

DIAGNOSING AND MANAGING ONLINE B2C RELATIONSHIPS: TOWARD A  
B2C RELATIONSHIP STAGE THEORY AND EMPIRICAL INVESTIGATION OF  
AN ECOMMERCE ATTRACTION MODEL

By

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A dissertation submitted in partial fulfillment of  
the requirements for the degree of

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of DAMON EDWARD CAMPBELL find it satisfactory and recommend that it be accepted.

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Co-Chair

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Abstract

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This dissertation addresses a need for theoretical insight to eCommerce Customer Relationship Management (eCRM). Stage Theory, a theory from psychology which identifies stages of interpersonal relationships, is instantiated in an eCommerce context to provide the theoretical foundation for eCRM research. This dissertation consists of three essays. The first essay develops a framework called the B2C-Relationship Stage Theory (B2C-RST) which identifies stages of B2C relationships and specific factors that influence each stage. The B2C-RST consists of three stages: Attraction, Build-Up, and Maintenance. The second essay begins the empirical testing of the B2C-RST by developing a psychometric instrument measuring the constructs proposed for the Attraction stage. This essay uses survey methods with two separate and independent samples. The third essay utilizes a laboratory experiment and survey designed for theory testing of the initial stage, Attraction. This research provides implications for information systems (IS) practice and theory in the area of interface design and eCRM.

Key Words: Business-to-Consumer Relationship Stage Theory (B2C-RST),  
Electronic Commerce, Customer Relationship Management (CRM), Stage Theory,

Relationship Marketing, construct validity, quantitative analysis, positivist research,  
discriminant validity, convergent validity, Electronic Commerce Attraction Model  
(eCAM) Technology Acceptance, Attraction, B2C Relationships

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## **Dedication**

This dissertation is dedicated to my wonderful wife, Nikki, who supported me at every step of way while being a wonderful mother to our children. This dissertation is as much a product of her work as it is mine.

## 1. INTRODUCTION

This dissertation is comprised of three essays. Each essay was drafted with the intention of being published in a research journal, and at this time have all been under review at journals. The author of this dissertation has been the primary contributor for all three of these essays including the collection and analysis of all the data presented throughout this dissertation.

The topics of these essays converge in the area of electronic-Commerce (eCommerce) customer relationship management (eCRM). The goal of this dissertation is to lay the foundation for a stream of research investigating online B2C relationships with a stage perspective. The theoretical foundation for this work is provided by Stage Theory developed in the field of psychology. This theory provides unique insight to the progression of relationships, and was selected from a review of alternative theoretical perspectives as a lens with high potential for studying this topic (see Appendix A emphasis added). eCRM is a topic that is highly researched yet a literature review of this stream of research has shown to be lacking in theoretical development (Romano & Fjermestad, 2002a). This dissertation was developed to fill that void in eCRM research.

*Essay One* is a conceptual paper that theoretically extends Stage Theory, which was developed to study human-to-human relationships, to the context of online business-to-consumer (B2C) electronic-Commerce (eCommerce). In cases where a customer chooses to establish a relationship with a person or an organization, the relationship moves through various stages. Likewise, when a customer forms an ongoing relationship with an online organization, it progresses through similar stages. Although each type of

relationship is unique, all share some common attributes. As such, this paper applies the perspective of common and unique relationship attributes to the domain of business-to-consumer relationships, proposing a theoretical framework for examining stages of B2C relationships. The theoretical foundation for this research is based in Stage Theory and is applied to the information systems (IS) domain. The proposed B2C Relationship Stage Theory (B2C-RST) highlights three stages of B2C relationships from the customer's perspective; Attraction, Build-Up, and Maintenance. This theoretical framework provides a foundation for both research and practice in the areas of interface design and B2C customer relationship management. The contribution of this first essay is that it lays the foundation for this stream of research, and provokes many possible research questions by which this framework can be applied.

*Essay Two* begins the empirical testing of the B2C-RST by developing a survey instrument to measure the constructs presented in the first stage, Attraction. The main focus of this essay, however, is the validity of the measurement instruments. Numerous researchers have called attention to many different important issues in instrument development throughout the relatively short history of the Information Systems academic research community (e.g., D. Straub, Boudreau, & Gefen, 2004; D. W. Straub, 1989). With the cumulating knowledge regarding the entire process of instrument development, it has now become necessary to take a closer look at specific aspects of instrument development. This paper focuses on construct validity, namely convergent and discriminant validity, and examines some popular methods of establishing these types of validity when using cross-sectional data. Strengths and weaknesses of these analysis techniques are examined with a focus on the role of theory and informed interpretation.

The applicability of these techniques is highlighted by analyzing a sample dataset where two constructs are theorized to be highly correlated. Recommendations are provided for the use and interpretation of various validity analysis techniques. The purpose of this paper is to serve as a tutorial for the highlighted analysis techniques and to equip researchers with greater understanding of these techniques to be used defensibly by researchers and reviewers.

*Essay Three* empirically tests the model of eCommerce Attraction (eCAM). This paper reports on the results of two empirical studies investigating how initial customer perceptions of a website influence attraction towards an online organization, the first step to forming a business-to-consumer (B2C) relationship. A conceptual model is proposed by extending a popular relationship theory, Stage Theory, to an electronic-commerce context. This model, the electronic-commerce attraction model (eCAM), offers a theoretical foundation for researchers and practitioners to better understand the initial phase of online customer relationships. The results from one experiment (focusing on controlled theory testing) and one survey (focusing on generalizability) support the eCAM as a new theoretical lens for understanding electronic commerce-based attraction, a fundamental component for building online B2C relationships. Tests of nomological validity regarding the proposed eCAM and previously established models (e.g., technology acceptance model and WebQual) and constructs were conducted to assess the contribution of this fresh theoretical perspective. Results indicate support for the eCAM. Opportunities for future research are examined as well as how the eCAM can be applied to improve business websites.



The results of the second and third essays provided convincing evidence to the initial support of the B2C-RST and this line of research.

## 2. ESSAY ONE -

### **DIAGNOSING AND MANAGING ONLINE BUSINESS-TO-CONSUMER (B2C) RELATIONSHIPS: TOWARD A B2C RELATIONSHIP STAGE THEORY**

#### **INTRODUCTION**

Customer<sup>1</sup> relationship management (CRM) “involves attracting and keeping economically valuable customers” (Romano & Fjermestad, 2002b p. 7). Research has shown that attracting new customers can cost 20%-40% more in an online setting compared to offline (Reichheld & Schefter, 2000), and raising retention rates of these customers as little as 5% can increase profitability 30%-85% (Gefen, 2002). While the concept of CRM has its origins grounded in traditional marketing (i.e., relationship marketing), the rapid growth of the Internet and electronic commerce (eCommerce) has ushered in a new phase in the evolution of CRM research. The Internet provides customers with an information technology (IT)-mediated interface (e.g., website) that offers a high degree of interactivity and control when communicating with organizations (Liu & Shrum, 2002; Rayport & Jaworski, 2003). In turn, IT provides organizations with an unprecedented ability to gather, store, and utilize ‘profile and preference’ information to engage customers in one-to-one interaction (Wells, Fuerst, & Choobineh, 1999). As a result of the perceived potential of IT-mediated CRM, the information systems (IS) academic community has been active in pursuing electronic commerce customer relationship management (eCRM) related research (Romano & Fjermestad, 2002a, 2002b).

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<sup>1</sup> This paper uses the terms User, Consumer, and Customer synonymously.

Research related to the area of business-to-consumer (B2C) eCommerce reveals *four* high level perspectives that influence eCRM: breadth, depth, relational, and transactional. IS literature currently offers breadth perspectives of eCommerce (Ives & Learmonth, 1984) that acknowledge the many phases (e.g., beginning, middle) of a B2C relationship. IS literature also offers depth perspectives which focus on a particular aspect of a customer relationship such as attracting customers (Watson, Akselsen, & Pitt, 1998), website use (Van der Heijden, 2003), reuse (Loiacono, Watson, & Goodhue, 2007), and eLoyalty (R. E. Anderson & Srinivasan, 2003). In addition to these two perspectives, the relational nature of relationships interjects another important dimension to B2C relationships. Ideally, organizations practice eCRM to achieve specific goals such as high customer retention (Reichheld & Schefter, 2000), yet customers have both relational (i.e., social or psychological) and transactional (i.e., economic) motives. Relationship marketing research has integrated interpersonal relationship theories to gain perspective into both relational and transactional needs of customers in B2C relationships (e.g., Dwyer, Schurr, & Oh, 1987; Morgan & Hunt, 1994). Therefore, we believe that these four perspectives are critical theoretical components for understanding effective B2C eCRM strategy.

We propose a need for a theoretical foundation for studying online B2C relationships that can capture both breadth and depth perspectives as well as customers' relational and transactional needs when engaging in such relationships. This will allow businesses to engage customers in a relationship by understanding the phase (e.g., beginning or middle) of the B2C relationship, and drilling down in that phase to understand the relational and transactional needs of the customer. By meeting these

needs, an organization will be able to attain the goal of CRM, which is “attracting and keeping economically valuable customers” (Romano & Fjermestad, 2002b p. 7). One particular theory, Levinger’s (1980) Stage Theory, demonstrates particular promise as a framework for studying B2C relationships from these four perspectives.

From a breadth perspective, Stage Theory identifies five different stages that an interpersonal relationship undergoes. These stages observe that relationships start with Acquaintance then progress to Build-Up etc., and details how relationship dynamics differ depending on the phase of a relationship. The strength of Stage Theory lies in its ability to not only distinguish between specific stages of relationships, but also take a depth perspective identifying various factors influencing each stage. Also, Stage Theory was originally developed to examine interpersonal long-term relationships between humans, and therefore has unique insight into both relational needs and transactional needs that are both essential aspects of maintaining a successful relationship. Therefore, Stage Theory is uniquely equipped to provide breadth, depth, relational, and transactional perspectives of B2C relationships. In our endeavor to provide a theoretical perspective for B2C relationships we will extend the concepts outlined in Stage Theory’s first three stages (Acquaintance / Attraction, Build-Up, Continuation / Consolidation) to the context of online B2C relationships. This paper proposes a paradigm of *customer relationship management* that is not solely focused on up-selling, product offering personalization, or inventory management, but creating a competitive advantage by producing long lasting customer relationships. By understanding the customer’s perspective of B2C eCommerce relationship stages, organizations can benefit by indentifying more effective website design strategies that facilitate the attraction, build-up, and maintenance of valuable

customer relationships.

This paper offers prescriptive insights for website development that could better facilitate B2C relationships by providing: 1) a theoretical foundation for understanding eCRM; and 2) a complement to existing IS theoretical perspectives for studying CRM. These two goals will be pursued by developing a framework for this research called B2C Relationship Stage Theory (B2C-RST) using Levinger's (1980) Stage Theory as the theoretical foundation. After outlining this framework and the associated propositions, a method of testing this framework is proposed. Then the theoretical and practical contributions of B2C-RST are summarized with suggestions for future research.

## **THEORETICAL DEVELOPMENT**

Relationships have been studied in many different domains, including but not limited to B2C eCommerce (e.g., Li, Browne, & Wetherbe, 2006; Romano & Fjermestad, 2002a, 2002b), relationship marketing (e.g., Dwyer et al., 1987), interpersonal relationships (e.g., Altman & Taylor, 1973, 1987; Leon Festinger, 1954; Huesmann & Levinger, 1976), business relationships (Bergen, Dutta, & Orville C. Walker, 1992), brand relationships (Fournier, 1998), and B2B relationships (Lane, Salk, & Lyles, 2001). Research on the topic of online B2C relationships and eCRM has also been influenced by many different reference disciplines (e.g., psychology, marketing, information systems). The primary emphasis of this study is to complement the existing research in these areas with a unifying, holistic theory focused on eCRM.

In identifying an appropriate theoretical perspective for this research, we encountered many different relationship perspectives and existing models (e.g., stage perspectives, consumer satisfaction models, brand equity/extensions models, trust

models, or channel management models). This past research regarding different business relationships can be categorized into two different schools of thought. The first school of thought is focused on the *breadth* of a relationship, and the second focuses on the *depth* of the relationship. *Relationship breadth* posits that relationships are not the same at any given point. Therefore, this perspective supports the view that a relationship goes through different phases through which the relationship changes (e.g., beginning, middle, and end). An example of research regarding relationship breadth includes Dwyer et al. (1987), which extends the concepts found in interpersonal marriage research to the domain of Buyer-Seller relationships and which identified five different stages in that type of a relationship. Similar conceptual life cycles have also been proposed and tested for many types of relationships (e.g., Altman & Taylor, 1973, 1987; Leon Festinger, 1954; L. Festinger, Schachter, & Back, 1950; Huesmann & Levinger, 1976; George Levinger, 1980; Zajonc, 1968) including eCommerce (Ives & Learmonth, 1984). *Relationship depth* refers to identification of the important factors that influence a relationship (e.g., trust, satisfaction, brand equity, visual appeal, communication, conflict), and examines the impact of such factors at a particular relationship stage. An example of research regarding relationship depth includes Morgan and Hunt's (1994) Commitment-Trust theory of relationships. This theory does not focus on the different stages of a relationship, but on the importance and role of trust and commitment. This theory has also been extended to the context of eCommerce (Li et al., 2006). Therefore we believe that a holistic theoretical framework of B2C relationships should incorporate both breadth and depth perspectives.

A review of research regarding online B2C studies published in six primer

journals between the years 2000-2004 uncovered 31 articles, and classified these studies into two different subcategories, transactional and relational (See Li et al., 2006 emphasis added). The relational perspective was found to be more focused on the “social and psychological factors in online B2C interactions” (Li et al., 2006 p. 105) rather than regard an online B2C relationship from a solely transactional perspective – a “one-time provision of economic benefit, profit, efficiency, and effectiveness of the interaction to attract and satisfy consumers” (Li et al., 2006 p. 110). We believe that going beyond the transactional perspective, and acknowledging the role of the online organization as a social actor from the relational perspective is equally important in the study of eCRM. One of the major strengths of online B2C relationships is that organizations can engage customers on a one-on-one basis. eCommerce customers are growing more accustomed to personalized interactions with businesses (Awad & Krishnan, 2006; Greer & Murtaza, 2003; Tam & Ho, 2005). Although businesses may not consider B2C interactions as relational, it is growing more personal in an eCommerce context for the customers. This can be evidenced by many streams of research that have looked at various relational aspects of B2C relationships such as customer loyalty (Gefen, 2002; Prewitt, 2002), disclosure of personal information online (Awad & Krishnan, 2006), positive and negative emotional responses (Sun & Zhang, 2006), personal trust (McKnight, Choudhury, & Kacmar, 2002), and customer retaliation for scorned relationships (Grégoire & Fisher, 2006). Therefore we believe that the relational and transactional along with the breadth and depth perspectives are needed for a holistic B2C eCRM theoretical framework.

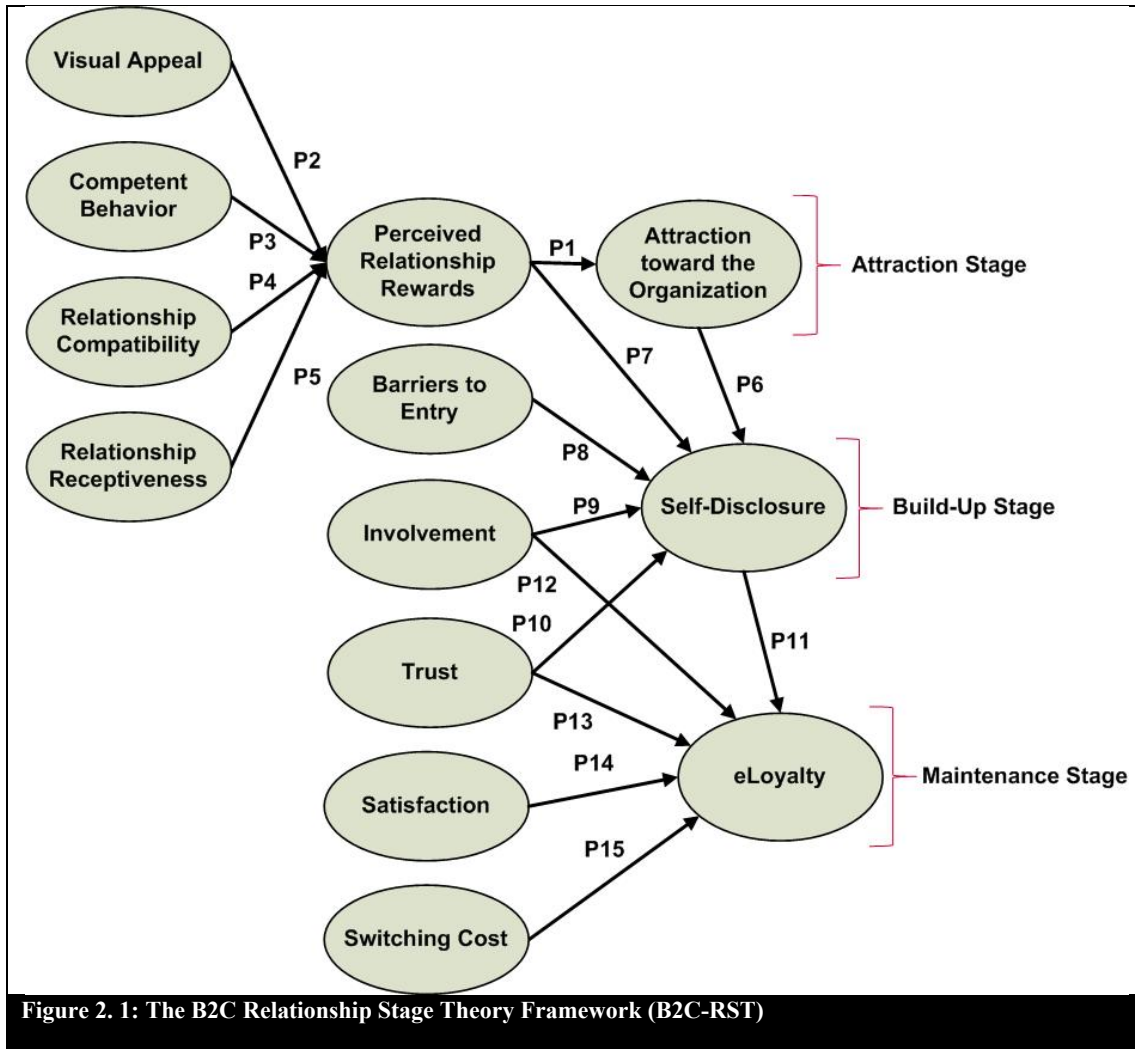
In our search for a theory that captures these four aspects of relationships, one theory, Levinger's (1980) Stage Theory demonstrates particular promise as a framework for studying online B2C relationships. Stage Theory was the only theoretical perspective identified that utilizes both views of relationship breadth and depth. Stage Theory identifies five different stages that an interpersonal relationship undergoes. These stages are Acquaintance / Attraction, Build-Up, Continuation / Consolidation, Deterioration, and Ending. The Acquaintance / Attraction stage occurs when there is an initial appeal upon meeting. The second phase, Build-Up, is categorized by an increase of interdependency brought on by self-revelation and a process of "testing the waters" of a potential relationship. The third stage, Continuation / Consolidation, is defined as a time when the relationship becomes more stable and a commitment is present. The stage of Deterioration is when a relationship consistently decays into less desirable states than previously experienced. The final stage, Ending, consists of the termination of the relationship. Stage Theory was developed to study interpersonal relationships between humans therefore providing the social and psychological perspective necessary to account for the relational aspect of relationships. Stage Theory's depth acknowledges the necessary transactional (e.g., competent behavior) aspects of B2C relationships as well as the relational (e.g., visual appeal) aspects of these types of relationships and details how these factors are manifest at each stage. In order to gain insight into B2C relationships, we extend this theoretical perspective to online B2C relationships.

### **The B2C Relationship Stage Theory Framework**

Using Stage Theory as the foundation, we developed a framework for studying eCRM called B2C Relationship Stage Theory (B2C-RST), see Figure 1. The stages of



Attraction, Build-Up, and Maintenance are similar to those identified by Stage Theory and applied to the context of online B2C relationships. The Deterioration and Ending stages are not included in this framework as eCRM is, by definition, focused on the scope of attracting and maintaining long-term customers rather than the deterioration and ending of customer relationships. Here we outline how we have used Stage Theory to develop B2C-RST. First, we outline the definition of these stages from eCommerce context that are consistent with the definitions set forth by Stage Theory. Second, we outline the definitions and theoretical assumptions set forth in the extension of Stage Theory to an eCRM context. And finally, we detail the justification for the associated propositions, as well as define the individual constructs in this framework.



The first stage of the B2C-RST is *Attraction*. Attraction is defined as *an overall evaluation or attitude toward a potential relationship with another*. During the Attraction stage, two important conditions exist that distinguish it from other stages of a relationship. First, both parties have low levels, if any, of personal experience with each other at this stage. Second, Attraction stops at the evaluation of an organization because actual engagement in a relationship would fall into the Build-Up stage. This stage is focused on appraising the potential risks and rewards of a B2C relationship. Distinguishing this stage from subsequent stages is essential to a deeper understanding of

Attraction.

The second stage is *Build-Up*, which begins as a *customer initially engages in a B2C relationship, and includes a phase of testing and learning by engaging in self-disclosing behavior under potentially rewarding situations*. During the Build-Up stage a customer discloses personal information about themselves in order to obtain benefits believed to be possible in the relationship. Learning occurs as customers observe how such information is used in the budding relationship and if the perceived rewards of the relationship can translate to real gains.

The first two stages of a B2C relationship can be considered the beginning of a relationship. However, a relationship cannot be considered mature until the stage of *Maintenance* is achieved. *Here the intention to remain in a B2C relationship is fostered. In an eCommerce context, this is manifest by a growing level of eLoyalty*. eLoyalty is defined by “a customer’s intention to visit the Internet business site again based on previous experiences as well as future expectations” (Kim, Lee, Han, & Lee, 2002 p. 248) and “deals with customer intentions to do more business with the vendor and to recommend that vendor to other customers” (Gefen, 2002 p. 29). Focusing on risks and rewards is not as important at this stage because a working relationship is established. This stage of the relationship can be sustained indefinitely if properly maintained. But if not maintained, it can deteriorate.

Identification of these stages and the instantiation of Stage Theory to a B2C relationship context were done by identifying the underlying factors set forth in Stage Theory and applying those factors to the customer’s perspective of a B2C relationship.

## Definitions and Fundamental Assumptions

As with all conceptual endeavors, the development of this framework requires certain assumptions and theoretical boundaries. The following are details of the fundamental assumptions made during the development of this theory.

*First, online B2C relationships meet the same definition as human-to-human interpersonal relationships.* According to the theory of personal relationships, three elements define a relationship<sup>2</sup>: interdependence, interaction, and attribution to dispositions of the other party (Kelley, 1979). First, *interdependence* (e.g., both parties rely on each other), in an online B2C relationship both the customer and the organization are dependent on the other to meet each party's needs. Second, *interaction* (e.g., direct interface between parties), eCommerce represents an emphasis on the exchange of information through an online interaction. Finally, *attribution to dispositions of the other party* (e.g., ability to form adequate expectations of the other), in an online B2C relationship, organizations and customers can develop such attributions. Organizations often use 'profile and preference' strategies to anticipate customer's needs. Also, human-computer interaction research has shown that customer's also regard computers as social actors, and interact with them as they would a social entity (C. Nass, Fogg, & Moon, 1996; Clifford Nass & Moon, 2000; Clifford Nass, Moon, Fogg, Reeves, & Dryer, 1995). B2C relationships meet these essential elements when understood from a relational perspective. Many seminal marketing articles have also applied this assumption by extending interpersonal relationship theory to a B2C relationship. For example, Dwyer et al. (1987) extended psychology theory related to marriage relationships in the study of

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<sup>2</sup> Many types of eCommerce interactions would not fit this definition. For example, a single, one-time, and spontaneous purchase would not be considered a B2C relationship.

buyer-seller relationships. Also, Morgan and Hunt (1994) extended psychology theory related to long-term interpersonal relationships to the context of B2C relationships.

*Second, from the customer's perspective in an eCommerce context, the website and the organization are the same.* Previous research in the area of online B2C interaction, has suggested that customers perceive the website as a representative of the organization (Winter, Saunders, & Hart, 2003), and do not perceive a difference between the website representative and the organization (Gefen, Karahanna, & Straub, 2003; Li et al., 2006). In fact, IS scholars have argued that “when the customer sees a website and not the firm, the site becomes the firm” (Pitt, Berthon, & Watson, 1999).

*Third, the B2C-RST is proposed to capture the customer's perspective of a B2C relationship not the organization's.* One of the aspects of Stage Theory that lends itself to be instantiated into a B2C relationship framework is the focus on interpersonal relationships from a one-sided perspective. Progression of a relationship is dependent upon individual decisions to begin or continue in a relationship. By understanding what influences these individual decisions, one can gain a depth perspective of a relationship. Although an individual's perceptions and decisions are not generalizable to an organization<sup>3</sup> (Sarker, 2006; Sarker, Valacich, & Sarker, 2005), we assume that progression of a B2C relationship is dependent on the actions of the customer. An organization depends on customers to willingly progress in a relationship. Therefore by understanding the customer's perspective, one can determine the key factors of B2C

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<sup>3</sup> The B2C-RST does not attempt to model how organizations perceive B2C relationships nor inform how organizations perform decision making tasks in the context of B2C relationships. An organization has different purposes than the customer. Organizations do not make decisions like individuals (see Sarker et al. 2005, Sarker 2006). However, Stage Theory still provides an adequate framework for this research as it only looks at one side, and limits the scope to a variance perspective. This view focuses on the predictors of perceptions that inform the mini-decisions comprising relationship progression. Therefore this theory is equipped for the instantiation into examining customer perspectives.

relationships. Organizations can benefit from this understanding because it will enable them to manage customer's perceptions of the relationship. It is intuitive to believe that if an eCommerce organization can understand and meet the needs of a customer at any given point in a B2C relationship, then that customer is more likely to engage in the relationship. However, if the needs of the customer are not met, then relationship progression is unlikely. This theoretical perspective can enable organizations to form strategic goals based on the needs of customers at given stages of a B2C relationship.

