of Psychology and Marketing, and the Journal of Interactive Marketing were reviewed. These journals were selected because of their recognized quality and the significant attention they have devoted to UWI research articles in the past. Relevant articles were printed and read, and the bibliographies of relevant articles were searched for additional articles. Finally, databases were used to perform "backward" and "forward" searches to identify relevant articles that had contributed to or expanded upon key articles. To be included in the review, articles had to be published in peer-reviewed journals, and UWI outcomes had to be a major focus of investigation in the article. Because the goal of this study was to explore a broad range of relatively loosely defined terms and constructs, rather than to provide definitive empirical analysis and answers, the inclusion criteria for this review were more relaxed than those of a review that would seek definitive/conclusive empirical answers. Although the authors did not attempt to formally assess or report the quality of the studies that were examined, studies that did not focus on the outcomes of user interactions with transaction-oriented B2C websites, case studies, articles published in abstract form only, opinion papers, theoretical models that lacked empirical evidence, studies that failed to report sample sizes or did not report significant sample sizes ($n < 25$), studies that did not report statistical analysis of their findings, and articles that focused on users' general intention to engage in internet shopping (e.g., Shih 2004) or their use or intention to use the Web medium (as opposed to individual, specific websites) were excluded from the review.

The database and reference searches returned approximately 1,800 unique articles. Review of the abstracts of these articles revealed 602 articles that were potentially relevant to the UWI domain. A full review of the 602 articles resulted in a total of 144 articles that were selected to be analyzed as a part of the systematic review. The systematic review process identified 323 unique terms that had been used to name UWI outcomes. The terms recorded were those used in model diagrams, lists, or the body of the literature itself.

Identifying High-level Constructs

Having identified the terms that had been most commonly used to name UWI outcomes in the literature, we sought to identify the influential "first order" constructs that have been consistently reported and researched. Towards this end, a "word map" of the words and phrases that compose the outcomes was created. In the first column of the word map, each unique verb, noun, adjective, and adverb that was used in an outcome name was listed. A total of 280 unique words were found. In the second column, the phrase that each word was included in was listed. The authors' assessments found 622 unique phrases. A third column kept a count of the number of papers that measured each specific phrase. Example entries from the word map (for the words "privacy" and "risk") are shown in Appendix J, Table 1.

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Once the word map was created, the authors assumed that the frequency with which a word or phrase (and related words and phrases) has been studied and reported within the literature is a good indication of how important it has been to the UWI body of knowledge. Clearly, the authors do not mean to imply that in every instance a word or phrase that appears frequently is of more significance than a word or phrase that would appear only once. However, when the word map was examined, the "clusters" created by several words or phrases (or highly related words and phrases) did imply that they might be candidates for consideration as first-order constructs. By simply ranking the counts of the words, the authors found that relatively few sets of words, phrases, and their synonyms are significantly more common than others. Author rankings indicated that only 108 of the 622 phrases were used more than once to name UWIs, and that only 51of the 622 phrases were used more than twice.

Among the word and phrase clusters, some of the most obvious phrase clusters were those that refer to actual behaviors. A simple examination of the words and phrases (listed in each word map) revealed that the most common and un-ambiguous behaviors are what the authors call "actual purchase behavior", "actual return behavior", and "actual re-purchase behavior". Each of these behaviors are discrete and unambiguously measurable (they either happen or they do not), and the behavior can be easily measured by examining a website server log.

By creating and sorting the word map, the authors were able to identify the most frequent approaches used to name UWI outcomes. The final step was to group words and phrases which are literal or effective synonyms, identify words and phrases which are derivatives of one another, and to describe and differentiate related constructs. Towards this goal, two tasks were performed. First, the authors reviewed the literature with the dual purpose of gaining a fuller understanding of the meanings of the words and phrases in the word map, and simultaneously increasing their understanding of how the constructs listed in the word map are related. By examining the literature to understand the meanings of the most frequently occurring words and phrases in the word map, the authors identified 10 first-order constructs. Their names and general descriptions are listed in table 1, and fuller descriptions and differentiations are given in the following pages of the article.

Based upon the word and phrase definitions encountered in the literature, the authors developed classification criteria for each first-order construct (Appendix J, Table 2).

To determine the reliability of the classification criteria, two authors individually examinedthe papers used to identify the high level constructs. The outcomes of each paper were identified and assigned to one or more of the 10 first-order outcomes according to the definitions and classification guidelines in Table 2. A Cohen's Kappa of 0.847 indicated a very high level of agreement between the author's assessments of the outcomes that were studied in the papers, as well as how the authors assigned those outcomes into the 10 first-order constructs.
Finally, the authors jointly considered each phrase and whether it could be classified into one of the first-order constructs. If the phrase could not be categorized based upon unanimous agreement, it was not classified. However, as Table A-1 in appendixA indicates, a large number of the outcomes listed in the word map were successfully grouped.

Results

The results of the systematic review indicate that a large majority of the outcomes examined in the UWI literature fall within one of ten broad categories of UWI outcomes-

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confirmation/disconfirmation, engagement, trust, perceived risk, perceptions of products and sellers, purchase intention, actual purchase activity, intention to return to the site, actual return visits, and repeat purchases. The confirmation/disconfirmation outcome has both a pre-purchase outcome and a post purchase outcome. Perceived web quality and e-service quality are used to measure confirmation/disconfirmation of expectations with respect to a user's interactions with the e-tailer's website and satisfaction is the larger outcome which measures whether the entire transaction experience met the user's expectations.

Trust

Trust has been widely studied across the social sciences, and it has received considerable attention within the e-commerce domain, especially in regards to its effects on customer behavior on the Internet. In the context of e-commerce, there is general agreement that "trust" describes a trustor's willingness to be vulnerable to a trustee in an environment of uncertainty (Gefen et al. 2003). Several studies have found that consumers' concerns about website trustworthiness are a major obstacle to consumers' willingness to share personal information or engage in on-line transactions (Dinev and Hart 2006). Further, studies indicate that websites that establish high levels of trust are able to demand higher prices than websites that elicit comparatively low levels of trust (Ba and Pavlou 2002).

Anticipating the potential advantages of understanding trust and its effects, researchers have dedicated substantial resources to better understanding the trust construct, the various sources of trust, the factors that influence trust, and how trust affects customer behaviors and other UWI outcomes. Figure 3(Appendix J) illustrates the relationships between these constructs, and table B-1 (Appendix B) summarizes these constructs as they appeared in the articles that were included in this review. The summary of trust studies presented in table B-1 (Appendix B) shows that authors often use one or more of the antecedent/moderating variables shown in Appendix J, Figure 4 as proxy variables for trust.

In their 1995 paper, Mayer et al. pointed out that trust, per se, is difficult to measure. For example, a survey question such as "How willing are you to be vulnerable to the company hosting this website?" is probably too existential to elicit meaningful answers from survey participants. Consequently, various trust antecedents are often used as proxy variables for trust. Mayer et al. (1995) identified four central antecedents of trust: ability, benevolence, integrity, and individual trust propensity. "Individual trust propensity", or "disposition to trust" (McKnight et al. 2002), refers to an individual's innate tendency to trust. Each individual's trust propensity is a largely static trait, consistent across context and over time. In contrast, the other trust antecedents are largely dependent upon circumstances and often fluctuate over time. "Perceived ability" refers to a trustor's determination of a trustee's ability to provide the goods or services they offer in a safe and efficient manner, and to provide assistance if required (i.e., for product returns), and to manage competently any personal and financial information the user provides. "Perceived benevolence" describes trustors' perceptions of a trustee's intentions to act in the best interests of both parties and refrain from engaging in opportunistic behaviors. Distinct from benevolence is "integrity", which is a perception that a party will adhere to acceptable principles and abide by the rules of an agreement. Together, ability, benevolence, and integrity are often viewed as a "trusting beliefs" construct. In the literature review section of their 2002 paper, McKnight et al. argued that many of the trust antecedents reported in the peer-reviewed literature fit within the ability-benevolence-integrity trusting beliefs model (although

they use "competence" in place of "ability"). As examples, they point out that competence includes "expertness" and "dynamism"; benevolence includes "good-will" and "responsiveness"; and integrity includes "morality", "credibility", "reliability", and "dependability". Several empirical investigations have supported the internal and discriminant validity of the trusting beliefs model (Casalo et al. 2007, McKnight et al. 2002), as well as the influence trusting beliefs have on purchase intentions and activity (Bart et al. 2005).

A limited set of studies have investigated the "sources of trust" that trustors use as the basis for their trusting beliefs. Commonly cited sources of trust include cognitive processes, structural assurance, situational normality, familiarity, calculativeness, and values (Ba and Pavlou 2002, Gefen et al. 2003, McKnight et al. 2002, McKnight et al. 1998, Wingreen and Gaglione 2005). In comparison to the large numbers of studies that have investigated the relationships between trust signals and trusting beliefs, only a handful of e-commerce studies have empirically investigated how various sources of trust affect trusting beliefs or behaviors. In the context of B2C websites, "trust signals" include the various components of a website's design, information content, or functionality that build or degrade sources of trust, or which otherwise influence trusting beliefs, intentions, or behaviors (Ba and Pavlou 2002, Hong 2006, Schlosser et al. 2006). For B2C practitioners, the effects of trust signals on trust sources, trusting beliefs, and trusting behaviors may be the most interesting aspects of the trust model because, from a practitioner's point of view, trust signals are the most tangible and actionable components of the model.

As Table B-1 (Appendix B) illustrates, trust and its many associated dimensions are largely dependent upon several moderating factors. Past product experience, past internet purchasing experience, product involvement, and several other factors have all been demonstrated to significantly influence trust and trusting behaviors.

Perceived Risk

Risk in the consumer domain has been the subject of serious research for decades. According to Mitchell (1999), consumer risk is "a subjectively-determined expectation of loss; the greater the probability of this loss, the greater the risk thought to exist for an individual." (Mitchell 1999, p. 168). Although its precise definition is still debated (for example, risk defined as "expectation of loss" differs from risk defined as "pay-off times probability"), most definitions of risk that have been applied to the e-ecommerce domain seek to measure consumer perceptions of the potential for loss or of not realizing an expected outcome. Dinev and Hart (2006) call these beliefs about the potential for loss "risk beliefs", and we adopt this term to describe users' beliefs about the magnitude and probability of consequences in situations involving outcome uncertainty.

It is important to note that perceived risk is not the same as actual (or purportedly "objectively measured") risk (Mitchell 1999). In fact, research indicates that retail customers are very poor at assessing actual risk (Grazioli and Jarvenpaa 2000). Ultimately, though, consumer behavior is much more influenced by perceived risk than actual risk, and most UWI investigations that study risk as an outcome focus on consumers' perceptions of risk.

In the consumer domain, risk is posed by several sources, with each source posing various types of risk. Figure 4, in Appendix J, is a model of perceived risk based on a synthesis of research on risk perceptions with respect to B2C transaction oriented websites (Ueltschy et al. 2002, Jarvenpaa et al. 2000, Shih 2004, Miyazaki & Fernandez 2001, Park et al. 2005). Sources

of risk describe the source of the uncertainty (seller, channel, product, etc.), while types of risk describe the types of loss that can be incurred (financial, time, performance, privacy, etc.) Finally, consumer perceptions of risk are invariably tinted by their individual tolerance and preference for risk. Table C-1 (Appendix C) summarizes several studies that have investigated the relationships between risk antecedents, website risk signals, sources of risk, types of risk, and consumer risk beliefs.

Two specific types of risk- privacy and security risk, or, more accurately, customer perceptions of privacy and security risk- have received special attention from e-commerce researchers. In e-commerce, perceived security refers to an individual user's assessment of a website's ability to protect itself from malicious access (e.g., viewing, storing, manipulation) or attack (e.g., a virus or worm) (Flavián&Guinalíu 2006). Perceived privacy describes users' perceptions of their ability to control how their personal information is acquired and used (e.g., sale to third parties, spam, telemarketing, etc.) (Flavián&Guinalíu 2006). Privacy and security have been demonstrated to have especially high importance in the B2C environment (Littler and Melanthiou 2006, Wang et al. 1998). This is largely due to the potential threat of malicious acquisition and use of personal information posed by the Internet environment.

