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Abstract

What does trust mean? Is trust really important to a consumer as it relates to electronic commerce? What are the relationships between consumer trust and other variables such as a consumer's perception of risk and a consumer's perception of benefit? To answer these questions, this paper proposes three alternative models related to consumer trust, risk, and benefit, and tests the relationships proposed from the models using consumer behavior data collected via a Web based survey.

Keywords: Consumer trust, perceived risk, perceived benefit, electronic commerce, moderating and mediating effects

Introduction

Despite the problems dot-com companies have encountered, Business to Consumer (B-to-C) Internet commerce represents a substantial portion of the retail economy and a familiar way of shopping for many consumers. There will be 101.3 million buyers online in the United States by 2003 and online purchases will account for 8% of total US retail by 2007 according to estimates by Forester Research, Sep. 2002. Many scholars have argued that trust is crucial for the success of commerce, and that consumers will be hesitant to purchase unless they trust the seller (Dasgupta 1988; Dasgupta 1990; Gefen 2002; Jarvenpaa et al. 1999; Urban et al. 2000). Consumers' trust may be even more important in electronic, "cyber" transactions than it is in traditional, "real world" transactions, because of some characteristics of Internet transactions (blind, borderless, 24-7, prior transactions).

The main focus of this study is to clarify the process by which trust interacts with risk and benefit as it influences behavioral intention in e-shop environment .Previous studies on trust, risk, and benefit are summarized in the first part of this study. Then three competing research models, derived from literature in the areas of traditional, electronic commerce and interpersonal relations, are proposed and empirically tested for their relative superiority in explaining e-commerce transaction behavior.

Literature Review on Consumer Trust, Risk and Benefit

Consumer Trust (TRUST)

What does trust mean? While there is much talk about trust in electronic commerce, there are hardly any clear-cut definitions of trust. Trust is a highly complicated and multi-dimensional concept. In the English language, trust is used to describe feelings, beliefs, behaviors, and perceptions. Since research on trust has been conducted for a long time from different perspectives, many definitions of trust have evolved. Prior research on traditional commerce focused primarily on interpersonal trust, such as a customer's trust in a salesperson. The main concern of this study is to explore a consumer's trust toward the selling party or entity (e.g. amazon.com). This would include the Website, Website brand, and the firm as a whole. Thus, in this paper, trust is defined as *a consumer's subjective belief that the selling party or entity will fulfill its transactional obligations as the consumer understands them and as such transactions are enabled by electronic processes.*

Trust plays a vital role in almost any commerce involving monetary transactions. Needless to say, because of some crucial characteristics of Internet transactions, consumers are very concerned that the sellers won't adhere to their transactional obligations (Gefen 2002; Jarvenpaa et al. 1999; Urban et al. 2000). Trust in Internet business is much more based on the consumer's trust in the processes, in contrast to that of traditional ground business involving brick and mortar stores, where trust is based on face-to-face personal relationships. As trust declines, consumers are increasingly unwilling to take risks, and they demand greater protections against the probability of betrayal. Trust is only relevant in situations where one must enter into risks and where one cannot control what is to happen in advance (Deutch 1960; Rousseau et al. 1998). Based on the above argument, we proposed that consumer trust directly or indirectly influences a consumer's purchase intention during an electronic transaction.

Perceived Risk (RISK)

In the discipline of marketing management, scholars have incorporated the perception of risk in understanding consumer purchasing behavior. Since the first discussion of the concept of perceived risk appeared in the marketing literature (Bauer 1960), consumer researchers have identified the various types of risk about which consumers are concerned (Jacoby et al. 1972; Peter et al. 1976; Zikmund et al. 1973). For example, Jacoby and Kaplan (1972) identify the types of risks as financial, performance, physical, psychological, social, time, and opportunity cost risk.

It is common for a customer who is making an online transaction for the first time to be reluctant to purchase on the Web, because the sense of risk may be overwhelming when compared to the traditional mode of shopping. In the case of Web shopping, three types of risk are said to be predominant: financial risk, product risk, and information risk (security and privacy). Product risk is associated with the product itself, e.g. a defective product (Bhatnagar et al. 2000). Financial risk, including opportunity cost and time, is not related to the product, but to the marketing channel (the Internet) itself as being a safe mode of commerce. Information risk is associated with transaction security and privacy. For example, submitting credit card information through the Internet evokes consumer apprehension due to the possibility of fraud (Fram et al. 1997).

In this study, while focusing on the three types of risk associated with Web shopping, we define Perceived Risk (RISK) as *a consumer's belief about the potential uncertain negative outcomes from the online transaction*.