*Fourth, the B2C-RST is proposed from a variance perspective.* Although the B2C-RST does offer both breadth and depth perspectives, this framework is not a process theory. Markus and Robey (1988) define a process theory as a model concerned with explaining how outcomes develop over time. Therefore, the B2C-RST does not qualify as a process theoretical perspective according to this definition. The exogenous variables presented in this model are shown to predict the desirable endogenous variables associated with the different stages of an online B2C relationship. Given the variance perspective for this theory, we can gain insight, albeit implicitly, to the B2C-RST process by understanding the ordinal nature of the relationship stages. By understanding the key relationships between the predictors in this model as proposed in this cross-sectional view, and the time order in which the breadth perspective gives us, a holistic understanding of online B2C relationships is possible.

As this model is intended as a variance model, we are not accounting for changes over time due to the cross-sectional (e.g., snapshot) nature of the variance perspective. Therefore, although our model states that certain constructs predict important variables (e.g., attraction, self-disclosure, and eLoyalty), we do not maintain that the antecedents

will not change over time. The level of ‘trust’ at point Time N may not be the same level of ‘trust’ at Time N+1. Our model maintains that trust at Time N is predictive of the level of loyalty at the same Time N, but does not determine what the level of trust will be at Time N+1. As Stage Theory is not presented as a process theory, going beyond such a conceptualization is beyond the scope of this research.

*Finally, identification of the constructs included in the B2C-RST was done by identifying the underlying factors set forth in Stage Theory and instantiating those factors to an online B2C relationship context.* The theoretical propositions and constructs presented in the B2C-RST are intended to be a faithful instantiation of the Stage Theory perspective in an online B2C relationship context, and supported by evidence found in the IS literature. We admit (and expect) that there may be alternative relationships between these constructs not represented in this model, however in this conceptual endeavor our effort was to stay true to the Stage Theory perspective. For example, there may actually be direct effects between variables where this model implies mediation, or there may be relationships between the exogenous variables represented in the model. However, we leave this further investigation of relationships for future research, and have presented a faithful representation of this theoretical extension.

## **JUSTIFICATION FOR PROPOSITIONS**

Now that the underlying assumptions of the B2C-RST have been outlined, this section presents the justification for the propositions related to the depth of each stage. Both Stage Theory and the IS literature provide the theoretical justification for B2C-RST and the associated propositions. First we begin with the Attraction stage then proceed to subsequent stages.

## **eCommerce Attraction Stage**

Attraction is defined as an overall evaluation or attitude toward a potential relationship with an organization, and this stage is focused on appraising the potential risks and rewards of a B2C relationship. This stage of a B2C relationship is qualified by low levels of experience with the website and therefore minimal previous interaction and expectations when initially exposed to the organization's website. Past research indicates that, all else being equal, attraction is encouraged by the perceived rewards others may provide (Ted L. Huston, 1974). Further research based on interpersonal relationships provides deeper insight into the various factors that lead to perceived rewards: good appearance, competent behavior, compatibility, and a level of responsiveness or apparent liking (Ted L. Huston & Levinger, 1978; George Levinger, 1980). Further, perceived rewards may be evaluated from a *transactional* perspective (e.g., capable, proficient) as well as a *relational* perspective (e.g., special, enjoyable). To illustrate further, we look to Feingold's (1992) meta-analysis in which he identified important aspects of evaluating potential relationships. The preference categories identified in this meta-analysis include socioeconomic status (SES), ambitiousness, character, intelligence, humor, and personality. Intuitively, some of these areas are more transactional (e.g., ambitiousness), while other aspects are more relational (e.g., humor).

Each of these factors can be the source of relational and/or transactional rewards. Each type of relationship serves different roles in individuals' lives and involves different contexts. Some relationships may be focused on transactional rewards (e.g., extrinsic needs such as best price). Others provide more relational rewards (e.g., intrinsic needs such as enjoyment). Therefore, the influencing factors of perceived rewards may fulfill



relational and/or transactional needs of the relationships. For example, the determinant “good appearance” may be perceived as a transactional reward in one relationship but relationally rewarding in another; how a determinant is viewed depends on the dynamics of the relationship and its context. Table 1 applies these relationship factors to B2C relationships and provides an example of these underlying factors. Below, each construct within this theoretical model is defined and integrated into the overall model.

<b>Table 2. 1: Operational Examples of Constructs Proposed the in the Attraction Stage</b>	
<b><i>Construct</i></b>	<b><i>Operational Example(s)</i></b>
Attraction to the Organization	An overall positive attitude toward engaging in a B2C relationship with an online organization
Perceived relationship rewards	A belief that a customer will always benefit from interactions with a web-based organization
Visual Appeal	The website’s good appearance, color scheme, or attractive layout
Competent behavior	A websites download delay, level of security, or navigation issues
Relationship compatibility	A perception that the organization’s values are compatible with the customer’s
Relationship receptiveness	A perception that a web-based organization really wants the customer to be their customer

*Attraction toward an Organization:* We reiterate here our definition of attraction as an attitude or summary evaluation of toward an organization. Past eCommerce research has acknowledged the importance of attracting new customers, and many different strategies have been suggested to achieve this end (Watson et al., 1998). However, to our knowledge, this construct has not been measured in an eCommerce context. Based on Stage Theory, we have identified the following constructs as key antecedents that directly and indirectly influence this variable.

*Perceived Relationship Rewards:* Research in attraction between humans has found that evaluations and perceptions of gains vs. losses are of great importance (Aronson & Linder, 1965; Huesmann & Levinger, 1976; G. Levinger & Snoek, 1972). The use of perceived rewards is not foreign to IS research. IS researchers have used

similar constructs in IS adoption literature, which is similar to attraction in B2C relationships. The model of Personal Computer Utilization considered the importance of evaluating long-term consequences in researching IS use (Thompson, Higgins, & Howell, 1991).

Perceived relationship rewards, for the purpose of this research, are defined as the perception of overall future gains or benefits from engaging in a B2C relationship. This perception is a product of a complex evaluation of an organization's observed and perceived attributes. Interpersonal relationship research has shown that attraction is encouraged by the perceived rewards of a potential relationship (Ted L. Huston, 1974). If one perceives that there are potential rewards for entering a relationship, one is likely to be attracted. We posit that the higher the level of perceived rewards of a potential B2C relationship, the higher the level of attraction toward the organization.

*P1: A customer's perception of rewards from a potential B2C relationship positively affects the customer's Attraction toward an Organization.*

*Visual Appeal:* Visual appeal in this context can be viewed as a perception of the aesthetics and overall appearance of a website. This construct has been used in many previous eCommerce research studies (e.g., Loiacono et al., 2007). In offline interpersonal relationships, visual appeal would largely be determined by perceptions of another's physical beauty (Ted L. Huston & Levinger, 1978). Appearance is often the first attribute that others can evaluate, and past research shows that people make many attributions based on appearance (Ted L. Huston & Levinger, 1978). For instance, those with good appearance are regarded in higher favor (Adams & Huston, 1975; Dermer & Thiel, 1975; Dion & Berscheid, 1975; Dion, Berscheid, & Walster, 1972; T.L. Huston,

1973), are viewed as more responsible (Seligman, Paschall, & Takata, 1974), are more influential (Sigall & Aronson, 1969), are perceived as better performers (Landy & Sigall, 1974), are pleasing to the eye (Feingold, 1992), and are more responded to by others (Barocas & Karoly, 1972; Benson, Karabenick, & Lerner, 1976). These types of attributions increase perceptions of possible rewards from potential relationships.

Similar effects have been found in business relationships. For example, research on Agency Theory shows that the environment can effect perceptions of organizations (Bergen et al., 1992). In such relationships, positive atmospherics (e.g., nice looking hotel lobby) can prompt individuals to form more positive evaluations (Kotler, 1973-1974). IS research on website design indicates that a website's visual appeal can be assessed in as little as 50 milliseconds (Lindgaard, Fernandes, Dudek, & Brown, 2006). Customers can therefore use attributions based on these impressions to evaluate other aspects of the website or organization. One of the more telling findings in this regard within the IS discipline is the notion that what is beautiful is useable (Tractinsky, Katz, & Ikar, 2000). Tractinsky and colleagues found that users' perceptions of a system's aesthetics correlated more highly with their assessment of usability than the degree of actual usability, suggesting that perceptions of visual appeal are more important than the actual performance of the system. Past research has found that websites that are more attractive lead to positive evaluations (Van der Heijden, 2003). In accordance with this research, website visual appeal is expected to enhance the perceived rewards of a potential B2C relationship.

*P2: A customer's perception of a website's visual appeal affects the perceived rewards of a relationship.*

*Competent Behavior:* This construct refers to the perception of website competence. For instance, does the system do what is expected (i.e., normed), and does it perform as it should (e.g., security)? In an offline context these perceptions are based on one's ability to behave according to the norms of social appropriateness, given a specific context and role (Ted L. Huston & Levinger, 1978). Competent Behavior has been observed to be a strong factor in determining the possible rewards of a relationship (Ted L. Huston & Levinger, 1978) because perceptions of future behavior are often based on past behavior. Socially normed appropriate behavior similarly encourages attraction (Chaikin & Derlega, 1974; Chelune, 1976). Also, behaviors such as disclosing personal information in inappropriate circumstances discourages attraction (Derlega & Chaikin, 1976). Other studies have found that perceptions of another's "ability to obtain and willingness to invest the resources necessary for the survival and success" of a relationship (Buston & Emlen, 2003 p. 1) influence evaluations of possible relationships (Feingold, 1992). Therefore, we see the assessment of one's competence as a key factor for understanding perceptions of potential rewards of a relationship.

In an online B2C context, perceptions of competence can be influenced by a number of characteristics including but not limited to security, navigability, response time, and usefulness. Many proxy variables have been studied that can be attributed to this macro construct. For example, website characteristics such as download delay (Dennis F. Galletta, Henry, McCoy, & Polak, 2006), security and navigability (Salisbury, Pearson, Pearson, & Miller, 2001) and usefulness (Van der Heijden, 2004) have all been found to influence user perceptions of websites. Such perceptions have also been found to be influenced by web seals (e.g., VeriSign) (Odom, Kumar, & Saunders, 2002).

Competence has long been used in trust-related IS research (Mayer, Davis, & Schoorman, 1995; McKnight et al., 2002), where competence has been found to predict trusting beliefs. All these assessments of website competent behavior influence evaluations of future interactions and possible rewards of a B2C relationship. Similarly, website functionality and competence are also expected to predict perceptions of possible relationship rewards.

*P3: A customer's perception of a website's competent behavior affects the perceived rewards of a relationship.*

*Relationship Compatibility:* The definition of this construct refers to perception that the website content communicates values and beliefs that are compatible with the values and beliefs of the customer. Perceptions of compatibility in interpersonal relationships are an integral part of attraction (D. Byrne, 1969; Sussmann & Davis, 1975). Aspects of compatibility which encourage attraction include similarity (Craig & Duck, 1977) and compatible attitudes (Johnson & Tesser, 1972; Tesser, 1972). These aspects of compatibility have shown to reinforce our self-concept (D. Byrne, 1971; D. Byrne, Clore, Griffitt, Lamberth, & Mitchell, 1973; Clore, 1975; Clore & Byrne, 1974), indicate that others are good (Arrowood, 1973; Hensley & Duval, 1976; Leonard, 1975; Levine, Ranelli, & Valle, 1974), and enhance one's self esteem (Leonard, 1975).

A comprehensive review of compatibility research in IS has shown that compatibility in values has been a significant aspect of IS use (Karahanna, Argarwal, & Angst, 2006). Karahanna et al. (2006) also considered values compatibility to be an important factor in technology acceptance. Past research has shown that compatibility has been used in similar IS research as an important factor in diffusion of innovations

research (Moore & Benbasat, 1991). In a B2C context, if an organization's website conveys beliefs and values compatible with a potential customer, similar effects are expected. For example, customers have been found to be more attracted to an organization with similar values (i.e., environmentally friendliness) than incompatible values (Laroche, Bergeron, & Barbaro-Forleo, 2001).

*P4: A customer's perception of an organization's relationship compatibility affects the perceived rewards of a relationship.*

*Relationship Receptiveness:* This construct refers to a customer's perception of a organization's desire to enter into a customer relationship. Interpersonal attraction research shows that evaluations of future interactions do effect perceived rewards of a relationship (Huesmann & Levinger, 1976). These types of evaluations lead to a perception of greater ability to provide future rewards (Brickmann, Meyer, & Fredd, 1975). Overall, an individual is more likely to be attracted if assured that the other accepts them (T.L. Huston, 1973; G. Levinger & Snoek, 1972), and not attracted if assured that they were not acceptable (Shanteau & Nagy, 1976).

Similarly, in an eCommerce context, a customer is more interested in an organization that shows interest in a B2C relationship (e.g., product notices) than one that does not (e.g., no-return policy). With current IS capabilities, organizations are able to communicate one-to-one with users (Wells et al., 1999) with customized content (Palmer & Griffith, 1998; Watson et al., 1998). These individual cues portrayed in a website act as a signal to potential customers of an organization's receptiveness to a relationship. In turn, interfaces that portray a message of relationship receptiveness affect a customer's overall perception of possible rewards from that relationship.

*P5: A customer's perception of an organization's relationship receptiveness affects the perceived rewards of a relationship.*

### **eCommerce Build-Up Stage**

There are a few qualifying conditions for this stage of a B2C relationship. First, customers have been exposed to the website resulting in low to moderate levels of experience with the site. Second, initial trust is being formed at this stage. The third qualifying condition for this stage regards an exchange of information between the organization and the customer. This stage is tightly coupled with the greater promise of rewards which encourages the customer to continue to investigate the possible B2C relationship. Much of the eCRM research has been focused on information retrieval from customers (Romano & Fjermestad, 2002a). Therefore, the necessity of self-disclosure in eCommerce is evident. Stage Theory also points out that self-disclosure is the crucial aspect of this stage of a relationship. Self-disclosure is encouraged by many factors (see Table 2) outlined in the Build-Up stage.

<b>Table 2. 2: OPERATIONAL EXAMPLES OF CONSTRUCTS PROPOSED IN THE BUILD-UP STAGE</b>	
<i><b>Construct</b></i>	<i><b>Operational Example(s)</b></i>
Self-disclosure	A customer gives personal information to a web-based organization (e.g., email address, credit card information)
Attraction to the Organization	An overall positive attitude toward engaging in a B2C relationship with an online organization
Perceived Relationship Rewards	A continued belief that a B2C relationship offers benefits for the customer
Barriers to Entry	A habit of visiting a website, time investment, or learning curve investment toward a <b>competing</b> website
Involvement	A high level of perceived relevance between of relationship between the organization and the customer
Trust	A willingness to be vulnerable to a web-based company

*Self-disclosure:* A mature relationship can progress to a point of full disclosure leaving both parties very vulnerable to each other. Prior to reaching that level of

disclosure, a stage of ‘testing-the-waters’ is an important step for all parties. The ultimate dependant variable in the Build-Up stage is a customer’s level of self-disclosure.

Levinger and Snoek (1972) found that an important part of relationships regarded the testing of disclosure to see how the other party will respond. Recent research has also found that self-disclosure is a common way for adults to increase interpersonal closeness (Collins & Feeney, 2004; Mikulincer & Nachshon, 1991). Self-disclosure has been found to be essential to eCommerce exchanges, which cannot exist without information exchange between the parties (Youngme Moon, 2000). Depending upon the outcomes of the Attraction stage of the B2C-RST and/or past Build-Up activities, one may wish to engage in self-disclosing behavior in order to discover the others reaction. For example, if a customer offers a website a personal email address, will the information be abused or not? If so, the customer may not continue such behavior or give false information and therefore not progress in the relationship. Research has shown that various IT-artifacts have been known to influence human’s self-disclosure with computers (Youngme Moon, 2000), and Stage Theory suggests the following are key predictors of this behavior.

*Attraction toward an Organization:* Attraction is a necessary but not sufficient condition for initiating a B2C relationship. One of the fundamental characteristics of a relationship is interaction (Kelley, 1979). However, there is a natural apprehension to disclose information (McCroskey & Richmond, 1977) that especially exists online (e.g., security concerns). This attitude toward a relationship with an online organization, as previously defined, is essential, and without this positive overall evaluation of a relationship self-disclosure is unlikely. Attraction toward an organization provides the initial appeal which motivates individuals to overcome the natural apprehension to



exchange information that facilitates the interaction requisite for a relationship (Ted L. Huston & Levinger, 1978).

*P6: A customer's attraction toward an online organization affects self-disclosure.*

*Perceived Relationship Rewards:* Interpersonal relationship research shows that the progression of interpersonal relationships is based on the perception of incrementally greater potential rewards compared to costs (Huesmann & Levinger, 1976; G. Levinger & Huesmann, 1980). Based on the outcomes from the Attraction stage and/or previous Build-Up activities, a B2C relationship may show increasing promise of gains. A promise of gains will continue to motivate individuals to engage in behavior that will further the relationship. In a B2C context for instance, this stage is therefore ideal for extracting information from potential eCommerce customers with conditional rewards to entice customers to share information (e.g., share e-mail address, name, and other information to receive a username, password, or other type of access to potential rewards).

*P7: A customer's perception of relationship rewards affects self-disclosure.*

*Barriers to Entry:* Interpersonal relationship research has shown that progression from the Attraction stage to further stages of a relationship is only possible if one desires to expand interpersonal connections (Ted L. Huston & Levinger, 1978; George Levinger, 1980). Although one may be attracted to another party, there may be barriers that inhibit expansion of connections (e.g., previously committed to another relationship, content with current relationships). Alternatively, when one commits to a relationship, one often commits to construct barriers to entry into competing relationships (e.g., pledge of monogamy). In an eCommerce context, these barriers to entry take the form of switching

costs. For example, if one has high *switching costs with website A*, then there exists a *barrier to entry with a competing website B*. Thus barriers to entry prevent further progression in a competing B2C relationship.

The Build-Up stage is concerned with switching costs customers may have already established with a competitor, such are barriers to entry because they prevent a customer to enter into new B2C relationships. Past research has identified many different facets of switching costs that can be classified into three categories: procedural switching costs, financial switching costs, and relational switching costs (Burnham, Frels, & Mahajan, 2003). Procedural switching costs are primarily involving the loss of time and effort. Financial switching costs include the loss of financially quantifiable resources. Relational switching costs refer to the psychological or emotional discomfort due to the loss of identity and the breaking of bonds. IS research has also identified three similar types of switching costs: transaction costs, learning costs, and artificial or contractual costs.

“Transaction costs are costs that occur to start a new relationship with a provider and sometimes also include the costs necessary to terminate an existing relationship. Learning costs represent the effort required by the customer to reach the same level of comfort or facility with a new product as they had with an old product. Artificial switching costs are created by deliberate actions of firms; frequent flyer programs, repeat-purchase discounts, and “click-through” rewards are all examples” (P.-Y. Chen & Hitt, 2002 p. 257).

In other words, if a potential customer faces high switching costs relating to a competing organization, the customer would be less likely to pursue an alternative B2C relationship and, subsequently, less likely to engage in self-disclosure.

*P8: In an eCommerce context, a customer’s barriers to entry into a new B2C relationship affects self-disclosure.*

*Involvement:* Zaichkowsky (1985) defines involvement as: “a person’s perceived

relevance of a [potential relationship] based on inherent needs, values, and interests.” In IS research, the concept of involvement has been primarily used in the study of systems development (Barki & Hartwick, 1989; Tait & Vessey, 1988). However, marketing research has long acknowledged the importance of involvement in consumer behavior (Greenwald & Leavitt, 1984; Petty, Cacioppo, & Schumann, 1983). Interpersonal relationship research has shown that levels of involvement correlate with subsequent progress of relationships (Hill, Rubin, & Peplau, 1976; G. Levinger, Senn, & Jorgensen, 1970). IS-related research has shown that interfaces can affect the level of user involvement (Kumar & Benbasat, 2002) especially in an eCommerce context (Griffith, Krampf, & Palmer, 2001). Research has also shown that people interact with computers at similar levels of involvement as with other people (Kiesler, Sproull, & Waters, 1996). Given that an eCommerce interaction requires disclosure of information in order to transact business, it is expected that the involvement in a potential B2C relationship fosters self-disclosure in a B2C relationship.

*P9: A customer's level of involvement affects self-disclosure.*

*Trust:* Consistent with the definition presented by Mayer, Davis, and Schoorman (1995), trust is a willingness of parties to be vulnerable to other's actions. Stage Theory names this construct as an important aspect of relationship maintenance. Trust has been shown to be influenced by many factors, such as trust in the business environment, trust in the organization, individual differences, and beliefs about specific characteristics of the trustee (Dinev & Hart, 2006; Gefen & Straub, 2003; Mayer et al., 1995; McKnight et al., 2002; P.A. Pavlou & Gefen, 2004). Interpersonal relationship research suggests that for relationship progression to occur, a party becomes more vulnerable to the other. Such

willingness to become vulnerable is by definition an act of trust. A IS research study has also shown that aspects of trust are significant predictors of a customer's willingness to provide personal information to transact on the Internet (Dinev & Hart, 2006). Similarly we propose that trust is a key predictor of a customer's self-disclosure.

*P10: A customer's level of trust in a B2C relationship affects self-disclosure.*

### **eCommerce Maintenance Stage**

Attainment of this stage of a B2C relationship marks the maturing of the working relationship. Qualifying conditions for this stage of a B2C relationship include high levels of experience with the site, overall perceived rewards, self-disclosure, and moderate to high levels of trust and eLoyalty. Trust between parties is formed due to the Build-Up activities of the previous stage. This stage of a relationship marks the only stage of a relationship where perceived rewards are not the focus of the relationship, but are prerequisite. The focus of this stage is establishment of a working relationship.

*eLoyalty*: Reiterating our previously outlined definitions as “a customer's intention to visit the Internet business site again based on previous experiences as well as future expectations” (Kim et al., 2002 p. 248) and “deals with customer intentions to do more business with the vendor and to recommend that vendor to other customers” (Gefen, 2002 p. 29). In IS research, the intention to continue to use an IS has been widely researched as the post-adoption stage of IS use (Bhattacharjee, 2001). This stream of research as well as relationship literature stresses the importance of satisfaction as an antecedent to continuance. However, the relational focus of the B2C-RST offers insight to other possible factors that may lead to eLoyalty (see Table 3).

**Table 2. 3: Operational Examples of Constructs Proposed in the Maintenance Stage**

<i>Construct</i>	<i>Operational Example(s)</i>
eLoyalty	Continued website usage and positive attitude toward my past experiences with the organization
Self-disclosure	A customer gives personal information to a web-based organization (e.g., email address, credit card information)
Involvement	A high level of perceived relevance between of relationship between the organization and the customer
Trust	A belief that the web-based company will do what is in my best interest
Satisfaction	A favorable perception of the process and outcomes dealing with a website in a B2C relationship
Switching cost	Already familiar and comfortable with purchasing atmosphere of an online organization

*Self-disclosure:* One of the qualifying conditions for a mature relationship is that both parties have high levels of self-disclosure. As disclosure and interdependence are more prevalent in a relationship, maintenance is achieved (George Levinger, 1980; G. Levinger & Huesmann, 1980). Marketing research has also shown that self-disclosure is necessary in the development of commitment to a retailer (Cho, 2006). Self-disclosure has been found to be essential to eCommerce exchanges, which cannot exist without information exchange between the parties (Youngme Moon, 2000). Consistent with these streams of research we propose that self-disclosure affects eLoyalty.

*P11: A customer's level of self-disclosure affects the level of eLoyalty to a website.*

*Involvement:* As discussed earlier, the interaction between the two parties is a key aspect at this stage of a relationship. As in the Build-Up stage, Stage Theory indicates that involvement is also very influential in the Maintenance stage. Interpersonal relationship research has shown that levels of involvement correlate with subsequent progress of relationships (Hill et al., 1976; G. Levinger et al., 1970). IS-related research has also shown that interfaces can affect the level of customer involvement (Kumar & Benbasat, 2002) especially in an eCommerce context (Griffith et al., 2001). One

eCommerce study has shown that involvement is highly influential in determining website loyalty (Wang, Pallister, & Foxall, 2006). Similar to this finding, it is expected that the involvement in a potential B2C relationship fosters eLoyalty to a website.

*P12: The involvement in a B2C relationship affects the level of eLoyalty to a website.*

*Trust:* As previously defined, trust is a willingness of parties to be vulnerable to other's actions. At this stage of a B2C relationship, a customer's level of trust in an eCommerce website is more stable as the result of the outcomes of the Build-Up stage where a party is tested to see if they are trustworthy. If an organization is able to "pass" the testing-the-waters stage presented in Build-Up, then a level of trust is fostered. Such trust is necessary to engender eLoyalty. Relationship marketing has also acknowledged the importance of the role of trust for mature relationships (Morgan & Hunt, 1994), and has even been the focus of alternative models regarding B2C relationships (e.g., website-stickiness) (Li et al., 2006). In one study focusing on eLoyalty, trust was shown to be the strongest predictor (Gefen, 2002). Similarly we propose that trust is a key predictor of a customer's level of eLoyalty.