In the e-commerce research domain, it is exceptionally rare for any two studies to consistently measure perceived risk. As with the other complex constructs reviewed in this paper, researchers investigating risk must make trade-offs between model complexity and information-gathering costs.

Trust and Risk – Observations, Issues, and Opportunities

At this point, we wish to emphasize the difference between trust and risk. In the context of e-commerce, trust is a perception about a participant or mechanism in a transaction, while perceived risk is a perception about the consequences of the transaction itself (Mayer et al. 1995). For example, a customer may be willing to transact with a seller in which they do not have a high level of trust as long as the transaction presents relatively low risk (e.g., when buying a previously-owned CD on eBay). However, this same customer may be un-willing to buy from that same seller when perceived financial and performance risk is high (e.g., when buying a used luxury watch). Studies of trust and risk are also complicated because they refer to different "targets", which may include the seller, the medium (the internet) or a specific website. Despite the demonstrated importance of the privacy and security constructs, there is no definitive explanation of the relationships between privacy, security, ability, benevolence, and integrity. In one of the few empirical investigations of the relationships between privacy, security, ability, benevolence, and integrity, Flavián and Guinalíu (2006) compared two models. The first model conceptualized security, privacy, competence (ability), benevolence, and honesty (integrity) as a single trust construct. The second model conceptualized competence, benevolence, and honesty as subconstructs of trust, and separated security and privacy into a separate, distinct construct, which they called "security in private data handling (SHPD)". The results of a confirmatory factor analysis performed by Flavián and Guinalíu favored the 2-factor model. In another recent study, Internet trust loaded separately from perceived privacy risk. Unfortunately, the authors measured competence (ability) and reliability (integrity), but did not measure benevolence. Therefore, they were not able to show a difference between benevolence and privacy (Dinev and Hart 2006). Similarly, a study from the marketing domain measured trust, privacy, and security (Bart et al. 2005). Although they found privacy and security to be significantly different from

trust, one limitation of this study was that they measured trust as a general construct instead of measuring ability, benevolence and integrity separately. The lack of clarity regarding the definitions of, and differences between, security, privacy, and other closely related trust constructs is a major gap in the e-commerce body of knowledge.

Although trust and risk can be theoretically separated, in the context of e-commerce, evidence suggests that trust and risk have a strong interaction effect (Cho 2006, Dinev and Hart 2006, Jarvenpaa et al. 2000, Pavlou and Gefen 2004, van der Heijden et al. 2001). Hence, in practice it is very difficult to study trust independently of risk without threatening the internal validity of the trust measurement (Jarvenpaa et al. 2000, Pavlou 2003, Pavlou and Gefen 2004, van der Heijden et al. 2001). This suggests, whenever possible, future studies of trust should make reasonable efforts to measure and account for perceived risk.

Engagement

Websites often evoke strong emotional and cognitive responses from their users. In this study, we adopt the term "engagement" to describe these various patters of emotions, thoughts, and the user's state of mind following their experiences during and after a UWI.
One of the principle attributes of engagement studied in the literature is "flow". Flow has been studied in traditional business channels, as well the context of athletic and cognitive performance (Jackson 1996, Hawkins & Hoch 1992). In its most basic sense, flow is a latent construct that describes immersion within a task. Empirical studies have demonstrated that individuals experiencing flow exhibit several consistent states including arousal, focused attention, control, telepresence, affect, elaboration, time distortion, and playfulness. Arousal describes a state of heightened awareness and involvement with a task (Novak et al. 2000). Focus of attention refers to the selective allocation of cognitive resources (Huang 2006), accompanied by a heightened differentiation of relevant from irrelevant stimuli. Perceived control describes an individual's perception of having the knowledge, resources and opportunities required to complete their tasks (Huang 2006, Koufaris and Hampton-Sosa 2002). Telepresence refers to a sense of virtually experiencing an environment (Fiore et al. 2005b, Klein 2003). Affect describe the states of pleasure and enjoyment that occur during the state of flow (Novak et al. 2000). Time distortion refers to the fact that individuals may lose track of time while they are experiencing flow (Novak et al. 2003). Playfulness describes creativity and loss of self-judgment or criticalness. Elaboration describes attempts to integrate or compare current circumstances and information to previously encountered experiences or information (Tam and Ho 2005), as well as attempts to cognitively process counterarguments, source derogation, support arguments, or source bolstering. (Yoo and Kim 2005)

Aside from flow, several other constructs have been used to describe and measure how users cognitively engage websites. In order to understand which information is processed and retained by website visitors, investigators sometimes ask study participants to engage in tasks that measure their ability to recall information points that they have been exposed to at a website (Hong 2004, Koernig 2003, Hong, et al. 2004-5) or perform tasks (Day et al. 2006, Galletta et al. 2006, Kamis and Stohr 2006, Webster and Ahuja 2006). Measurements of performance time and accuracy are used to gauge which information website visitors notice and retain, and whether they can recall that information later for decision-making purposes. These cognitive indicators are critical for sellers hoping to understand the information utility of various information points, as well as how customers differentiate and decide between various product offerings. Table D-1

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(Appendix D) summarizes the research that has been conducted related to flow and other cognitive and emotional outcomes.

Perceptions of the Product or Seller

While visiting B2C websites, customers often form opinions and beliefs about the products being sold and the websites' host companies. Although customer perceptions of individual companies and products can be studied independently of the Internet, factors such as the lack of salespeople and the inability to touch or experience merchandise mean that visitors of B2C web stores will develop different perceptions of products and sellers than they would in traditional brick-and-mortar stores (Gounaris and Dimitriadis 2003). For instance, most e-businesses consumers rarely have direct contact with sales people and instead depend on the information in the company's Web interface to form expectations about the company (Culnan and Armstrong 1999), with the perceived quality of the interface acting as a signal to consumers about unobservable product or company quality (Rao et al. 1999, Spence 1973). Table E-1 (Appendix E) lists several product and company perceptions that have been studied in the e-commerce literature including perceived value, product choice, perceived benefit of product acquisition, attitude toward the brand (Chen and Dubinsky 2003, Karson and Fisher 2005a), and perceived product quality.

Confirmation/Disconfirmation

In the context of consumer studies, the terms confirmation and disconfirmation are used to describe the agreement (confirmation) or disagreement (disconfirmation) between a customer's expectations of an interaction with a seller and that customer's perceptions of the seller's actual performance. Consumers experience confirmation or disconfirmation in regard to many aspects of any given interaction with a seller. For example, in the preliminary stages of a user-seller interaction, a customer will experience confirmation/disconfirmation regarding the seller per se, the quality and value of the products or services being considered for purchase, and the utility and aesthetic appeal of the interaction environment (Brady and Cronin 2001). Upon making a purchase, consumers experience confirmation/disconfirmation regarding the purchase transaction itself. Ultimately, consumers experience confirmation/disconfirmation about performance or quality of the product or service they have purchased (Bolton and Drew 1991), as well as the post-purchase service they receive from the seller.

Several constructs have been used to describe confirmation/disconfirmation. Satisfaction is commonly used to describe both specific pre-purchase satisfaction (Gruca 2003), price satisfaction (Gruca 2003), information satisfaction, (Spreng et al. 1996) and general or overall consumer perceptions of confirmation/disconfirmation. Several studies that have investigated satisfaction in the context of UWIs are summarized in Table F-1 (Appendix F).

The satisfaction construct is often insufficiently defined and measured in research studies. Indeed, the term "satisfaction" is so embedded in the consumer research vocabulary that some studies have made the construct a central focus of their research model without offering a formal definition of it (Ballantine 2005, Bansal et al. 2004, Kim and Kim 2006, Ranaweera et al. 2005). For example, in their 2006 paper, Zviran et al. describe several models and definitions reported in studies by other authors, but they do not offer a definition of satisfaction as it applies to their

own study. Other studies have defined satisfaction in terms of itself (e.g., Bansal et al. 2004, Jiang 2002, Yang et al. 2005).

In the early 1980's, the service quality construct gained favor as a way of measuring consumer confirmation/disconfirmation regarding how well sellers facilitated purchase transactions. In their 1988 and 1991 articles, Parasuraman et al. described reliability, tangibles, responsiveness, assurance, and empathy as the major dimensions of service quality. Tangibles describe a seller's physical facilities and the appearance of its stores, equipment, and personnel. Reliability describes a seller's ability to perform a promised service accurately and effectively. Responsiveness describes a seller's willingness and ability to provide customer service. Assurance describes the knowledge and courtesy of employees. Finally, empathy describes caring and individualized attention provided by the firm. Table F-2 (Appendix F) summarizes several studies that have investigated electronic service quality in the context of UWIs. Several proponents of the service quality construct have attempted to provide meaningful differentiations between the service quality and satisfaction constructs. As early proponents of the individuality of service quality, Parasuraman et al. (1988) asserted that "Perceived service quality is a global judgment, or attitude, relating to the superiority of the service, whereas satisfaction is related to a specific transaction" (Parasuraman et al. 1988, p 16).

Other studies have attempted to differentiate between service quality and satisfaction while defining both constructs in terms of confirmation/disconfirmation (see Cronin and Taylor 1992 pg. 57 for a list). For example, Ueltschy et al. (2007) defined perceived service quality as judgments or perceptions of "the difference between expected service and perceived service", and satisfaction as "… the consumer's response to the evaluation of the perceived discrepancy between prior expectations and actual performance… with expectations viewed as what is likely to happen." However, none of these studies clearly explain how service quality is distinct from satisfaction (with the seller's service).

As the Internet evolved and the World Wide Web became a major channel of commerce, researchers began to investigate consumers' reactions to websites. Early studies explored how website quality factors such as design, information content, and functionality influenced user perceptions and behaviors (Huizingh 2000, Liu and Arnett 2000, Zhang and von Dran 2000). In their 2001 paper, Barnes and Vidgen (2001) described and demonstrated the WEBQUAL instrument- a version of Parasuraman et al.'s (1998) SERVQUAL instrument modified to accommodate the unique aspects of the Web environment (e.g., lack of a physical store, lack of tactile contact with products, lack of sales personnel, lower information search costs, etc.) In 2007, one of the most rigorous instruments for measuring website quality (also called WebQual), was published by Loiacono, Watson, and Goodhue (2007). Table F-3 (Appendix F) summarizes several studies that have developed and validated instruments intended to measure website quality.

The website quality construct borrows strongly from the Technology Acceptance Model (Davis 1989) in that one of its major objectives is to measure the "usefulness" and "usability" of websites. However, as Loiacono et al. (2007) point out, website managers and developers require more guidance than usefulness and usability. Hence, perceived website quality models often identify web-specific sub-dimensions of usability and usefulness. For example, perceived website quality models often measure usefulness in terms of information quality, functional quality, information fit-to-task, relative advantage; usefulness is often measured in terms of navigation quality, site organization, etc.

The outcomes of user interactions

An examination of the commonly identified dimensions of electronic service quality and perceived website quality, as well as direct commentary by various authors, demonstrate that electronic service quality and perceived website quality exhibit substantial construct overlap. In their 2002 and 2005 articles, Zeithaml et al. (2002) contend that perceived website quality focuses mainly on helping practitioners improve their websites' design, whereas electronic service quality is a much broader construct that provides a picture of the entire buyer-seller on-line interaction process.

Current research has not clearly established how perceived website quality is theoretically or functionally separate from electronic service quality. If a seller's website is seen as the online equivalent of a retailer's physical store, then it is logical to view perceived website quality as a subdimension of electronic service quality, closely paralleling the Brady and Cronin's (2001) model that viewed "Physical environment quality" as a sub-dimension of service quality.

Many of the models that have been developed to describe and measure electronic service quality and perceived website quality exhibit overlap with other well-established UWI outcome constructs. For example, trust and several dimensions of flow and other cognitive and emotional outcomes are commonly included as dimensions of electronic service quality and perceived website quality models. The primary argument against including trust or flow as part of electronic service quality is that both trust and flow can easily and meaningfully be measured independently from electronic service quality or perceived website quality. Factor analyses reported in studies that have investigated the convergent and discriminant validity of perceived website quality models which included trust have consistently concluded that trust is a stand-alone dimension (Loiacono et al. 2007; Kim and Stoel 2004b). Neither theory nor empirical studies have demonstrated the advantage of measuring trust as part of electronic service quality or perceived website quality, instead of as a separate outcome that may interact with various dimensions of electronic service quality or perceived website quality.

