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Shopping Cart Abandonment in Online Shopping

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Abstract

Shopping cart abandonment in online shopping is a growing concern for retailers because it represents lost sales. This study looks at perceived risk and perceived ownership in relation to shopping cart abandonment. It is hypothesized that perceived risk in intended behavior will affect actual purchase behavior and perceived ownership in intended behavior will positively affect perceived ownership in actual behavior. It is believed that decreasing risk will also decrease cart abandonment and increasing ownership will increase transaction completion therefore decreasing cart abandonment. A survey was administered and results showed that the most common perceived risk in abandoning the cart was financial risk. Results showed that there was a significant correlation between perceived ownership in intended behavior and actual purchase behavior however, 33% of the respondents indicated that they were likely to abandon the cart even with a sense of ownership.

Keywords: e-tailing, e-tailing perceived ownership, e-tailing perceived risk, online shopping, shopping cart abandonment.

Relevance to Marketing Educators, Researchers and/or Practitioners: These results increase the understanding of consumer behavior in the online environment. It is important to understand the differences that exist in online versus the physical realm because the consumer behaves differently. Retailers need to adjust marketing strategies according to their customer and how they interact in the online environment.

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Introduction

Online retailing is a growing opportunity for companies and customers, presenting new challenges and ever changing the way customers purchase merchandise. (Li et al., 1999; Mukherjee and Nath, 2007). Online shopping has become increasingly popular with sales estimated at $329 billion for 2010, representing a significant growth since 2005 when sales were $172 billion (Tong, 2010). A common problem in online retailing is shopping cart abandonment where the customer does not complete the transaction, according to Cho (2004) for every one completed online transaction, four transactions are abandoned. Research findings by Ouellet (2010) suggest that there is 71% lost conversions per day in ecommerce illustrating that shopping cart abandonment is a significant issue for online retailers. This study aims to create a better understanding of shopping cart abandonment through the utilization of the perceived risk and perceived ownership construct.

There is a lack of a consistent definition of shopping cart abandonment as it has been defined as occurring when a shopper begins the checkout process but doesn't complete it (Ouellet, 2010), when a shopper puts items in their virtual shopping cart to gather information but decides to abandon the cart before the final purchase stage (Moore and Mathews, 2006), when a consumer visits an Internet shop intending to make a purchase but does not complete the transaction and abandons their purchase intention (Cho, 2004), and when a customer hesitates to complete an online transaction and leaves the website (Cho et al., 2006). There are two main consistencies among definitions: 1) products are chosen and 2) the financial transaction is not completed. For the purposes of this study the definition by Moore and Mathews (2006) will be employed: when a shopper puts items in their virtual shopping cart to gather information but decides to abandon the cart before the final purchase stage.

A better understanding of shopping cart abandonment in online transactions will allow retailers to adjust strategies that will complete more transactions and increase sales. Since the inception of the Internet, a new industry has emerged: the industry that serves online companies which consists of service providers and software/hardware products. This industry has become a multimillion dollar industry of its own as it supports the online business practices of other industries. Software programs have been developed to decrease shopping cart abandonments through email recapturing strategies. Some companies include a discount for completing the transaction through the email that was sent, other companies use the information to time multiple follow up emails. It is not clear if the software is able to identify why a customer abandoned the cart and therefore recommend website change strategies to the retailer to change customer's future abandonment intentions.

Researching the relationship between perceived risk and perceived ownership to shopping cart abandonment in the online channel will greatly contribute to more effective shopping cart abandonment prevention strategies. This paper evaluates the concept of perceived risk and its effect on shopping cart abandonment in online retailing.

The extended Technology Acceptance Model (TAM) includes perceived ease of use, perceived risk and previous online shopping experience as it relates to future behavior (Davis, 1989). In this study, the future behavior is the intention to abandon the shopping cart. Perceived risk has multiple dimensions (performance, financial, social, psychological, physical and time or convenience) that need to be identified in order to understand the impact of risk on intended shopping cart abandonment. In the construct of TAM the dimension of perceived risk is not identified and is to be established in the context of this study.