*P13: A customer's level of trust in a B2C relationship affects the level of eLoyalty to a website.*

*Satisfaction:* Wixom and Todd (2005) define satisfaction as: "a degree of favorableness with respect to the system, mechanics of interaction, [and outcomes of interaction]." This includes satisfaction with the website, organization, previous outcomes, and the relationship with the organization in general. There are two different aspects of interest with regard to satisfaction. Relationship research on human couples

identifies two complementary functions of a relationship, task and social-emotional (George Levinger, 1980; T. Parsons & Bales, 1955; Settoon & Mossholder, 2002; Thibaut & Kelley, 1959). Task functions include dealing with externally related issues. Social-emotional functions include intra-relationship issues. Both types can be the source of satisfaction (or dissatisfaction). Past research on relationships shows the importance of satisfaction for successful relationships (Blood Jr. & Blood, 1978; G. Levinger, 1964). The level of satisfaction in a relationship at an initial time point have been found to predict subsequent time periods (Hill et al., 1976; G. Levinger et al., 1970). Relationship marketing literature also has recognized the influential role satisfaction plays as a predictor of long-term orientation with an organization (Ganesan, 1994). IS research also indicates the influence of satisfaction with previous transactions for the intention to transact business (Paul A. Pavlou, 2003). Satisfaction has also shown to influence IS continuance and use (Bhattacharjee, 2001; Wixom & Todd, 2005) which is similar to eLoyalty (Kim et al., 2002). IS research has shown that interface characteristics can influence user satisfaction (e.g., D.F. Galletta, Henry, McCoy, & Polak, 2004), therefore both process and outcome satisfaction are important to consider in a B2C context. Previous studies have shown satisfaction to be the most influential predictor of eLoyalty (R. E. Anderson & Srinivasan, 2003; Ribbink, Riel, Liljander, & Streukens, 2004). Therefore this role of satisfaction in eLoyalty is justified in the model.

*P14: A customer's level of satisfaction with a website affects the level of eLoyalty to a website.*

*Switching Cost:* Members of an interpersonal relationship make an investment in the relationship (Huesmann & Levinger, 1976; Rusbult, 1980), whereby a level of

interdependence creates an incentive to maintain that investment. In a B2C context, this interdependence, for a customer, takes the form of high switching costs. As defined above, this construct is likely to exhibit higher forms of transaction, relational, artificial, procedural, financial, or relational switching costs. Many consider eCommerce to be an industry with relatively low switching costs, however literature suggests high customer loyalty in electronic markets (Friedman, 1999). Previous research in the area of eLoyalty has found switching costs to be a significant predictor (Gefen, 2002). Consistent with this previous research, we expect that switching costs will influence customer's level of eLoyalty.

*P15: A customer's level of switching costs affects the level of eLoyalty to a website.*

## **TESTING THE B2C-RST**

Given that this theoretical framework is proposed from a variance perspective, we propose this model can be tested explicitly as a variance model using survey methods. Appendix B proposes survey items to measure the constructs proposed in the B2C-RST. However, we also offer alternative uses of this framework for purposes of empirical testing as well as practical use.

One of the strengths of this perspective is that it captures the breadth perspective. Therefore some practical and theoretical insight maybe gained by incorporating empirical methods common in testing a process perspective. Such a perspective is not explicitly testable in the framework. However, we propose two methods that could be used to inform a process view of this phenomenon. First, such a view may be validated by



breaking up the model presented here into stages and test the stages with the use of longitudinal data of a sample that progresses through an online B2C relationship.

Second, we propose a method commonly used in testing the progression and/or dissolution of long-term interpersonal relationships. This method utilizes a comparison technique which classifies relationships based on their current characteristics (Gottman & Levenson, 2000). As discussed, each stage offers qualifying conditions which can be used to assess the current state of a given B2C relationship. Further, by examining a relationship, it is possible to ascertain the stage in which a B2C relationship is currently engaged (see Table 4). These unique qualifying conditions, as previously identified, are: 1) Past experience with the website, 2) Positive overall perceived rewards of the relationship, 3) Level of self-disclosure of personal information, 4) Level of trust, and 5) Level of eLoyalty. Based on these qualifying conditions, the stage of a B2C relationship for an individual, or target market, can be determined by analyzing the mean responses to the survey items presented in Appendix B. Once an organization determines the current stage of a relationship, eCommerce managers can use the B2C-RST framework to manage the B2C relationship based on the needs of the customer for a given stage of the relationship.

<b>Table 2. 4: Qualifying Conditions for Each Stage of the B2C-RST</b>					
<i>Qualifying Condition</i>	<i>Experience with the website</i>	<i>Positive overall perceived rewards of the B2C relationship</i>	<i>Level of self-discloser of personal information</i>	<i>Level of Trust</i>	<i>Level of eLoyalty</i>
<i>Stage</i>					
Attraction	L	L	L	L	L
Build-Up	L to M	H	L to M	L	L
Maintenance	H	H	H	M to H	M to H
Note, L = Low, M = Moderate, and H= High					

The B2C-RST can also be practically applied to enable organizations to focus on the stage (or stages) of a B2C relationship that is most applicable for a target segment of customers without surveying individuals or a market segment. This can be done by intuitively targeting a specific stage, and applying the insight of the theoretical relationships presented here. For example, a start-up company may need to focus on enhancing important aspects of Attraction and Build-Up for potential customers, or an organization with a mature consumer base may need to focus on important factors in the Maintenance.

Another method of practical application of this theoretical perspective would be for executives to periodically assess a customer base. This could be achieved by surveying a representative sample of an organization's eCommerce patrons and analyzing the snapshot of data to make inferences and strategic decisions. By comparing the mean values, a dashboard could be comprised to show the percentage that rated favorable (or unfavorable) on the desirable dependant variables (e.g., Attraction toward the Organization, Self-Disclosure, and eLoyalty). Therefore a strategic understanding of the current customer base could be gained. Also, comparing the mean values of the predicting variables could give insight into possible strategic action-plans to attract, build, or maintain customer relationships.

## **CONCLUSIONS**

Throughout this paper, practical and theoretical contributions have been outlined regarding the insight that the B2C-RST brings to research regarding B2C relationships. Specifically, this proposed framework examines the online B2C relationship from a Breadth, Depth, Relational, and Transactional view providing a holistic view from which

to examine and study such relationships. Additionally, the B2C-RST offers insight for web developers and eCRM practitioners. This perspective supports the notion that a one-size-fits-all eCommerce strategy may not be optimal for eCRM. The B2C-RST suggests that customers need different web characteristics and eCommerce policies based on the appropriate stage of a B2C relationship. This framework also suggests a different type of eCommerce personalization strategy. Currently, some eCommerce organizations are focused on product personalization as their primary area of eCRM strategy (e.g., Amazon.com). However, this framework supports that website personalization strategies based on B2C relationship stages may also lead to competitive advantages. Using this theoretical framework, businesses will be able to identify or target specific stages of a B2C relationship and adjust their website's characteristics or eCommerce policies to encourage long-term customer relationships.

As this is a conceptual paper, one of its primary focuses is to create many future research questions, and inspire empirical work in this area. Therefore we believe we have provided a platform for numerous such questions. For example, some constructs presented in this model are new to IS literature, and others have been used in other models. Exploring the relationship between some of these new constructs and others in the literature could be the focus of many streams of research. Another avenue for future research would be to reconcile this model (or parts of the model - e.g., one stage) with complimenting research models. For example, comparing and contrasting the Attraction stage presented here and the technology acceptance model (TAM) in an eCommerce acceptance context. Implicit in this conceptual undertaking is a call for future research dedicated to the testing of the model and corresponding propositions presented in this

paper. Future research can also include an investigation of this phenomenon from the organization's perspective. Another avenue for future research could include investigating possible moderating factors such as situational factors (e.g., mood, task, etc.) individual differences (e.g., computer playfulness). This conceptual framework also lays the foundation for future conceptual models which could offer a process theory perspective of this phenomenon. Finally, one other avenue of future research would be to extend the remaining stages identified in Stage Theory (e.g., Deterioration and Ending) to the context of online B2C relationships.

**3. ESSAY TWO -**

**EXAMINING THE STRENGTHS AND BOUNDARIES OF VALIDITY**

**ANALYSIS TECHNIQUES IN INFORMATION SYSTEMS RESEARCH FOR**

**CROSS-SECTIONAL DATA**

**INTRODUCTION**

Many researchers have raised issues regarding instrument development and validation in IS research over the past 20 years (e.g., Gefen, Straub, & Boudreau, 2000; D. Straub et al., 2004; D. W. Straub, 1989). IS research commonly utilizes cross-sectional data, and subsequently, numerous techniques have been used to validate such data. One of the culminating works in this line of research was Straub, Boudreau, and Gefen's (2004) article that proposed validation guidelines for measurement instruments. Straub and colleagues noted that there are many different validity components, specifically, content validity, construct validity, reliability, and manipulation validity. In order for any instrument to be considered psychometrically sound, it cannot ignore any of these components. For example, an instrument that is highly reliable yet lacks construct validity is useless. The goal of this paper is to delve deeper into one of these areas: construct validity. Here we provide a tutorial for understanding various aspects of common statistical techniques used to establish construct validity when using cross-sectional data.

Under the umbrella of construct validity many key aspects have been identified (D. Straub et al., 2004). This paper focuses on statistical analysis techniques commonly used in IS research when analyzing cross-sectional data, and focuses on two aspects of

construct validity: convergent and discriminant validity. Convergent validity is the extent to which the observed variables (e.g., items of a questionnaire) of a latent variable correlate highly with other observed variables that represent the same latent variable (D. Straub et al., 2004). “Discriminant validity involves the analysis of a target construct in relation to its alternatives or cognates” (Shadish, Cook, & Campbell, 2002 p. 364). This form of validity is necessary to assure that conclusions do not result in a distinction between to constructs when in practice there is only one.

“When a construct is proposed, the proponent invariably has in mind distinctions between the new dimension and other constructs already in use. One cannot define without implying distinctions, and the verification of these distinctions is an important part of the validation process” (Campbell & Fiske, 1959 p. 84).

Here we will provide a tutorial for these analysis techniques as well as illustrate their strengths and weaknesses. With this understanding we hope to provide researchers the tools to utilize these techniques faithfully and interpret their results appropriately.

One main focus of this tutorial is to highlight the role of **theoretical** understanding when interpreting construct validity analysis techniques. By focusing on convergent and discriminant validity, we do not minimize the importance of the other aspects of construct validity (e.g., factorial validity, nomological validity, predictive validity, and common method bias) (D. Straub et al., 2004), which we consider to be prerequisite to construct validity. This paper is not focused on invalidating any of these analysis techniques, but compares and contrasts different types of validity analysis. An example of a real instrument development will be analyzed to illustrate the utility and limitations of these respective validity techniques. The intent of the recommendations proposed in this paper is to highlight the importance of theoretically informed interpretation of results, as opposed to strict adherence to blind statistical procedure and

subjective rules-of-thumb.

To accomplish these goals, some of the commonly used validity analysis techniques for cross-sectional data are discussed. The strengths and weaknesses of these respective techniques are highlighted. In turn, the different validity analysis techniques are compared and contrasted using a sample data set that was collected for the development of a survey measurement instrument. The dataset used in this example is useful because it consists of cross-sectional data containing two constructs that are theorized to be highly correlated. The data analysis method is then outlined. Finally, the contributions and limitations of this research are summarized.

### **CONSTRUCT VALIDITY: KEY ISSUES**

Fundamentally, construct validity focuses on convergent and discriminant validity. Assuredly, these two aspects are integral and related in terms of construct validity. This focus was partially due to the popularity of the multi-trait multi-method (MTMM) approach to construct validity as proposed by Campbell and Fiske (1959). The MTMM compares the correlation of different measures of the same trait (convergent validity) and measures of different cognate traits (discriminant validity). The MTMM controlled for other specific types of validity (e.g., common method bias and nomological validity). However, the MTMM is not feasible to be used in all cases of instrument development. One of the drawbacks to the MTMM is that it requires established measures for multiple methods and cognate constructs. Such established measures are not always available, especially considering that instrument development is mostly needed for constructs for which established measures do not currently exist.

Therefore, given the infeasibility of using the MTMM for many types of

instrument development, other statistical techniques have emerged for demonstrating convergent and discriminant validity. The issue of validity is important regardless of the statistical technique used for hypothesis testing (e.g., ANOVA, linear regression, HLM, PLS, or SEM). However, the validity of the measurement instrument is a fundamental prerequisite when conducting hypothesis testing. Therefore, many different analysis techniques have been proposed for establishing discriminant and/or convergent validity, specifically, Principle Components Analysis (PCA), Confirmatory Factor Analysis (CFA) as used in Structural Equation Modeling (SEM), Average Variance Extracted (AVE) analysis, X<sup>2</sup> Comparison Analysis, and Correlation-Based Analysis. These analysis techniques have become common in analyzing cross-sectional data and establishing validity of measurement instruments. This paper will examine the strengths and weaknesses of these common analysis techniques, which is an understanding key to making sound conclusions while conducting research. As part of this undertaking two points are important to understand 1) the role of theory in the selection of data analysis techniques and interpretation of the results and 2) the use of rules of thumb and *de facto* standards.

### **Role of Theory in Selecting Data Analysis Techniques and Interpreting Results**

The role of theory in selecting data analysis techniques can be better understood through a discussion comparing and contrasting Exploratory Factor Analysis (EFA) vs. Confirmatory Factor Analysis (CFA). EFA is data-driven, and “conducted to discover what latent variables (factors) are behind a set of variables or measures. Generally contrasted with CFA, which tests theories and hypotheses about the factors one expects to



find.” (Vogt, 1999 p. 105) EFA is a statistical analysis technique that examines data to uncover patterns in the data that can be used to suggest underlying theoretical factors. CFA is a technique that compares an observed dataset against a proposed theoretical model. Therefore CFA is much more theory-driven than EFA.

It is possible to use EFA for theory-driven analysis, or CFA for data-driven analysis, however, it is important to understand the difference between these analysis techniques. If EFA does not support a theoretical perspective, it may be more appropriate to use CFA before judging a dataset ‘useless’ or rejecting a hypothesis. Similarly, it may be necessary to cross-validate CFA conducted using modification indices (which is a data-driven approach to modifying a theoretical model) before claiming support for a theoretical model.

Theoretical sensitivity should also be used when interpreting the results of data analysis. In this context, we focus on the role of discriminant and convergent validity. In interpreting data analyses for these types of validity, researchers need to keep in mind the theorized relationship between constructs. For example, there may be theoretical reasons not to test for discriminant or convergent validity. Here we will discuss three specific reasons: 1) second-order factors, 2) theoretically justified highly correlated constructs, and 3) formative (as apposed to reflexive) factors.

A situation where discriminant validity is not a concern is with second-order factors. A second-order factor is a multidimensional factor where specific sub-dimensions of the factor can be identified. An example of a second-order factor is the construct of Trust (e.g., McKnight et al., 2002). In this example, the second-order factor is considered to be made up of three sub-factors: an individual’s ability, competence, and

integrity. Discriminant validity between these sub-factors is not prerequisite, as they are all sub-dimensions of the same factor. However, discriminant validity with other factors would be expected.

Another situation in which theory can play a significant role in guiding the interpretation of results with regards to discriminant validity is when constructs are theorized to be highly correlated. For example, much research has shown that the constructs of Motivation and Intelligence are highly correlated (McCLelland, Atkinson, Clark, & Lowell, 1953; Muir & deCharms, 1975). As a result, two schools of thought have emerged regarding this issue. The first advocates the existence of two highly correlated, yet distinct, latent constructs (Burt & Williams, 1962). The second school of thought does not support this view and claims that Motivation and Intelligence are two different labels for essentially/practically the same latent construct (Loretan, 1965). Since neither side can offer irrefutable evidence to support their view, it is left to each researcher to decide which school of thought they will accept. In other words, each researcher's theoretical perspective influences the interpretation of their results.

Finally, convergent validity is not a concern when the theoretical framing calls for formative factors. In defining formative constructs by contrasting them with reflexive constructs, Jarvis and colleagues set the following criteria: 1) "direction of causality from measure to construct"; 2) "internal consistency is not implied"; 3) "dropping an indicator from the measurement model may alter the meaning of the construct"; 4) "takes measurement error into account at the construct level"; 5) "construct possesses "surplus" meaning"; and 6) "scale score does not adequately represent the construct." (Jarvis, Mackenzie, & Podsakoff, 2003 p. 201). It is not prerequisite that formative factors show

convergent validity, as one of the theoretical assumptions for a formative factor is that the items (survey questions) do not have to show convergent validity (e.g., Marakas, Johnson, & Clay, 2007). Therefore, the development of an instrument for a construct theorized to be formative does not follow the same procedure as an instrument development for a reflective construct. The preceding examples illustrate the need for researchers to understand the impact of a theoretical view on the interpretation of data analysis.

### **Use of Rules of Thumb and *de facto* Standards**

When interpreting construct validity, there are rules of thumb and *de facto* standards, which provide some practical guidance, but are also considered to be inherently limited.

“Validity rules of thumb are pragmatic measures indicating patterns of behavior that are acceptable within a scientific community. There is no recognized means of verifying the truth of such heuristics, other than through tradition or evaluation of best of breed practice. It is traditional, for example, to accept a p-value of .05 in SEM (Joreskog & Sorbom, 1983), just as the .01 and .05 thresholds are accepted heuristics in linear regression (Neter, Wasserman, & Kutner, 1990). As with first generation regression models, there is no mathematical or other means for establishing these levels (Nunnally, 1967, 1978; Nunnally & Bernstein, 1994). Nonetheless, rules of thumb are desirable because of their practicality, enabling researchers to utilize them as *de facto* standards” (Gefen et al., 2000 p. 42-43).

We perceive these rules of thumb and *de facto* standards as being a double-edged sword. On one hand, such rules and standards provide a valuable means for interpreting construct validity. Conversely, they must be acknowledged also as a limitation given that some of these standards are interpreted subjectively. For example, is there a significant difference between a p-value of 0.049 and 0.051? These type of interpretations are ultimately left to researcher’s subjection, and are therefore vulnerable to both type I (false negative) and type II (false positive) errors.

Understanding the issues regarding the role of theory, and the use of rules of thumb, and *de facto* standards is key in data analysis and interpretation. With this focus, we will now explain and evaluate well-accepted statistical analysis techniques for convergent validity and discriminant validity used with cross-sectional data in IS research.

## **VALIDITY ANALYSIS FOR CROSS-SECTIONAL DATA**

There are a few popular methods for establishing construct validity commonly used in IS research. Here we will provide a tutorial for four different analysis techniques. The first is an EFA recommended for data-driven (e.g., theory building) research, and is centered on Principal Components Analysis. Next, three types of analysis techniques for theory-driven research are examined which are commonly used with CFA, namely the Correlation-based comparison, Average Variance Extracted (AVE) comparison, and  $X^2$  comparison. Some of these techniques can be used to evaluate both convergent and discriminant validity. Here we will illustrate how these techniques can be conducted as well as interpreted.

### **Principal Components Analysis**

Principal Components Analysis (PCA) is a form of Exploratory Factor Analysis that examines data for underlying factors suggested by the observed variables of a dataset, and is commonly run using SPSS software. PCA has been defined as a “statistical procedure employed to resolve a set of correlated variables into a smaller group of uncorrelated or orthogonal factors” (Gefen et al., 2000 p. 70). This statistical procedure uses Eigen values and a rotation technique to identify patterns in the data that

are intended to identify underlying factors in a dataset. The output of a PCA provides item loadings on the factors identified. Discriminant validity can be shown if items load highly on their assigned (or identified) factor and low on all other revealed factors. Convergent validity can be shown when all items assigned to a construct load highly on that same factor. Table 1 illustrates an example of an output of PCA item loadings that support convergent and discriminant validity.

The strengths and weaknesses of this analysis technique will not be compared and contrasted to the other techniques included in this tutorial. The PCA technique is data-driven, and there inlays its strength and weakness. When used appropriately this technique is useful to establish validity of measurement instruments (e.g., to build theory, identify refined items in an instrument development). The remaining techniques will be examined in the context of theory driven analysis.

We will now concentrate on analysis techniques common for theory-driven research and instrument development. The focus will be on three specific types of validity analysis techniques for theory-driven research (i.e., Correlation-based, Average Variance Extracted (AVE) comparison, and  $X^2$  comparison). The correlation-based and  $X^2$  comparison techniques are used for assessing discriminant validity. The AVE comparison can be used to assess both convergent<sup>4</sup> and discriminant validity. The strengths and weaknesses of these techniques will be outlined in order to inform theory-driven research analysis and interpretation.

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<sup>4</sup>, It is worth mentioning the commonly used thresholds used in Structural Equation Modeling (SEM) to assess convergent validity, although these rules of thumb are not the focus of this paper. Specifically, these thresholds are used when examining the factor loadings (Segars 1997). These loadings, which represent the path coefficients from the observed variables to the latent variables, should exceed the threshold of 0.707 to determine convergent validity (Chin 1998, Hair, Anderson, Tatham, and Black 1998, Segars 1997).

**Table 3. 1: Output of PCA Item Loadings**

	Factor		
	1	2	3
F1-Item1	<b>.857</b>	.082	-.048
F1-Item2	<b>.885</b>	.035	-.021
F1-Item3	<b>.849</b>	.127	-.024
F1-Item4	<b>.703</b>	-.090	.110
F1-Item5	<b>.818</b>	-.026	.140
F2-Item1	.032	.022	<b>.931</b>
F2-Item2	.041	-.001	<b>.944</b>
F2-Item3	.020	.039	<b>.931</b>
F3-Item1	-.005	<b>.887</b>	.018
F3-Item2	.046	<b>.821</b>	-.019
F3-Item3	-.013	<b>.884</b>	.038
F3-Item4	.045	<b>.837</b>	.028

**Correlation-based Analysis**

The Correlation-based analysis is a discrimination test based on examining the correlation between two factors (e.g., Carlson, Kacmar, & Williams, 2000; Kline, 2005; McKnight et al., 2002). Interpreting these correlations is a subjective process that is at the discretion of the researcher. The primary goal of this analysis technique is to identify any correlations that could identify two constructs as being (in practice) the same. Kline (2005) offers a rule of thumb that the upper limit for correlations between factors should be .85. Kline argues that items measuring two constructs that correlate at this level could hardly be expected to represent two distinct constructs. However, the .85 threshold is not positioned as an explicit rule as it is not supported with any empirical evidence and is simply presented as a suggested reference point.

The limitation of this type of discriminant validity check is that there is no statistical test to determine if constructs are discriminant. This type of analysis requires each researcher to set their own threshold, and interpret the data themselves. This presents an obvious problem as researchers often hold different standards for

discriminant validity. For instance, some scholars contend that correlations above .6 (more than 36 % shared variance) could be too high (e.g., Carlson et al., 2000; Loehlin, 2004 p. 99; McKnight et al., 2002). Thus, the difficulty with this type of analysis is that it may be difficult for researchers to agree on an acceptable level of correlation. This is especially true when considering the role of theory. Some theoretical perspectives may support a high correlation and others may not. Therefore, the interpretation becomes very subjective and context specific. Table 2 summarizes the strengths and weaknesses of this method.

<b>Table 3. 2: Strengths and Weaknesses of Correlation-Based Assessment of Discriminant Validity</b>	
Strengths	<ul style="list-style-type: none"> <li>• Allows for the theoretical perspective to guide interpretation</li> <li>• Compares all possible relationships within a pool of constructs</li> </ul>
Weakness	<ul style="list-style-type: none"> <li>• No common threshold available that all researchers agree on</li> <li>• Allows for misinterpretation</li> <li>• Allows for multiple interpretations</li> </ul>

### **AVE Comparison Analysis**

Conceptually, the Average Variance Extracted (AVE)<sup>5</sup> denotes the variance explained in a factor by its items. Assessment of convergent validity using the AVE includes an examination of each construct, which should have an AVE value above .50 (Fornell & Larcker, 1981). AVE comparison analysis for discriminant validity is used when the AVE is calculated<sup>6</sup> for each set of items by construct, and then compared to the squared correlation (variance explained by another construct) between two constructs (Gefen & Straub, 2005; Gefen et al., 2000). If the AVE is larger than any squared

<sup>5</sup> The AVE statistic is given in PLS outputs, and can be manually calculated using SEM as  $(\sum \lambda_i^2) / [(\sum \lambda_i^2) + \sum_i \text{Var}(\varepsilon_i)]$  where  $\lambda_i$  is the indicator loading and  $\text{Var}(\varepsilon_i) = 1 - \lambda_i^2$ .

<sup>6</sup> See an example of this calculation in APPENDIX C.

correlation, then it is said to show discriminant validity because the items account for more variance than any variance explained by a correlation with another construct. This discriminant validity technique indicates that the items associated with one construct do explain more variance than the correlation from another construct (J. C. Anderson & Gerbing, 1988; Segars, 1997). It can be concluded that the two constructs are significantly different, and that the items uniquely measure the assigned construct.

The difficulty with this method lies in the comparison made between two different sources of variance accounted for (VAF). The first source is the VAF of the items assigned to a particular construct. The second source is the VAF of a correlation with another latent variable. However, this is not an apples-to-apples comparison. This method constitutes a sufficient, but not necessary condition for discriminant validity. If the AVE is higher than a squared correlation, then it (most definitely) supports discriminant validity. However, if the AVE is not larger, it cannot be assumed that discriminant validity is not shown. The squared correlation between constructs is not a pure representation of the variance explained by another construct's items. Only the correlation between the latent variables as measured. To truly estimate if one construct's items better measure another construct, a direct comparison of the items of both constructs must be made. Table 3 summarizes the strengths and weaknesses of the AVE comparison method for establishing discriminant validity.