Confirmation and disconfirmation is one of the most widely studied constructs in electronic commerce, yet the definitions, measurements, and results reported in the peer-reviewed literature are obscured by imprecise or otherwise unclear terminology. In order to reduce confusion and enable meaningful inter-study comparisons, future studies should seek to identify clear theoretical and empirically-supported differentiations of the many types of confirmation/disconfirmation outcomes that result from user-website interactions – specifically defining and measuring satisfaction, e-service quality, and website quality sub-dimensions of the confirmation/disconfirmation set of outcomes.

Purchase Intention and Actual Purchase Activity

One of the most meaningful outcomes of UWIs is actual purchase activity. Measuring actual purchase activity allows for direct measurement and comparison (since the outcome is usually measured using dollars or currency), and several studies have been able to study actual purchase transactions. Liang and Lai (2002) investigated the effects of site functionality on actual purchase outcomes by giving subjects a $16 stipend and asking them to purchase two books from specified websites. Vishwanath (2004) found that on-line auction sites that contained a product picture and "reserve" price (lowest bid acceptable by the seller) received significantly higher bids than sites without pictures or reserve prices. Lynch and Ariely (2000) showed that the availability of quality information affected consumer price sensitivity when

experimental subjects were asked to spend their own money to make complete transactions at two competing websites. Similarly, Gregg and Walczak (2008) found that at online auction buyers bid earlier and spent more for identical products sold using a high quality auction listing than those sold using a low quality auction listing.

      While actual purchase activity is extremely informative to researchers and practitioners, asking subjects to actually make a purchase imposes a financial cost upon either the study's subjects or researchers (if the researchers provide their subjects a stipend). As a result, it is common for studies to measure purchase intention, typically operationalized as "intention to transact" (Pavlou 2003), "willingness to purchase", or "interest in purchasing an item from a specific website", as a proxy variable for actual purchase activity (Song and Zahedi 2005, van der Heijden et al. 2001). Table G-1 (Appendix G) describes the various ways that purchase intention has been operationalized in the IS literature and Table G-2 (Appendix G) summarizes the papers where actual purchases were made.

Intention to Return, Repeat visits, Repeat purchases

      Customer retention, (ideally, customers who make repeat purchases) is one of the primary goals of every company (Pine et al. 1995, Reichheld and Sasser 1990). Although repeat purchase activity is an extremely desirable outcome and a focus for most successful businesses, repeat purchase activity is very difficult to capture in an experimental setting, and very few UWI studies have addressed repeat website visits or return purchases. While modern click-tracking and data-mining applications facilitate repeat visit and repeat purchase analysis, secondary data describing visitor click streams does not usually track other outcomes (trust, perceived risk, cognitive/emotional outcomes, etc.) As a result, experimental studies investigating return visits or repeat purchase outcomes often use intention to return or intention to make a repeat purchase, respectively, as proxies for actual return and repeat-purchase behavior (Cao et al. 2005, Douglas and Mills 2005, Liang and Lai 2002, Lin et al. 2005, Palmer 2002). Tables H-1 to H-4 (Appendix H) describe how various studies have measured intention to return to a website, repeat visits, intention to repurchase and repeat purchases.

Synthesis and Discussion

      While it is important to understand individual UWI outcomes, these outcomes do not occur in isolation. As a result, understanding the relationship between the various UWI outcomes has been the focus of many IS studies. Table I-1 (Appendix I) summarizes the relationships between UWI outcomes reported in the literature examined as a part of this review. Figure 5, in Appendix J, provides a high-level overview of the main UWI outcomes and their relationships. It synthesizes relationships between UWI outcomes that are summarized in Appendix I , Table I-1. Some of the relationships shown in Appendix J, Figure 5 have been extensively investigated while others have less support. For example, the relationship between pre-purchase outcomes (perceived website quality, e-service quality, engagement, trust and perceived risk etc.) have been studied extensively (e.g. Eroglu et al. 2003, Flavián et al. 2006, Jin and Park 2006, Lin et al. 2005, Park et al. 2005). However, the relationship between pre-purchase outcomes and actual purchases (e.g. Ba &Pavlou 2002, Gregg &Walczak 2008) and post-purchase outcomes (e.g. Eastlick et al. 2006, Jiang 2002, Rousseau et al. 1998) are only beginning to be investigated.

Appendix I, Table I-1, represents the primary relationships between UWI outcomes identified in the peer-reviewed literature to-date. This diagram demonstrates that the relationships between UWI outcomes are rarely one-to-one or unidirectional, and almost every relationship between two UWI outcomes studied in the literature has been shown to be impacted by at least one other UWI outcome factor. Moreover, the table delineatesgaps and opportunities for future investigation. Several studies have already investigated the incremental explanatory value of various UWI outcomes, and we hope that the results of this study will encourage and facilitate future attempts to investigate the relative importance of various UWI outcomes. We also hope this study will help future researchers to identify and account for factors that might otherwise confound the inter-outcome relationships they investigate.

Appendix I, Table I-1, also highlights areas where future research may be needed to clarify the relationships between UWI outcomes. For example, the relationship between trust and risk has not been explored extensively in the UWI literature and the results of the studies that have been conducted have been inconclusive. This suggests that in-depth studies of the relationships between trust and risk may be some of the most meaningful and actionable opportunities for researchers to inform B2C e-commerce practice.

One of the largest gaps in prior research highlighted in Appendix I, Table I-1, is the lack of research on actual behaviors versus intended behaviors. Ideally, future research should capture actual purchase behavior and repeat visit behavior in comparison to purchase intentions and intentions to repeat visit sites to provide more realistic insights into UWI outcomes. In the realm of IS research, the main barriers to obtaining measurements of purchase behaviors in experimental environments are more likely the limited financial resources of study participants and researchers rather than the difficulties of operationalizing and measuring individual purchase activity. Despite these and other obstacles, the practical importance of understanding why customers make (or fail to make) purchases seems to guarantee that UWI outcomes will continue to be a central focus of e-commerce research.

IMPLICATIONS FOR THEORY, PRACTICE, AND EDUCATION

The consistent use of a well-formed nomenclature can help reduce confusion associated with the occurrence of multiple similar terms with substantive overlap conceptually, facilitate construct definition and measurement, and enable readers to make "apples to apples" comparisons between research study findings. In the context of a literature-based conceptual model, this study describes some of the themes that are currently central to UWI outcomes research, and identifies current research areas where building a definitional consensus is needed. Clearly, the UWI outcomes that are the focus of this article do not lend themselves to any one "right" definition or measure, and the authors do not purport to provide a comprehensive "gold standard" nomenclature. Rather, this study represents a first small step towards identifying, defining, and differentiating the primary UWI outcomes. The study describes trends that may represent emerging themes, and identify areas for further research. Although formal discussions of nomenclature are not yet common in the IS field, the authors hope this study will encourage further discussion, exploration, and ultimately clarification of the UWI nomenclature. The fact that UWIs are widely studied beyond IS (most notably, in the fields of marketing and consumer psychology) means that efforts to clarify the UWI nomenclature will have an influence well beyond the IS field.

Although not conclusive, the authors hope that the summaries provided in this review will help e-commerce researchers identify the various constructs and variables which are relevant to their research questions, as well as the factors that might confound their research results. By prudently accounting for likely confounds, researchers can greatly increase the internal, external, and nomological validity of their studies. This review may also be useful to e-commerce practitioners who have been confused by the nomenclature irregularities that they may have encountered in the UWI literature.

The results of this study demonstrate that every author can choose to actively contribute to the advancement of a well-formed nomenclature by following two simple guidelines. First, authors must provide sufficiently clear and precise definitions of terms, especially those central to the discussion at

hand. Too often, seemingly ubiquitous terms such as trust, risk, satisfaction, quality, value, etc., are insufficiently formed within individual studies. Even the simplest attempts to clarify concept definitions and scope can greatly enhance the quality of any report. Second, authors should make every attempt to theoretically and operationally recognize and maintain the independence of constructs that have demonstrated clear theoretical and empirically supported construct independence. Too often, well-established independent constructs (i.e., trust, risk, engagement) are partly or wholly included as sub-dimensions of constructs because they are shown to influence a latent construct when, in fact, the independent construct is quite probably best conceptualized and measured as a moderator. In order to avoid construct over-lap, constructs that have demonstrated high internal validity and significant explanatory and predictive value should not be treated as sub-dimensions of another higher-level construct unless the established construct is empirically demonstrated to be a sub-dimension of the super-construct, rather than a moderating variable interacting with the super-construct.

Finally, there are tremendous potential advantages that a standardized UWI terminology can offer during literature- and knowledge-search efforts. Current database-enabled literature searches are often imprecise, retrieving a large number of irrelevant articles, while at the same time over-looking relevant ones. In the future, search algorithms capable of executing search instructions such as "find all studies published after 1995 in peer-reviewed journals which examine the antecedents of user-website interactions" may be extremely productive, but only if study authors, literature seekers, and literature database managers use a common nomenclature. This includes differentiating terms from any terms with similar meaning, and acknowledging any terms that have the same effective meaning as the terms they select.

Continued efforts towards developing a semantically precise, meaningful nomenclature should help the UWI domain continue to mature by reducing semantic confusion and enabling meaningful inter-study comparison and conflation. Whenever investigators deviate from accepted nomenclature, they should explain why they have done so, and explain how the terms differ sufficiently to justify their use.

LIMITATIONS AND FURTHER RESEARCH

This research has identified a number of gaps in our current understanding of UWI outcomes. For example, the relationship between intention to return and repeat purchase activity has not yet been studied by IS researchers. Since much of the IS research conducted to date uses intentions as a proxy for purchase behavior, understanding this relationship is especially important. The impact of perceived risk and satisfaction on repeat purchase activity has also not been studied. These are areas where additional studies are needed to better understand UWIs and how they relate to the ultimate goal of transforming visitors into customers.

Other topics warranting additional research are the trust and risk models proposed in this paper. The complete trust and risk models proposed in this article have not been empirically tested. Additional research is needed to test that the relationships suggested by prior trust and risk research hold. Studies are also needed to clarify the definitions of, and differences between, security, privacy, and other constructs closely related to trust. Finally, the focus of this article was limited to a limited set of B2C retail websites- future articles may wish to address other types of sites (service sites, auction sites, sites targeted for mobile devices, etc.)

Although the construct discussions in this article are as comprehensive as we could provide, each UWI outcome is significant and broad enough to justify a separate literature review, as are UWI antecedents and UWIs themselves. Indeed, each dimension of the Zhang and Li (2005) HCI model is of sufficient size and influence to justify further literature summaries and reviews.

Despite the attention given to UWI outcomes, it is extremely rare for any one study, no matter how well designed and implemented, to provide an authoritative answer to a significant research question. In mature research domains, guidance is based upon bodies of evidence- sets of research studies that have investigated the same (or very closely related) research questions and which together demonstrate the value (internal, construct, external, nomological, and predictive validities) and limitations of a model,

theory, or course of action. According to the Oxford Centre for Evidence-Based Medicine (Oxford Center 2007), high-quality systematic reviews and meta-analyses (meta-analyses are systematic reviews that synthesizes quantitative results), are the most authoritative methods to integrate the results of studies comprising a given body of knowledge, and review articles are commonly published in high quality medical journals. Such review articles typically summarize, compare, and aggregate the results of high-quality studies that have investigated the same research question (Fergusson et al. 2005). Despite their potential to synergize knowledge, systematic reviews are rarely published in information systems journals, even though several review articles in leading IS journals have demonstrated that reviews can provide actionable guidance to IS practitioners and researchers (Chang et al. 2005, Ngai and Wat 2002, Riquelme 2001, Zeithaml et al. 2002).

