



# Persuading Attributes of Online Shopping Cart Abandonment

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## Abstract

The objective of this study is to focus on the variables which influencing the consumer's tendency towards online shopping cart abandonment which will happens in the final stages of the online buying process. Data for this study were collected by using an online survey. This study was conducted in Chennai. The sample consists of 185 consumers who purchased online as well as have the experience of abandoning their cart at least once during the past one-year period. The finding of this study emphasizes that the perceived waiting time is the prominent factor of online shopping cart abandonment. The other factors explored are perceived risk and perceived online behavioral tracking. It was also found that all these three factors such as Perceived waiting time, Perceived risk and Perceived online behavioral tracking had direct effect on online shopping cart abandonment. This study investigates the unmapped part of consumer behavior.

**Keywords:** online shopping, Perceived risk, Perceived online behavioral tracking, Consumer behavior, Cart abandonment

## 1. Introduction:

Indian E-commerce industry is on the rise at a sweltering rate. Conversely, a major crisis is online shopping cart abandonment, which takes place when a customer browses through the website, put a product to the cart instead of finishing the purchase and then move to another website, hence put aside the transaction process. Shopping cart abandonment takes place during the final stages of consumer decision making process. Insufficient literature is the major drive for the present study. According to Forrester Research, due to cart abandonment the lost opportunity to E-tailers is estimated to be more than \$18 billion a year. Only three fourth of the online shoppers plan to return to the website to complete the purchase. According to Octane Research report only 12% of Indian E-tailers deploy cart abandonment programs. Few studies has been conducted and investigated from customer point of view. Thereby this study aims to identify the factors which lead to cart abandonment. In addition this study gives insights, strategies and directions for E-marketers to get back the lost revenues due to abandoned carts.

This study will fill up that hiatus, by concentrating on three attributes such as Perceived Risk, Perceived Online behavioral tracking, and Perceived waiting time as probable determinants of online shopping cart abandonment. This paper constitutes as: a concise discussion on literature review, methodology, findings and analysis, major findings, implications of the study.

### 1.1 The Expectation Disconfirmation Model

According to Studies by Oliver, 1980; Oliver and DeSabro, 1988, satisfaction is viewed as expectations of the consumer and

dissatisfaction is viewed as disconfirmations of the consumer expectation. Swan and Trawick, 1981, revealed that the consumer's expectations are neither positively disconfirmed nor negatively disconfirmed according to the expectations of the consumer. Oliver, 1980 proposed that one of the most Probable outcome was negative disconfirmation of consumer expectation is dissatisfaction and positive disconfirmation is satisfaction.

Earlier studies by Szymanski and Henard, 2001, paid attention towards post purchase satisfaction whereas researchers like Simintiras et al. (1997), have studied as pre purchase satisfaction. In this study, the authors found that, expectation disconfirmation model might drive in the final stages of purchase. This study tries to prove that the consumer's may have some prior expectations created on their earlier online shopping experience. Which leads to pre purchase decision?

Even though consumers are satisfaction pertaining to online shopping environment based on convenience, site design, 24 X 7 shopping still shopping cart abandonment takes place in the checkout process. If online marketer makes consumer satisfied during their checkout process. On the other hand, the consumers satisfied till they reach the checkout process, they might be keen to oversee slight disappointments. In this study, we focus on three prominent factors: 1 Perceived waiting time. 2 Perceived risk 3 Transaction inconvenience.

## 2. Literature Review:

### 2.1. Cart Abandonment

The term Cart abandonment defined by Angeline Close," this behavior as consumers' placement of item(s) in their online shopping cart without making a purchase of any item(s) during that online shopping session".

Study by Rajamma et.al (2009), states that perceived waiting time, perceived risk and perceived transaction inconvenience had an impact on shopping cart abandonment. Apart from the previous studies, this study tries to find out the impact of perceived risk on online shopping cart abandonment.