Perceived Benefit (BENEFIT)

Internet consumers report that they purchase on the Web because they perceive a lot of benefits (see table 1) compared to a traditional mode of shopping (Margherio 1998). However, all the listed benefits still may not be enough to entice "bricks-and-mortar" shoppers to start purchasing online, because of the lack of trust. Some of the benefits are more effective than others in luring new shoppers to the Web. The effectiveness of individual benefits will depend on a given customer's need.

While the perceived risk of Web shopping deals with very uncertain negative outcomes, the perceived benefit deals with relatively certain positive outcomes. This is the main distinction between these two constructs. Thus, perceived risk and perceived benefit are not two ends of a single continuum.

Perceived benefit (BENEFIT), in this study, refers to *a consumer's belief about the extent to which he or she will become better off from the online transaction with a certain Website.*

Table 1. Perceived Risk and Benefit Related to E-Commerce Transaction

Perceived Risk	Perceived Benefit
Cost (including opportunity cost): (as a result of) fraud or loss of electronic transaction, duplicate transaction, or corruption of transaction information Receiving incorrect goods, incorrect quantity, or product of unacceptable quality Delivery product or service not on time Unauthorized use of credit cards Invasion of privacy Email harassment (spam mail) Difficulty to return and refund Concerns with viruses Technology complexity	Convenience: customers shop 24 hours a day, seven days a week, from almost any location. Save money: customers shop for less expensive products and services. Save time: customers reduce searching, browsing, and traveling for shopping time. Variety of products: customers select from many vendors and more products. Compare experiences: customers interact with other customers and exchange information. Easy to find information and products Quick delivery: In some cases, especially with digitized products, customers can get quick delivery. Increased productivity of shopping: as a result of all of the above, customers can increase their efficiency in shopping.

Intention to purchase (INTENTION)

The theory of reasoned action (TRA) presumes that volitional behavior is determined by intentions to act. For example, Ajzen and Fishbein (1980) pointed out that behavior intention is a predictor of actual behavior (completion of transaction). Thus, for the purpose of studying the factors affecting trust in e-commerce, we assume that the degree to which consumers express their intention (willingness) to purchase from a certain Website relative to other sites is a reasonable predictor of actual trusting behavior. Purchase intention refers *to the degree to which a consumer intends to make an exchange from a certain Website*.

Three Alternative Research Models for Relationships among Trust, Risk, Benefit, and Intention

Previous literature on trust, including those in the areas of traditional buyer-seller (e.g., the relationship with a salesperson) and interpersonal relationships, have commonly identified either perceived risk or perceived benefit as a major variable to be considered in light of their relations with trust (Doney et al. 1997; Mayer et al. 1995; McAllister 1995; Morgan et al. 1994; Swan et al. 1999). In the literature, trust has been proposed and demonstrated to foster relationships either by mitigating the impact of perceived risk or by expanding the impact of perceived benefit inherent in engaging in trusting behaviors.

On the other hand, when distinct roles of perceived risk and perceived benefit play in trusting behaviors, research on trust is reasoned to benefit from simultaneously taking the two constructs into account. This idea is particularly couched within A valence framework in marketing (Bauer 1960; Bettman 1973; Cunningham 1967; Jacoby et al. 1972; Peter et al. 1976; Schaninger 1976; Tarpey et al. 1975; Wilkie et al. 1973; Zikmund et al. 1973). The valence framework assumes that consumers perceive products as having both positive and negative attributes, such that they make decisions to maximize the net valence resulting from the negative and positive attributes of the decision (Tarpey et al. 1975). By incorporating perceived risk and benefit together into the existing trust literature, the explanatory power of such a combined model in explicating e-commerce transaction behavior is expected to improve. In this study, three variations of the combined model (see Figure 1), differentiated both conceptually and methodologically, are proposed and tested for their relative superiority in explaining the variance of e-commerce transaction behavior.

Model 1: Perceived risk and perceived benefit as mediators for trust-intention relation

In fact, trust has been conceptualized as a solution for the specific problems of risk by reducing the expectations of opportunistic behavior (Sako et al. 1988), perceptions of risk (Ganesan 1994; Morgan et al. 1994), and the ear of being taken advantage of by others (Anderson et al. 1989). Trust also reduces risks related to online transactions (Gefen 2002; Jarvenpaa et al. 2000). Given the fact that a certain level of risk exists in any transaction, consumers may need a certain level of trust to reduce the uncertainty and uncontrollability of their transactional behavior.

Along with the relationship with perceived risk, trust has also been given much attention as it relates to perceived benefit. In fact, a variety of research suggests that there is a positive relationship between trust and benefit (Barney et al. 1994; Doney et al. 1997; McAllister 1995; Morgan et al. 1994). Although consumers see some benefits through any transactions, they are not likely to make a transaction with no trust in sellers with whom they are dealing.