One explanation for the lack of IS review articles may be that quite often the results of IS studies do not lend themselves to systematic, objective comparison and aggregation because it is rare to find IS studies that have consistently used the same clear definitions, applications of use, and measurements. However, it can be argued that the lack of consistent terminology increases the need for such review articles.

CONCLUSION

Although many high-quality models of individual or selected groups of UWI outcomes (e.g., Loiacono, Watson, and Goodhue 2007, McKnight, Choudhury, and Kacmar 2002) have been proposed and demonstrated in the literature, the results of various studies are still difficult to compare because major constructs are not generally defined or measured consistently. The lack of consistently used definitions and measurements is a problem that inhibits research rigor as well as the efficient, effective interpretation of research results.

The evidence from this study indicates that understanding the antecedents and outcomes of user interactions with B2C websites may be one of the most practical and immediate ways for Web retailers to create sustainable strategic and tactical competitive advantage. Although scores of outcomes have been reported in the literature, the results of this article demonstrate that most outcomes directly represent, or are sub-dimensions of, one of ten primary UWI outcome categories. Although most outcome constructs and sub-dimensions are still not measured consistently enough to enable a systematic review or meta-analysis be performed across studies to summarize results, several high-quality models (and their refinements) have been proposed and demonstrated in the literature. As the ability to describe and explain UWI outcomes continues to expand, practitioners and researchers will continue to be better able to understand the relationships between UWIs and revenue-generating purchase activity.

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Appendix A
The outcomes as assigned to the first-order constructs by the authors

Table A-1 The outcomes assigned to the first-order constructs		
Outcome	**Outcomes measured in the literature(# of papers)**	**Sources**
Trust	Trust(13), Trusting intentions(6), Benevolence(6), Competence(5), Honesty(4), Trustworthiness(3), Institution-based trust(2), Trust in the store(2), Integrity(2), System trust(2), Trust in store(2), Initial trust in the company(2), Trust in community of sellers(1), Internet trust(1), (1), Initial trust(1), Credibility(2), Vendor trust(2), Predictability(2), Credibility(2), Trust in website owner(1), Process-based trust(1), Characteristic-based trust(1), Trusting intentions(1), Overall trust(1), Trust in a specific web business(1), Vendor Trustworthiness(1), Cue-based trust(1), Willingness to provide personal information(2), Trust in the peer recommender(1), Post-purchase trust(1), Assurance perception(1), Result demonstrability(1), Initial trust toward the e-tailer(1), Online initial trust(1), Willingness to disclose information(2), Brand trust(1), Disposition to trust(1), Predictability(2), Trust in oneself(1), Reliability(1), Confidence(1), Technology trustworthiness(1), Distrust(1)	Trifts 2003, Liu & Arnett 2000, Schlosser 2006, Bart et al. 2005, Koufaris& Hampton-Sosa 2004, Jarvenpaa 2000, Pavlou&Gefen 2004, Wingreen&Gaglione 2005, Dinev& Hart 2006, Kim &Benbasat 2006, Everard&Galletta 2005, Stewart 2006, Lim et al. 2006, Liu et al. 2004, Ba &Pavlou 2002, De Wulf et al. 2006, Flavián et al. 2006, Cazier et al. 2006, Yousafzai et al. 2005, Garbarino& Lee 2003, Mcknight et al. 2004, Einwiller 2003, Wang et al. 2004, Smith et al. 2005, Grewal et al. 2004, Pan &Zinkhan 2006, Hampton-Sosa &Koufaris 2005, Yang et al. 2006, Yoon 2002, Casalo et al. 2007, Chen & Barnes 2007, Eastlick et al. 2006, Jin & Park 2006, Faja&Trimi 2006, Ha 2004, Kim &Stoel 2004, Luo et al. 2006, Metzger 2006, Van Dyke et al. 2007, van der Heijden et al. 2001, Pavlou 2003, Wang et al. 2006, McKnight et al. 1998, Suh 2003, Einwiller 2003, Wakefield et al. 2004
Perceived Risk	Perceived risk(11), Privacy(7), Security(4), Risk perception(1), Perceived Internet privacy risk(1), Perceived security risk(1), Concerns about on-line shipping(1), Privacy concerns(2), Personal loss(1), Perceived security control(1), Performance risk(1), Financial risk(1), Transaction risks(1), Perceived security(1), Perceived privacy(1), Internet privacy concerns(1)	Ueltschy et al. 2002, Jarvenpaa et al. 2000, Pavlou and Gefen 2004, Dinev& Hart 2006, Park et al. 2005, Grewal 2003, Chen & Dubinsky 2003, Odom 2002, Koenig 2003, Luo&Seyedian 2003, Huang 2006, van der Heijden et al. 2001, Pavlou 2003, Wang et al. 2006, Schlosser 2006, Bart et al. 2005, Koufaris& Hampton-Sosa 2004, Jarvenpaa et al. 2000, Liu et al. 2004, Biswas&Biswas 2004, Chen & Barnes 2007, Buchanan 2007, Faja&Trimi 2006, Steenkamp&Geyskens 2006, Eastlick et al. 2006, Ha 2004, Van Dyke et al. 2007, Dinev& Hart 2006

Engagement	Entertainment(6), Committment(5), Pleasure(4), Arousal(4), Attention(3), Enjoyment(3), Playfulness(3), Concentration(2), Decision quality (2), Flow(2), Perceived control(2), Decision confidence(2), Efficacy(2), Flow(2), Curiosity(2), Depth of information processing(1), Elaboration(1), Cognitive effort(1), Recall of product information(1), Expectation of a positive outcome(1), User disorientation(1), Engagement(1), Performance(1), Confidence in product selection(1), Commitment(5), Liking(1), Joy(1), Pride(1), Dislike(1), Frustration(1), Fear(1), Domain knowledge(1), Mood(1), Valence of experience(1), Cognitive intensity(1), Cognitive valence(1), Emotional intensity(1), Emotional valence(1), Recall rate(1), Recognition rate(1), Brand recognition(1), Experiential value(1), Unaided recall(1), Situational involvement(1), Enduring involvement(1), Control(1), Attention focus(1), Interest(1), Personal relevance(1), Perceived enjoyment(1), Decision time(1), Decision accuracy(1), Level of arousal(1), Involvement(1), Presence(1), Product knowledge(1), Product interest(1), Perceived fairness judgment(1), Choice confidence(1), Utilitarian experience(1), Cultural congruity(1), Likeability(1), Appropriateness(1), Affect(1), Community building(1), Cognition(1), Affection(1), Conation(1), Hierarchy of affect(1), Consideration set size and quality(1), Degree of confidence(1)	Haubl et al. 2000, Koufaris 2002, Tam & Ho 2005, Hong et al. 2004, Lim et al. 2006, Webster &Ahuja 2006, Vijayasarathy& Jones 2001, De Wulf et al. 2006, Èthier et al. 2006, Kamis&Stohr 2006 , Park et al. 2005, Fiore et al. 2005, Chen et al. 2003, Raney et al. 2003, Yoo& Kim 2005, Karson& Fisher 2005, Koernig 2003, Huang 2006, Hampton-Sosa &Koufaris 2005, Day et al. 2006, Li et al. 2001, Bickart&Shindler 2001, Haws & Bearden 2006, Chernev 2006, Ahn et al. 2005, Eastlick et al. 2006, Jiang 2002, Steenkamp 2006, Luo 2006, Thatcher & George 2004, Tsai & Huang 2007, Huizingh& Hoekstra 2003
Perceptions of the Product or Seller	Product choice(3), Product choice(3), Product choice(3), Attitude toward the product(1), Brand commitment(1), Expected benefits(1), Perceived acquisition value(1), Perceived product value(1), Perceived customer value(1), Attitude toward the product(1), Perceived value(1), Perceived product quality(1), Perceived quality(1), Perceived sacrifice(1)	Lynch &Ariely 2000, Lopes &Galletta 2006, Grewal et al. 2003, Suri et al. 2003, Smith et al. 2005, Fasolo et al. 2006, Teas &Agarwal 2000, Luna 2003, Holzwarth et al. 2006, Xai& Monroe 2004

Confirmation/ Disconfirmation	Satisfaction(14), Attitude toward the website(9), Perceived ease of use(9), Perceived usefulness(7), Entertainment(6), Information quality(5), Ease of use(4), Attitude(4), Playfulness(3), Overall satisfaction(3), Website quality(3),Website Satisfaction(2), Confirmation(2), Overall Website satisfaction(2), Overall Web Site Satisfaction(2), Information quality(2), Usefulness(2), Information Fit-to-task(2), e-satisfaction(2), Willingness to recommend the site(2), Attractiveness(1), Navigation difficulty(1), Informativeness(1), Entertainment experience(1), Navigation experience(1), Shopping enjoymenta(1), Perceived usefulness(1), Perceived ease of use(1), Perceived usability(1), Usability(1), Pleasure(1), Perceived playfulness(1), Website quality(1), Perceived usefulness(1), Perceived ease of use(1), Attitude toward web site delay(1), Attitude toward the page(1), Relevant information(1), Perceived site quality(1), Online store image(1), Claim and non-claim components of web-site attitude(1), Telepresence(1), Perceived quality(1), Website appeal(1), Perceived amount of information(1), Product information(1), Customer support(1), Currency(1), Customer attitude toward a retail site(1), Entertaining(1), Informative(1), Tailored information(1), Online completeness(1), Relative advantage(1), Ease of understanding(1), Intuitive operations(1), Response time(1), Visual appeal(1), Innovativeness(1), Emotional appeal(1), Consistent image(1), Information availability(1), Product selection(1), Customer service(1), Price(1), Transaction duration(1), Shipping and handling(1), Web appearance(1), Transactional capability(1), Functionality, Structure(1), System quality(1), Service quality(1), Aesthetics(1), Customization(1), Perceived service quality(1), Perceived privacy empowerment(1), Satisfaction with the e-commerce channel(1), User attitude about the site(1),User satisfaction(1), Pre-sale and post-sale e-satisfaction(1), Post-recovery satisfaction(1), Satisfaction with price(1), Price satisfaction(1), Price fairness(1), Perceived satisfaction(1), Satisfaction with the ordering process(1), Satisfaction with fulfillment process(1), Purchase satisfaction(1), Web site satisfaction(1), Likelihood to recommend(1), Dissatisfaction(1), Post-purchase complaint behavior(1), At check-out satisfaction(1), After delivery satisfaction(1),On-line satisfaction(1), Service encounter satisfaction(1), Overall customer satisfaction(1), Anticipated satisfaction(1), Overall Design quality of web sites(1) , Financial and time savings(1), Website value(1)	Liu & Arnett 2000, Lin et al. 2005, Kang & Kim 2005, Zviran et al. 2006, Bart et al. 2005, Èthier et al. 2006, Koufaris& Hampton-Sosa 2004, Kohli et al. 2004, Koufaris 2002, Agarwal&Venkatesh 2002, Galletta 2006, Everard&Galletta 2005, Liu et al. 2004, Negash et al. 2003, Benbunan-Fich 2001, Chen et al. 2002, De Wulf et al. 2006, Flavián et al. 2006, Kamis&Stohr 2006, Karson& Fisher 2005, Martin et al. 2005, Rose et al. 2005, Chen & Dubinsky 2003, McKnight et al. 2004, Muller &Chandon 2003, Heijden&Verhagen 2004, Posselt& Gerstner 2005, Karson& Fisher 2005, Fiore et al. 2005, Holloway et al. 2000, Xia & Monroe 2004, Grewal et al. 2004, Eroglu et al. 2003, Koernig 2003, Szymanski &Hise 2000, Luo&Seyedian 2003, Cao et al. 2003, Hampton-Sosa &Koufaris 2005, Haws & Bearden 2006, Luna et al. 2003, Ahn et al. 2007, Ballantine 2005, Bansal et al. 2004, Elliot & Speck 2005, Holzwarth et al. 2006, Ha 2004, Loiacono et al. 2007, Mithas et al. 2007, Rodgers et al. 2005, Thatcher & George 2004, Tsai & Huang 2007, Van Dyke 2007, van der Heijden et al. 2001, Pavlou 2003
Purchase Intention	Purchase intention(14), Intention to purchase(4), Willingness to buy(3), Intention to use the web site(3), Attitude toward shopping at the store(2), Intention to transact(2), Transaction intentions(1), Willingness to provide personal information), Willingness to pay(1), Price the subject indicated they were willing to pay(1), Likelihood to use the virtual store(1), Willingness to purchase(1), Intention to buy(1), Willingness to purchase from the online retailer(1), Avoidance/approach(1), Patronage intention(1), Vendor preference(1), Willingness to pay for customization(1), Behavioral intent(1)	TriftsHaubl 2003, Odom & Saunders 2002, Song &Zahedi 2005, Bart et al. 2005, Jarvenpaa et al. 2000, Pavlou&Gefen 2004, Dinev& Hart 2006, Everard&Galletta 2005, Lim et al. 2006, Lopes &Galletta 2006, Ba &Pavlou 2002, Gupta et al. 2001, Chen et al. 2002, Dinev& Hart 2005, Park et al. 2005, Fiore et al. 2005, Karson& Fisher 2005, Martin et al. 2005, Chen & Dubinsky 2003, Van der Heijden&Verhagen 2004, Raney et al. 2003, Fiore et al. 2005, Xia & Monroe 2004, Eroglu et al. 2003, Koernig 2003, Hampton-Sosa &Koufaris 2005, Chu et al. 2005, Bickart& Schindler 2001, Ahn et al. 2007, Chen & Barnes 2007, Eastlick et al. 2006, Holzwarth et al. 2006, Jiang 2002, Faja&Trimi 2006, Ha 2004, Van der Heijden et al. 2001, Pavlou 2003, Schlosser 2006, Lee & Lin 2005