## 2.2. Perceived Risk

Perceived risk is consumer's cognizance of insecurity of engaging in doing things and it quite often relates to consumer behavior (Chang & Tseng, 2013; Dowling & Staelin, 1994). Various Researchers found that Perceived risk has played a crucial role in online shopping consumer behavior. (Belanger et al., 2002; Ranganathan and Ganapathy, 2002; Liao and Cheung, 2001; Landrock, 2002. Pandya and Dholakia (2005) found out that the fact behind the surge in online retailing is the divergence between consumer – marketer perception and expectations about the risk during the check-out stage and thus leads to online shopping cart abandonment.

According to the study by Cheon, Cho and Kang, (2006) revealed that perceived risk has a significant influence on online shopping cart abandonment, thus, if consumers think that there is high risk involved in buying certain products, consumers become more careful before making a purchase. So, and more information gathered will lead to online shopping cart abandonment. (Kukar-Kinney & Close, 2010).

According to the study by Rajamma, Paswan, and Hossain (2009), the perceived risk, perceived waiting time and inconvenience caused by online transaction drastically leads to online shopping cart abandonment. The null hypothesis (H1) thus proposed is H1: There is no direct effect of Perceived risk on online shopping cart abandonment.

## 2.3. Perceived Waiting Time

Waiting time is the amount of time spent to wait to receive a product or service. As stated by Davis and Heineke (1998), "consumers' response to waiting in a line can change their perception towards service delivery process". Maister, (1985); Davis and Vollmann, (1990); Davis and Heineke, (1998), suggested that there is a converse association between perceived waiting time and satisfaction of the consumers. Davis and Vollmann (1990) proclaimed that the customers become more impatient, when the availability of time is limited. Katz et al., (1991); Pruyn and Smidts, (1998), pointed out that customers generally overrate the waiting time for service. Perceived waiting time presume more significance for online customers, who want to save time. (Childers et al., (2001); Wolfenbarger and Gilly, 2001; Balabanis and Vassileiou, (1999) revealed that any delay in perceived waiting time leads to abandoning their online shopping cart. Attributes that throw in to set back in completing online purchase are slow downloads, uploads, lengthy forms. According to Nielsen 1996 survey, customers lost their purchase interest in websites which waiting time is more than 10 seconds, these results are carried out by Selvidge et al. (2002) and Kuhnmann (1989). Selvidge et al. (2002) observed that there is any hindrance in waiting time often hints the consumer's frustration, which ultimately falls out in abandoning the online shopping cart. Hence we state that, longer the waiting time during the transaction stage often leads to tendency to drop the purchase decision and abandon their online shopping cart. The null hypothesis (H2) thus proposed is

H2: There is no direct effect between Perceived waiting time and online shopping cart abandonment.

## 2.4. Perceived Online Behavioral Tracking

According to Federal Trade Commission, (FTC) 2009 defines "Behavioral tracking is one among the marketing activity in which the online activities of the individual consumers will be collecting

and compiling a record of their interests, preferences, and/or communications over time and across websites in order to deliver personalized advertising".

Most of the online retailers are using cookies into the browser to monitor the customer's online activities (Miyazaki, 2008). Once cookies were installed in to a customer's computer, it will allow sellers and third parties to track customers browsing patterns across websites to show case personalized advertisements. (Cranor, 1999; FTC, 2009). Displaying personalized advertisements is one of the booming trends in online marketing (Turban, King, Lee, Liang, & Turban, 2010). The null hypothesis (H3) thus proposed is

H3: There is no direct effect of Perceived online behavioral tracking on online shopping cart abandonment.

## 3. Research Methodology:

To find out the factors leads to online shopping cart abandonment, the primary data were collected through structured online questionnaire. Online Shoppers were approached at random at mass gathering places like Chennai trade centre, shopping malls, Art galleries, Exhibition venues located in Chennai City for the period of 3 months. A total of 200 online shoppers participated in the study. After preliminary examinations of the collected data, 15 responses were removed because of they were not purchased in online for the past 6 months. Perceived risk factor items were taken from the article by Rajasree K. Rajamma Audhesh K. Paswan Muhammad M. Hossain, (2009), & Chuleeporn Changchit, Robert Cutshall, Selvy Loreta, 2014, Replies to this scale items were measured by 5 point likert scale ranging from 1-Not at all Concerned to 5-extremely concerned. Perceived waiting time scale items were derived from Rajasree K. Rajamma Audhesh K. Paswan Muhammad M. Hossain, (2009), Perceived online behavioral tracking were derived from, Tun-Min (Catherine) Jai, Leslie Davis Burns, Nancy J. King, 2013, The dependent variable Online shopping cart abandonment was derived from Monika Kukar-Kinney & Angeline G. Close, 2010, and studied as a continuous variable, in which the customers were asked about their cart abandonment frequency. In adding up to the prominent attributes of this study, some demographic information were also collected from the respondents.