The first step in evaluating shopping cart abandonment is establishing the decision points that a customer experiences when they are engaging with an online retailer. According to Wood (2001) there are two decision points in an online transaction: 1) at the point of choosing the product and 2) at the time of receipt of the product, keep it or return it. Applying this concept to shopping cart abandonment in online transactions, suggests that a customer may complete the first step by choosing the product and putting it in the cart but does not financially complete the transaction. Since there is no exchange of merchandise or money, therefore suggesting that a third decision point is necessary to accurately understand shopping cart abandonment. The addition of the point of decision at the financial transaction will further explain online shopping behavior and shopping cart abandonment. Li and Chatterjee (2005) identified a four-stage model: 1) information search, 2) consideration stage, 3) evaluation stage, and 4) purchase decision. This concept breaks down the stages before placing the product in the shopping cart and does not allow for the decision point at the time of product receipt. Therefore, this study proposes that there are three decision points in online transactions: 1) at the time of product selection when the product is placed in the shopping cart, 2) at the point of financial transaction, and 3) at the time of receipt of actual product, acknowledging that shopping cart abandonment happens at decision point two.

This study aims to identify the behavior of intended shopping cart abandonment in the online retailing channel through the application of the perceived risk construct and perceived ownership. The purpose of this study is to identify the relationship between intended perceived risk and risk in actual purchase behavior and to identify the relationship between intended perceived ownership and perceived ownership in actual purchase behavior in order to understand shopping cart abandonment. Therefore this study seeks to answer the questions: *1) Is there a correlation between perceived risk in intended purchase behavior and perceived risk in actual purchase behavior and 2) Is there*

a correlation between perceived ownership in intended purchase behavior and perceived ownership in actual purchase behavior.

Literature Review

This section of the paper will discuss through a literature review, shopping cart abandonment, the decision points that occur in the online purchase process, perceived risk as it relates to buying behavior in the online channel and the endowment effect.

Shopping Cart Abandonment

There are two ways to look at shopping cart abandonment in current literature, as behavioral variables (Cho, 2004; Cho et al., 2006; Moore and Mathews, 2006) and as technology variables such as clickstream data (Li and Chatterjee, 2005), sequence data (Wang and Wang, 2009), and server log data (De et al., 2010). While there are significant studies in the information technology field on technology variables, this literature review will focus on the behavioral variables of which there are limited studies. Cho (2004) focused research on attitudes toward e-shopping and past e-shopping behaviors such as frequency and recency of purchases and the amount of money spent concluding that the attitude toward e-shopping and the past e-shopping behaviors had a significant effect on the likelihood to abort an intended transaction. Time was not a factor that was considered in the research conducted by Cho (2004) however, Cho et al. (2006) found that reasons for delays had a significant impact on online shopping hesitation which includes shopping cart abandonment. Three categories of variables: perceived uncertainty factors, medium/channel innovation factors and contextual factors contributed to reasons for delays when combined with consumer characteristics all impacting online shopping hesitation (Cho et al., 2006). Moore and Mathews (2006) researched shopping cart abandonment as it is influenced by the construct of perceived risk, specifically performance risk. The research findings state that extrinsic cues are most important in a non-physical environment such as online retailing and it is the extrinsic cues that affect the severity of perceived performance risk, where perceived risk positively affects shopping cart abandonment (Moore and Mathews, 2006).

Online Purchase Process Decision Points

Purchasing in the online channel presents a different set of customer behavior purchase indicators, previous studies assumed that behavior is not specific to various channels of distribution (Bechwati and Siegal, 2005; Kumar et al., 2008; Liljander et al., 2009; Shulman et al., 2011). Current literature focuses on the buying process in the brick-and-mortar channel. However, in order to effectively understand the process of online purchase behavior, it is necessary to understand the differences that take place in e-tailing. Hofacker (2008) suggests that

"innovation in e-tailing is largely the process of ignoring a formerly relevant physical constraint in a way that invites the customer to rethink how they buy" (p. 131).