<b>Table 3. 3: Strengths and Weaknesses of AVE Comparison for Discriminant Validity</b>	
Strengths	<ul style="list-style-type: none"> <li>• Established <i>de facto</i> standard</li> <li>• Accounts for explanatory power of a construct's items</li> <li>• Correlational data are included in the analysis, but interpretation is objective rather than subjective</li> </ul>
Weakness	<ul style="list-style-type: none"> <li>• No significance test</li> <li>• Comparison represents a sufficient, but not necessary condition for</li> </ul>



	discriminant validity <ul style="list-style-type: none"> <li>• Comparing the VAF of constructs items and the VAF of a correlation to another latent variable is not an apples-to-apples comparison</li> </ul>
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## **X<sup>2</sup> Comparison Analysis**

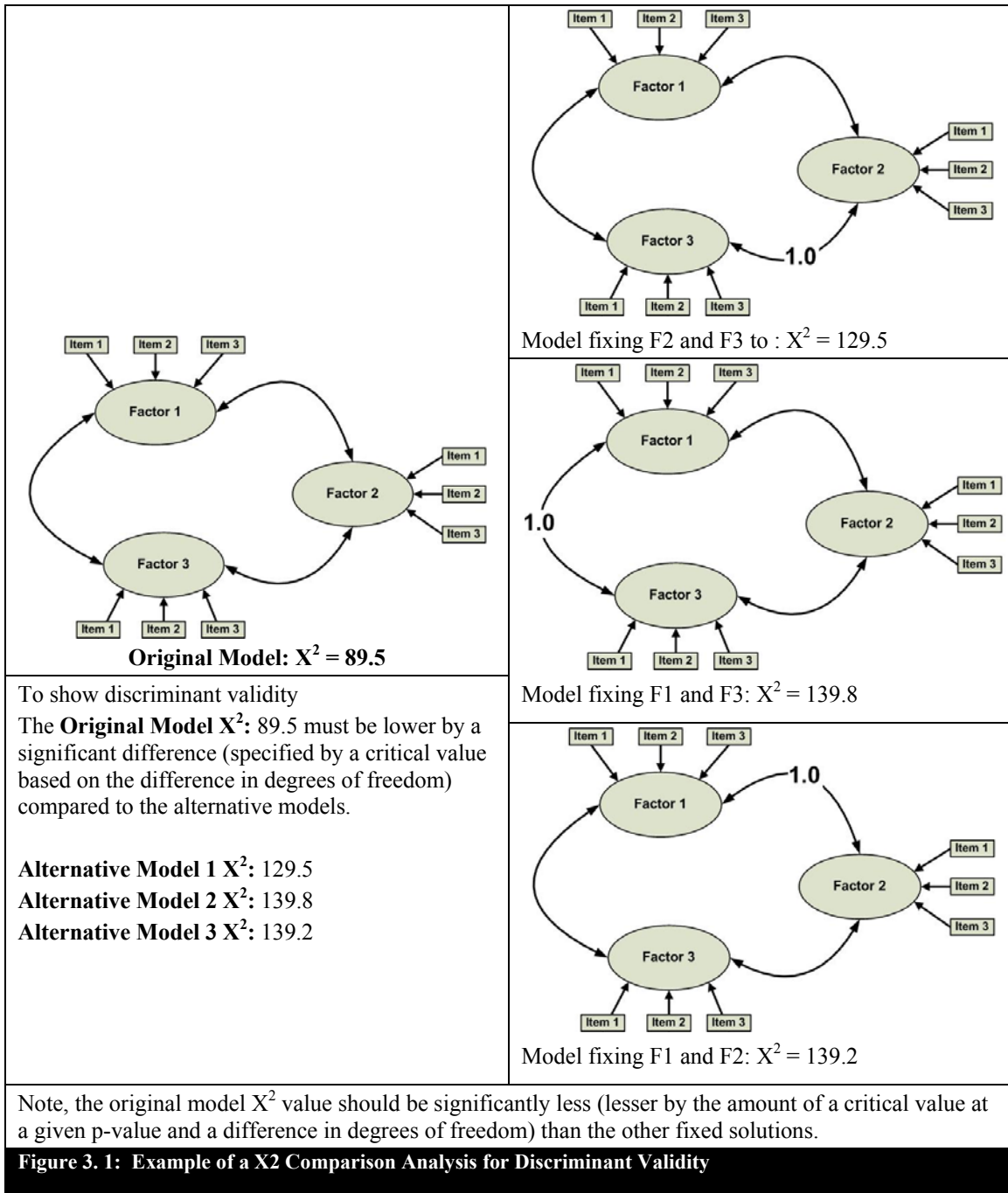
This type of analysis compares the X<sup>2</sup> values between fixed and free solutions for each pair of constructs being assessed in a measurement model using Structural Equation Modeling (SEM) analysis (J. C. Anderson & Gerbing, 1988; Segars, 1997; D. Straub et al., 2004). The free solution is a measurement model that has no fixed parameters in the correlations between the factors (see Figure 1, emphasis added). The fixed solutions are those that fix one correlation between two factors to 1. All possible fixed solutions must be evaluated. Then a X<sup>2</sup> analysis is conducted comparing the free solution to all the fixed solutions. In order to show discriminant validity, the free solution should show a significant improvement in fit. This would show that modeling the constructs separately is a better fit to the data than considering them the same, thus supporting discriminant validity. This demonstrates that all possible combinations of factors indicate a significantly worse fit to the data than separating the constructs (J. C. Anderson & Gerbing, 1988; Segars, 1997; D. Straub et al., 2004).

In order to make comparisons across the fixed and free solutions, it is necessary to derive the critical value. Critical values are usually obtained using a look-up table for X<sup>2</sup> critical values which are common in statistics books or online (e.g., Baker, 2000). To look up this critical value, you need to specify the degrees of freedom (df) and the p-value desired (e.g., .05 or .001). For this type of test, the difference between the original model (free solution) and any of the fixed models will be 1 df. Therefore, researchers only need to determine the desired p-value. To comparing the X<sup>2</sup> values between the

original model (free solution) and all fixed solutions, the original model should have a  $X^2$  value that is significantly less than any of the fixed solutions. For example, Figure 1 shows a  $X^2$  comparison for a model with three constructs.  $X^2$  difference test for 1 df at the  $p < .001$  requires a difference of 10.828 in the  $X^2$  Values (Baker, 2000). Therefore, this  $X^2$  comparison analysis supports discriminant validity because the original model that shows 3 distinct factors fits the data significantly better than any alternative model combining factors (fixing correlations).

Another form of this type of discriminant validity test would be to fix the correlations at zero. To fix the correlations at 1, conceptually, means that the constructs are identical or have a correlation of 1. Fixing the correlations at 0 offers the conception that the constructs are maximally different, having a correlation of 0. If this test were fixing the correlations to zero, you would not want a significant decrease in fit. In other words, when analyzing the results, the researcher would want to show that fixing the correlations at zero did not cause a significant decrease in fit.

If a researcher is data-driven, and trying to identify factors from the data, it may be more conservative to use the test that fixes the correlations at 0. Fixing the correlations to 0 may also be useful in situations where constructs are not theorized to be highly correlated. Fixing the correlations to 0 may also be appropriate in theory-driven research, if the correlations between constructs are not expected to be significantly different than zero. However, if the researcher is conducting a theory-driven analysis, and expects that constructs would be significantly correlated yet still distinct constructs. Then fixing the correlation to 1 would be the analysis recommended here because one would not expect the correlations to be 0 (constructs to be maximally different).



The positive aspect of this type of discriminant analysis is that it is not reliant upon correlational data, *de facto* standards, nor rules of thumb. This is the only test, covered in this paper, in which a statistical significance test is available. The weakness of this test is that it is highly influenced by sample size (Bentler & Bonett, 1980; B. M.

Byrne & Stewart, 2006; F. F. Chen, Sousa, & West, 2005; Cheung & Rensvold, 2002) and non-normality (West, Finch, & Curran, 1995). As the sample size increases, the likelihood of a significant difference increases since the  $X^2$  statistic is directly related to sample size [ $X^2 = (N-1)F_{GLS}$ ]. “Recently, researchers (Cheung & Rensvold, 2002; Little, 1997; Marsh, Hey, & Roche, 1997) have argued that the  $\Delta X^2$  value is as sensitive to sample size and non-normality as the chi-square statistic itself, thereby rendering it an impractical and unrealistic criterion (B. M. Byrne & Stewart, 2006 p. 305).” Thus, a downside to this technique is that a large sample size or non-normality<sup>7</sup> in the data may result in a statistically significant result when no practical difference is present. Therefore, this analysis technique is not trustworthy in all cases. Table 4 summarizes the strengths and weaknesses of this method.

Table 3. 4: Strengths and Weaknesses of X2 comparison discriminant analysis	
Strengths	<ul style="list-style-type: none"> <li>• Significance test is available</li> <li>• Not reliant on only correlational data</li> </ul>
Weakness	<ul style="list-style-type: none"> <li>• The statistic is skewed by large samples size. Therefore, small and practically irrelevant relationships could be determined statistically significant</li> <li>• The statistic is skewed by non-normality</li> </ul>

With the weakness of the  $X^2$  comparison analysis being large sample sizes, it is important to understand the research regarding power analysis in SEM. Note that even if you have a justifiable sample size in terms of power, the sample may still be too large for the  $X^2$  comparison analysis. However, these rules of thumb for sample size help give

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<sup>7</sup> Robust estimation can be used to correct for non-normality. Most commonly this is done by using corrections to the statistic that have been found more appropriate to evaluate data fit with high kurtosis levels (Hu and Bentler 1992). Satorra and Bentler (1988) developed a scaling correction for the  $\chi^2$  statistic which has been shown to be most reliable (Curran, West, and Finch 1996, Hu and Bentler 1992, Satorra and Bentler 1988). Robust estimation is a feature available in EQS and Mplus software packages. Note, the  $\Delta \chi^2$  test using the Satorra-Bentler cannot use critical values based on the classic  $\chi^2$  statistic.

perspective to the confidence of researchers in these types of analysis.

Many factors need to be considered in assessing power of a model analyzed with SEM techniques (e.g., normality of the data, level of missing data, and number of estimated parameters in the model). From the research regarding sample size requirements in SEM, general rules of thumb (used in practice) for a priori power estimates<sup>8</sup> have emerged (see cited works from Bentler, 2005 pages 11-12 for emphasis added). One such rule of thumb is to have 5 to 10 subjects per estimated parameter in your model. If there are high levels of non-normality or missing data, it is justifiable to have 20 subjects per estimated parameter. An estimated parameter<sup>9</sup> is a parameter in the SEM model that is not fixed nor observed (e.g., covariances, variances, disturbances, errors, path weights). Therefore, the more items (observed variables), relationships, and constructs that are represented in a model, more parameters are estimated. In such cases, more subjects are needed to attain adequate power.

We believe that the rules of thumb summarized here are justifiable as comparison points for determining if the sample size is defensible for a  $X^2$  comparison analysis. Five to ten subjects per estimated parameter are needed if the data is normally distributed and if there is no missing data. Twenty subjects per estimated parameter are needed to serve as a good comparison point if the data has levels of non-normality or missing data points.

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<sup>8</sup> Mplus statistical software offers a feature that can assess the power in an SEM analysis. The output of this analysis demonstrates areas of the model that may or may not be under powered. This is not a power analysis of the omnibus model, but of localized parts of the model. By examining the different relationships in the model, researchers can determine the power of the relationships represented in a model.

<sup>9</sup> Most statistical software packages report the estimated parameters in a model in their output. However, it can be determined a priori by counting the non-fixed and non-observed variables in a specified model.

## ILLUSTRATION WITH SAMPLE DATA

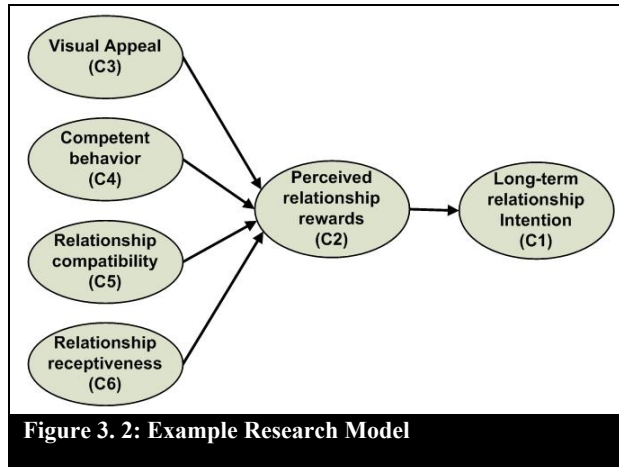
Thus far we have outlined common construct validity analysis techniques used in IS research and their associated strengths and weaknesses. Next we will illustrate the use of these analysis techniques to highlight the strengths and weaknesses outlined above. We will also propose a method for using these techniques in order to propose a standardized method for establishing validity for IS researchers using cross-sectional data.

The data<sup>10</sup> used in this running example were collected with the intent of developing an instrument of new constructs extended from psychology literature and instantiated into an IS context. The research model is presented in Figure 2 and the definitions of these constructs are presented in Table 5 to outline the theoretical justification for the relationship between these constructs. The theoretical justification for this model will not be presented here. The factor structure presented in Figure 2 and other details regarding the data collection will be presented as those areas have relevance to the interpretation of the statistical analyses. In this sample data, the issue of discriminant validity is called into question, which is ideal for the discussion of the strengths and weaknesses of the aforementioned analysis techniques.

<b>Table 3. 5: Stage Theory Instantiated to Online B2C Customer Relationships</b>	
<i>EC related construct</i>	<i>Definition</i>
Long-term relationship Intention	The specific intention to engage in a long-term customer (Business-to-Consumer) relationship with an online firm
Perceived relationship rewards	Perceptions of overall possible benefits from interactions with a web-based organization in a online B2C relationship
Visual appeal	Overall perceptions of a website's aesthetics and appearance
Competent behavior	Perception of competence of the IS interface and its functionality

<sup>10</sup> The data used in this paper stems from a separate working paper. Please direct any questions regarding the use of this data or the theoretical foundation for the data collection to the author.

Relationship compatibility	Perception that the website content communicates values and beliefs that are compatible with the values and beliefs of the user
Relationship receptiveness	Perception of a company's desire to enter into a customer relationship



### Details of Sample Data

The development of the survey instrument for the research model employed two separate and independent samples. An exploratory data analysis was performed on the first sample, while the second sample was used to cross-validate the results of the first sample (Barbara M. Byrne, 2006). Here we first outline the data collection procedures and other important aspects of evaluating the data sets and the development of the measurement instruments. The development of the survey instrument was conducted by undergoing the following process: item generation, exploratory factor analysis, cross-validation of the exploratory analysis with a second sample, and the assessment of the reliability and validity of the instrument. During the assessment of construct validity we will illustrate the use of the analysis techniques highlighted in this paper. This dataset, which contains measurement items of two constructs that are highly correlated, gives us an opportunity to examine the strengths and weaknesses of these construct validity analysis techniques.

## **First phases of Instrument Development**

In order to insure content validity, three researchers were recruited to stimulate and subjectively analyze 30 potential items for each of the constructs in the research model. Sample 1 was collected with survey methods which included the initial bank of items and other previously validated measures. This survey was given to 455 undergraduate college students in an introductory Information Systems course. Twenty seven subjects were dropped for not completing the survey, and another 33 were dropped for not complying with the directions of the survey. This brought the total of useable completed surveys to 395. The average age of the subjects was 21.91 years, and there were 218 (55.2%) males. Students received course credit, approximately 1% of their final grade, for participation in the survey.

As these measures are intended to assess the initial perceptions of perspective customers toward eCommerce firms based on websites, the subjects were given a scenario search task on existing eCommerce websites prior to filling out the survey. Any subject that had previously seen the websites before was not included in the data set as this would not be considered an initial assessment of the website.

### **Survey 1: Exploratory Analysis**

With the data collected from the first survey an EFA was conducted in SPSS 11.0 based on maximum likelihood estimation in order to identify the most appropriate items to include in the final measurement instrument. PCA was not used as this was a theory-driven analysis with an a priori proposed factor structure. Eight items were identified for each construct that loaded at higher than .7 on their assigned factor and less than .3 on any other factor. The items were then included in a SEM measurement model using EQS



6.1. This analysis was used for instrument refinement. Modification indices were used to refine the number of items per construct. The procedures used for selecting the best items and altering the model based on modification indices are as follows: 1) deletion of items with the highest modification indices or with error terms associated with the highest modification indices, 2) no deletion occurring in the case that the construct would then be represented by fewer than three items, and 3) no further items were deleted once the measurement model attained acceptable fit.

### **Survey 2: Cross-validation**

The next step in the development of the survey instrument involved collection of a second sample in order to cross-validate the findings of the first sample, and assess the reliability and validity of the measurement instrument. The data gathering procedure for this second sample was similar to first sample. The survey was revised to include fewer items based on the results from the analysis of the first sample. The second sample consisted of 275 useable responses. The average age of the subjects was 22.21, and there were 180 (65.5%) males. These data were also analyzed using EQS 6.1.

### **Measurement Model Assessment**

SEM is not robust to high levels of multivariate kurtosis (Bentler, 2005; Barbara M. Byrne, 2006; Curran, West, & Finch, 1996; West et al., 1995). Unfortunately, data collected via survey instruments assessing the same stimuli commonly have high levels of multivariate kurtosis. Such is the case with this sample. The multivariate kurtosis for this measurement model is 54.36, which does exceed recommended parameters of being no greater than 5 (Bentler, 2005; Barbara M. Byrne, 2006). Evaluation using the Chi-

square ( $X^2$ ) statistic (or variants of the  $X^2$  statistic) may not be adequate under these conditions (Hu & Bentler, 1992). Therefore, corrected fit statistics have been found more appropriate to evaluate data fit with high kurtosis levels (Hu & Bentler, 1992). Satorra and Bentler (1988) developed a scaling correction for the  $X^2$  statistic which has been shown to be most reliable (Curran et al., 1996; Hu & Bentler, 1992; Satorra & Bentler, 1988). This paper evaluates a model's fit based on the Satorra-Bentler scaled (S-B  $X^2$ ) fit indices<sup>11</sup>.

For the purposes of fit testing, the robust Comparative Fit Index (CFI), the robust Root-Mean-Square Error of Approximation (RMSEA), and the robust Standardized Root Mean Square Residual (SRMR) were used. The criteria used to evaluate model fit were that CFI values must be .95 or higher, SRMR values must be .08 or lower, and the RMSEA values must be .08 or lower (Hu & Bentler, 1999). The measurement model below (see Table 6) complied with these thresholds demonstrating good fit.

<b>Table 3. 6: Measurement Model: Standardized Loadings (all loadings <math>p &lt; .0001</math>), Composite Reliabilities and Fit Statistics</b>					
Items	Standardized Loadings	Composite Reliabilities	Items	Standardized Loadings	Composite Reliabilities
C4_1	0.882	0.927	C1_1	0.862	0.899
C4_2	0.894		C1_1	0.902	
C4_3	0.92		C1_1	0.828	
C4_4	0.716		C5_1	0.895	0.927
C4_5	0.901		C5_2	0.819	
		C5_3	0.843		
C3_1	0.967	C5_4	0.926		
C3_2	0.973	0.979	C5_5	0.915	
C3_3	0.97		C6_1	0.896	0.938
C2_1	0.876	0.898	C6_2	0.864	
C2_2	0.822		C6_3	0.884	

<sup>11</sup> When Satorra-Bentler corrections are conducted on normally distributed data, the robust fit statistics (e.g., CFI and RMSEA) come to the same values as non-corrected statistics.

C2_3	0.893		C6_4	0.912	
<b>Fit Statistics</b>					
X <sup>2</sup> /df	682.211/215		SRMR	.052	
S-B X <sup>2</sup>	436.2805		RMSEA	.061 (.053,.069)	
CFI	.959				

### **Reliability Analysis**

The reliability analysis for these constructs was done using the Cronbach alpha and the Composite reliabilities (Werts, Linn, & Joreskog, 1974). The following are the Cronbach alpha values for the research model constructs: C1 (Alpha =.8939), C2 (Alpha =.8976), C3 (Alpha =.9794), C4 (Alpha =.9347), C5 (Alpha =.9421), and C6 (Alpha =.9375). The recommendation is that the Cronbach alpha should be above 0.70 (Nunnally & Bernstein, 1994), and such is the case for these constructs. As shown in Table 6, all composite reliability scores were also greater than the recommended threshold of .70 (Hair, Anderson, Tatham, & Black, 1998). These analysis techniques demonstrate that the research model constructs are reliable.

### **Assessing Construct Validity for Sample Data**

At this point in the instrument development process, we begin to evaluate the construct validity of the measurement items. This analysis consists of evaluation of convergent and discriminant validity. Since we are limited to cross-sectional data, we will utilize the techniques illustrated previously. Since this instrument development was theory-driven, PCA was not used.

### **Convergent Validity**

SEM was used to assess convergent validity by examining the factor loadings (Segars, 1997). These loadings should exceed the threshold of 0.707 (Chin, 1998; Hair et

al., 1998; Segars, 1997). The factor loadings (see Table 6) in the research model indicate compliance with this standard, thus demonstrating convergent validity. Another assessment of convergent validity is that the AVE of each construct should also be above .50 (Fornell & Larcker, 1981). The AVE of the constructs is as follows: C1 (0.747), C2 (0.747), C3 (0.941), C4 (0.808), C5 (0.760), C6 (0.791). Hence, it can be concluded that convergent validity has been demonstrated.

### **Discriminant Validity**

First, we used the correlation-based discrimination analysis and the AVE comparison to initially assess the discriminant validity of the constructs in the research model (see Tables 7 and 8). This was done to determine if there were any high correlations between the constructs, and to establish if there was sufficient support (with AVE comparison) for discriminant validity between these constructs.

Both of these analyses indicate that the discriminant validity between C2 and C1 may be in question, and that the cause of this problem may be the high correlation between these two constructs. However, according to the theoretical perspective shown in the research model, C2 is the only variable proposed to predict C1. Therefore, this high correlation may be theoretically justifiable, and it may be necessary to further investigate the discriminant validity between these two constructs. Considering this theoretical perspective, and the weaknesses of the AVE and pure correlation analysis techniques, we continue to investigate the discriminant validity of these constructs. Therefore, the  $X^2$  discriminant comparison analysis was used to further examine the discriminant validity of the constructs C1 and C2.

**Table 3. 7: Factor correlations for Survey 2**

	C1	C2	C3	C4	C5	C6
C1	1.000					
C2	0.915	1.000				
C3	0.689	0.75	1.000			
C4	0.637	0.771	0.73	1.000		
C5	0.696	0.764	0.626	0.576	1.000	
C6	0.632	0.742	0.661	0.726	0.658	1.000

**Table 3. 8: EQS Estimated Squared Correlations and (AVE)\***

	C1	C2	C3	C4	C5	C6
C1	<b>0.747</b>					
C2	0.837	<b>0.747</b>				
C3	0.475	0.563	<b>0.941</b>			
C4	0.406	0.594	0.533	<b>0.808</b>		
C5	0.484	0.584	0.392	0.332	<b>0.760</b>	
C6	0.399	0.551	0.437	0.527	0.433	<b>0.791</b>

\* AVE figures are shown in bold along the diagonal

### **X<sup>2</sup> Discriminant Comparison Analysis**

Table 9 is a summary of the X<sup>2</sup> discriminant validity analysis conducted for all the constructs in the research model. The type of analysis was used that set the correlations to 1 as this would test the assumption that these constructs are conceptually identical. The correlation was not set to 0 as this was a theory-testing exercise in which the constructs were not theorized to be maximally different but correlated. The results indicate that every combination of factors results in a significant decrement in fit compared to the original model. X<sup>2</sup> difference test for 1 df at the p<.001 requires a difference of 10.828 in the X<sup>2</sup> values (Baker, 2000). It can be concluded that these constructs show discriminant validity using this method.

The limitations of this analysis must be considered. Since this type of

discriminant analysis is influenced by sample size and non-normality (evident by the high multivariate kurtosis value), one cannot be confident that these statistical differences are driven by the sample size<sup>12</sup>, non-normality, or by the discrimination of the constructs.

Table 3. 9: Chi-square Discriminant Analysis						
Model	df	X <sup>2</sup> Value		Model	df	X <sup>2</sup> Values
<b>Original</b>	<b>215</b>	<b>682.211</b>		C6, C2	216	732.494
C5,C4	216	700.806		C6,C3	216	745.879
C6,C5	216	707.408		C6,C4	216	748.925
C6,C1	216	709.221		C1,C3	216	750.203
C5, C1	216	710.881		C2,C4	216	754.730
C1,C4	216	717.296		C2,C3	216	774.020
C5, C2	216	723.061		C3,C4	216	786.134
C5,C3	216	724.014		C1,C2	216	794.689
X <sup>2</sup> difference test for 1 df at the p<.001 requires a difference of 10.828 in the X <sup>2</sup> values (Baker, 2000).						

### Using Theoretical Sensitivity

Some of the above data analysis techniques support that C2 and C1 are discriminant excepting the X<sup>2</sup> discriminant analysis which is the only test that offers a significance test. Assuming a lack of definitive support either way, it may be necessary to conduct further analysis based on the theoretical perspective. In other words, it is at the researcher's discretion to consider any theoretical support for a high correlation between constructs and to investigate if such a relationship can be supported with statistical evidence. Given the theoretical perspective presented in the research model (see Figure 2); there are four possible ways to deal with this situation dealing with discriminant validity (see Table 10). Each of these options is explored in the quest to further investigate the proposed theoretical relationship between constructs C1 and C2.