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Actual Purchase Activity	Actual transaction behavior(2), Purchase option(1), Final bid price at on-line auction(1), Conversion(1), Self-reported purchase behavior(1), Likelihood to make unplanned purchases(1), Actual transaction behavior(1), Purchase behavior(1), Actual purchase behavior(2), Prices paid for auction items(1), On-line purchases(1), On-line purchases(1), Purchase behavior(1), Bid and purchase price(1), Conversion rate(1), Actual transaction(1), Actual Website buying frequency(1), Purchase activity(1)	Lynch &Ariely 2000, Haubl&Trifts 2000, Ballou&Pazer 1995, Bart et al. 2005, Pavlou&Gefen 2004, Koufaris 2002, Agarwal&Venkatesh 2002, Tam & Ho 2005, Lim et al. 2006, Ba &Pavlou 2002, DiClemente&Hantula 2003, Standifird et al. 2004, Shermon&Deighton 2001, Ariely& Simonson 2003, Bansal et al. 2004, Pavlou 2003, Wang et al. 2006
Intention to Return	Loyalty(5), Commitment(5), Intention to return(3), Willingness to recommend the website(2), Intention to visit again(1), Future intention to use(1), Intention to re-use the site(1), Willingness to shop at e-retailer web site again(1), Book-marking(1), Willingness to patronize the online retailer(1), Intended loyalty(1), Revisit intention(1), Stickiness(1), On-line loyalty(1), Intention to revisit the website(1), Webstie loyalty(1), Behavioral intention to use the site(1), Willingness to patronize the on-line store(1)	Lynch &Ariely 2000, Lin et al. 2005, Koufaris 2002, Galletta et al. 2006, Liu et al. 2004, Webster &Ahuja 2006, Flavián et al. 2006, Fiore et al. 2005, Wang et al. 2004, Fiore et al. 2005, Koernig 2003, Bansal et al. 2004, Casalo et al. 2007, Eastlick et al. 2006, Jiang &Rosenbloom 2005, Jiang 2002, Jin & Park 2006, Ha 2004, Ramasubbu et al. 2007, Rodgers et al. 2005, Rousseau et al. 1998, Supphellen&Nysveen 2001, Thatcher & George 2004, Wang et al. 2006, Suh& Han 2003
Repeat Visits	Actual return visits to a virtual store over a given period of time(1)	Chen et al. 2002
Repeat Purchases	Repurchase intentions(6), Likelihood to repurchase(1),	Karson& Fisher 2005, Holloway et al. 2000, Grewal et al. 2004, Tsai & Huang 2007, Liu et al. 2004, Wang et al. 2006, Lee & Lin 2006

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Appendix B
Literature Related to Trust

Table B-1. Operationalizations of Trust.				
Study	**Antecedent Factors**	**Trust Signals**	**Trusting Beliefs**	**Trusting Intentions**
Ba &Pavlou 2002	Price	Customer feedback mechanisms	Credibility; Benevolence	Price paid for auction item
Bart et al. 2005		Navigation and presentation; Brand strength; Advice; Entertainment	Trustworthiness	
Belanger et al. 2002		Security features; Security statements; Third party privacy seals; Third party security seals	Trustworthiness	
Casalo et al. 2007	Reputation, Satisfaction		Benevolence; Competence, Honesty	Commitment to the website
Chellappa, 1997	Perceived privacy of transaction; Perceived security of transaction		Trustworthiness	
Dinev& Hart 2006	Perceived internet privacy risk, Personal internet interest		Internet trust	Willingness to provide personal information
Eastlick et al. 2006	Privacy concerns	Information Choice Strategy (Opt-in or opt-out of the site collecting personal data)	Trustworthiness (fairness, honesty, sincerity)	Commitment to the website
Einwiller 2003	Trust in oneself	Vendor reputation; System reputation	Vendor trust (competent, consistent, fulfills needs, honest, reliable); System trust (Safe, risky, uneasy feelings)	Trusting Intention (Probability of buying in the future)
Flavián&Guinalíu 2006	Perceived usefulness; Perc. ease-of-use; Enjoyment of technology; Company size & reputation; Disposition to trust; Perceived privacy and security	Willingness to customize; Interaction	Online initial trust	Purchase intention
Flavián et al. 2006	Website usability		Honesty; Benevolence; Competence	Loyalty
Garbarino& Lee 2003	Dynamic pricing		Overall trust; Benevolence; Competence	
Grewal et al. 2004		Customer-Identification and Purchase Timing techniques	Integrity; Credibility, Reliability	Purchase Intention

Ha 2004	Security, privacy, word-of-mouth, good on-line experience	Brand name; Quality of information	Brand trust	Brand commitment
Hampton-Sosa &Koufaris 2005	Web site appeal; Web site usability		Initial trust in the company	
Jarvenpaa et al. 2000	Perceived store size; Perceived store reputation		Trustworthiness	Attitude toward the store; Willingness to buy
Jin & Park 2006	Website design, Order fulfillment, Communication, Merchandising, Security/Privacy, Promotion	Merchandising; Promotion	Trust	Loyalty
Kim &Benbasat 2006		Trust-assuring arguments (claim, data, backing arguments)	Perceived trustworthiness	
Koufaris& Hampton-Sosa 2004	Perceived usefulness; Perc. ease-of-use; Perc. security control	Perceived willingness to customize; Perceived reputation	Initial trust in the company	
Lim et al. 2006		Portal affiliation; Customer endorsement	Integrity; Benevolence	Willingness to purchase from the store; Actual purchase behavior
Liu et al. 2004		Privacy factors (notice, access, choice, security)	Notice trust, access trust, choice trust, security trust	Behavioral intentions (Purchase, re-visit, positive comment, recommend)
Lurie 2004		Website design investment; Online privacy and security statement	Ability, Benevolence, Integrity	Purchase intention
Malhotra et al. 2004	Internet privacy concerns		Trusting beliefs	Behavioral intention
McKnight et al. 2002		Website design; Security and privacy statements	Ability, Benevolence, Integrity	Purchase intention
Pan &Zinkhan 2006	Risk averseness; Perceived privacy risk	Privacy disclosure statements	Trustworthiness; Privacy protection; Customer protection	
Pavlou&Gefen 2004	Trust propensity; Sellers performance; Past positive experiences	Feedback mechanisms; Escrow services; Credit card guarantees	Trust in Community of sellers	Transaction intentions; Actual transaction behavior
Pavlou 2003	Reputation; Satisfaction with past transactions; Web shopping frequency		Trustworthiness	Intention to transact
Roy et al. 2001	Trust propensity	Perceived web quality (usability)	Ability, Benevolence, Integrity	
Schlosser et al. 2006		Perceived investment in seller website	Trusting beliefs (Ability, Benevolence, Integrity)	Purchase Intention

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Smith et al. 2005	Shopping goals	Peer recommendations		Perceived influence of the recommender; Product choice
van der Heijden et al. 2001	Perceived store size; Perceived store reputation	Perceived reputation	Trustworthiness	Attitude toward the store; Willingness to buy
Van Dyke et al. 2007	Privacy concerns, Familiarity	Perceived privacy empowerment	Trust	
Wang et al. 2004		Trustworthiness cues (Seals of approval, Privacy/Security disclosures, Return policy, Awards from neutral sources)		Willingness to provide personal information
Wingreen&Baglione 2005	Initial trust; Familiarity with Internet shopping	Positive information about the online vendor	Vendor trustworthiness; Technology trustworthiness	
Xia & Monroe 2004		Price partitioning	Perceived Trustworthiness	Purchase Intention
Yousafzai et al. 2005		Link to privacy/security policy; Guarantee; Statement; Third-party sign; Customer testimonials; Brand identification	Ability, Benevolence, Integrity	Trusting Intention

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Appendix C
Literature Related to Perceived Risk

Table C-1. Operationalizations of Perceived Risk				
Study	**Risk Signal**	**Risk Source**	**Risk Type**	**Risk Beliefs**
Biswas&Biswas 2004	Retailer reputation; Perceived advertising expense; Warranties		Perceived Performance, Financial, and Transaction Risks	
Chen & Dubinsky 2003	Product quality; Product price	Product risk	Perceived product risk	Perceived risk
Dinev& Hart 2006		Internet privacy risk		Internet privacy concerns
Forsythe 2006			Financial risk; Product risk; Time risk; Convenience risk	Perceived risk
Jarvenpaa& Todd, 1997			Privacy risk	Perceived risk
Jarvenpaa et al. 2000		Product risk; Retailer risk		Perceived risk
Malhotra et al. 2004			Privacy (Information collection, control, awareness)	
Mauldin &Arunachalam 2002	Third party assurances		Security risk; Product/retailer risk; Information risk	
Miyazaki & Fernandez 2001			Privacy risk	Perceived risk
Park et al. 2005	Product presentation (Image size, image animation)			Perceived risk
Pavlou&Gefen 2004			Perceived risk from the community to sellers	
Pavlou 2003		Environment; Seller	Environmental risk; Behavioral risk (Economic risk; Personal risk; Seller risk; Privacy risk	
Pires et al. 2004			Financial risk; Social risk; Performance risk; Psychological risk; Physical risk; Convenience risk	
Schlosser et al. 2006	Privacy and security statements		Financial risk; Privacy risk; Relative risk (on-line vs. offline shopping)	Perceived risk
van der Heijden et al. 2001				Perceived risk