Research findings by Wood (2001) revealed that that there are two decision making points for remote purchases, which include catalog, home-shopping and online purchases, 1) the customer's decision to order and 2) upon receipt, their decision to keep or return the item. Li and Chatterjee (2005) identified a four-stage model: 1) information search, 2) consideration stage, 3) evaluation stage, and 4) purchase decision. According to Wood (2001) some of the limitations on the decision process that are specific to remote purchases include: 1) the separation of the time period between order and receipt and 2) the consumer's lack of opportunity to examine the product physically until the second stage of the decision process. Li and Chatterjee (2005) researched online shopping behavior through clickstream data where Wood (2001) utilized cognitive responses of customers. Additional findings by Wood (2001) suggest that the decision to keep or return the item upon receipt is best explained by endowment effect.

Perceived Risk

Perceived risk is a construct that is utilized to understand consumer attitudes. In this section of the paper the dimensions of perceived risk, the outcomes of perceived risk and online retailing and perceived risk will be presented. According to research conducted by Bauer "consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant" (Cox, 1967: 24). Risk has been conceptualized as the product of two dimensions: the perceived (adverse) consequences of behavior, and the likelihood of their occurrence (Cox, 1967; Dowling, 1986). Based on this information presented it is assumed that increased information will decrease uncertainty therefore decreasing perceived risk. One of the conclusions of a study conducted by Cunningham was that "the composition of perceived risk varies by product both in terms of the relative weights of the consequences and uncertainty variables and in terms of the variance for each of these variables" (Cox, 1967: 91). Dowling and Staelin (1994) postulate that perceived risk involves the "magnitude of consequences and the probabilities that these consequences may occur if the product is acquired" (p. 120).

There is lack of consistent identification of dimensions of perceived risk among studies. According to Dowling (1986) the number and types of loss are influenced by the product type, respondent, and the purchase situation. Six main risk dimensions of perceived risk have been identified: 1) Performance, 2) Financial, 3) Social, 4) Psychological, 5) Physical Risk and 6) time or convenience risk. (Cox, 1967; Stone and Gronhaug, 1993; Tsiros and Heilman, 2005) Mitchell (2001) utilized 4 dimensions: physical risk, financial risk, time and

convenience risk and psychosocial risk in his research that presented a new conceptual framework for store image utilizing perceived risk.

Sharma et al., (2009) utilized three types of consumer risk variables – consumer risk-taking attitude, perceived risk evaluation using 5 of the risk dimensions and price consciousness in research to express perceived risk as a higher order of consumer risk variables (CRP). Research conducted by Dowling and Staelin (1994) assumed that the customer's involvement with the purchase decision will influence the perceived risk of that product. Three categories of involvement were identified: 1) ego involvement, 2) purchase involvement and 3) product involvement.

Stone and Gronhaug (1993) tested perceived risk as a mediator of individual psychological risk to influence overall risk. The study suggested that the other risks (finance, performance, time, social, physical) affect overall risk as mediated by the psychological dimension. Research was conducted using purchase information of a personal computer because it was perceived to be a "risky," complex and expensive purchase. Findings of the research concluded that all six risk dimensions overlap positively with the criterion variable but that the contribution to overall risk varied greatly. Data showed that financial and psychological risks were the most predominant and that psychological risk is an important mediating function for other types of risk. (Stone and Gronhaug, 1993). Dowling and Staelin (1994) tested the psychological construct of acceptable risk as a moderator of the relationship between product-specific perceived risk and the use of extra risk-reduction activities, the research was conducted using purchase information of new dresses. Sweeney et al (1999) tested perceived risk as a mediator of the relationship among various quality components and perceived value for money, findings from the study concluded that perceived risk is a mediator of the relationship for quality antecedents. Cho (2004) proposed a model that predicts that the effects of attitudes toward e-shopping will mediate the effects of perceived benefits/risks of e-shopping on the likelihood to abort a transaction.