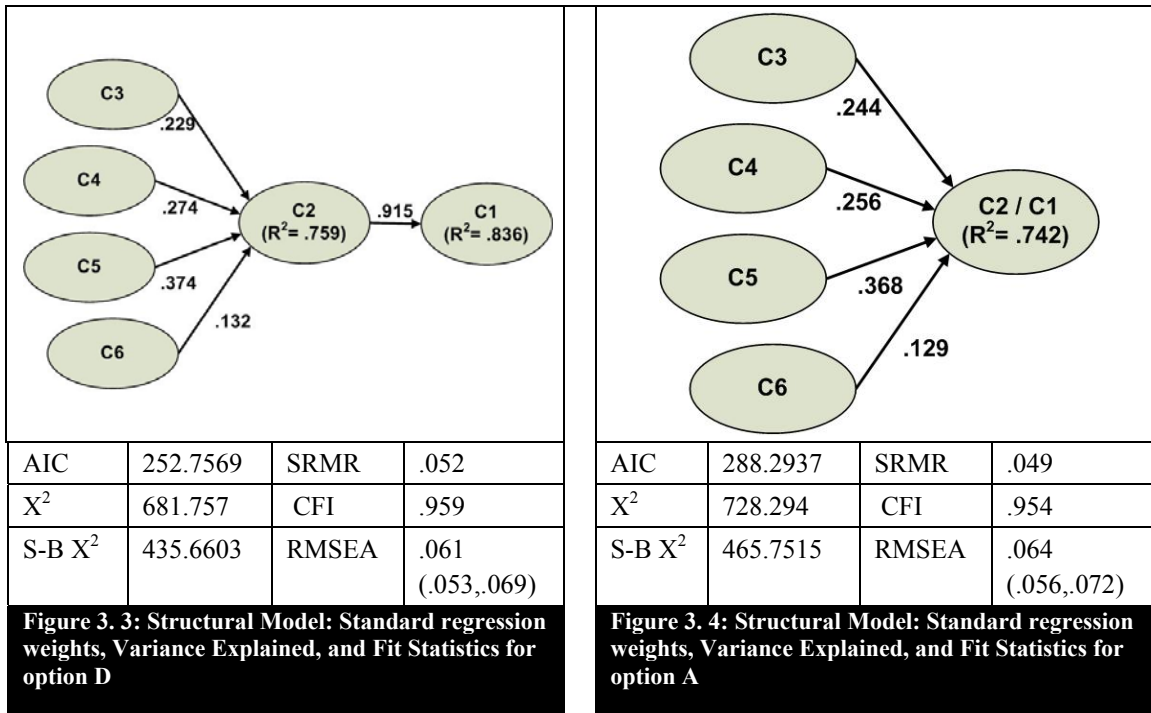
<sup>12</sup> The sample size used for this analysis is actually defensible (see the following section). However, for sake of illustration we continue with the running example as if sample size could be considered the cause of the supporting discriminant validity results in the  $\chi^2$  comparison analysis.

<b>Table 3. 10: Options for dealing with discriminant validity between C1 and C2</b>	
Option A	Combine the factors and test the model with all the manifest variables from both C2 and C1 to one single construct.
Option B	Delete C1 from the model and have C2 be the ultimate exogenous variable.
Option C	Delete C2 from the model and have C1 as the ultimate exogenous variable.
Option D	Leave the model as proposed and accept the high correlation between the factors as a legitimate relationship between these two constructs.

Each of these options is defensible given the results of this data. However, the question remains which is best? We will compare each of these options, and by using theoretical sensitivity and various statistical analyses find support to identify the best option.

Option B is not theoretically supported. The proposed model is intended to predict a behavioral intention, having the model stop at the Perceived rewards construct (C2) would not answer the research question this model was designed to answer. Therefore this option will not be considered as it would violate the purpose of the research and cross the line from theoretically-driven research to data-driven research. However, it should be recognized as a viable option to address the statistical issues raised in these analyses.

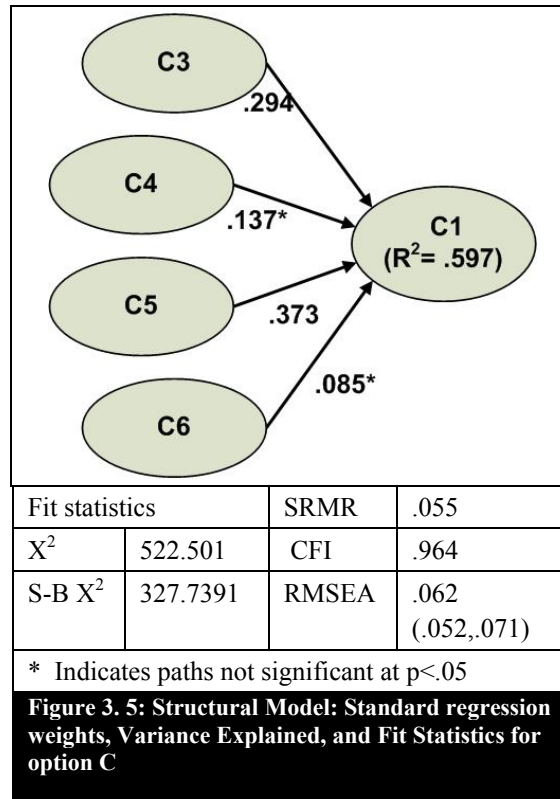
The comparison of option A or option D was done with an appeal to a fit statistic that is designed for such a comparison, the Akaike's Information Criteria (AIC). The AIC is used to compare two or more models with the smaller values representing a better fit (Barbara M. Byrne, 2006; Hu & Bentler, 1992). Raftery (1995) indicates that drops in the AIC greater than 10 can be considered quite significant. In order to do this comparison, structural models were fit for these two models (see Figures 3 and 4).



The results of these structural models show that both options meet the fit thresholds. A review of the AIC for Figures 3 and 4 show that the model with separate factors (Figure 3) shows better fit than modeling the factors combined (Figure 4). These results support option D over option A, and therefore option A is not supported in comparison to option D.

Option C supports the deletion of the construct C2 from the model, which results in having C1 as the ultimate dependant variable. Figure 5 summarizes the details of a structural model fit for Option C. The results summarized in Figure 5 do not support that C2 and C1 are so highly correlated as to be considered the same construct. These results show that relationships present between the proposed model’s antecedents and the construct C2 are not significant if C2 is replaced by C1. Figure 3 shows that all of the model’s antecedents significantly affect C2. This is not the case for the C1 construct (see Figure 5). Therefore, option C is not supported.





In considering the choice between options B and D, the theoretical perspective offers unique insight. Conceptually speaking, by eliminating one of these constructs from the model, a piece of the theoretical insight to the phenomena would then be lost. Conversely, nothing is lost (from a theoretical perspective) by including C1 in the model if there is a high correlation between C2 and C1. The theoretical perspective justifies the place of these constructs in the model. It can be concluded that option D is more likely to offer richer theoretical perspective than option B. Table 11 summarizes our proposition, that in this case the triangulation of analysis results, and the theoretical perspective, support modeling these two constructs as separate factors (option D).

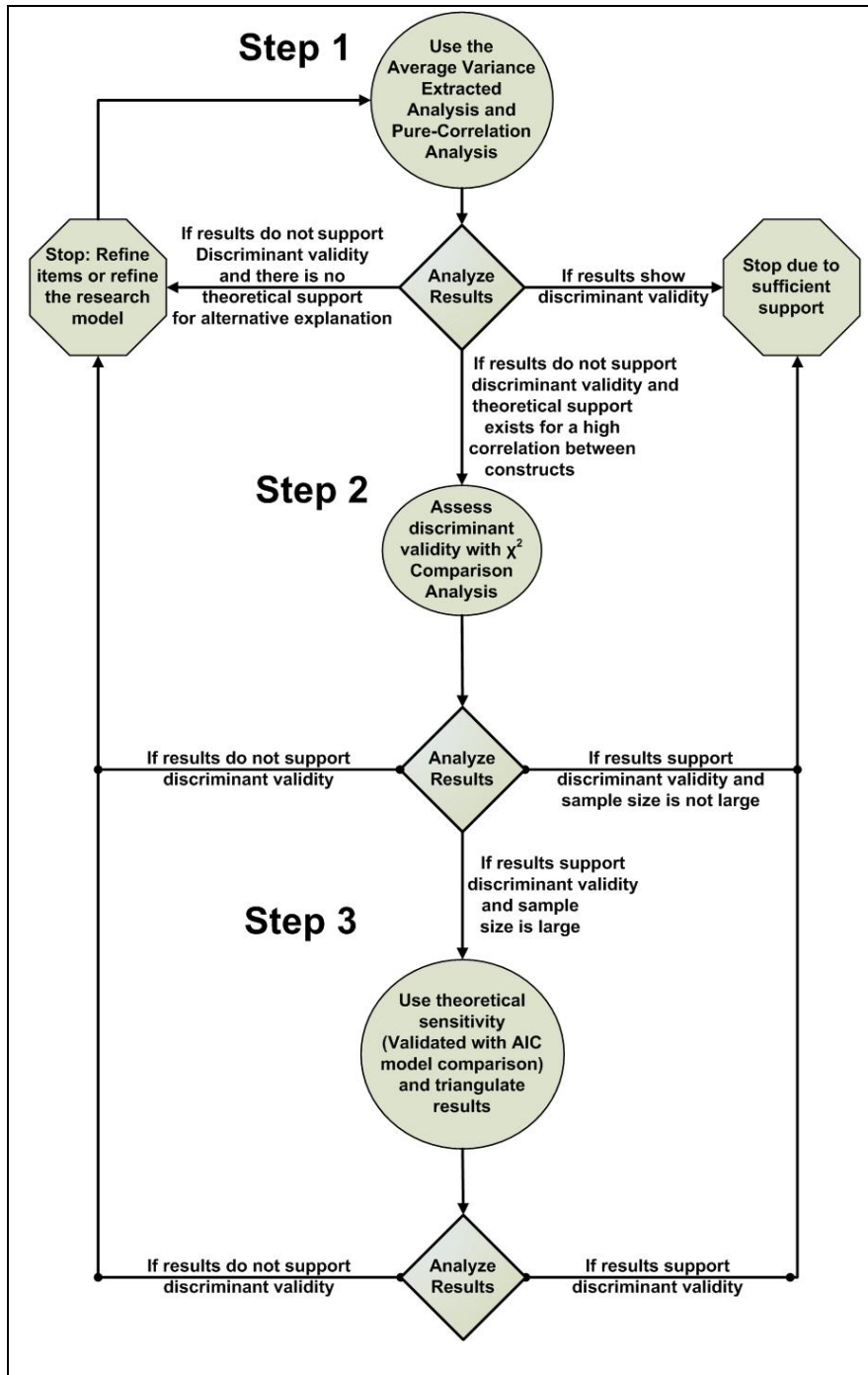
It is certain that cases like the one shown here are not very common in IS research. However, this example is an effective means of demonstrating some of the

strengths and weaknesses of the commonly used discriminant validity analysis techniques in IS research. Secondly, it has also been fruitful in showing the importance of theoretical sensitivity and the triangulation of data analysis techniques for interpretation of data analysis techniques.

<b>Table 3. 11: Results of comparisons options for dealing with discriminant validity concerns between C1 and C2</b>		
Option A	Combine the factors and test the model with all the manifest variables from both C2 and C1 to one single construct.	Not supported
Option B	Delete C1 from the model and have C2 be the ultimate exogenous variable.	Not supported
Option C	Delete C2 from the model and have C1 as the ultimate exogenous variable.	Not supported
Option D	Leave the model as proposed and accept the high correlation between the factors as a legitimate relationship between these two constructs.	Supported

### **RECOMMENDED METHOD FOR COMPREHENSIVE THEORY-DRIVEN DISCRIMINANT VALIDITY ANALYSIS**

Considering the strengths and weaknesses of the commonly used methods of discriminant validity analysis outlined above, we propose a method for analyzing discriminant validity for cross-sectional data in theory-driven research (see Figure 6). This method stresses the use of multiple analysis techniques, and the use of theoretical sensitivity in cases of highly correlated and theoretically justifiable relationships between constructs. The use of multiple analysis techniques is used here in order to lessen the impact of weaknesses of any one analysis technique. By using multiple techniques, the weakness of any one analysis will guard researchers against type I or type II errors.



**Figure 3. 6: Decision Tree for assessing Discriminant Validity with Cross-sectional Data**

*Step 1.* We recommend first using the AVE technique in conjunction with the correlation-based analysis to assess if any constructs are shown not to meet the generally accepted threshold. Analyzing the results from these techniques will determine if further

analysis is needed. If both the correlation between the constructs and the AVE comparison support discriminant validity, then no further action is needed. Such results support discriminant validity. However, if discriminant validity is not supported, further action is required. If there is no theoretical justification for a high correlation between constructs, then the model and/or measurement items should be refined. If there is a theoretical justification for the relationship between two highly correlated constructs, then we recommend moving to step 2.

*Step 2.* Analysis of the  $X^2$  comparison in step 2 needs to be tempered with respect to the sample size and level of deviation from a normal distribution. We propose three recommendations at this point, depending on the result of the analysis. A) If the results do not support discriminant validity, we recommend stopping until the construct definition, measurement items, and/or model can be refined. B) If this analysis supports discriminant validity, the sample size is not considered large and there is no concern of non-normality in the data, we recommend stopping here. Sufficient support would then be given for discriminant validity. C) If sample size is considered to be large or a significant level of non-normality exists in the data and results support discriminant validity, we propose moving on to the third step in this method.

*Step 3.* The final step includes a series of model comparisons that encapsulate all possible model representations respecting any construct cognates. This comparison should be theoretically driven and can be verified using the AIC fit statistic with SEM. If step 3 does not yield results that support discriminant validity, we propose that a further refinement of the measurement items, construct definition, and/or model is needed. However, if results of this analysis support discriminant validity, then we propose that

this should be sufficient in cases of constructs that theory supports to be highly correlated.

## **DISCUSSION AND CONCLUSIONS**

The contribution of this work is twofold. First, it is a descriptive outline of the commonly used methods used in IS literature for establishing construct validity. This paper describes how to execute each type of validity analysis. Another descriptive contribution of this paper is that it compares and contrasts each type of commonly used analysis technique in order to inform researchers of the strengths and weaknesses of each technique. Such an understanding is essential for researchers in interpreting the results of data analysis.

Second, the paper's contribution involves a prescriptive method that can be referred to for analyzing discriminant validity in situations of highly correlated and theoretically justified cognates. This method, summarized in Figure 6, prescribes how commonly used analysis techniques can be utilized to maximize their strengths. The strength of this method is that it is driven by theory, can be supported statistically, and supports informed data analysis. The method of assessing discriminant validity with cross-sectional data also provides an organized structure. This research supports the need for researchers to not naively rely on procedural aspects of any given discriminant validity analysis. We also stress the importance and use of theoretical sensitivity in interpreting what the data reveals. We do not propose that researchers go beyond their data when assessing discriminant validity, but use theoretical sensitivity and triangulation of multiple analysis techniques in analyzing data.

Future research in this area may concern other analysis techniques for other types

of data (non cross-sectional data) and/or other areas of concern for instrument development (e.g., reliability). Another focus for this line of research is the use of multiple analysis techniques in other aspects of data analysis (e.g., using SEM for an omnibus model and ANOVA to show simple effects and interactions). This paper stresses the issue of construct validity; future research should consider several other areas in which analysis triangulation can be used.

#### **4. ESSAY THREE -**

### **BREAKING THE ICE IN B2C RELATIONSHIPS: UNDERSTANDING INITIAL CUSTOMER PERCEPTIONS OF WEBSITES WITH THE ECOMMERCE ATTRACTION MODEL**

#### **INTRODUCTION**

The rapid growth of electronic commerce (eCommerce) has stimulated businesses to utilize information technology (IT) for facilitating business-to-consumer (B2C) interactions. Several research studies have leveraged the technology acceptance model (TAM) to understand whether an online consumer<sup>13</sup> will choose to do business via an organization's website (e.g., Gefen et al., 2003; Loiacono et al., 2007; Van der Heijden & Verhagen, 2004). More specifically, TAM-based eCommerce research has shed light on important factors regarding website quality, use, reuse/revisit, intention to purchase, and trust related issues (Gefen et al., 2003; Loiacono et al., 2007; Van der Heijden, 2003, 2004). TAM oriented research has provided an important theoretical foothold for understanding customer adoption of an eCommerce website. However, there has been a recent movement that has called on the IS discipline to move beyond core TAM and look for alternative theories for understanding how individuals perceive information technology (Benbasat & Barki, 2007). Thus, a primary goal of this research effort is to provide a fresh theoretical perspective for understanding how initial perceptions of an organization's website affect online consumer behavior.

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<sup>13</sup> This paper uses the terms User, Consumer, and Customer synonymously.

An alternative conceptual foundation for understanding B2C eCommerce interactions is from a relationship perspective. The concept of customer relationship management (CRM) has been leveraged by both the marketing (Berry, 1983) and IS (Romano & Fjermestad, 2002a) disciplines. When approaching online consumer behavior from a relationship perspective, one must be able to discern the current phase of a relationship (i.e., beginning, middle, or end). Given our focus on initial customer perceptions of a website, an appropriate parallel is the beginning of a B2C relationship - attraction (e.g., Dwyer et al., 1987). One avenue to exploring B2C eCommerce attraction is to build upon relationship theories that have been applied to other contexts/domains. Any such theory must be able to not only provide the ability to qualify whether a customer is in an attraction stage, but also be able to delve into the specific factors that influence attraction within that stage. Also, the theory should have the latitude to capture not only how the customer perceives the relationship from a transactional perspective, but also a relational perspective.

One relationship theory, Stage Theory, appears to be particularly promising as a framework for understanding B2C eCommerce Attraction. The strength of Stage Theory is that it not only has the breadth to outline five different stages of relationships<sup>14</sup> but also offers the depth to identify important factors, both relational and transactional, within each stage. Therefore using Stage Theory as a framework for studying B2C eCommerce Attraction offers a fresh theoretical lens for evaluating a customer's initial perceptions of an organizational website. As such, organizations may improve their ability to attract customers by better understanding customer needs at the initial stage of a B2C

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<sup>14</sup> Stage theory identifies five distinct stages of an interpersonal relationship, Attraction/Acquaintance, Build-Up, Continuation/Consolidation, Deterioration, and Ending (Levinger 1980).



relationship. Additionally, by successfully applying Stage Theory to the Attraction stage within an eCommerce context, we lay the foundation for studying subsequent relationship stages using this theoretical lens.

The purpose of this paper is to provide a new theoretical lens from which to study the phenomenon of eCommerce attraction in online B2C relationships, and begins by reviewing relevant literature to show the contribution of Stage Theory as the theoretical foundation in this work. This is followed by a presentation of the proposed research model, called the eCommerce Attraction Model (eCAM), as well as the research hypotheses, which instantiates Stage Theory in an eCommerce context. Next, the methodology for testing the eCAM is reviewed, including a laboratory experiment (focusing on precise and controlled theory testing) and a survey (focusing on generalizability). Included in this analysis is a test of nomological validity that compares the new constructs presented in the eCAM to determine their discriminant and nomological validity with previously established models in IS and their corresponding constructs. Finally, the results and future research opportunities are examined.

## **LITERATURE REVIEW AND THEORETICAL DEVELOPMENT**

Given the focus on eCommerce Attraction, it is first necessary to revisit related research to demonstrate how relationship theory can extend and complement prior studies. Intuitively, the concept of eCommerce Attraction is similar to technology acceptance. However, a primary and important difference between these two perspectives is that acceptance denotes adoption and use, while Attraction is limited to a pre-adoption evaluation and attitude toward an organization. On the other hand, both perspectives deal with initial exposure to a technology (such as a website) and are therefore quite

complementary. For instance, the technology adoption models—for example, TAM (F. D. Davis, 1989; F.D. Davis, Bagozzi, & Warshaw, 1989), UTAUT (Venkatesh, Morris, Davis, & Davis, 2003), TPB and DTPB (Ajzen, 1991; Taylor & Todd, 1995)—provide an in-depth, isolated snapshot of important factors influencing IS acceptance. Yet, these models lack theoretical *breadth* for understanding *post-acceptance* phenomena.

Alternatively, other research has proposed various eCommerce life cycle models (e.g., Berthon, Pitt, & Watson, 1996; Ives & Learmonth, 1984; A. Parsons, Zeisser, & Waitman, 1998; Venkatesan & Kumar, 2004), offering greater *breadth* for understanding the adoption and post-adoption phenomena. Although these life cycle models examine the progressive role of different acceptance and use phases over time, they also lack the *depth* to understand the various factors influencing each respective phase in the life cycle. Thus, a need exists to indentify a theoretical foundation that provides the latitude to observe and understand eCommerce Attraction from both a *breadth* and *depth* perspective, as has been demonstrated in other relationship contexts (Dwyer et al., 1987; Huesmann & Levinger, 1976; George Levinger, 1980).

Much of the prior eCommerce research touches on the technological or *transactional* aspects of websites (e.g., usefulness, relative advantage, and controllability; Loiacono et al., 2007; Paul A. Pavlou & Fygenson, 2006). Yet some scholars are beginning to examine the role of other *relational* reactions in IT-mediated interactions (Van der Heijden, 2004). The relational perspective is defined as a focus on the “social and psychological factors in online B2C interactions” (Li et al., 2006 p. 105) in comparison to the transactional perspective – a focus on a “one-time provision of economic benefit, profit, efficiency, and effectiveness of the interaction to attract and

satisfy consumers” (Li et al., 2006 p. 110). The need for a theoretical perspective that acknowledges both relational as well as transactional perspectives in eCommerce is evident by recent literature in this area that suggest that customers react quite personally (i.e., on a relational level) in B2C interactions. For instance, researchers have examined issues of customer loyalty (Gefen, 2002; Prewitt, 2002), disclosure of personal information online (Awad & Krishnan, 2006), positive and negative emotional responses (Sun & Zhang, 2006), personal trust (McKnight et al., 2002), perceived enjoyment (Van der Heijden, 2004), and customer retaliation for scorned relationships (Grégoire & Fisher, 2006). Practitioners and researchers have recognized the impact these relational aspects have on long-term customer relationships. Therefore, we propose that eCommerce Attraction should be studied from a theoretical perspective that considers the *transactional* and *relational* aspects of online B2C relationships, as well as the *breadth* and *depth* of such relationships.

Stage Theory (George Levinger, 1980) holds particular promise as a framework for guiding this research because it addresses all four of the aforementioned theoretical perspectives: breadth, depth, relational, and transactional. In particular, it provides the context in which one stage (e.g., Attraction) leads to a subsequent stage (e.g., Build-Up). Stage Theory provides the theoretical foundation to explore Attraction as a single stage within a broader life cycle of B2C relationships. Additionally, Stage Theory brings insight to the relational (i.e. social and psychological) as well as transactional factors that influence this initial stage of an online B2C relationship. However, prior to instantiating Stage Theory to an online B2C relationship context, we must establish that online B2C relationships meet the same definition as human-to-human interpersonal relationships.

According to the theory of personal relationships, three elements define a relationship: interdependence, interaction, and attribution to dispositions of the other party (Kelley, 1979). First, *interdependence* (e.g., both parties rely on each other), in an online B2C relationship both the customer and the organization are dependent on the other to meet each party's needs. Second, *interaction* (e.g., direct interface between parties), eCommerce represents an emphasis on the exchange of information, goods, services, and capital through an online interaction. Finally, *attribution to dispositions of the other party* (e.g., ability to form adequate expectations of the other), in an online B2C relationship, organizations and customers can develop such attributions. Organizations often use 'profile and preference' strategies to anticipate customer's needs. Also, human-computer interaction research has shown that customer's also regard computers as social actors, and interact with them as they would a social entity (C. Nass et al., 1996; Clifford Nass & Moon, 2000; Clifford Nass et al., 1995). B2C relationships meet these essential elements when understood from a relational perspective. Many seminal marketing articles have also applied this assumption by extending interpersonal relationship theory to a B2C relationship. For example, Dwyer et al. (1987) extended psychology theory related to marriage relationships in the study of buyer-seller relationships. Also, Morgan and Hunt (1994) extended psychology theory related to long-term interpersonal relationships to the context of B2C relationships.

The next section of this paper reviews the tenants of Stage Theory with a focus on the Attraction stage of a relationship. Following that review, a theoretical model will be presented which instantiates the underlying factors identified by Stage Theory to the context of eCommerce Attraction. The focus of this research, Attraction, is more depth

oriented and considered a necessary first step to establishing a theoretical foothold for studying online B2C relationships.

### **Stage Theory**

From a Stage Theory perspective, Attraction is defined as *an overall evaluation or attitude toward a potential relationship with another*. During the Attraction stage, two important conditions exist that distinguish it from other stages of a relationship. First, both parties have low levels, if any, of experience with each other. Second, Attraction stops at the evaluation of an object because actual behavior would fall into the Build-Up stage. These conditions provide a theoretically justified method for distinguishing Attraction from subsequent stages of a relationship (e.g., build-up), ultimately leading to a deeper understanding of this phenomenon.

To understand relationship depth in the Attraction stage, the factors that influence this stage must also be identified and defined. Research on attraction between humans has found that the key factor for attraction is the overall *perceived rewards* of the relationship (Aronson & Linder, 1965; Huesmann & Levinger, 1976; G. Levinger & Snoek, 1972). Stage Theory indicates that perceived rewards are a product of a complex evaluation of possible gains vs. losses that others may provide (Ted L. Huston, 1974). Further, perceived rewards may be evaluated from a *transactional* perspective as well as a *relational* perspective. To illustrate these two types of rewards further, we look to Feingold's (1992) meta-analysis in which he identified important aspects of evaluating potential relationships. The preference categories identified in this meta-analysis include socioeconomic status (SES), ambitiousness, character, intelligence, humor, and personality. Intuitively, some of these areas are more rewarding from a transactional

perspective (e.g., ambitious), while other aspects provide more relational rewards (e.g., humor). Stage Theory offers specific determinants that influence the overall perception of possible rewards, both transactional and relational.

Stage Theory offers the following determinants of perceived rewards within the Attraction stage: *good appearance*, *competent behavior*, *compatibility*, and a level of *responsiveness* (Ted L. Huston & Levinger, 1978; George Levinger, 1980). Each of these factors can be the source of relational and/or transactional rewards. Each type of relationship serves different roles in individuals' lives and involves different contexts. Some relationships may be focused on transactional rewards (e.g., economic). Others provide more relational rewards (e.g., social or psychological). Therefore, the influencing factors of perceived rewards may fulfill relational and/or transactional needs of the relationships. For example, the determinant "good appearance" may be perceived as a transactional reward in one relationship but a relational reward in another; how a determinant is viewed depends on the dynamics of the relationship and its context. Each determining factor is described next.