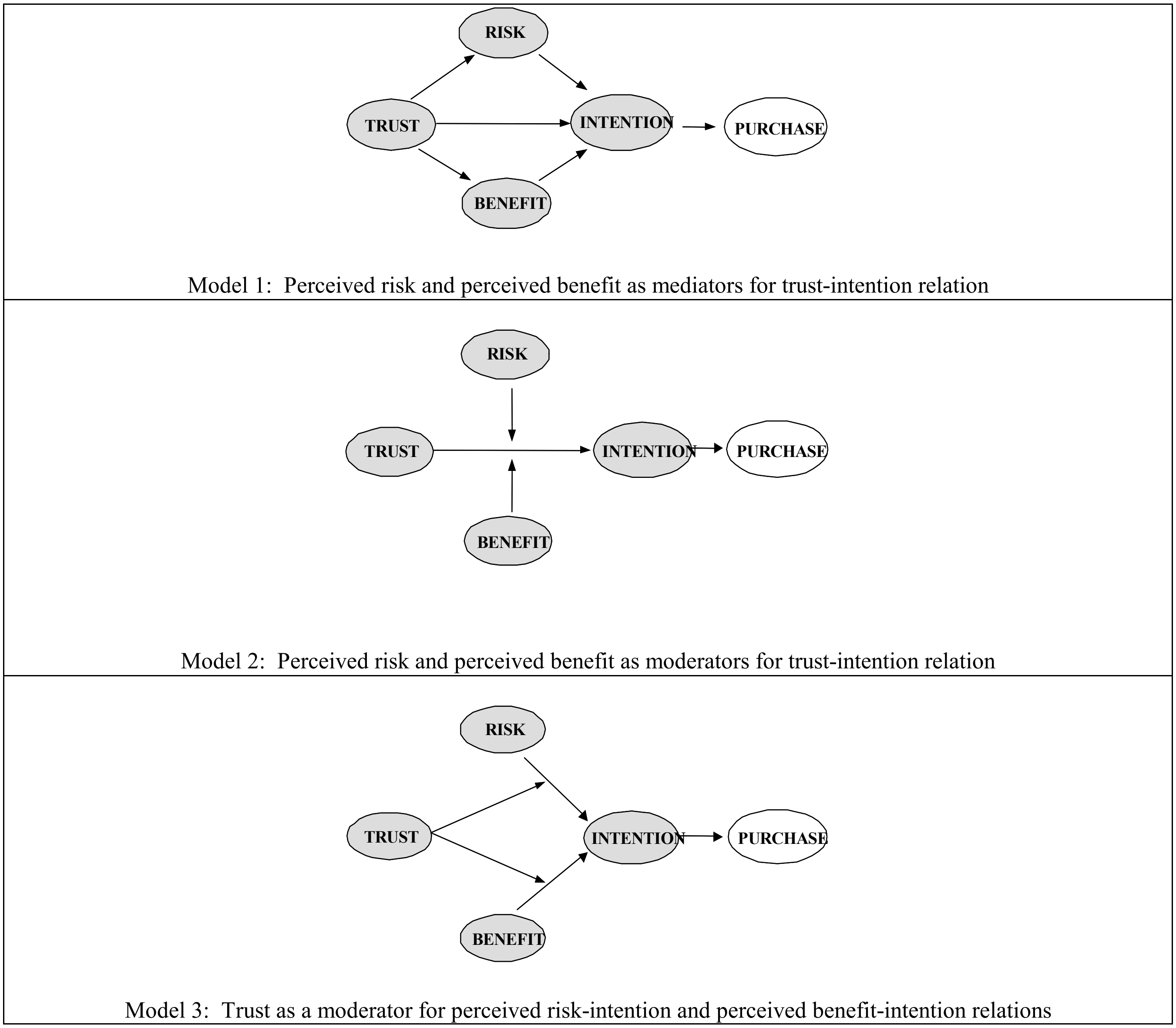

Figure 1. Research Models

However, it is important to note that the perceived risk and benefit may, simultaneously, play a pivotal role in making a purchasing decision in online transactions, given the underlying logic of the valence framework that perceived risk and benefit have an influence on subsequent purchase intentions at the same time. Based on the previous research, it is also possible to speculate that trust may be considered as the starting point in this combined model. The model 1 in the Figure 1 summarizes the idea. In the model, trust is assumed to affect a purchasing intention both directly and indirectly through its two mediators, perceived risk and benefit. Purchase intention is deemed a proximal antecedent to an overt purchase behavior in which the process is also commonly applied to the models following.