Perceived risk has been studied as an antecedent of perceived value by Sweeney et al., (1999), the study examined two dimensions of risk: financial and performance risk which can be considered an expectation of future costs associated with a product's perceived value. Financial risk is defined as a net financial loss to a customer, including the possibility that the product may need to be repaired, replaced or the purchase price refunded and performance risk is defined as the loss incurred when a brand or product does not perform as expected (Sweeney et al.,1999). "The central finding is that perceived risk, as measured by elements of performance and financial risk, has a more powerful, direct effect on perceived value than the traditional antecedents of perceived relative price or perceived product quality" (Sweeney et al.,1999: 99).

Research conducted by Sharma et al (2009) concluded that risk-taking attitude, perceived risk, and price consciousness are significant manifestations of

risk propensity. In a study by Tsiros and Heilman (2005) on grocery store products they concluded that perceived risk is not significant because groceries are not considered "status" goods and there is not a great financial investment (Tsiros and Heilman, 2005). Liljander et al., (2009) researched perceived risk as it relates to store image and store branded merchandise. The study concluded that a positive store image significantly helps to reduce consumers' perceived financial risk involved in store brand products and return policies (Liljander et al., 2009).

Future research indicates that multiple products and product categories should be included in studies to increase generalizability of the perceived risk concept. (Dowling, 1986; Dowling and Staelin, 1994; Stone and Gronhaug, 1993; Sweeney et al., 1999) According to Dowling (1986) there is not enough theoretical development of perceived risk, "without an adequate model of the process generating risk perception and intervening between this construct and behavior, ascribing meaning to empirical correlations is difficult" (p. 206).

Tong (2010) suggests that it is vital for retailers to minimize the risks that consumers feel when making Internet purchases in order to be more successful. It is suggested by Cho (2004) that online retailing includes physical, psychological, performance and financial risk. "Identifying the relative significance of benefit and risk perceptions is useful since it can provide useful strategic implications of what needs to be done to motivate or discourage certain behavior" such as purchase behavior (Cho, 2004: 828). Many articles suggest that perceived risks are associated with purchasing online merchandise but do not investigate the direct relationship between perceived risk and failure to complete a transaction (shopping cart abandonment). It is essential for retailers who do business in the online channel to understand the customer's perceived risk of purchasing merchandise in the online environment in order to reduce shopping cart abandonment.

Liljander et al., (2009) researched store image as a risk reducer utilizing the concept of perceived risk. Their research concluded that in certain product categories such as apparel, purchases are likely affected by perceived psychological risk, functional risk and financial risk. However the research was conducted in the traditional brick and mortar retailing channel and its application in the online channel has not been researched. Campbell and Goodstein (2001) found that higher perceived risk inhibits exploratory tendencies, leading to preferring the norm over the novel; it can be assumed that online retailing can be novel when the customer lacks knowledge in technology.

Tong (2010) indicated that the likelihood to purchase on the Internet decreases as consumers' perceptions of risk increase with relation to technology. Research has shown that the concept of perceived risk is useful in determining future purchase intentions which can be a useful component to understanding shopping cart abandonment (Petersen and Kumar, 2009).

Peck and Shu (2009) investigated perceived ownership and the effect of touch on ownership, the findings revealed that using ownership imagery significantly increased both perceived ownership and the valuation of products. In a study utilizing a functional MRI to see changes that occur in the brain as decisions are made found that "virtual ownership instantly altered the economic value estimation processing" (Votinov et al., 2010: 62). These results are especially significant when the product cannot be physically touched as is the case in the online retailing channel. Research by Sen and Johnson (1997) found that in relation to mere-possession effect with coupons, the customer felt a sense of ownership when in possession of the coupon without taking possession of the product.