*Good Appearance* has been observed, in interpersonal relationship research, to be determined by perceptions of another's beauty based on physical attributes, and has shown to have a strong relationship with levels of attraction in interpersonal relationships (Ted L. Huston & Levinger, 1978). Appearance is often the first attribute that others can evaluate, and past research shows that people make many attributions based on appearance (Ted L. Huston & Levinger, 1978). For instance, those with good appearance are regarded in higher favor (Adams & Huston, 1975; Dermer & Thiel, 1975; Dion & Berscheid, 1975; Dion et al., 1972; T.L. Huston, 1973), are viewed as more responsible

(Seligman et al., 1974), are more influential (Sigall & Aronson, 1969), are perceived as better performers (Landy & Sigall, 1974), are pleasing to the eye (Feingold, 1992), and are more responded to by others (Barocas & Karoly, 1972; Benson et al., 1976). These types of attributions increase perceptions of possible rewards from potential relationships.

*Competent Behavior* refers to perceptions of one's ability to behave according to the norms of social appropriateness, given a specific context and role (Ted L. Huston & Levinger, 1978). Competent Behavior has been observed to be a strong factor in determining the possible rewards of a relationship (Ted L. Huston & Levinger, 1978) because perceptions of future behavior are often based on past behavior. Appropriate socially normed behavior similarly encourages attraction (Chaikin & Derlega, 1974; Chelune, 1976). Also, behaviors such as disclosing personal information in inappropriate circumstances discourages attraction (Derlega & Chaikin, 1976). Other studies have found that perceptions of another's "ability to obtain and willingness to invest the resources necessary for the survival and success" (Buston & Emlen, 2003 p. 1) influence evaluations of future rewards (Feingold, 1992). Therefore, we see the assessment of one's behavior as a key factor for understanding perceptions of potential rewards of a relationship.

*Compatibility* involves perceptions of similarity (Craig & Duck, 1977) and likeness of values (Johnson & Tesser, 1972; Tesser, 1972), and are an integral part of interpersonal relationship attraction (D. Byrne, 1969; Sussmann & Davis, 1975). This is defined by a perception that the amount of contradiction between the two parties' values is minimal. This compatibility has shown to reinforce one's self-concept (D. Byrne, 1971; D. Byrne et al., 1973; Clore, 1975; Clore & Byrne, 1974), indicate that others are

good (Arrowood, 1973; Hensley & Duval, 1976; Leonard, 1975; Levine et al., 1974), and enhance one's self-esteem (Leonard, 1975). In sum, similarity of personal values increases a relationship's perceived rewards.

*Responsiveness* to the relationships must be positive demonstrating an apparent liking which indicates that one is open to and reciprocates a willingness and desire to engage in a mutual relationship. Research shows that these types of evaluations of future interactions do effect attraction (Huesmann & Levinger, 1976). Overall, individuals are more likely to be attracted if assured that the other accepts them (T.L. Huston, 1973; G. Levinger & Snoek, 1972) and not attracted if assured that they are not acceptable or valued (Shanteau & Nagy, 1976). These types of evaluations lead to a perception of greater ability to provide future rewards (Brickmann et al., 1975). The prospect that others highly regard the opportunity of a future relationship influences perceptions of such a relationship's potential rewards.

## **RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT**

In this section, we instantiate the concepts outlined for Stage Theory's Attraction stage to an eCommerce context. Stage Theory was developed to examine interpersonal relationships between humans. Extension of this framework to an eCommerce B2C relationship context between a customer and an organization requires that certain theoretical assumptions and boundaries be established. The following are three of these assumptions and boundaries. The first two assumptions regard the inclusion of a non-individual (i.e., organization) as an object in this relationship framework.

First, it is not necessary to measure variables from the organization's perspective to understand eCommerce Attraction. One of the strengths in using Stage Theory as a



framework for this study is that Stage Theory examined interpersonal relationships from a one-sided perspective. Progression of a relationship is dependent upon individual decisions to begin or continue in a relationship. By understanding what influences these individual decisions, one can gain a depth perspective of how individuals are attracted to a relationship. Similarly we assume that progression of a B2C relationship is dependent on the customer's individual decisions to begin or continue in a B2C relationship, and an organization depends on customers to willingly progress in a relationship. Therefore by understanding the customer's perspective, one can determine the key factors that encourage Attraction.

Second, customers can make similar assessments about organizations in an online B2C Attraction context as in an interpersonal relationship context. Research in the Computers are Social Actors paradigm (CASA) provides insight on this topic of how individuals perceive cues manifested within various channels of an interface (e.g., website) (Clifford Nass et al., 1995). Previous research on human computer interaction have illustrated that users respond in human-like manner to cues exhibited by the interface. This attribution is consistent even though users have the knowledge that interfaces are not in any way human (Y. Moon, 2000; Y. Moon & Nass, 1996; Youngme Moon & Nass, 1998; Clifford Nass & Lee, 2001; Clifford Nass & Moon, 2000).

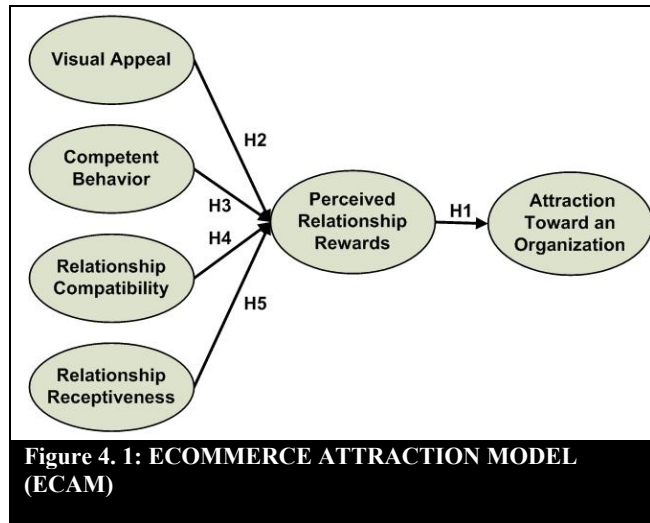
Third, in an online B2C Attraction context, assessments of the website or organization are in practice too similar to be considered distinct from each other. In an eCommerce context, a website is a representative of the organization in that "when the customer sees a Web site and not the firm, the site becomes the firm" (Pitt et al., 1999 p. 12). In this eCommerce Attraction context, the website becomes the only representative

of the firm and the virtual instantiation of the organization (Gefen et al., 2003; Li et al., 2006). Therefore, in this context, the two are the same.

Based on these assumptions, we have used Stage Theory as a framework for studying online B2C Attraction. To instantiate core concepts of Stage Theory to an eCommerce Attraction context, we have identified relevant constructs that represent underlying factors identified by this theoretical perspective. Table 1 summarizes the eCommerce constructs representing the underlying factors identified in Stage Theory.

Figure 1 illustrates a theoretical eCommerce Attraction Model (eCAM) that applies these various factors.

<b>Table 4. 1: Attraction Constructs Identified by Stage Theory Instantiated to Online B2C Customer Relationships</b>			
<i>Stage Theory Construct</i>	<i>Definition</i>	<i>EC related construct</i>	<i>Definition</i>
Attraction	Desire to engage in a relationship, but stops at intention. Actual behavior falls into the Build-Up stage.	Attraction toward an Organization	An attitude or summary evaluation of an overall initial appeal toward an organization
Perceived rewards	Overall perception of potential rewards from a relationship that is a product of a complex evaluation of possible rewards from both transactional and relational aspects of a relationship	Perceived relationship rewards	Perceptions of overall possible benefits from interactions with a web-based organization in a online B2C relationship
Good Appearance	Perceptions of another's beauty based on physical attributes	Visual Appeal	Overall perceptions of a website's aesthetics and appearance
Competent Behavior	Perceptions of one's ability to meet relational and transactional needs in a relationship	Competent Behavior	Perception of competence of the IS interface and it's functionality
Similarity of values	A perception of an insignificant amount of contradiction between values held by two parties	Relationship Compatibility	Perception that the website content communicates values and beliefs that are compatible with the values and beliefs of the customer
Positive responsiveness or their apparent liking	Perceptions that one is open to and reciprocates a willingness and desire to engage in a mutual relationship	Relationship Receptiveness	Perception of a company's desire to enter into a customer relationship



Support for the eCAM has been developed, to this point, by Stage Theory. However, previous IS literature has proposed similar constructs (e.g., website visual appeal = good appearance) and relationships between them. Drawing on this area of research, we support the inclusion of these constructs in the model and the related hypotheses. Nevertheless, we believe that this model complements new and existing constructs to provide a unique theoretical view.

*Attraction toward an Organization:* We reiterate here our definition of attraction as an attitude or summary evaluation of an overall initial appeal toward an organization. Past eCommerce research has acknowledged the importance of attracting new customers, and many different strategies have been suggested to achieve this end (Watson et al., 1998). However, to our knowledge, this construct has not been measured in an eCommerce context. The eCAM uses a relationship theory focus, similar to reference disciplines (e.g., Dwyer et al., 1987), to predict eCommerce Attraction. Based on Stage Theory, we have identified the following constructs as key antecedents that directly and indirectly influence this variable.

*Perceived Relationship Rewards:* Perceived relationship rewards are defined as the perception of the overall future gains or benefits of any possible B2C relationship. There are many possible rewards that can be perceived by a customer such as more transactional rewards (e.g., efficient) or more relational rewards (e.g., enjoyable). The use of perceived rewards is not foreign to IS research. For instance, IS researchers have used similar constructs in IS adoption literature. Specifically, the model of Personal Computer Utilization considered the importance of evaluating long-term consequences for IS use (Thompson et al., 1991). Likewise, outcome expectations have also shown to influence IS use within Social Cognitive Theory (Compeau & Higgins, 1995). Therefore, we posit that the higher the level of perceived rewards of a potential B2C relationship, the higher the level of Attraction toward an online organization.

*H1: A customer's perception of rewards from a potential B2C relationship positively affects the customer's attraction toward an organization.*

*Visual Appeal:* Visual appeal in this context can be viewed as a perception of the aesthetics and overall appearance of a website. This construct has been used in many previous eCommerce research studies (e.g., Loiacono et al., 2007). Research has shown that these types of positive atmospherics (e.g., a nice-looking hotel lobby) can prompt individuals to form more positive evaluations of an organization (Kotler, 1973-1974). This website characteristic is often the first to be evaluated by a customer. IS research on website design indicates that a website's visual appeal can be assessed in as little as 50 milliseconds (Lindgaard et al., 2006). Customers can therefore use attributions based on these impressions to evaluate other aspects of the website or organization. One of the most telling findings in IS research regarding computer use was a study that supported

the notion that what is beautiful is usable (Tractinsky et al., 2000). In this study, evaluations of interface appeal correlated higher to evaluations of IS usability than the objective usability standards. Research on agency relationships also show that the environment can affect perceptions of organizations (Bergen et al., 1992). In accordance with this research, website visual appeal is expected to enhance the perceived rewards of a potential B2C relationship.

*H2: A customer's perception of a website's visual appeal positively affects the perceived rewards of a relationship.*

*Competent Behavior:* This construct refers to the perception of website competence. For instance, does the system do what is expected (i.e., normed), and does it perform as it should (e.g., security)? Many proxy variables have been studied that can be attributed to this macro construct. For example, website characteristics such as download delay (Dennis F. Galletta et al., 2006), security and navigability (Salisbury et al., 2001) and usefulness (Van der Heijden, 2004) have all been found to influence the positive appraisal of online organizations. Such perceptions have also been found to be influenced by web seals (e.g., VeriSign) (Odom et al., 2002). Competence has long been used in trust-related IS research (Mayer et al., 1995; McKnight et al., 2002), where perceptions of competence has been found to predict other overall evaluations (i.e., trusting beliefs). Thus, it is reasonable to argue that these assessments of website competent behavior influence evaluations of future interactions and possible rewards of a B2C relationship. Similarly, website competence is also expected to predict perceptions of possible relationship rewards.

*H3: A customer's perception of a website's competent behavior positively affects*

*the perceived rewards of a relationship.*

*Relationship Compatibility:* The definition of this construct refers to the perception that the website communicates values and beliefs that are compatible with the customer's values and beliefs. A comprehensive review of compatibility research in IS has shown that compatibility in values has been a significant aspect of IS literature (Karahanna et al., 2006). Karahanna et al. (2006) also proposed values compatibility to be an important factor in technology acceptance. Other research in this area has also shown that compatibility is an important factor in initial technology use (Moore & Benbasat, 1991). In a B2C context, if an organization's website conveys beliefs and values compatible with those of a potential customer, similar effects are expected. For example, customers have been found to be more attracted to an organization with similar values (i.e., environmental friendliness) than incompatible values (Laroche et al., 2001).

*H4: A customer's perception of an organization's relationship compatibility positively affects the perceived rewards of a relationship.*

*Relationship Receptiveness:* This construct refers to a customer's perception of a company's desire to enter into a customer relationship. In an eCommerce context, a customer is more interested in an organization that is proactive in developing a B2C relationship (e.g., specials, incentives) than one that is not (e.g., no-return policy). With current capabilities of IS, organizations are able to communicate one-to-one with customers (Wells et al., 1999) and customize content to individuals (Palmer & Griffith, 1998; Watson et al., 1998). These cues portrayed in a website act as a signal to customers of an organization's receptiveness to a potential relationship. Interfaces that portray a message of relationship receptiveness affect a customer's overall perception of possible

rewards from that relationship.

*H5: A customer's perception of an organization's relationship receptiveness positively affects the perceived rewards of a relationship.*

## **METHOD**

Given that this research involves initial testing of a new research model, two studies are used for the purposes of this analysis. Study 1 utilizes a laboratory experiment method to ensure internal validity and clear-cut theory testing. A possible limitation of this study is generalizability. Therefore, Study 2 was conducted using existing websites in a survey method with real eCommerce customers. The use of real sites and real online customers help to inject realism into this work. Analysis was conducted using structural equation modeling (SEM) with EQS 6.1 and SPSS 12.0 software. Together, we believe that these studies provide an adequate initial assessment of our research model. The goal of these two studies is to address the three key dimensions of research studies: generalizability, realism, and precision (Dennis & Valacich, 2001; McGrath, 1982). While Study 1 has been designed to maximize precision, Study 2 is more focused on generalizability and realism.

### **Instrument Development and Pilot Studies**

The development of the psychometric instruments measuring the new constructs in the eCAM followed the following process: item generation, factor analysis, reliability analysis, and validity analysis. Two separate and independent samples (not included in the following two studies) were used in this process. An exploratory data analysis was performed on the first sample, and the second sample was used to confirm the results of

the first (Barbara M. Byrne, 2006). As the first step, a bank of items was generated that could potentially measure the constructs of interest. To ensure content validity, three researchers were recruited to generate more than 30 items to measure the constructs of interest. The first sample of 395 undergraduate students was used and exploratory factor analysis, and a second sample of 275 undergraduate and graduate students was used to confirm the results of the first sample using a confirmatory factor analysis. Results from these samples indicate that the measures are psychometrically sound. The items that resulted from this development can be found in Appendix D.

### **Measurement Instruments**

Also included in Appendix D are the measures used that were taken or adapted from previous research including Visual Appeal (Loiacono et al., 2007) and Attraction toward the Organization (Fisher, Ilgen, & Hoyer, 1979; Highhouse, Lievens, & Sinar, 2003; Turban & Keon, 1993). This instrument contained only reflective measures of these latent variables (Jarvis et al., 2003; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; D. W. Straub & Burton-Jones, 2007).

### **Study 1**

Website treatments were developed for the purpose of this study to represent a fictitious collegiate T-shirt company. The twelve treatment websites were created to introduce variance in the levels of the antecedent constructs in the eCAM (Visual Appeal, Competent Behavior, Relationship Compatibility, and Relationship Receptiveness). Subjects were randomly assigned to the different treatments.



## **Task**

To simulate a situation consistent with initial attraction of an eCommerce website, a scenario-based task was used in conjunction with the websites of a fictitious eCommerce organization. The participants were given a scenario designed to expose them to various aspects of the website and increase the realism of the experience (see Appendix E). After exposure to the various treatments, subjects completed the survey instrument.

## **Variance Manipulations**

Appearance was manipulated in the website treatment by having a high/low level of website aesthetics (see Figure 2). Please note that all other aspects of the website (images and text) were controlled. Competent Behavior was manipulated with a 3- to 5-second download delay (present/absent). The constructs of Relationship Receptiveness and Relationship Compatibility were manipulated using consumer reports regarding the company's stance on child labor (see Appendix F for example of this Relationship Compatibility manipulation) and the company's return policy (supportive/unsupportive for Relationship Receptiveness manipulation, see Appendix G), respectively. Participants receiving these manipulations were directed via task sheets to read the related content on the website.



## Participants

The subject pool for this experiment consisted of 345 college undergraduate students from a sophomore level management information systems course. The average age of the subjects was 20.57, and there were 67% males. Students received course credit, approximately 1% of their final grade, for participating.

## Measurement Model

Table 2 reports an assessment of the measurement model fit for the eCAM. The reliability analysis for the constructs used the Cronbach alpha and the composite reliability scores calculated from standardized factor loadings<sup>15</sup> (Werts et al., 1974) (see Table 2 and 3). Convergent validity was assessed by examining the factor loadings in SEM (see Table 2) and the average variance extracted<sup>16</sup> (AVE) of each construct (see Table 4). Discriminant validity was assessed by comparing the AVE of each construct with the squared correlation of other constructs in the model. Convergent validity,

<sup>15</sup> Composite reliability scores were calculated as  $(\sum \lambda_i)^2 / [(\sum \lambda_i)^2 + \sum_i \text{Var}(\varepsilon_i)]$  where  $\lambda_i$  is the indicator loading and  $\text{Var}(\varepsilon_i) = 1 - \lambda_i^2$ .

<sup>16</sup> AVE were calculated as  $(\sum \lambda_i^2) / [(\sum \lambda_i^2) + \sum_i \text{Var}(\varepsilon_i)]$  where  $\lambda_i$  is the indicator loading and  $\text{Var}(\varepsilon_i) = 1 - \lambda_i^2$ .

discriminant validity, and reliability of the measurement instruments were demonstrated in this sample. Also, the measurement model demonstrated good fit.

**Table 4. 2: Measurement Model: Standardized Loadings (all loadings  $p < .05$ ), Composite Reliabilities and Fit Statistics for Study 1**

<i>Construct</i>	<i>Items</i>	<i>Standardized Loadings</i>	<i>Composite Reliabilities</i>	<i>Construct</i>	<i>Items</i>	<i>Standardized Loadings</i>	<i>Composite Reliabilities</i>
<b>Competent Behavior</b>	CB1	.713	0.793	<b>Relationship Compatibility</b>	Rcp1	.853	0.958
	CB2	.818			Rcp2	.955	
	CB3	.713			Rcp3	.973	
<b>Relationship Receptiveness</b>	RR1	.870	0.938		Rcp3	.902	
	RR2	.915		<b>Perceived Rewards</b>	PR1	.907	0.938
	RR3	.955			PR2	.931	
<b>Attraction toward the Organization</b>	Atto1	.935	0.946		PR3	.903	
	Atto2	.805		<b>Visual Appeal</b>	VAP1	.961	0.985
	Atto3	.958			VAP2	.991	
	Atto4	.905			VAP3	.982	
<b>Fit Statistics</b>							
<b>X<sup>2</sup> / df</b>		287.071 / 155		<b>SRMR</b>		.031	
<b>GFI</b>		.923		<b>CFI</b>		.984	
<b>AGFI</b>		.896		<b>RMSEA</b>		.050(.041,.059)	
<p>- Note, the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) are used to evaluate the fit of the measurement and structural models presented in this analysis. The criteria used to evaluate model fit will be that CFI values must be .95 or higher, SRMR values must be .08 or lower, and the RMSEA values must be .08 or lower (Hu &amp; Bentler, 1999). Also reported here are the commonly used goodness of fit index (GFI) and adjusted goodness of fit index (AGFI).</p> <p>- Composite reliabilities should be above 0.70 (Hair et al., 1998).</p> <p>- Factor loadings showed that the threshold of 0.707 was met for convergent validity (Chin, 1998; Hair et al., 1998; Segars, 1997).</p>							

**Table 4. 3: Cronbach Alpha Values for eCAM Constructs**

<b>Construct</b>	<b>Cronbach alpha</b>
Competent Behavior	0.790
Visual Appeal	0.985
Perceived Rewards	0.937
Relationship Compatibility	0.958
Relationship Receptiveness	0.936
Attraction towards the Organization	0.945
Note, Cronbach alpha should be above 0.70 (Nunnally & Bernstein, 1994).	

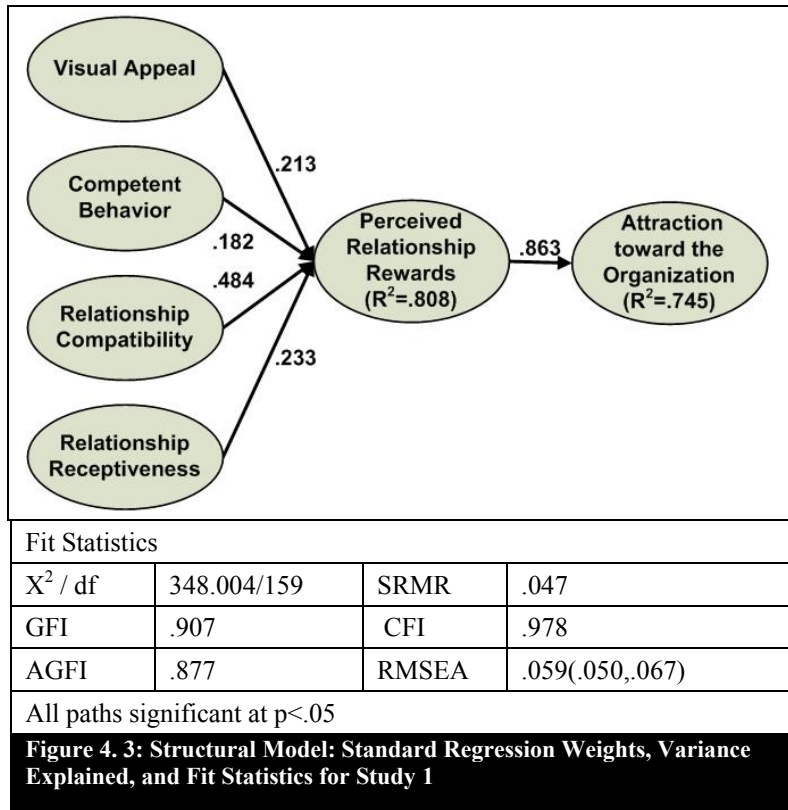
**Table 4. 4: EQS Estimated Squared Correlations and (AVE)\***

	Atto	CB	PR	RCP	RR	VAP
Attraction Toward the Organization (Atto)	<b>0.815</b>					
Competent Behavior (CB)	0.342	<b>0.562</b>				
Perceived Rewards (PR)	0.721	0.421	<b>0.835</b>			
Relationship Compatibility (RCP)	0.448	0.254	0.630	<b>0.850</b>		
Relationship Receptiveness (RR)	0.402	0.266	0.507	0.306	<b>0.835</b>	
Visual Appeal (VAP)	0.507	0.265	0.372	0.176	0.331	<b>0.957</b>

\* AVE figures are shown in bold along the diagonal  
- Note, each construct's AVE should be above .50 for convergent validity (Fornell & Larcker, 1981).  
- Each AVE should be greater than the squared correlations with other constructs for discriminant validity (J. C. Anderson & Gerbing, 1988).

### Hypotheses Testing

Hypothesis testing was conducted using SEM. See Figure 3 for the EQS estimated standardized regression weights, variance explained, and fit statistics for the eCAM as hypothesized.



## Controlling for Common Method Variance

Common method bias, which is a concern for this study, refers to the possibility of a response bias in data that is collected from the same source. Two statistical methods were used to assess the possibility of common methods bias. First Harmon's one-factor test using an unrotated exploratory factor analysis was conducted in accordance to the recommendations of Podsakoff and Organ (1986). As expected, four factors were identified with eigenvalues greater than one explaining a total variance of 82%. The first factor accounted for 58 % of the variance<sup>17</sup>.

Second, a procedure<sup>18</sup> that Lindell and Whitney (2001) recommended was used to examine correlations corrected for any method effect. An inspection of the data revealed that two variables, Online Completeness and Consistent Image, had relatively low correlations with the two endogenous variables in the eCAM. Therefore this common method bias analysis was conducted using both these variables as proxies for the method effect (see Table 5). As the correlations between these two proxy variables actually represent more than the method effect, but any correlation actually observed between these variables, it can be reasonably concluded that the results converge with the

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<sup>17</sup> "A limitation of Harmon's one-factor test is that there are no guidelines on how high the variance of the first factor should be for common method bias to be detected. In addition, the first factor would contain variance that is due to methods bias and to the traits, and it is not possible to isolate the variance attributable to the method in this test." (Jayachandran, Sharma, Kaufman, & Raman, 2005 p. 186) Such is the situation with this data as it is impossible to separate the common method variance from the expected theoretical covariance between the four antecedents in the eCAM and the exogenous variables in the model. This is especially the case when using an unrotated factor matrix with a group of items that are theorized to correlate.

<sup>18</sup> This procedure allows for an analysis of correlations between constructs corrected for a level of correlation believed to represent the common method bias. This is done by a priori selecting a marker variable that conceptually should represent a zero correlation with a dependent variable of interest, and inserting that scale into the survey instrument. After the data is collected the observed correlation between the marker variable and the dependent variable is treated as a proxy for a method bias and is used to partial out the method effect. If this is not done a priori, as is the case with this study, an alternative variable can be selected from the data set which represents a low correlation with the variables of interest.

structural analysis of the eCAM.