The Table- 1 shows the Top 10 online portals frequently used by Indian consumers.

**Table 1: Indian Online Shopping Portal**

Online Portals	Percent
Amazon	36.8
Flip kart	48.9
Snap deal	3.7
Pay tm	3.2
EBay	3.2
Jabong	1.6
Shop Clues	2.6
Total	100.0

The below Table – 2 clearly states that the products abandoned in the online shopping cart by the consumers recently during their online purchase.

**Table 2: Products Abandoned Recently**

Product Categories	Percent
Kindle E-Reader & E-Books	2.6
Books	5.3
Movies, Music, & Video Games	6.3
Mobiles & Tablets	34.2
Computers & Accessories	10.0
Cameras, Audio & Video	5.3
Home, Kitchen & Pets	5.8
Toys & Baby Products	6.3
Beauty, Health & Gourmet	4.2

Clothing & Accessories	6.8
Jewellery,Watches & Eyewear	3.7
Shoes	6.8
Car, Motorbike & Industrial Goods	2.6
Total	100.0

### 5. Data Analysis & Findings:

The sample contains of 58% of male and 42% of female respondents. Among them 74% of the respondents were between the age group of 21-33. 69% of the respondents from urban area,18% from semi urban and 13% from rural parts of the Chennai city.

#### 5.1. Reliability Statistics:

**Table1:** Composite Reliability Statistics

Construct	Indicators	Reliability	Construct Reliability
Perceived Risk	8	0.842	0.84
Perceived Waiting Time	7	0.848	0.842
Perceived Behavioral Tracking	4	0.877	0.88
Overall	19	0.913	

According to Nunnally, (1978) & Robinson et al., (1991), the factors were tested to measure the level of internal consistency affirming that all the attributes having adequate level of internalreliability the cronbach alpha value is 0.913.

**Table 2:** Discriminant Validity

	SIC	AVE
Perceived Risk	0.290	0.502
Perceived Online Behavioral Tracking	0.387	0.542
Perceived Waiting Time	0.341	0.65

All variance extracted (AVE) estimations in the above table are larger than the squared inter construct correlation estimates (SIC). This reveals the indicators have more in common with the construct they are associated with than they do with other constructs. Therefore, (the Perceived risk , Perceived waiting time and Perceived online behavioral tracking) all the three construct CFA model demonstrates discriminant validity.

#### Convergent Validity

**Table 3:** Convergent validity

Construct	Indicators	AVE
Perceived Risk	8	0.502
Perceived Waiting Time	7	0.542
Perceived Behavioral Tracking	4	0.65

To analyze convergent validity , two measures required which is AVE(Average variance extracted) and CR (Construct reliability). Table - 3 shows the average variance extracted here is 0.502,0.542 and 0.65 .The thumb rule is that the AVE value should be greater than 0.5 which indicates adequate validity of the constructs.

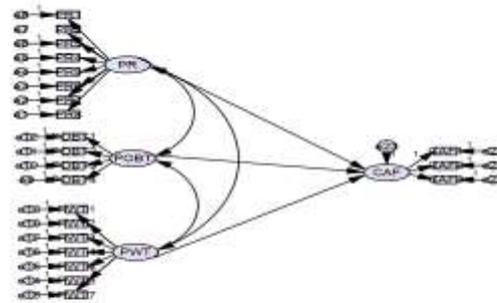
**Table4:** KMO and Bartlett's Test- Sample Adequacy Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	1845.163
	df	171
	Sig.	.000

Before doing confirmatory factor analysis, appropriateness of the data has been tested. To assess the sampling adequacy, KMO test was applied to Measure of Sampling Adequacy (MSA). The value was found to be **0.857 or 85.7%**.It indicates that sample is good enough for factor analysis. The overall significance of correlation

matrices was tested with the Bartlett Test of Sphericity providing enough support for the validity of the factor of the data set Here, the significant value is 0.000, which implies that there is relationship among variables.