Appendix D
Literature Related to Engagement

Table D-1 Engagement Outcomes			
Study	**Antecedents**	**Engagement**	**Summary**
Novak, Hoffman,& Yung 2000	Website interaction speed; Importance (invovlement)	Skill/Control; Challenge/Arousal; Focused Attention; Telepresence; Flow	Skill/Control, Challenge/Arousal, Focused Attention, and Telepresence all correlated with a general measure of Flow; the effect of flow on exploratory behavior was equivovca.
Koufaris 2002	Product involvement; Web skills; Value-added search mechanisms; Challenges	Perceived Control; Shopping Enjoyment; Concentration	All antecedents were correlated with Shopping Enjoyment and Concentration, but not Perceived Control; Shopping Enjoyment was correlated with Intention to Return
Huizing& Hoekstra 2003	Invovlement; Experience; Intensity of use	Flow	Flow was significantly correlated with each stage of the hierarchy of effects model (attention, cognition, affection, and conation)
Eroglu, Machleit& Davis 2003	Site atmosphere	Pleasure; Arousal; Attitude	Site atmosphere was positively associated with Pleasure; Pleasure and Arousal both influenced Satisfaction and Approach/Avoidance behavior, but only Pleasure (not Arousal) was associated with Attitude
Ahn, Ryu&Han 2007	System, Information, and Service Quality; Perceived ease of use	Playfulness (Concentration, Enjoyment, Curiosity)	Information quality, Service quality, and perceived ease of use were positively associated with Playfulness; Playfulness was positively associated with Attitude and Behavioral intention to use
Fiore, Jin & Kim 2005	Website interactivity	Arousal, Pleasure	Website interactivity was positively associated with Arousal and Pleasure; Arousal was positively associated with Willingness to purchase and Willingness to Patronize; Pleasure was positively associated with Global attitude and Willingness to Patronize
Hong 2004	Item presentation (Flashing or non-flashing)	Attention, Item recall	Overall, flashed items received more attention than non-flashed items, but this did not lead to better recall.
Koernig 2003	Service description	Attribute recall (attention)	More complete (tangible) service descriptions were positively associated with attribute recall
Fiore, Kim & Lee 2005	Image interactivity technology (3-D, customizable images)	Telepresence, Experiential value (Excitement, curiosity)	The level of Image interactivity technology was positively associated with Telepresence and Experiential value; Telepresence was positively associated with experiential value, attitude toward the retailer, willingness to purchase, and willingness to patronize; Experiential value was positvely associated with attitude toward the retailer and willingness to patronize

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Webster &Ahuja 2006	Navigation systems	Perceived disorientation; Engagement; User performance	Enhanced navigation systems were associated with less disorientation and increased task performance; Disorientation was negatively associated with engagement; High engagement and low disorientation were positively associated with intention to use the website
Hong, Thong & Tam 2004	Search aids	Confidence in product selection	Using Internet search aids was associated with higher levels of confidence in product selection
Jiang &Benbasat 2004	Information and functional control	Control, Perceived diagnosticity, Flow	Information and functional control were positively associated with perceived diagnosticity and flow
Kamis&Stohr 2006	Search effort, Domain knowledge	Decision quality, Decision confidence	Search effort and domain knowledge were positively associated with Decision quality; Decision quality was positively associated with Decision confidence; Decision confidence was positively associated with perceived ease of use, but not perceived usefulness
Hassanein& Head 2005	Social presence	Enjoyment	Social presence was positively associated with Enjoyment; Enjoyment was positively associated with Attitude toward purchasing from the website
Park, Lennon &Stoel 2005	Product presentation (Image size, image animation)	Mood	Image animation was positively associated with Mood; Mood was positively associated with Purchase Intention and negatively associated with Perceived Risk
Klein 2003	Media richness	Control, Telepresence	Media richness and user control were positively associated with Telepresence
Pires, Stanton &Eckford 2004	Risk	Involvement	Perceived risk of purchasing online was associated with required purchase decision involvement
Tam & Ho 2005	Recommendation set size, Sorting cue, Individual need for cognition/structure	Attention, Elaboration	Content with sorting cues were more likely to attract attention and induce elaboration; Recommendation set size did influence choice outcome
Steenkamp&Geyskens 2006	Country characteristics (Rule of law, National identify, Individualism)	Emotional experience (Pleasure, Arousal)	Pleasure was positively associated with perceived value
Ethier, Hadaya, Talbot & Jean Cadieux 2006	Cognitive appraisal of situational state (Evaluation of the online shopping episode)	Emotions (Liking, joy, pride, dislike, frustration, fear)	Cognitive appraisal of situational state was positively associated with liking, joy, pride, dislike, and frustration.
Jiang 2002	Willingness to pay for online customization	Choice confidence	Consumer willingness to pay for online customization was positively associated with choice confidence.

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Appendix E
Literature Related to Perceptions of Product or Company

Table E-1: Perceptions of Product or Company	
Study	**Perceptions of Product or Company**
Chen & Dubinsky 2003	Perceived customer value
Fasolo et al. 2006	Product choice/preference
Grewal et al. 2003	Price expectations; Perceived acquisition value
Holzwarth et al. 2006	Attitude toward the product
Karson& Fisher 2005a	Attitude toward the brand
Karson& Fisher 2005b	Attitude toward the brand
Kohli et al. 2004	Financial and time savings
Lopes &Galletta 2006	Expected benefits
Luna et al. 2003	Attitude toward the product
Luo&Seyedian 2003-4	Site value
Lynch &Ariely 2000	Price sensitivity; Perceived product quality; Product choice/preference
Smith et al. 2005	Product choice/preference
Suri et al. 2003	Perceived product value
Teas &Agarwal 2000	Perceived value; Perceived quality; Perceived sacrifice
Xia & Monroe 2004	Perceived value

Appendix F
Literature Related to Confirmation/Disconfirmation

Table F-1. Overview of Satisfaction in the B2C Literature			
Study	**Definition of satisfaction**	**Operationalization of satisfaction**	**Type of satisfaction considered**
Abdinnour-Helm et al. 2005	Satisfaction with a web site, per se, is not defined.	Satisfaction with a web site (Content, Accuracy, Format, Ease of Use, Timeliness)	
Ballantine 2005	Satisfaction, per se, was not defined	One question measured on a likert scale anchored on satisfied-unsatisfied.	Level of satisfaction with the interface provide by an online retail store
Bansal et al. 2004	website satisfaction was defined as "The mean level of overall satisfaction with a site…" p. 294	One question gathered from quarterly website customer satisfaction data provided by Nielsen/NetRatings	Overall satisfaction
Cao &Gruca 2004	Satisfaction, per se, was not defined	Consumer ratings of e-tailer service provided by BizRate.	Pre-purchase satisfaction (Ease of use, product selection, product information, website performance); Post-purchase satisfaction (On-time delivery, product representation, order tracking, customer support)
Cao et al. 2003-4	The authors discuss many different aspects of buyer-seller interactions that consumers may judge as satisfactory or unsatisfactory, butt they do not define satisfaction, per se.	For each of the NN aspects of the purchase being assessed, customer respondents were asked "How satisfied are you wit each of the following aspects of this on-line purchase?" Respondents responded using a 10-point scale rooted on "Not at all satisfied" or "Highly satisfied".	Price satisfaction (satisfaction with product price, satisfaction with shipping/ handling costs); Satisfaction with ordering process (ease of ordering, product selection, product information, & website performance); Satisfaction with fulfillment process (on-time delivery, order tracking, product representation, customer support)
Cho et al. 2002	Dissatisfaction, per se, is not defined.	Dissatisfaction was measured by 3 Likert scale items anchored on "Strongly dissatisfied" and "Not dissatisfied at all"	Dissatisfaction
Flavián et al. 2006	Satisfaction is defined as "an affective consumer condition that results from a global evaluation of all the aspects that make up the consumer relationship." (p. 4)	Overall satisfaction was measured by four 7-point Likert scale items	
Holland & Baker 2001	Satisfaction with the retailer, per se, is not defined.	Satisfaction with the retailer was measured by four 7-point Likert scale items	Satisfaction with the retailer.

Holloway et al. 2000	Post-recovery satisfaction was defined as "the degree to which a customer is satisfied with a service firm's transaction-specific service recovery effort following a service failure" (the authors quote the definition in Boshoff, 1999, p. 237)	Post recovery satisfaction was measured by 3 items, each measured by a seven-point multi-item reflective scale	Post-recovery satisfaction
Jiang &Rosenbloom 2005	At-checkout satisfaction is defined as "... customer ratings... of e-retailing services on the shopping convenience dimension." (p. 157); After-delivery satisfaction is defined as "customer ratings ... of e-retailing services on the fulfillment reliability dimension." (p. 158); Overall satisfaction is defined as "… the general attitude toward the e-tailing service provider after the transaction is complete." (p. 153)	At-checkout satisfaction, after delivery satisfaction, and overall satisfaction were measured by customer responses to questions at the bizrate website.	
Jiang 2002	Anticipated satisfaction was defined as "… the customer's assessment of the likely satisfaction with consuming his/her chosen product/service." (p. 172)	Anticipated satisfaction was measured by three 7-point Likert scale items	
Jin & Park 2006	Satisfaction was defined as "… the perception of pleasurable fulfillment and occurs when retailer performance matches or is higher than consumers' expectations." (p. 203)	Satisfaction was measured by three 7-point Liker scale questions.	
Kim & Kim 2006	Satisfaction, per se, was not defined	Identified three dimensions of online shopping satisfaction (Safe purchasing, shopping convenience, and vendor reliability)	Online shopping satisfaction, Shopping convenience satisfaction, shopping convenience satisfaction, and vendor reliability satisfaction
Kim & Lim 2001	Satisfaction was defined as "an evaluation rendered that the consumption experience was at least as good as it was supposed to be." (the authors quote the definition in Hunt, 1977)	Study participants assessed their satisfaction with 15 various aspects of a website (information, design, customer service, entertainment, etc.)	Website satisfaction
Lee & Lin 2005	Satisfaction was defined as "Customer satisfaction with an online store." (p. 167)	Customer satisfaction was measured by one question measured by a seven-point Likert scale.	Customer satisfaction.
McKinney et al. 2002	Overall satisfaction was defined as "an affective state representing an emotional reaction to the entire Web site search experience." (p. 298) Information quality satisfaction and system quality satisfaction "…have an evaluative nature similar to that of overall satisfaction." (p. 299)	Information quality satisfaction and System quality satisfaction (both measured by 4 Likert scale questions); Overall satisfaction (measured by 5 Likert scale questions and one dichotomous question).	Information quality satisfaction; System quality satisfaction; Web-customer (overall) satisfaction

Muylle et al. 2004	Web site user satisfaction is "… the attitude toward the web site by a hands-on user of the organization's web site." (p. 545, italics original)	Web site user satisfaction was operationalized by 4 first-dimensional constructs (Layout, Information, Connection, Language Customization). Information was operationalized as relevancy, accuracy, comprehensibility, and comprehensiveness. Connection was operationalized as ease of use, entry guidance, structure, hyperlink connotation, and speed.	Web site user satisfaction
Negash et al. 2003			User satisfaction
Parasuraman et al. 2005	e-satisfaction was defined as "…the outcome of consumer perceptions of online convenience, merchandising, site design, and site convenience." p. Liang & Lai 2002	Two questions asking whether the individual was satisfied and pleased with their Internet shopping experience.	Overall satisfaction with the Internet-shopping experience
Posselt& Gerstner 2005	Satisfaction is measured in terms of confirmation/disconfirmation.	Pre-sale services (ease of finding product, product selection, clarity of product information, price, website look, shipping charges, shipping options, display of purchase amount); Post-sale services (product availability, order tracking, on-time product arrival, product representation, customer service support); Overall satisfaction. Data was gathered from customer ratings of retailers at BizRate.com that used 11-point Likert scales.	Pre-sale satisfaction; Post sale satisfaction
Rodgers et al. 2005	On-line satisfaction was defined as an "… emotional reaction to an on-line service experience." (p. 314)	Satisfaction was measured by three 5-point Likert scale questions.	
Shamdasani et al. 2008	satisfaction: "	Four questions using a seven-point semantic differential scale	Overall satisfaction
Shankar et al. 2003	Satisfaction was defined as "…the perception of pleasurable fulfillment of a service…" (p. 154); "Service encounter satisfaction is transaction specific, whereas overall customer satisfaction is relationship-specific, that is, overall satisfaction is the cumulative effect of a set of discrete service encounters or transactions with the service provider over a period of time." (p. 156)	Service encounter satisfaction was operationalized by one 5-point Liker scale question; Overall satisfaction was operationalized by one 7-point Likert scale question.	
Thatcher & George 2004	Satisfaction, per se, was not defined	Consumer satisfaction was measured by 3 items which were not described.	Consumer satisfaction.
Tsai & Huang 2007	Overall satisfaction was defined as "… a positive affective state resulting from a global evaluation of performance based on past purchasing and consumption experience." (p. 233)	Overall satisfaction was measured by four 7-point Likert scale items	

Wolfinbarger&Gilly 2003	"Global quality is designed to be a global measure across purchase experiences..while the customer satisfaction items refer specifically to the most recent purchase." (p. 195)	Six questions measuring post-purchase satisfaction	Overall satisfaction
Zviran et al. 2006	The authors discuss many different aspects of buyer-seller interactions that consumers may judge as satisfactory or unsatisfactory, and they discuss other authors definitions of satisfaction, but they do themselves not define satisfaction, per se.		