Table 4. 5: Common Method Bias Analysis			
	<b>ATTO</b>	<b>PR</b>	All correlations are significant at $p < 0.05$  Note: The first correlation represented by each construct is the correlation as measured in Study 1, the second value is the correlation corrected for method bias accounting for the correlation observed with the construct Online Completeness, and the third is the corrected correlation accounting for the correlation with the construct Consistent Image.
<b>PR</b>	0.847		
	0.792		
	0.746		
<b>CB</b>		0.657	
		0.471	
		0.447	
<b>VAP</b>		0.610	
		0.398	
		0.371	
<b>RCP</b>		0.797	
		0.687	
		0.673	
<b>RR</b>		0.712	
		0.556	
		0.535	
<b>OnlineComp</b>	0.264	0.352	
<b>Const Img</b>	0.398	0.380	

### Testing Nomological validity

There currently exists, in IS literature, long and established streams of research that covers IS adoption/acceptance as well as interface design. The eCAM uses a fresh theoretical perspective to identify some new and similar constructs that complement these two streams of research. Therefore, it is necessary to investigate the discriminant and nomological validity of the newly proposed constructs with previously established constructs. Included in this data collection were constructs commonly used with the technology acceptance model (TAM) Perceived usefulness, Perceived Ease of Use,

(Venkatesh & Davis, 1996), and Behavioral Intention to Use a website. Items associated from Loiacono and colleagues' (2007) WebQual model were also included in this survey to assess the discriminant validity from any previously established interface characteristics. The inclusion of WebQual was needed to test the discriminant validity of previously established website characteristics, as it was developed from a very extensive literature review on the topic of interface characteristics.

An AVE analysis was conducted between all of the constructs in the eCAM, TAM, and WebQual (Loiacono et al., 2007). An additional construct was also added to this AVE analysis, Attraction toward the Website (see Appendix D for the items). This was done to explicitly test the assumption presented earlier that the Website and the Organization are perceived to be the same in an eCommerce context. Table 6 summarizes the results of this analysis, and shows all constructs to be discriminant excepting the constructs of Attraction toward the Website and Attraction toward the Organization. Thus supporting discriminant and nomological validity, as well as supporting the assumption that the website and organization are perceived to be indiscriminant in an eCommerce context.

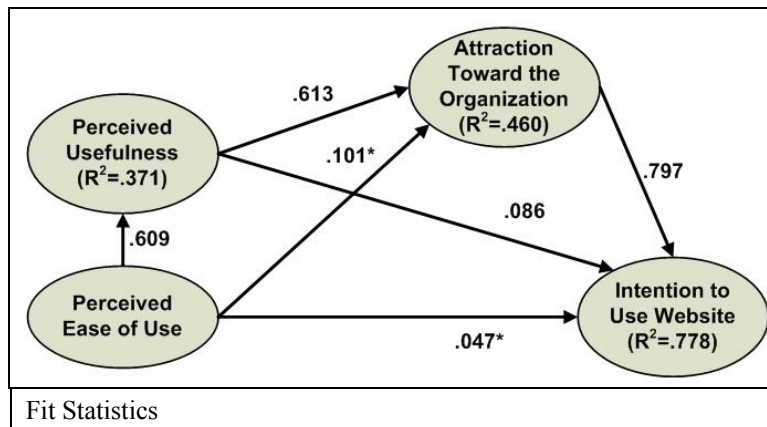
**Table 4. 6: Estimated Squared Correlations and (AVE)\***

Label	CB	VAP	RCP	RR	PR	BI	TalorInfo	USFL	OnlinCompt	Info/task	RelAdv	
CB	<b>0.560</b>											
VAP	0.269	<b>0.958</b>										
RCP	0.257	0.176	<b>0.850</b>									
RR	0.268	0.331	0.306	<b>0.835</b>								
PR	0.432	0.372	0.635	0.507	<b>0.834</b>							
BI	0.371	0.445	0.384	0.321	0.651	<b>0.967</b>						
TalorInfo	0.377	0.426	0.276	0.396	0.466	0.444	<b>0.830</b>					
USFL	0.384	0.387	0.283	0.274	0.487	0.425	0.415	<b>0.931</b>				
OnlinCompt	0.123	0.082	0.089	0.105	0.124	0.089	0.105	0.106	<b>0.701</b>			
Info/task	0.475	0.338	0.338	0.378	0.591	0.520	0.551	0.508	0.114	<b>0.896</b>		
RelAdv	0.177	0.080	0.135	0.120	0.218	0.123	0.203	0.144	0.259	0.216	<b>0.782</b>	
Euse	0.349	0.200	0.173	0.158	0.281	0.237	0.327	0.393	0.158	0.471	0.219	
EaseUnd	0.310	0.263	0.142	0.238	0.310	0.228	0.323	0.292	0.212	0.372	0.174	
IntOpp	0.232	0.109	0.133	0.089	0.186	0.132	0.252	0.240	0.183	0.311	0.289	
Trust	0.348	0.248	0.516	0.312	0.692	0.510	0.417	0.398	0.142	0.514	0.158	
RsTm	0.242	0.157	0.067	0.120	0.192	0.142	0.198	0.215	0.141	0.245	0.138	
P.E.	0.371	0.457	0.430	0.408	0.738	0.607	0.531	0.489	0.083	0.602	0.184	
Innov	0.223	0.561	0.204	0.263	0.364	0.386	0.436	0.331	0.094	0.261	0.081	
EmApp	0.255	0.471	0.309	0.399	0.561	0.438	0.441	0.401	0.066	0.448	0.111	
Const Img	0.034	0.106	0.104	0.143	0.144	0.107	0.122	0.065	0.073	0.082	0.187	
attw	0.349	0.593	0.417	0.401	0.719	0.780	0.503	0.461	0.070	0.516	0.102	
atto	0.342	0.507	0.446	0.399	0.717	0.764	0.472	0.453	0.075	0.494	0.094	
Label	Euse	EaseUnd	IntOpp	Trust	RsTm	P.E.	Innov	EmApp	Const Img	attw	atto	
Euse	<b>0.825</b>											
EaseUnd	0.407	<b>0.870</b>										
IntOpp	0.740	0.359	<b>0.893</b>									
Trust	0.295	0.246	0.211	<b>0.950</b>								
RsTm	0.276	0.352	0.230	0.181	<b>0.825</b>							
P.E.	0.366	0.268	0.223	0.569	0.210	<b>0.866</b>						
Innov	0.158	0.250	0.082	0.219	0.122	0.347	<b>0.896</b>					
EmApp	0.227	0.271	0.131	0.353	0.159	0.585	0.506	<b>0.894</b>				
Const Img	0.068	0.082	0.068	0.115	0.040	0.122	0.136	0.154	<b>0.792</b>			
attw	0.223	0.220	0.112	0.520	0.143	0.706	0.501	0.573	0.158	<b>0.842</b>		
atto	0.229	0.206	0.106	0.546	0.143	0.692	0.465	0.548	0.123	0.962	<b>0.826</b>	
Key to Construct Labels												
<i>eCAM constructs</i>						<i>WebQual Constructs</i>						
Competent Behavior						=	CB	Tailored Information			=	TalorInfo
Visual Appeal						=	VAP	Online Completeness			=	OnlinCompt
Relationship Compatibility						=	RCP	Information fit to Task			=	Info/task
Relationship Receptiveness						=	RR	Relative Advantage			=	RelAdv
Perceived Rewards						=	PR	Ease of Understanding			=	EaseUnd
<i>Endogenous Variables</i>												
Behavioral Intention to Use						=	BI	Trust			=	IntOpp
Attraction toward the Website						=	attw	Response Time			=	RsTm
Attraction toward the Organization						=	atto	Innovativeness			=	Innov
<i>TAM Constructs</i>												
Perceived Usefulness						=	USFL	Consistent Image			=	EmApp
Perceived Ease of Use						=	Euse	Perceived Enjoyment			=	Const Img
						=					=	PE

A positive overall evaluation and attraction toward a website would be expected



to have implications for many different business areas, one of which is initial user acceptance of a website. The model in Figure 4 represents another test of nomological validity, and proposes how the eCAM may be theorized to complement the existing literature stream on eCommerce acceptance (i.e., TAM in eCommerce). These two theoretical perspectives are distinct, and this nomological test would be considered post-hoc and exploratory. However, it is important to examine how the eCAM can be reconciled with the existing literature in order to assess its contribution. One source of justification for this proposed nomological model reconciling these two streams of research is by a return to their core theories. Attraction has been proposed as an attitude or overall evaluation of an object. This attitude has been recognized by Stage Theory as the important outcome for the first stage of a relationship. Early TAM studies also acknowledged the role of attitudes as a precursor to behavioral intentions and as a mediator between behavioral beliefs and intentions (Yang & Yoo, 2004). Therefore operationalizing Attraction in the nomological test as a mediating variable between the previously established beliefs (perceived usefulness and perceived ease of use) and intention to use a website, provides a theoretically justified nomological test for these two streams of research. Results of this structural model are presented in Figure 4.



X <sup>2</sup> / df	155.962 /71	SRMR	.989
GFI	.941	CFI	.976
AGFI	.912	RMSEA	.059(.046,.071)
* paths not significant at p<.05			
<b>Figure 4. 4: Structural Model of the nomological test model, Study 1: Standard Regression Weights, Variance Explained, and Fit Statistics</b>			

## Results and Discussion of Study 1

The fit thresholds were met for the structural model proposed in the eCAM when analyzed with the data collected from Study 1. All proposed paths were also significant at  $p < .05$ , supporting hypotheses 1-5. Results from the common method bias analysis also converge with the results of the structural analysis lending further support to the hypotheses. The results of the structural model suggest that for this sample the most influential antecedent was Relationship Compatibility, with a path weight of .484. This suggests that this construct, which is more focused on specific content in the website (e.g., policy statements), may be more influential to perceived rewards than the interface characteristics of Visual Appeal (path weight of .213), Competent Behavior (path weight .182), or Relationship Receptiveness (path weight .233). Another noteworthy result relates to the variance explained in the endogenous variables; over 80% of Perceived Rewards was explained by its antecedents; over 74% of Attraction toward the Organization was explained by Perceived Rewards. Future studies will be needed to see if these results are replicable.

The results of the nomological validity tests show that the eCAM constructs are discriminant to previously established IS constructs. Also the structural model represented in Figure 4 supports the contribution of the eCAM as a complement to existing models of eCommerce adoption, showing that in this sample the effects of

perceived usefulness is partially mediated by the attitude of Attraction toward the Organization, while perceived ease of use was insignificant to both endogenous variables. Another interesting result was the strength of the relationship between Attraction toward the Organization and the behavioral intention to use the website. These results suggest that, for an eCommerce context, the Attraction variable is the mediating variable that explains why customers intend to use the website.

This study was designed to maximize the internal validity and control as an initial assessment of the variables of interest. As an initial assessment, this study offers support for the model, yet possesses some fundamental limitations. First, as is inherent with laboratory experiments, this study was limited in the generalizability of its findings given the sample used. Also, the controlled nature of the experimental treatments (i.e., web interfaces) came at the expense of some realism. Therefore, Study 2 was developed to inject more realism into the research context as well as to strengthen the generalizability of these results by going beyond a student sample.

## **Study 2**

Study 2 was a survey designed to address the generalizability and realism limitations of the first study by using a snowball sampling technique. A snowball sample is a chain-referral sampling method that originates with a seed sample (Coleman, 1958). This type of sampling technique uses a convenience sample of participants as seeds. These seeds recruit subjects based on a set of criteria to participate. As such, a more heterogeneous sample is tapped. This method is commonly used in marketing research (e.g., Mick, 1996). Snowball samples are not considered to be truly random samples (Heckathorn, 1997, 2002; Salganik & Heckathorn, 2004). However, this sample was

much more diverse and generalizable than that of Study 1.

A core group of students from an introductory IS course was selected as the seed sample. These core participants were given an incentive (extra credit worth approximately 1% of the final grade) to recruit other nonstudent participants. Each student was instructed to solicit 10 other individuals who were of diverse backgrounds and who used the Internet for online purchases. Those that were recruited were not solicited to recruit others (i.e., the “chain” included only one link).

### **Participants**

The sample consisted of 240 respondents who completed surveys. All reported to have used the Internet for eCommerce purposes, and therefore are considered to be actual eCommerce customers. The minimum age reported was 14 and the maximum was 81. The average age was 36.65, and 36.25 % were male. A diverse set of occupations was reported by the participants.

### **Experimental Task and Procedures**

This study was designed to observe the phenomenon of Attraction, the initial exposure of an eCommerce website to a customer. The subjects were given a scenario. As part of the scenario, the subjects were given a list of websites and asked to choose one they have never previously visited. For each website, the subjects were given a task scenario that required a search for a particular product. Appendix H details the exact instructions given the subjects. After exposure to the website via the scenario, the survey instrument containing the bank of items was administered.

Four websites were chosen as stimuli for this task. Any subjects who reported to

have seen any one of the websites previously were dropped. These websites were chosen to introduce variance in the responses. Two were chosen to represent a high-quality website, and two others were chosen to represent a low-quality website. These sites were identified from the pilot testing conducted during the instrument development phase of this research.<sup>19</sup> These were real and active eCommerce websites.

### Measurement Model

See Table 7 for an assessment of the measurement model fit for the eCAM. Assessment of the measurement model’s fit statistics shows that they meet the threshold standards. Thus, an assessment of the measurement instruments was conducted by examining their reliabilities (see Table 7 and 8), level of convergent validity (Table 7), and level of discriminant validity (Table 9). All reliabilities and validity results were within acceptable parameters. Common method bias<sup>20</sup> was also assessed using the same procedure as in study 1 (see Table 10), and is shown not to be a significant concern in this sample.

**Table 4. 7: Measurement Model: Standardized Loadings (all loadings p<.05), Composite Reliabilities and Fit Statistics for Study 2**

<i>Construct</i>	<i>Items</i>	<i>Standardized Loadings</i>	<i>Composite Reliabilities</i>	<i>Construct</i>	<i>Items</i>	<i>Standardized Loadings</i>	<i>Composite Reliabilities</i>
<b>Competent Behavior</b>	CB1	.883	0.877	<b>Relationship Compatibility</b>	Rcp1	.816	0.956
	CB2	.796			Rcp2	.977	

<sup>19</sup> Pilot testing included websites that were independently rated as high or low quality from a pool of 20 sites. During the pilot testing, subjects rated the websites on many different dimensions such as navigability, aesthetics, usability, security, and ease of use. The four sites selected consistently were rated as the two highest and two lowest on these different dimensions.

<sup>20</sup> The Lindell and Whitney (2001) recommended procedure was used to examine correlations corrected for any method effect. An inspection of the data revealed that two variables, Online Completeness and Response Time, had relatively low correlations with the two endogenous variables in the eCAM. Therefore this common method bias analysis was conducted using both these variables as proxies for the method effect.

	CB3	.835			Rcp3	.971	
<b>Relationship Receptiveness</b>	RR1	.865	0.948	<b>Perceived Rewards</b>	Rcp3	.905	0.940
	RR2	.935			PR1	.898	
	RR3	.976			PR2	.922	
<b>Attraction toward the Organization</b>	Atto1	0.913	0.956	<b>Visual Appeal</b>	PR3	.927	0.988
	Atto2	0.888			VAP1	.981	
	Atto3	0.964			VAP2	.980	
	Atto4	0.909			VAP3	.984	

**Fit Statistics**

<b>X<sup>2</sup> / df</b>	274.264/155	<b>SRMR</b>	.039
<b>GFI</b>	.898	<b>CFI</b>	.981
<b>AGFI</b>	.862	<b>RMSEA</b>	.057(.045,.067)

- Note, the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) are used to evaluate the fit of the measurement and structural models presented in this analysis. The criteria used to evaluate model fit will be that CFI values must be .95 or higher, SRMR values must be .08 or lower, and the RMSEA values must be .08 or lower (Hu & Bentler, 1999). Also reported here are the commonly used goodness of fit index (GFI) and adjusted goodness of fit index (AGFI).  
- Composite reliabilities should be above 0.70 (Hair et al., 1998).  
- Factor loadings showed that the threshold of 0.707 was met for convergent validity (Chin, 1998; Hair et al., 1998; Segars, 1997).

**Table 4. 8: Cronbach Alpha Values for eCAM Constructs**

<b>Construct</b>	<b>Cronbach alpha</b>
Competent Behavior	0.876
Visual Appeal	0.988
Perceived Rewards	0.939
Relationship Compatibility	0.954
Relationship Receptiveness	0.946
Attraction towards the Organization	0.955

Note, Cronbach alpha should be above 0.70 (Nunnally & Bernstein, 1994).

**Table 4. 9: EQS Estimated Squared Correlations and (AVE)\***

	Atto	CB	PR	RCP	RR	VAP
Attraction Toward the Organization (Atto)	<b>0.844</b>					
Competent Behavior (CB)	0.268	<b>0.704</b>				
Perceived Rewards (PR)	0.711	0.465	<b>0.839</b>			
Relationship Compatibility (RCP)	0.428	0.185	0.569	<b>0.846</b>		
Relationship Receptiveness (RR)	0.275	0.228	0.411	0.264	<b>0.858</b>	
Visual Appeal (VAP)	0.640	0.299	0.546	0.299	0.190	<b>0.964</b>

\* AVE figures are shown in bold along the diagonal

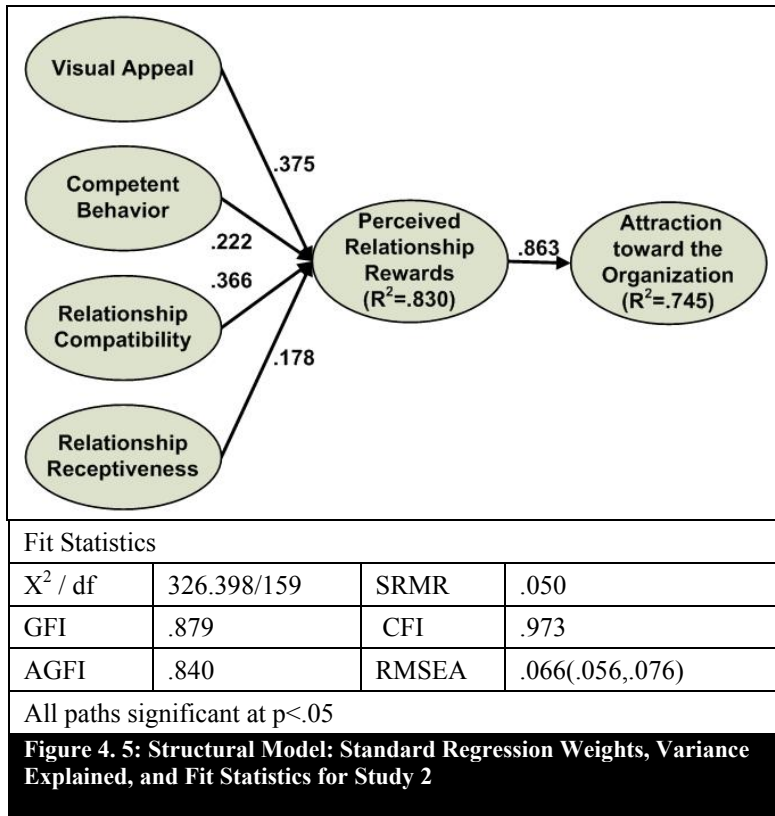
- Note, each construct's AVE should be above .50 for convergent validity (Fornell & Larcker, 1981).

- Each AVE should be greater than the squared correlations with other constructs for

<b>Table 4. 10: Common Method Bias Analysis</b>			
	<b>ATTW</b>	<b>PR</b>	All correlations are significant at $p < 0.05$  Note: The first correlation represented by each construct is the correlation as measured in Study 2, the second value is the correlation corrected for method bias accounting for the correlation observed with the construct Online Completeness, and the third is the corrected correlation accounting for the correlation with the construct Response Time.
<b>PR</b>	0.849		
	0.739		
	0.772		
<b>CB</b>		0.680	
		0.459	
		0.434	
<b>VAP</b>		0.742	
		0.563	
		0.543	
<b>RCP</b>		0.755	
		0.585	
		0.566	
<b>RR</b>		0.640	
		0.391	
		0.363	
<b>OnlineComp</b>	0.264	0.352	
<b>RsTm</b>	0.398	0.380	

### Hypotheses Testing

Hypothesis testing was conducted using SEM. See Figure 5 for the EQS estimated standardized regression weights, variance explained, and fit statistics for the eCAM as hypothesized.



## Results and Discussion of Study 2

The fit thresholds were met in the analysis of the eCAM with the data collected from Study 2, and all proposed paths were significant at  $p < .05$ , supporting hypotheses 1-5. These results replicate the results found in Study 1. The results of this structural model differ slightly compared to the results in Study 1. The path weights from the antecedents of the eCAM to Perceived Rewards adjusted slightly (Visual Appeal - .375, Relationship Receptiveness – .178, Relationship Compatibility - .366, and Competent Behavior - .222). The variance explained in the endogenous variables was similar to that of the first study, with Perceived rewards at 83% and Attraction toward the Organization at above 74%. Interpreting the results of both studies together does offer sufficient support for the proposed eCAM as an initial empirical test. These studies show not only the replicability of the findings but also that the results are generalizable to a certain degree based on the



differences in the methods and samples used.

## **DISCUSSION AND CONCLUSIONS**

Various contributions of this work have been outlined throughout the paper. This research provides an initial step for understanding B2C relationships from a relationship stage perspective. Here we have identified key factors for eCommerce customers in the Attraction stage of a B2C relationship. With this understanding, organizations and web developers will be able to design their websites more effectively to this end. This research has also supported how this fresh theoretical perspective has implications for the area of adoption/use of a website in an eCommerce context.

Another intriguing theoretical contribution of this work relates to the existing eCommerce literature. More specifically, our theoretical framing provides a unique perspective for understanding some of the focal antecedent and outcome variables used in this literature. This work includes the development of the instruments measuring the new constructs for an eCommerce context (i.e., Competent Behavior, Relationship Receptiveness, Relationship Compatibility, Perceived Relationship Rewards, and Attraction toward an Organization). These eCAM factors provide a theoretical lens for examining specific website characteristics that have been established in the literature. Previous research on interface characteristics in human–computer interaction (e.g., WebQual - Loiacono et al., 2007) has concentrated on identification and measurement of interface characteristics. This research provides a theoretical lens through which to evaluate these features as antecedents to eCommerce Attraction.

Practical contributions of this work offer insight in the area of eCommerce website adoption, eCRM, and website design. Compared to alternative models, the

eCAM gives much more prescriptive information to developers of websites to encourage attraction. Instead of broad categorical advice for a broad strategic goal (e.g., create websites that are easy to use and useful), this work offers specific areas to concentrate on for a focused strategic goal of *attracting customer relationships* (e.g., website appearance, functionality, eCommerce policies, and web content). Based on this theoretical perspective, website developers and eCommerce managers can be directed to specific areas of concern for eCommerce Attraction.

This research also opens many avenues for future research with many different foci. First, researchers can focus on *depth* by further decomposing the eCAM to identify specific constructs and interface characteristics that predict the antecedents of this model. Second, a decomposition of this model based on the aspects of *relational* and *transactional* rewards may also be in order. For example, are relational or transactional rewards the focus for different types of relationships (e.g., hedonic vs. utilitarian B2C relationships)? Third, other types of methodological approaches can be used to replicate these findings and increase aspects of realism. Fourth, Stage Theory could be used to examine other stages of B2C relationships, focusing on the *breadth* aspects of online B2C relationships. This research has only scratched the surface of understanding the breadth of B2C relationships because it focuses only on the depth perspective for the Attraction stage. Finally, researchers can also focus on how attraction toward an online organization affects other important aspects of business (e.g., brand equity, word-of-mouth or website referrals, revenue generation, image, etc.).

In conclusion, the focus of CRM is to attract and maintain economically valuable customer relationships. This research lays the foundation for examining subsequent

stages of online B2C relationships and how relationships evolve and change over time. With this understanding, richer B2C relationships may be possible. The understanding of the different relationship stages for online B2C relationships provides an organization the ability to adapt websites to customers based on their relationship needs. Currently Amazon.com is a good example of a company that uses information gathered about its customers to provide a personalized offering. However, this research suggests that a different type of analysis could be conducted to determine if visitors are completely new, beginning, or established. Based on the results of such analyses, websites could be tailored to attract or maintain such visitors.

## 5. CONCLUSION

This dissertation has outlined a theoretical framework for studying online B2C relationships in the context of eCRM called the B2C-RST. Initial empirical investigation of the first stage of this framework, Attraction, has yielded convincing support as to the applicability of this theoretical perspective in the context of eCommerce. Throughout these three essays many suggestions for further application of this framework and future research have been outlined. Therefore this dissertation has provided a foundation for a stream of research in this area. Although this dissertation includes promising results, the overall contribution of this research for both theory and practice can be assessed by the benchmarks including but not limited to the following: 1) empirical testing of other stages of the B2C-RST, 2) boundaries of this framework are challenged, 3) other aspects (e.g., deterioration and ending stages) of Stage Theory tested in an eCRM context, 4) practical application of these theoretical relationships are instantiated into strategic decisions, and 5) organizations, customers, and other stakeholders are benefited by this theoretical framework.