### 6. Conceptual Framework:



Source: Author's Own Model.

**Table 5:** Confirmatory Factor Analysis Fit Indices for Factors Instigating Online Shopping cart abandonment.

Type of Measure	Observed Values
CMIN/df	2.76
P Value	.000
RMSEA	0.01
Goodness-of-fit index (GFI)	0.918
Adjusted goodness-of-fit index (AGFI)	0.892
Comparative fit index (CFI)	0.914

Data was analysed through Structural equation Modelling(SEM). The Hypothetical model was analysed through AMOS 20 and model produced fit according to the statistical fit indices. Model fit Indices shows that the calculated CMIN/DF (Chisquare Minimum /Degree of Freedom) value is 2.76. The fit between the data and the proposed measurement analysis can be tested with a Chi-square Minimum /Degree of Freedom (CMIN/DF) test where the probability is lesser than or equal to 3 indicates the model is fit. Here GFI (Goodness of Fit Index) and AGFI (Adjusted Goodness of Fit Index) values are positioned at 0.918 and 0.892. The calculated CFI (Comparative Fit Index) value is 0.914 and also it is found that RMSEA (Root Mean Square Error of Approximation) value is 0.01. It can be understood that from table 3, CMIN/DF (Chisquare Minimum /Degree of Freedom) value is not more than 3. The values of GIF, AGFI and CFI for this analysis are more than 0.9 and RMSEA below 0.08 which means the model is are acceptable and valuable.

**Table6:** Summary of testing Hypothesis

			Estimates	SE	CR	P	Hypothesis
CAF	<---	PR	.040	.051	.778	.437	Supported
CAF	<---	POBT	-.021	.032	-.655	.513	Supported
CAF	<---	PWT	-.002	.025	-.064	.949	Supported

Perceived risk had no significant effect on cart abandonment (p=0.437) , supporting H<sub>1</sub>. Perceived online behavioral tracking had no significant effect on cart abandonment(p=0.513),supporting H<sub>2</sub>. Perceived waiting time had no significant effect on cart abandonment(p=0.949),supporting H<sub>3</sub>

## 7. Discussion and Suggestions

The study finding might give interesting insights into the factors which instigating online shopping cart abandonment. This study on final stage of consumer decision making process i.e. Payment transaction stage. We construct a SEM model and confirmed the factors influencing online cart abandonment .According to the proposed model, Perceived Waiting time, Perceived online behavioral tracking and perceived risk are the key variable influencing cart abandonment. This findings of this study supportsthe findings of Rajamma et al. (2009) and contradicts to the results of Yin Xu(2015) . In our ‘study Perceived waiting time is the most influential factor on online shopping cart abandonment by customers. While on shopping the graphics on the web site, Technical glitches,lengthy order forms makes customers to terminate the transaction process. Perceived risk was other crucial factor to impact on cart abandonment. It is advisable for the e-tailers to assure their customers about security of the personal details provided at the time of transaction stage. It seems that there is discrepancy between the privacy expectations of online customers and online retailers about personal information shared with third parties. Now a day’s sharing the customer information regarding browsing patterns and demographic details to the third parties is quite common in the online retail industry. Moreover online customer are mostly time conscious, marketers should try to cut down the waiting time which will intensify their obstruction with the buying process which subsequently leads toabandonment of their online shopping carts.

## 8. Limitations and Recommendations for Future Research

This study focuses on three factors alone. Factors like Organization research, comparing websites, and payment intention could be probed in future. The survey was completed through online, where the respondents were not randomly selected.. Future research should examine several other mediating factors such as consumer anxiety, transactional inconvenience and their impact on cart abandonment. This study was conducted in Chennai,so in future research should be carried out across various geographical and cultural perspective. The effect of behavioral tracking practices on customer behavioral responses could also be studied in future.

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