Table F-2. Overview of e-Service Quality

Study	Definition of ESQ	e-Service Quality Dimensions
Lee & Lin 2005	E-service quality is "overall customer assessment and judgment of e-service delivery in the virtual marketplace." (p. 161); Overall service quality is "Customer perceptions of service quality provided by an online store" (p. 167)	e-Service Quality (Website design, Reliability, Responsiveness, Trust, Personalization); Overall service quality
Parasuraman et al. 2005	Service quality "… encompasses all phases of a customer's interaction with a Web site: the extent to which a Web site facilitates efficient and effective shopping, purchasing, and delivery." (p. 217, italics orig)	e-Service Quality (Efficiency, Fulfillment, System availability, Privacy); e-Recovery Service Quality (Responsiveness, Compensation, Contact)
Resnick&Montania 2003	Service quality is loosely equated with expected customer service.	Expected customer service
Rodgers et al. 2005	Service quality, per se, is not defined.	service quality (Reliability, Tangibles, Empathy, Assurance, Responsiveness)
Tsai & Huang 2007	Service quality was defined as "… the degree to which customers perceived that e-commerce facilitated efficient and effective shopping, purchasing, and delivery."	Service quality
Ueltschy et al. 2007	Service quality equated to the usability of the website	Service quality (content, accuracy, format, ease of use, timliness)
van Iwaarden et al. 2003	Service quality, per se, is not defined.	service quality (Reliability, Tangibles, Empathy, Assurance, Responsiveness)
Wolfinbarger&Gilly 2003	"e-Tail Quality" is a description of "the attributes that contribute to consumers having a satisfying, high quality online shopping experience." (p. 186)	e-Tail Quality (Fulfillment/Reliability, Website design, Privacy/Security, Customer service)
Yang et al. 2005	User perceived service quality of web portals	Usability, usefulness of content, adequacy of information, accessibility and interaction

Table F-3: Perceived Website Quality in Studies of User-Website Interaction

Study	Factors
Agarwal&Venkatesh (2002)	Usability; content; ease of use; promotion; made for the medium; emotion
Ahn et al. (2007)	System quality; Information quality; Service quality
Aladwani&Palvia (2002)	Technical adequacy (security, navigation, usability, interactivity); Specific Content (product details, customer support, company info.); Content Quality (info. usefulness, info. completeness, info. clarity, info. conciseness, info. accuracy); Appearance (fonts, colors, attractiveness, multimedia, organization)
Barnes &Vidgen (2001)	Aesthetics; Navigation; Reliability [info. and service]; Competence; Responsiveness; Access; Credibility [trustworthiness of the site]; Security; Communication [info quality]; Understanding the Individual
Barnes &Vidgen (2002);	
Barnes &Vidgen (2006)	Usability; Design; Information Quality; Trust; Empathy
Cao et al. (2005)	System Quality (Search facility, Responsiveness, Multimedia capability); Information Quality (Information accuracy, Information relevance); Service Quality (Trust, Empathy); Attractiveness (Playfulness)
Chen and Yen (2004)	Playfulness; Choice; Connectedness; Information collection; Reciprocal communication
Hampton-Sosa &Kourfaris (2005)	Website appeal (Perceived usefulness; Perceived enjoyment); Website usability (Perceived ease of use, perceived control)
Huizingh (2000)	Content (information, entertainment, advanced features); Design (site features, visitor perceptions)
Kim & Kim (2006)	Web appearance; Entertainment; Information fit-to-task; Transaction capability; Response time; Trust
Kim &Stoel (2004)	Informational Fit-To-Task; Tailored Communication; Online Completeness; Relative Advantage; Visual Appeal; Innovativeness; Emotional Appeal; Consistent Image; Ease of Understanding; Intuitive Operations; Response Time; Trust
Lee &Kozar (2006)	Relevance; Currency; Understandability; Navigability; Response time; Personalization; Telepresence; Security; Empathy; Reliability; Responsiveness; Awareness; Reputation; Price savings
Liu & Arnett (2000)	Information and Service Quality; System Use; Playfulness; System Design
Loiacono et al., (2007)	Usefulness (Info. fit-to-task, Tailored information, Online completeness, Relative advantage); Ease of use (Ease of understanding, Intuitive operations); Trust; Response time; Entertainment (Visual appeal, Innovativeness, Emotional appeal, Consistent image)
Ranganathan&Ganapathy (2002)	Information Content; Design; Security; Privacy
Seethamraju (2006)	Trust (Security, Privacy information, Customer service information); Personalization (Customization, Interactivity); Accessibility (Ease of navigation, Ease of access, availability, speed of page loading); Content quality (Usefulness, Completeness, Currency, Consciousness, Accuracy); General information (Search facilities, valid links, product details); Appearance (Attractiveness, Proper use of fonts and colors)
Shchiglik& Barnes (2004)	Info. Quality; Interaction quality; Design quality
van der Heijden&Verhagen (2004)	Usefulness; Enjoyment; Ease of use; Style; Familiarity; Trustworthiness; Settlement performance
Webb & Webb (2004)	Service Quality (Reliability, Responsiveness, Assurance, Empathy, Tangibility); Information Quality (Accessibility quality, Contextual quality, Representational quality, Intrinsic quality)
Zhang & von Dran (2000)	Information Content; Cognitive Outcomes; Enjoyment; Privacy; User Empowerment; Visual Appearance; Technical Support; Navigation; Organization of Information Content; Credibility; Impartiality

Appendix G
Literature Related to Purchase Intention and Actual Purchase Activity

Table G-1. Overview of Purchase Intention	
Study	**Factors**
Ba &Pavlou 2002	Assign a price that they were willing to pay
Bart et al. 2005	Behavioral intent
Bickart& Schindler 2001	Purchase intention
Chen & Dubinsky 2003	Purchase intention
Chen et al. 2002	Likelihood to use the virtual store
Chu et al. 2005	Purchase intention
Dinev& Hart 2005-6	Intention to transact
Dinev& Hart 2006	Willingness to provide personal information
Everard&Galletta 2005-6	Intention to purchase
Faja&Trimi 2006	Willingness to buy
Fiore et al. 2005a	Willingness to purchase; Willingness to patronize
Fiore et al. 2005b	Willingness to purchase from the e-tailer
Gregg &Walczak	Online auction bid
Hampton-Sosa &Koufaris 2005	Intention to use the website
Jarvenpaa et al. 2000	Willingness to buy
Karson& Fisher 2005a	Intention to buy
Koernig 2003	Patronage intention
Lim et al. 2006	Willingness to buy
Lopes &Galletta 2006	Willingness to pay
Martin et al. 2005	Purchase intention
Odom et al. 2002	Intention to purchase
Park et al. 2005	Purchase intention
Pavlou&Gefen 2004	Transaction intentions
Pavlou 2003	Intention to transact
Raney et al. 2003	Intention to purchase
Schlosser et al. 2006	Purchase intention
Shermon&Deighton 2001	Willingness to pay for customization
Song &Zahedi 2005	Purchase intention
Stafford & Stern 2002	Intention to bid
van der Heijden&Verhage 2004	Intention to purchase
van der Heijden et al. 2001	Purchase intention
Xia & Monroe 2004	Purchase intention

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Table G-2. Overview of Actual Purchase Activity	
Study	**Factors**
Agarwal&Venkatesh 2002	Actual transaction behavior
Ariely& Simonson 2003	Bid and purchase price
Ba &Pavlou 2002	Prices paid for auction items
Ballou&Pazer, 1995	Final bid price at on-line auction
Bansal et al. 2004	Conversion rate
Bart et al. 2005	Conversion
DiClemente&Hantula 2003	On-line purchases
Gregg &Walczak 2008	Online auction purchase
Hassanein& Head 2005-6	Option purchased
Koufaris& Hampton-Sosa 2002	Likelihood to make unplanned purchases
Lim et al. 2006	Actual purchase behavior
Lynch &Ariely 2000	On-line purchases
Pavlou&Gefen 2004	Actual transaction behavior
Standifird et al. 2004-5	Purchase behavior
Tam & Ho 2005	Purchase behavior

Appendix H
Literature Related to Intention to Return, Repeat Visits/Purchases

Table H-1. Overview of Intention to Return	
Study	**Factors**
Bansal et al. 2004	Likelihood to repurchase
Bansal et al. 2004	Stickiness
Casalo et al. 2007	Commitment
Eastlick et al. 2006	Commitment
Fiore et al. 2005a	Willingness to patronize the on-line store
Fiore et al. 2005b	Willingness to patronize the online retailer
Flavián et al. 2006	Loyalty
Galletta et al. 2006	Intention to return, Willingness to recommend the site to others
Grewal et al. 2004	Re-purchase intention
Ha 2004	Brand commitment
Holloway et al. 2000	Repurchase intention
Jiang &Rosenbloom 2005	Intention to return
Jiang 2002	Revisit intention
Jin & Park 2006	Loyalty
Karson& Fisher 2005b	Repurchase intention
Koernig 2003	Intended loyalty
Koufaris& Hampton-Sosa 2002	Intention to return
Lin et al. 2005	Intention to re-use the site
Liu et al. 2004	Intention to visit again
Lynch &Ariely 2000	Willingness to shop at e-retailer web site again
Mithas et al. 2007	Loyalty
Rodgers et al. 2005	On-line loyalty
Rousseau et al., 1998	Loyalty
Suh& Han 2003	Behavioral intention to use the site
Supphellen&Nysveen 2001	Intention to revisit the site
Thatcher & George 2004	Loyalty, Commitment
Tsai & Huang 2007	Repurchase intention
van der Heijden&Verhage 2004	Book-marking
Wang et al. 2004	Book-marking
Wang et al. 2006	Webstie loyalty, commitment
Webster &Ahuja 2006	Future intentions to use

Table H-2.Overview of Actual Return Visit	
Study	**Factors**
Chen et al. 2002	Actual return visits to a virtual store over a given time period

Table H-3. Overview of Intention to Repurchase	
Study	**Factors**
Grewal et al. 2004	Repurchase intentions
Lee & Lin 2005	Purchase intention
Liu et al. 2004	Repeat purchase intention
Wang et al. 2006	Re-purchase intention

Table H-4.Overview of Actual Repurchase	
Study	**Factors**
Lynch &Ariely 2000	Repeat purchases from same site

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Appendix I
Literature Investigating Relationships Between UWI Outcomes