Proposed Model

This study proposes that there are three decision points in online transactions: 1) at the point of product selection, where the product is placed in the shopping cart 2) at the point of financial transaction and 3) at the point of receipt of actual product, shown in figure 1. For the purposes of this study, shopping cart abandonment happens at stage two when the customer decides to not financially complete the transaction.

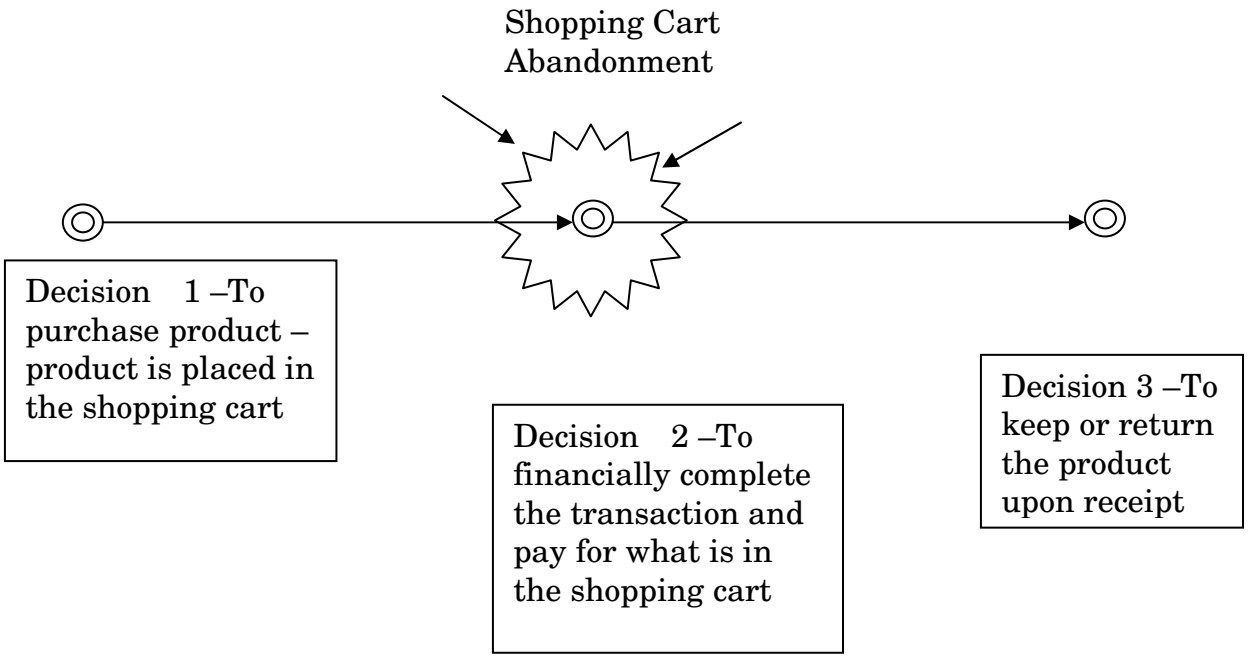

Figure 1. Proposed 3 levels of decisions in online purchase behavior

As the customer is browsing a retailer's website, they chose products that they consider purchasing and place them in the shopping cart. It is suggested

that placing products in the shopping cart is associated with a low perceived risk because placing the product in the shopping cart does not require a large investment on the part of the customer. Often times numerous items will be put in the cart with low intention of financially completing the transaction. This is the basis for hypothesis 1:

H_1 – Perceived risk in intended purchase behavior will positively influence risk in actual purchase behavior.

As a consumer becomes more attached to products they have placed in their virtual shopping cart, they will feel a greater sense of ownership. Increasing the sense of ownership will decrease the likelihood of shopping cart abandonment. This is the basis for hypothesis 2:

H_2 – Perceived ownership in intended purchase behavior will positively influence perceived ownership in actual purchase behavior.