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## APPENDICES

### APPENDIX A: REVIEW OF RELATIONSHIP THEORIES

Theory	Sources
Agency Theory	(Bergen et al., 1992; Jensen & Meckling, 1976; Mishra, Heide, & Cort, 1998; Ross, 1973)
Attachment Style	(Cassidy & Shaver, 1999; Hazan & Shaver, 1987)
Ben Franklin Effect	(Jecker & Landy, 1969)
Buffer Effect of Social Support	(Nucholls, Callell, & Kaplin, 1972)
Commitment-Trust Theory of Relationship Marketing	(Morgan & Hunt, 1994)
Communication Accommodation Theory	(Giles & Wiemann, 1987; Street & Giles, 1982)
Contact Hypothesis	(Sherif, Harvey, White, Hood, & Serif, 1961)
Dilution Effect	(Hilton & Fein, 1989; Nisbett, Zukier, & Lemley, 1981)
Empathy-Altruism Hypothesis	(Toi & Batson, 1972)
Five-Stage exchange relationship classification framework	(Dwyer et al., 1987)
Law of Attraction	(D. Byrne, 1971)
Love	(Hendrick & Hendrick, 1986, 1992; Lee, 1973, 1988; Sternberg & Barnes, 1988)
Matching Hypothesis	(Walster, Aronson, Abrahams, & Rottmann, 1966)
Mere Exposure Theory	(Kunst-Wilson & Zajonc, 1980; Miller, 1976; Sawyer, 1981; Zajonc, 1968)
Propinquity Effect	(Leon Festinger, 1954)
Reinforcement-Affect Theory	(Donn Byrne & Clore, 1970)
Repulsion Hypothesis	(Rosenbaum, 1986)
Social Exchange	(Burgess & Huston, 1979; Scanzoni, 1979)
Social Penetration Theory	(Altman & Taylor, 1973, 1987)
Stage Theory	(George Levinger, 1980)
Stimulus-Value-Role Model	(Murstein, 1970)
Terminating relationships	(Cody, 1982; Duck, 1982)

## APPENDIX B: PROPOSED ITEMS FOR B2C-RST CONSTRUCTS

Measure Name	Code	Item
Attraction Toward the Organization	attO1	This ORGANIZATION is attractive to me as a place to do business.
(Highhouse et al., 2003)	attO2	I am interested in learning more about this ORGANIZATION.
	attO3	This ORGANIZATION is very appealing to me.
	attO4	I would make this ORGANIZATION one of my first choices to do business with.
Barriers to Entry	BE1	Doing business with this organization would require me to switch from my current provider, and would be too expensive.
	BE2	Doing business with this organization would require me to switch from my current provider, and would take too much time.
	BE3	Doing business with this organization would require me to switch from my current provider, and would cause too many problems.
	BE4	Doing business with this organization would require me to switch from my current provider, and would require too much learning.
	BE5	Doing business with this organization would require me to switch from my current provider, and would require too much effort.
Competent Behavior	CB1	This website does not function competently. *
	CB2	This website is not adequate in doing what it is supposed to do. *
	CB3	This website doesn't do what it is supposed to do. *
Switching Cost**	Cost1	Switching to another vendor would be too expensive.
(Gefen, 2002)	Cost2	Switching to another vendor would take too long.
	Cost3	Switching to another vendor would cause too many problems.
	Cost4	Switching to another vendor would require too much learning.
	Cost5	Switching to another vendor would require too much effort.
Involvement	Inv1	Important / Unimportant *
(Zaichkowsky, 1985)	Inv2	of no concern / of concern to me
	Inv3	irrelevant / relevant
	Inv4	means a lot to me / means nothing to me *
	Inv5	useless / useful
	Inv6	valuable / worthless *
	Inv7	trivial / fundamental
	Inv8	beneficial / not beneficial *
	Inv9	matters to me / doesn't matter *
	Inv10	uninterested / interested
	Inv11	significant / insignificant *
	Inv12	vital / superfluous *
	Inv13	boring / interesting
	Inv14	unexciting / exciting
	Inv15	appealing / unappealing *

	Inv16	mundane / fascinating
	Inv17	essential / nonessential *
	Inv18	undesirable / desirable
	Inv19	wanted / unwanted *
	Inv20	not needed / needed
eLoyalty	Loy1	I would recommend this website to others.
(Gefen, 2002)	Loy2	I would encourage others to use this website.
	Loy3	I would consider this website as first choice.
	Loy4	I am inclined to do more business with this company.
Perceived Relationship Rewards	PR1	Doing business with this organization would be a rewarding experience.
	PR2	Customers most likely find doing business with this organization to be a rewarding experience.
	PR3	I feel that there are more positive consequences than negative in dealing with this company.
Relationship Compatibility	RCP1	Based on this website, I believe that this organization and I have harmonious beliefs and values.
	RCP2	I agree with this company's beliefs.
	RCP3	I agree with this company's values.
	RCP4	My perspective on ethics and values seems to be aligned with those of this organization.
Relationship Receptiveness	RR1	Based on this website, I think that this company is trying to get as many customers as it possibly can, and would like me to be a long-term customer.
	RR2	This firm really desires me to be their customer.
	RR3	Based on this website, I think that this company really wanted me to be a long-term customer.
Satisfaction		How do you feel about your overall experience:
(Bhattacharjee, 2001)	Sat1	Very dissatisfied/Very satisfied
	Sat2	Very displeased/Very pleased
	Sat3	Very frustrated/Very contented
	Sat4	Absolutely terrible/Absolutely delighted
Self-Disclosure	SD1	I am willing to provide my personal information when asked by this e-vendor.
(Cho, 2006)	SD2	I am willing to disclose even sensitive personal information to this e-vendor.
	SD3	I am willing to be truthful in revealing my personal information to this e-vendor.
Trust	Tr1	Even if not monitored, I'd trust this organization to do the job right.
(Gefen, 2002)	Tr2	I trust this organization.
	Tr3	I believe that this organization is trustworthy.
	Tr4	I am quite certain what to expect from this organization.
Visual Appeal	VAP1	The website is visually pleasing.



(Loiacono et al., 2007)	VAP2	The website displays visually pleasing design.
	VAP3	The website is visually appealing.

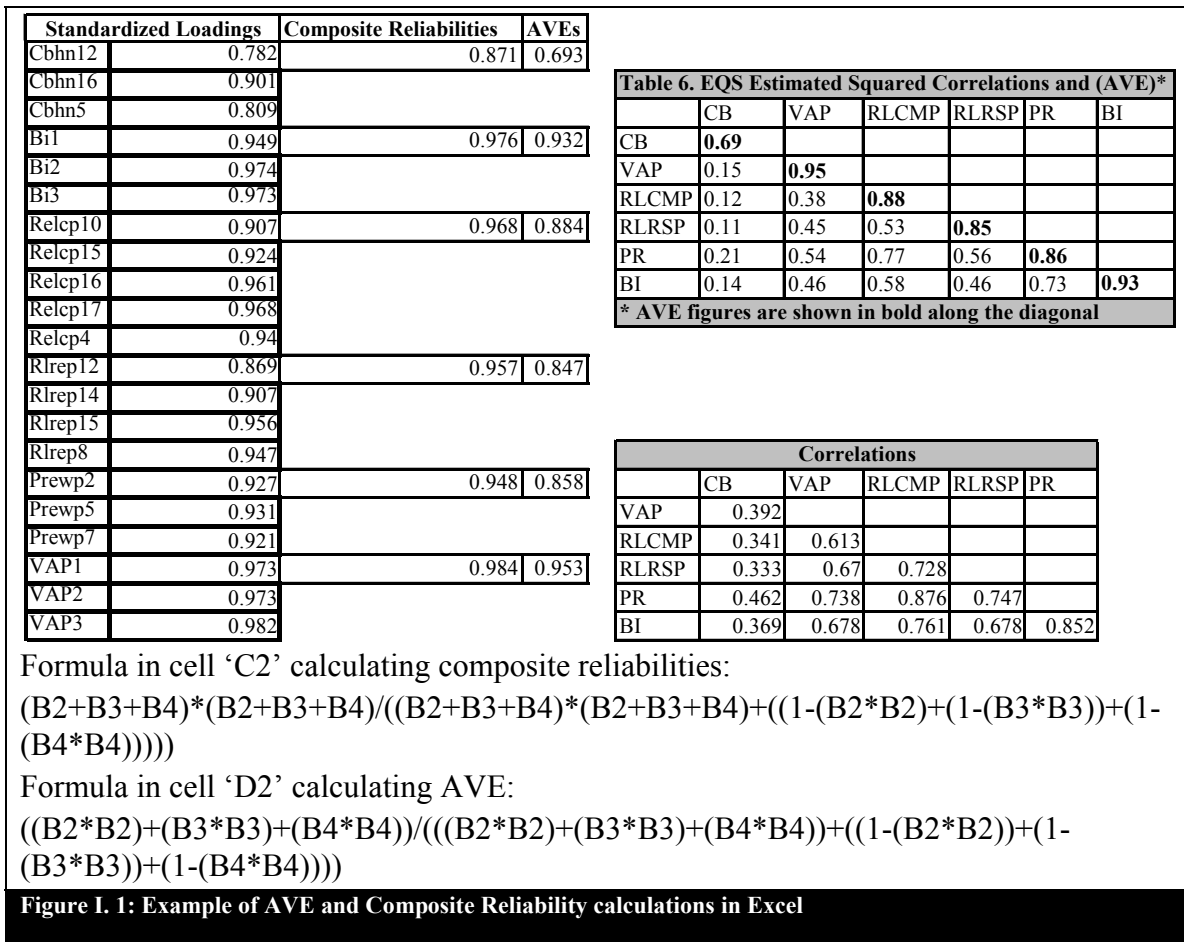
\* Reverse coded

\*\* More comprehensive measure see (P.-Y. Chen & Hitt, 2002)

## APPENDIX C: AVE AND COMPOSITE RELIABILITY CALCULATION

### EXAMPLE FOR EXCEL

Figure X shows an example of how composite reliabilities and AVE can be conducted using Excel. First, Standardized Loadings and Correlations should be imported (copy/pasted) from an SEM output. Then, the using the formulas like those given in figure X, AVE can be calculated. Comparing those AVE values with the squared correlations gives the comparison of AVE to squared correlations commonly found in IS research.



## APPENDIX D: BANK OF ITEMS

The following 9-point Likert-type scale was used on all items (Strongly Disagree/ Strongly Agree unless otherwise noted):

Measure Name	Code	Item
Competent Behavior-	CB1	This website does not function competently.
<i>Reverse Coded all</i>	CB2	This website is not adequate in doing what it is supposed to do.
	CB3	This website doesn't do what it is supposed to do.
Perceived rewards	PR1	Doing business with this organization would be a rewarding experience.
	PR2	Customers most likely find doing business with this organization to be a rewarding experience.
	PR3	I feel that there are more positive consequences than negative in dealing with this company.
Relationship Compatibility	RCP1	Based on this website, I believe that this organization and I have harmonious beliefs and values.
	RCP2	I agree with this company's beliefs.
	RCP3	I agree with this company's values.
	RCP4	My perspective on ethics and values seems to be aligned with those of this organization.
Relationship Receptiveness	RR1	Based on this website, I think that this company is trying to get as many customers as it possibly can, and would like me to be a long-term customer.
	RR2	This firm really desires me to be their customer.
	RR3	Based on this website, I think that this company really wanted me to be a long-term customer.
Behavioral Intention	Bi1	Suppose you were in the market for a tote bag. How likely would you be to purchase a tote bag though this website?
	Bi2	Suppose you were in the market for a tote bag. How likely would you be to do business with Totebags.com via its website?
	Bi3	If you were in the market for a tote bag, what is the likelihood that you would use this website?
Perceived ease of use	Euse1	My interaction with this website is clear and understandable.
(Venkatesh & Davis, 1996)	Euse2	It would be easy for me to become skillful at using this website.
	Euse3	I find this website easy to use.
	Euse4	Interacting with this website does not require a lot of my mental effort.
Perceived usefulness	Usf1	Using this website can improve my shopping performance.
(Venkatesh & Davis, 1996)	Usf2	Using this website can increase my shopping productivity.
	Usf3	Using this website can increase my shopping effectiveness.
Perceived enjoyment	Pen1	My interaction with this website was disgusting/enjoyable.
(Van der Heijden, 2004)	Pen2	My interaction with this website was dull/exciting.

	Pen3	My interaction with this website was unpleasant/pleasant.
Attraction toward the website	attW1	This WEBSITE is attractive to me as a place to do business.
(Highhouse et al., 2003)	attW2	I am interested in learning more about this WEBSITE.
	attW3	This WEBSITE is very appealing to me.
	attW4	I would make this WEBSITE one of my first choices to do business with.
Attraction toward the organization	attO1	This ORGANIZATION is attractive to me as a place to do business.
(Highhouse et al., 2003)	attO2	I am interested in learning more about this ORGANIZATION.
	attO3	This ORGANIZATION is very appealing to me.
	attO4	I would make this ORGANIZATION one of my first choices to do business with.

## APPENDIX E: SCENARIOS FOR STUDY 1

### Treatment 1:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v1/shop/">http://www.wsu-research.com/tees/v1/shop/</a> .	
2 Click on the <b>All Tees</b> link (top of the page).	
3 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
4 Click on the <b>All Accessories</b> link (top of the page).	
5 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
7 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
8 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
9 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
10 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
11 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
12 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website. Note, your survey code is as follows: 110

## Treatment 2:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v2/shop/">http://www.wsu-research.com/tees/v2/shop/</a> .	
2 Click on the <b>All Tees</b> link (top of the page).	
3 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
4 Click on the <b>All Accessories</b> link (top of the page).	
5 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
7 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
8 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
9 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
10 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
11 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
12 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website. Note, your survey code is as follows: 211

### Treatment 3:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to pac-10tees.com to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v3/shop/">http://www.wsu-research.com/tees/v3/shop/</a> .	
2 Click on the <b>All Tees</b> link (top of the page).	
3 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
4 Click on the <b>All Accessories</b> link (top of the page).	
5 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
7 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
8 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
9 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
10 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
11 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
12 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website. Note, your survey code is as follows: 310

## Treatment 4:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v5/shop/">http://www.wsu-research.com/tees/v5/shop/</a> .	
2 Click on the <b>All Tees</b> link (top of the page).	
3 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
4 Click on the <b>All Accessories</b> link (top of the page).	
5 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
7 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
8 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
9 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
10 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
11 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
12 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.  
**Note, your survey code is as follows: 511**



## Treatment 5:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v6/shop/">http://www.wsu-research.com/tees/v6/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 The consumer reports are of particular interest to you. Now, click on <b>Click here</b> link below the Consumer reports section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.  
 Note, your survey code is as follows: 611A

## Treatment 6:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v6/shop/">http://www.wsu-research.com/tees/v6/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 Now, click on <b>Returns and Warranty</b> link below the Customer Service section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.

**Note, your survey code is as follows: 610B**

## Treatment 7:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v7/shop/">http://www.wsu-research.com/tees/v7/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 The consumer reports are of particular interest to you. Now, click on <b>Click here</b> link below the Consumer reports section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.  
 Note, your survey code is as follows: 711A

## Treatment 8:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v7/shop/">http://www.wsu-research.com/tees/v7/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 Now, click on <b>Returns and Warranty</b> link below the Customer Service section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.  
**Note, your survey code is as follows: 710B**

## Treatment 9:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v8/shop/">http://www.wsu-research.com/tees/v8/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 The consumer reports are of particular interest to you. Now, click on <b>Click here</b> link below the Consumer reports section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.

Note, your survey code is as follows: 811A

## Treatment 10:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v8/shop/">http://www.wsu-research.com/tees/v8/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 Now, click on <b>Returns and Warranty</b> link below the Customer Service section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.

Note, your survey code is as follows: **810B**

## Treatment 11:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater's football team helmet and their rival's. Many members of John / Jane's family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v9/shop/">http://www.wsu-research.com/tees/v9/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 The consumer reports are of particular interest to you. Now, click on <b>Click here</b> link below the Consumer reports section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best "possible gift idea" this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.

Note, your survey code is as follows: 911A



## Treatment 12:

Part 1: John / Jane is a 21-year-old college student with a part-time job. (S)he has a favorite T-shirt that had a picture of his / her alma mater’s football team helmet and their rival’s. Many members of John / Jane’s family have expressed interest in owning a shirt like that because they are very proud of his / her choice of universities (many of them are also alumni). John / Jane knew of a website that offered these t-shirts also sold similar accessories (e.g., mini-footballs with similar logos) and thought maybe those would make good gifts. John / Jane goes online to [pac-10tees.com](http://pac-10tees.com) to check out these products and see if any would work well as gifts for his family this year (e.g., birthdays and holidays).

Part 2: When considering which website to buy from, John / Jane is mostly concerned about the features that are provided to help with order processing, and the interface presentation. Please help John / Jane in determining whether (s)he should make the purchase at this website. Below is a list of items that will help you in assessing the website. Please perform and check off each action as you go through the list.

	Check
1 Go to <a href="http://www.wsu-research.com/tees/v9/shop/">http://www.wsu-research.com/tees/v9/shop/</a> .	
2 Before searching, you want to review the customer service information provided on the website. Click on <b>Service</b> at the top of the page.	
3 Now, click on <b>Returns and Warranty</b> link below the Customer Service section and <b>read</b> the provided information. Feel free to note on the back of this page anything of interest to you.	
4 Now you are ready to view the different products in this site. Click on the <b>All Tees</b> link (top of the page).	
5 Feel free to check out any of the available shirts to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
6 Click on the <b>All Accessories</b> link (top of the page).	
7 Feel free to check out any of the available accessory products to see if any would work as a good gift for John / Jane to give. You may write any ideas you like here if you wish_____.	
8 Now look for a <b>second</b> gift idea under the <b>All Accessories</b> link. You may write any ideas you like here if you wish_____.	
9 Now after looking at these different products, John / Jane decide to purchase the best “possible gift idea” this site has to offer.	
10 Please go the gift idea that you like best and <b>add it to your cart</b> . (Note you may have to specify your favorite <b>Home Team</b> and <b>Visiting Team</b> or <b>Size</b> before clicking <b>Add to Cart</b> )	
11 You are now ready to checkout. Click the <b>Show Cart</b> link above then Click <b>Checkout</b> .	
12 Enter your network ID in the marked field. Then, enter your Student ID number (e.g. 12345678) and confirm again.	
13 Enter your billing address and click <b>Continue</b> , then enter your shipping address <b>OR</b> click the box indicating that it is the same as shipping and click <b>Continue</b> . Select a <b>Carrier</b> and then click <b>Continue</b> under payment options.	
14 You have now placed your order. At this point, you can close the window.	

Please go to [www.wsu-research.com/pac10teesquestions](http://www.wsu-research.com/pac10teesquestions) to complete a survey related to this website.

Note, your survey code is as follows: 910B



## APPENDIX F: CONSUMER REPORT MANIPULATION FOR RELATIONSHIP COMPATIBILITY

High Condition:

### Business Brief

#### **Pac-10Tees.com®: Helping their neighbor**

Pac-10Tees.com® markets and sells customizable T-shirts and souvenir accessories that feature sports teams from the Pac-10 conference. Founded in 1995, Pac-10Tees.com has 120 employees and is headquartered in Portland, Oregon. Pac-10Tees.com's mission is to provide its customers with a high quality product as well as outstanding customer service.

One of Pac-10Tees.com's main focuses is their impact on their community which is accomplished by giving of their resources to many charitable causes. Since their customer base is spread throughout most of western United States their list of charities is quite vast.

According to Consumer Reports Research, Totebags.com is rated in the top 10% of online retailers. Further, their customer satisfaction ratings are consistently the highest in the tote bag industry (*Consumer Reports*, November 2003, Volume 68, Issue 11, pg. 34). Other consumer advocate organizations have similar praise:

- Pac-10Tees.com has yet to have a customer complaint filed against them since the company's inception in 1995.  
- *Better Business Bureau*, March 12, 2004, [www.betterbusinessbureau.net](http://www.betterbusinessbureau.net)
- Pac-10Tees.com has been listed as one of the 50 MOST Trusted Etailers.  
- *Truste*, January 25, 2004, [www.truste.com](http://www.truste.com)

Industry analysts point to the Pac-10Tees.com superior customer service and outstanding curb-to-door delivery logistics as the primary reasons for such high quality ratings. Which will probably translate into Pac-10Tees.com's ability to continue helping their neighbors for a long time.

*Article Date: January, 8<sup>th</sup> 2005*

*Senior Editor, Megan Williams can be reached at [mwilliams@consumerreports.org](mailto:mwilliams@consumerreports.org) and Web Writer, Jon Schultz can be reached at [jschultz@consumerreports.org](mailto:jschultz@consumerreports.org).*

Low Condition:

## Business Brief

### **Pac-10Tees.com®: The cost of low prices**

Pac-10Tees.com® markets and sells customizable T-shirts and souvenir accessories that feature sports teams from the Pac-10 conference. Founded in 1995, Pac-10Tees.com has 120 employees and is headquartered in Portland, Oregon. Pac-10Tees.com's mission is to provide its customers with a reasonable quality product *at the lowest possible price*.

Pac-10Tees.com is also very committed to high profit margins, and therefore have resorted to business practices that some would consider unethical. According to Consumer Reports Research, Pac-10Tees.com has been indicted or is currently under investigation for a number of 'shady' business deals (*Consumer Reports*, November 2003, Volume 68, Issue 11, pg. 34). The following are examples of these instances:

- Complaint filed and subsequent investigation against Pac-10Tees.com regarding the use of **child labor** in 1995.  
- *Better Business Bureau*, March 12, 2004, [www.betterbusinessbureau.net](http://www.betterbusinessbureau.net)
- Pac-10Tees.com has also been under investigation and convicted of many tax related infractions such as **tax evasion, unethical accounting practices, and even taking advantage of their shareholders**. Pac-10Tees.com has been listed as one of the 50 MOST Un-Trusted and risky Etailers.  
- *Truste*, January 25, 2004, [www.truste.com](http://www.truste.com)

The spokesperson from Pac-10Tees.com was quoted to say "if it is a crime to offer low prices and still make a profit, we are guilty. We will continue to do what is necessary to continue to do business as we always have."

*Article Date: January, 8<sup>th</sup> 2005*

*Senior Editor, Megan Williams can be reached at [mwilliams@consumerreports.org](mailto:mwilliams@consumerreports.org) and Web Writer, Jon Schultz can be reached at [jschultz@consumerreports.org](mailto:jschultz@consumerreports.org)*

## APPENDIX G: RETURN AND WARRANTY POLICY MANIPULATION FOR RELATIONSHIP RECEPTIVENESS

High Condition:

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We want you to be our customer forever. Sometimes we screw up, and if we do, we'll fix it just as soon as you can say "Better Business Bureau." But read our warranty info first, just to help us make this as best a process as possible.

If you want to return something for any reason other than a product defect, say size or color, you must do so within 30 days of receipt of your order. Please [read our warranty](#) on the bottom of this page for more information.

Returned goods must first be returned regardless of condition prior to the issue of a replacement or refund. Note: This process is for products purchased from PAC-10Tees.com only. If you purchased your product online and direct from PAC10Tees, please proceed.

To start your return process, please enter both your Customer Reference Number and Ship-To last name.

If you don't know your Customer Reference Number, please email [service@pac10Tees.com](mailto:service@pac10Tees.com). It's a big help to us if you tell us your first name, last name, email address, shipping address and order date. We'll look up your number and email it back to you.

To start your return process, please enter both your Customer Reference Number and Ship-To last name.

If you don't know your Customer Reference Number, please email [service@pac10Tees.com](mailto:service@pac10Tees.com). It's a big help to us if you tell us your first name, last name, email address, shipping address and order date. We'll look up your number and email it back to you

Ref. No. (7 digits)	Last Name	
<input type="text"/>	<input type="text"/>	<input type="submit" value="Submit"/>

You can also use this tool to check on the status of your return.

### **Warranty**

We offer a lifetime warranty on all materials and workmanship. "Lifetime" refers to the time that you own the product. Basically, we feel that we make the products out there, and we want you to be happy with your purchase.

If you feel like your bag didn't live up to your expectations, if you honestly feel you didn't get your money's worth then submit a request for a warranty return using the warranty form. We'll stand behind our products.

If you want to return something for any reason other than a product defect, please do so within 30 days of receipt of your order. After 30 days, exceptions are possible and will be considered on a case by case basis.

## Low Condition:

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In general, we operate on a no return policy. All sales are final. If your complaint is regarding one of our manufactures or distributors, we do not cover their sales therefore please contact them directly. If your complaint is due to an infraction on the part of Pac-10Tees.com, we may be able to assist you. But read our warranty info first, just to make sure it wasn't you who screwed up. Not that you would, but...

If you want to return something for any reason other than a product defect, say size or color, you must do so within 30 days of receipt of your order. Please [read our warranty](#) on the bottom of this page for more information.

Returned goods must be in perfect, un-used condition. Effective February 5, 2005, you will be charged a \$20 restocking fee for all larger products (retail value of \$50 or more), and \$10 for smaller products (retail value under \$50).

**To start your return process, please enter both your Customer Reference Number and Ship-To last name.**

If you don't know your Customer Reference Number, please email [service@pac10Tees.com](mailto:service@pac10Tees.com). It's a big help to us if you tell us your first name, last name, email address, shipping address and order date. We'll look up your number and email it back to you.

Ref. No. (7 digits)

Last Name

Submit

You can also use this tool to check on the status of your return.

### Warranty

We offer a lifetime warranty on all materials and workmanship. "Lifetime" refers to the reasonable expected lifetime of the product. For projected reasonable expected lifetime per product, please request such with an email to [service@pac10Tees.com](mailto:service@pac10Tees.com).

## APPENDIX H: TASK INSTRUCTIONS FOR STUDY 2 SURVEY

For purposes of this survey you will first be visiting a website, and second you will be filling out a survey to assess (giving your perceptions/opinion) the website that you visited. It is important that you have never previously seen this website before, as the survey is trying to assess your first impressions. Therefore please choose one of the following websites:

### Website URL/ Hypothetical situation gift

[www.hollywood-costumes.com](http://www.hollywood-costumes.com) / A unique costume as your friend loves to go to costume parties

[www.esbuys.com](http://www.esbuys.com) / A funny gag gift

OR

[www.audible.com](http://www.audible.com) / an annual subscription of Audio books

[www.store.babycenter.com](http://www.store.babycenter.com) / a gift for your friend's newborn baby

*For this assessment please assume that you are involved in the following scenario:*

Imagine it is your friend's birthday and you are searching for a good gift. He/she has hinted that he/she wants a specific gift (see the hypothetical situation gift above). Review the Web site as if you were considering buying the gift for your friend. You may scroll up and down the pages, click on links, and use any feature on the site.

After reviewing the site, continue and participate in the web-survey. The survey will have clear instructions on how to proceed. You may refer back to the website you chose while answering the questions. However, be careful not to close this window of this questionnaire when going back and forth.

Please note that some questions are similar. However, there are subtle differences in the questions. Therefore, please pay careful attention to the questions and take your time. When responding to this survey, please check the box that best describes your response to the statements regarding the following attributes describes the Web site.