Table I-1. Relationships between UWI outcomes	
Relationship	**Studies Testing Relationship**
Engage, IReturn	Fiore et al. 2005a, Fiore et al. 2005b, Karson& Fisher 2005b, Koufaris& Hampton-Sosa 2002, Thatcher & George 2004
Engage, PIntent	Eastlick et al. 2006, Eroglu et al. 2003, Fiore et al. 2005a, Fiore et al. 2005b, Galletta et al. 2006, Hampton-Sosa &Koufaris 2005, Jiang 2002, Karson& Fisher 2005a, Lim et al. 2006, Park et al. 2005
Engage, Risk	Park et al. 2005
Engage, WebQ	Fiore et al. 2005a, Lin et al. 2005, Hampton-Sosa &Koufaris 2005, Kamis&Stohr 2006, Karson& Fisher 2005a
Engage, PerceptPS	Fiore et al. 2005a,
Engage, Sat	Eroglu et al. 2003, Lin et al. 2005
Engage, Trust	De Wulf et al. 2006, Eastlick et al. 2006, Hampton-Sosa &Koufaris 2005
Engage, Purch	Tam & Ho 2005
PIntent, Purch	Lim et al. 2006, Pavlou 2003, Pavlou&Gefen 2004
Risk, PIntent	Dinev& Hart 2006, Jarvenpaa et al. 2000, Malhotra et al. 2004, Mauldin &Arunachalam 2002, Park et al. 2005, Pavlou 2003, Pavlou&Gefen 2004, Schlosser et al. 2006 (not supported in all studies)
Risk, PerceptPS	Chen & Dubinsky 2003, Grewal et al. 2003 (not supported)
Risk, Sat	Luo&Seyedian 2003-4 (not supported)
Risk, Trust	Chellappa 1997, Dinev& Hart 2006 (not supported)
Risk, IReturn	Wang et al. 2006 (not supported)
Risk, Engage	Pires et al. 2004
Risk, Purch	
PerceptPS, PIntent	Fiore et al. 2005a
WebQ, Sat	Flavián et al. 2006,
WebQ, Trust	Flavián et al. 2006, Jin & Park 2006
WebQ, IReturn	Flavián et al. 2006
WebQ, IReturn	Mithas et al. 2007
WebQ, Engage	Chen & Dubinsky 2003, De Wulf et al. 2006, Ethier et al. 2006, Fiore et al. 2005b, Hampton-Sosa &Koufaris 2005, Kamis&Stohr 2006, Kang & Kim 2006, Karson& Fisher 2005a, Thatcher & George 2004
WebQ, IReturn	Ahn et al. 2007, Karson& Fisher 2005b, Koufaris& Hampton-Sosa 2002, Tsai & Huang 2007, Wolfinbarger&Gilly 2003
WebQ, Purch	Gregg &Walczak 2008, Koufaris& Hampton-Sosa 2002 (not supported)
WebQ, PIntent	Ahn et al. 2007, Karson& Fisher 2005a, Pavlou 2003
WebQ, Sat	Ballantine 2005, Bansal et al. 2004, De Wulf et al. 2006, Kim &Stoel 2004a, Lee & Lin 2005, Lin et al. 2005, Rodgers et al. 2005, Szymanski &Hise 2000, Tsai & Huang 2007,
WebQ, Trust	Bart et al. 2005, De Wulf et al. 2006, Everard&Galletta 2005-6, Hampton-Sosa &Koufaris 2005, Koufaris& Hampton-Sosa 2004, Roy et al. 2001, Van Dyke et al. 2007, Yousafzai et al. 2005
ESQ, SAT	Rodgers et al. 2005
ESQ, IReturnP	Tsai & Huang 2007
Sat, Engage	De Wulf et al. 2006, Flavián et al. 2006
Sat, PIntent	Bansal et al. 2004, Jiang 2002, Pires et al. 2004, Yoon 2002
Sat, IReturn	Bansal et al. 2004, Holloway et al. 2000, Jiang &Rosenbloom 2005, Jin & Park 2006, Posselt& Gerstner 2005, Tsai et al. 2006, Rodgers et al. 2005, Rousseau et al. 1998, Thatcher & George 2004
Sat, IReturnP	Teas &Agarwal 2000, Tsai & Huang 2007
Sat, Trust	De Wulf et al. 2006, Flavián et al. 2006
Sat, Purch	
Sat, Risk	Pires et al. 2004 (not supported)
SE, Engage	Kamis&Stohr 2006, Wu et al. 2006,
Trust, Engage	Flavián et al. 2006, Lim et al. 2006
Trust, PC	Smith et al. 2005
Trust, PIntent	Ahn et al. 2007, Bart et al. 2005, Chen & Barnes 2007, Dinev& Hart 2006, Eastlick et al. 2006, Everard&Galletta 2005-6, Gefen et al. 2003, Hampton-Sosa &Koufaris 2005, Jarvenpaa et al. 2000, Lim et al. 2006 (not supported), Malhotra et al. 2004, Pavlou&Gefen 2004, Pavlou 2003, Schlosser et al. 2006, Yoon 2002, Wakefield et al. 2004
Trust, Risk	Jarvenpaa et al. 2000, Malhotra et al. 2004, Pavlou&Gefen 2004, Pavlou 2003, Schlosser et al. 2006, van der Heijden et al. 2001, (not supported in all studies)
Trust, Sat	Casalo et al. 2007, Jin & Park 2006, Yoon 2002

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Trust, IReturn	Casalo et al. 2007, Eastlick et al. 2006, Jin & Park 2006
Trust, WebQ	Elliot & Speck 2005, Pavlou 2003
Trust, PerceptPS	Steenkamp&Geyskens 2006 (not supported)
Trust, Purch	Ba &Pavlou 2002
IReturn, PIntent	Eastlick et al. 2006, Jiang 2002
IReturn, Sat	Rousseau et al. 1998
IReturn, Purch	

WebQ = Perceived web or e-service quality
Trust = Trust
Risk = Perceived Risk
PerceptPS = Perceptions of the Product or Seller
Engage = Engagement
PIntent = Purchase Intention

Purch = Purchase Activity
Sat = Satisfaction
IReturn = Intention to Return
Return = Actual Return Activity
IReturnP = Intention to Repeat Purchase
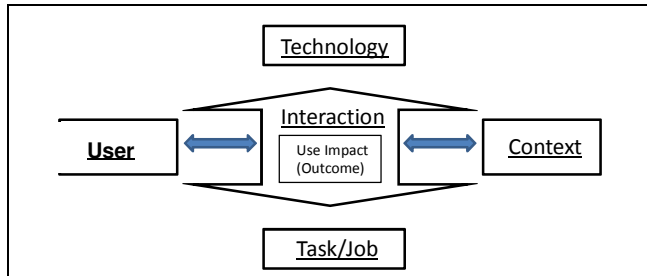RPurch = Repeat Purchase Activity

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Figure 1. The Zhang and Li (2005) HCI model

Step 1: Scan leading journals, search journal databases
Step 2: Go backward- review the citations of the articles identified in step 1.
Step 3: Go forward- use databases to identify relevant articles that have
      cited articles identified in steps 1 and 2.

Figure 2. Steps for identifying articles relevant to a literature review
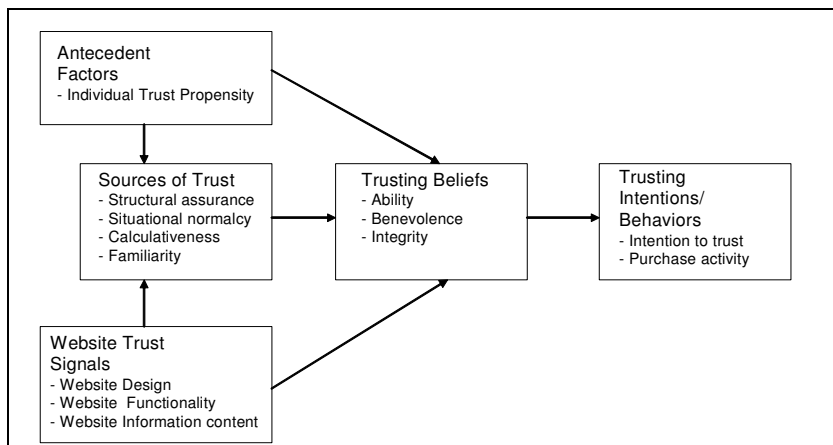

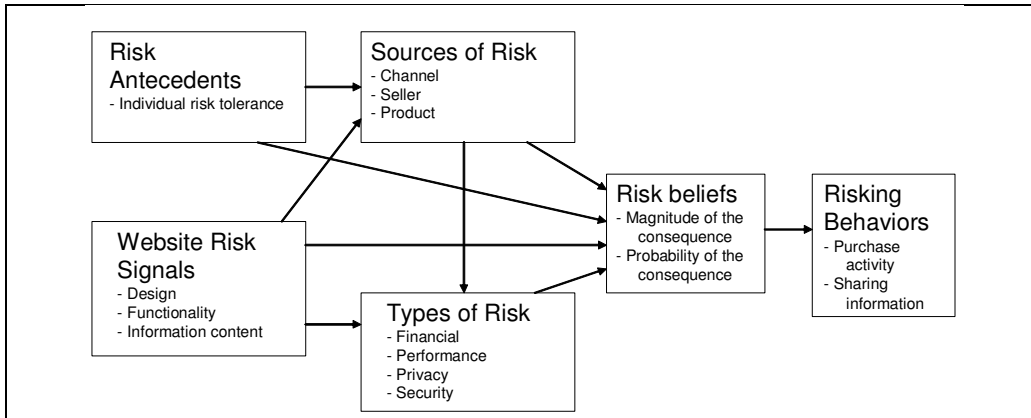
Figure 3. A high-level model of website trust

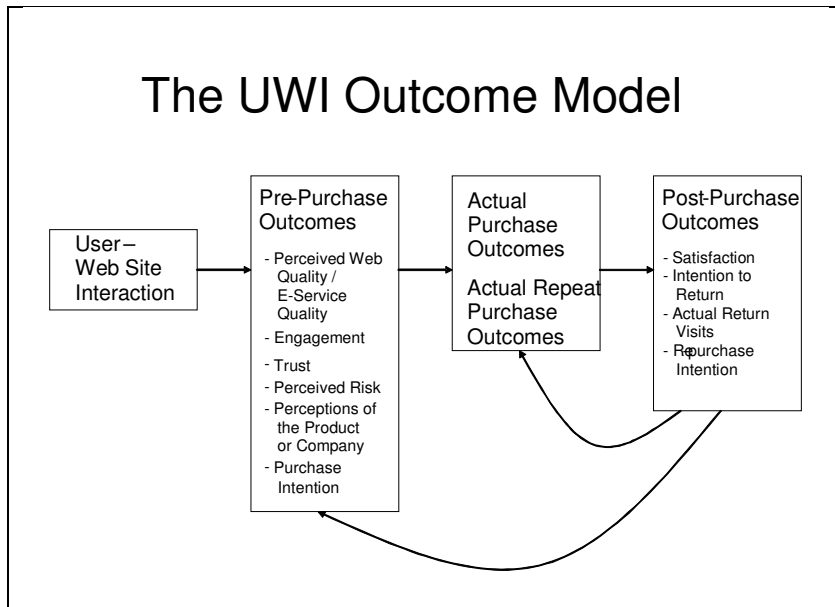Figure 4: Perceived risk in the context of B2C transaction-oriented websites

Figure 5. The user-website interaction outcome model

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Table 1. Word Map Example

Word	Phrase	Count
privacy	Privacy	7
privacy	perceived privacy empowerment	1
privacy	internet privacy concerns	1
privacy	perceived privacy	1
privacy	privacy concerns	2
privacy	perceived internet privacy risk	1
Risk	perceived risk	10
Risk	performance risk	1
Risk	financial risk	1
Risk	transaction risk	1
Risk	risk perception	1
Risk	perceived internet privacy risk	1
Risk	perceived security risk	1

Table 2. Construct Descriptions and Rules

Construct Name	Construct Description	Construct Rules
Trust	Includes trust and its derivatives.	The construct or variable represents a derivative of the word "trust", or any antecedent of trust, or any intention to trust, or source of trust, or target of trust is represented.
Risk	Includes risk and its derivatives.	The construct or variable represents a derivative of the word "risk", or any antecedent or risk, or any source of risk, or any intention to choose a course of action based upon the perception of risk.
Engagement	Includes the cognitions and emotions that occur during or after a UWI.	The construct or variable represents an emotion or cognition other than those of confirmation/disconfirmation or preference.
Perceptions of the product or seller	Includes perceptions that are developed about the product or the seller, *but not the website or other technologies* involved with presenting the website.	The construct or variable represents feelings or decisions of preference about a *product* or *seller*.
Confirmation/Disconfirmation	Includes all constructs that measure the differences between what customers expect before their experience and what they actually experience.	The construct or variable represents feelings of confirmation or disconfirmation about a website, technology, product, or seller.
Purchase Intention	Includes all constructs that measure a customer's intention to perform a purchase behavior.	The construct or variable represents a customer's intention or willingness to make a purchase.
Actual purchase activity	Includes all actual purchase activity.	The construct or variable represents actual purchase behavior.
Intention to return	Includes all constructs that measure a customer's intention to make a repeat visit to a website.	The construct or variable represents a website visitor's intention or willingness to return to the website.
Repeat visits	Includes any actual repeat visits to the website.	The construct or variable represents a website visitor'sactual return visits to a website.
Repeat purchases	Includes any intended or actual repeat purchases from the website.	The construct or variable represents a website visitor's intended or actual repeat purchases from a website.

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