Method

Study Design and Collection Method and Measurement

The participants were chosen based on their age group as millennials are more comfortable shopping online and therefore offered experience in online shopping. Participants were students enrolled in business programs at a small university in the southeast. They were asked to complete a survey based on their intended online behavior and their actual online behavior based on their most recent online purchase.

The survey questions were broken down into three groups: 1) online behavior, 2) intended online purchase behavior and 3) actual online purchase behavior. Questions were developed to determine which dimension of risk was most significant and the degree of perceived ownership in intended and actual online purchase behavior. A five point likert scale was utilized along with risk identification and rankings. Research yielded 133 completed and viable surveys.

Results

H_1 – Perceived risk in intended purchase behavior will positively influence risk in actual purchase behavior.

The following questions were asked to assess risk:

When leaving un-purchased items in the virtual shopping cart what is the most common reason? An example illustrating each risk was given, each of the six dimensions of risk was listed. This question assessed risk in intended purchase behavior.

Please rank starting with most important as 1, the reason you purchased the item. An example illustrating each risk was given; each of the six dimensions of

risk was listed. This question assessed which element of risk had the least impact on the actual purchase behavior.

Based on how each question was worded, a negative correlation of the data would show a positive influence of risk in intended behavior and actual behavior. The survey results did not show a significant correlation, however, the question used to asses risk in actual purchase behavior may have led to unreliable results. The results indicated that the most common risk in intended purchase behavior is financial risk (41.4%) and psychological risk (27.8%) yet in actual risk the reasons why the purchase was completed was performance (28.6%), financial (26.3%) and psychological (25.6%). It is necessary to gather additional information to understand how the customer is interpreting each risk.

H_2 – Perceived ownership in intended purchase behavior will positively influence perceived ownership in actual purchase behavior.

The following questions were asked to assess perceived ownership:

(Intended) Once you place the item in the virtual shopping cart, you consider it yours. Responses were very likely to very unlikely using a 5 point likert scale. This question assessed the strength of perceived ownership in intended purchase behavior.

(Actual) Once you placed the item in the virtual shopping cart, you considered it yours. Responses were very likely to very unlikely using a 5 point likert scale. This question assessed the strength of perceived ownership in actual purchase behavior.

Research results showed that there is a positive significant correlation between the strength of perceived ownership in intended behavior and perceived ownership in actual behavior. This information is significant for retailers in assessing shopping cart abandonment since an increase in perceived ownership has been found to increase the valuation of the product (Peck and Shu, 2009).

Website development should focus on increasing perceived ownership in an effort to decrease shopping cart abandonment and increase sales.

The research showed that in an intended purchase situation 33.8% of respondents indicated that they were “likely” to consider an item theirs (sense of ownership) once the item was placed in the cart; however, 33% indicated that they were “likely” to leave the items in the cart without completing the purchase. When asked to consider their most recent actual online purchase situation, 38.3% agreed that they considered the items theirs once the items had been placed in the virtual cart. These results are similar with the results of the sense of ownership for the intended purchase situations. However, we know that 100% of

the open shopping carts in the actual purchase situation were converted into sales transactions. This would indicate that sense of ownership might not be an indicating factor in cart conversion.

Future Research

Further research is necessary to better understand each of the dimensions of risk and the effect that they have in online shopping behavior. Past research does not look at the variation of effect with each dimension of risk and therefore does not given critical information that can be utilized by retailers to diffuse the risk associated with online shopping. Identifying a tool that can be used to assess risk from the customer's perspective will prove to be invaluable for future research on risk.

Additional research on decision points in the online shopping process will increase the understanding of consumer behavior in the virtual environment. Current research uses the physical store as a point of reference and that is not accurate when researching consumer behavior in online purchases. Further research focusing on the number of decision points and the depth of the decision at each point will shed valuable light on future online transactions.

Dowling and Staelin (1994) suggest that both positive and negative outcomes affect perceived risk. This would indicate that people with a more positive mood status feel less perceived risk, and therefore might have higher follow through to the sales transactions from their open carts, and lower cart abandonment. This is an area that needs to be researched further.

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