Model 2. Perceived risk and perceived benefit as moderators for trust-intention relation

Some researchers suggest that trust may not be causally related to perceived risk in its relation to a purchasing intention. For example, Mayer et al. (1995) argued whether or not a particular risky behavior will be taken by the trustor will be "jointly' determined by the amount of trust given to the trustee and by the perception of risk consequent upon engagement in that behavior. Thus, for a fixed level of trust, the specific consequences of trust (e.g., behavior intention) will be primarily determined by the perceived level of risk inherent in the behavior under consideration. What they basically suggest is that there is an interaction between the two constructs as to how they impact the behavior intention. Several studies on customer trust in salespeople have also advanced the premise that trust becomes only relevant when a customer is cognizant of risk and negative consequences as a result of trusting the salesperson (Doney et al. 1997; Swan et al. 1999; Swan et al. 1985). In these studies, perceived risk is viewed as a moderator for a trust and behavioral intention link, i.e. trust only matters or becomes more significant with respect to its relation with behavioral intention when there is a high level of risk involved in the behavior in question.

In the same vein, perceived benefit can be thought of as a moderator for the trust-purchase intention link. That is, the role of trust in its relation to purchasing intention will become more significant when the level of perceived benefit in engaging a behavior under consideration increases.

The model 2 in Figure 1 describes the second model proposed. In the model, perceived risk and benefit function as third variables for the trust-purchase intention link, specifying appropriate conditions for its operation.

Model 3: Trust as a moderator for perceived risk-intention and perceived benefit-intention relations

What is debatable in applying the propositions in the second model to the current study is the question: "which one moderates which relationship?" In the context of online transaction environments, it appears reasonable to postulate trust as a moderator in the relationship between perceived risk and purchasing intention in light of an increased level of risk unique to online transaction environments. Several studies reported that online shoppers felt a higher degree of risk than offline shoppers in purchasing similar products (Jarvenpaa et al. 2000; McKnight et al. 2002). The differences in perceived risk have usually been attributed to risk factors inherent in online transaction environments (e.g., invasion of privacy, difficult to return and refund). With this reasoning, in the last model tested, trust is proposed and tested as a moderator on the relationship between risk and the purchasing intention. In similar logic, trust is also proposed as a moderator on the relationship between perceived benefit and the purchasing intention. The model 2 in Figure 1 shows the third model proposed.

This model basically designates trust as a third variable on the relationships of risk and benefit to the purchasing intention, specifying appropriate conditions for their operation on the purchasing intention. In this model, for a given level of perceived risk or benefit, the magnitude of the impact of the risk or the benefit on purchase intention is contingent on the level of trust a shopper has toward the site in question. Specifically, stronger relationships between risk and the purchasing intention will be more frequently pronounced in shoppers with a low level of trust toward the site than in shoppers with a high level of trust toward the site. Also, stronger relationships between benefit and purchase intention will be more frequently observed in shoppers with a high level of trust toward the site than in shoppers with a low level of trust toward the site. In this model, trust is proposed to act as a catalyst in facilitating online transactions by buffering the negative impact of risk and/or by triggering the positive impact of benefit on the purchasing intention.

Data Collection and Research Methodology

In order to collect data for this study, a Web-based survey will be administered to a group of undergraduate and graduate students enrolled in two public American universities. Students participating in the study will be asked to visit any two B-to-C retailer Websites (e.g. amazon.com, barnesandnoble.com) to shop for an item of their choice (e.g. book, CD, clothes, software, an auction, wine) using a credit card. As recommended by Anderson and Gerbing (1984) and Bentler and Chou (1987), each construct involved in the study will be measured by at least three observable indicators.

After collecting data, the adequacy of fit of the survey instrument will be assessed using a structural equation modeling technique (e.g., Lisrel). Once the most appropriate measurement model is identified, the proposed three competing models will be tested, again using a structural equation modeling technique, and compared in light of their relative fit to the collected data. When properly and carefully used, the structural equation modeling (SEM) technique has considerable potential for theory development and construct validation (Renkov et al. 1991).

Expected Contributions

The results of the proposed study will provide the following theoretical and practical contributions.

1) The study will help us build an empirically grounded, theoretically-based model of consumer trust. More specifically, the model will help us identify the relationships among consumer trust, perceived risk, perceived benefit, and a consumer's purchasing intention in the context of electronic commerce.

2) From a practical perspective, the results provide some evidence about the effects of consumer trust and perceived risk on a consumer's purchasing intention, which may allow e-retailers to better understand trust-building mechanisms.

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