International Journal of Cyber Behavior, Psychology and Learning
Volume 7 • Issue 1 • January-March 2017

Risk Factors Discriminating Online Metropolitan Women Shoppers:
A Behavioural Analysis

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ABSTRACT

Online shopping has been really male - oriented as the product categories were limited to software, computers, music and computer accessories. As the product category expanded to clothing, food, home care and toys, women started to adopt online shopping. Nowadays there is a massive surge in online shopping particularly among metropolitan women, as they tend to purchase both necessary and discretionary products. According to the report by Associate Chamber of Trade and Industry of India (ASSOCHAM), over 80% of the online shopping is done by metropolitan women shoppers. The present study investigates the prominent perceived risks of employed women in online shopping through a consumer survey and by applying multiple discriminant analysis .The results of the empirical analysis demonstrated that perceived physical risk and product risk were found vital in discriminating the respondents as intermediate or experts in online shopping .Whereas perceived psychological risk, quality risk, Information Security Risk, Time Risk, Delivery Risk, Social Risk, Source Risk and financial risk perception during online purchase adoption contributes comparatively lesser for discrimination. The findings elucidate how marketers can formulate and implement risk-reducing strategies during online purchasing.

KEYWORDS

Indian Women Cyber Behavior, Metropolitan Women Shoppers, Online Shopping Experience, Perceived Risk, Physical Risk, Product Risk

1. INTRODUCTION

According to Indian Market Research Bureau and I- Cube 2015, 5.3million monthly active internet users are in Chennai - a Metropolitan city of India. Due to huge surge in technological advancement and access to the internet using mobile phones and tablets nearly 24% of them carry out online shopping. Probably the metropolitan women, use the internet for work and education in addition to online shopping and social networking. Usage pattern of internet also varies depending on the demographic factors such as age, income, and educational level. Young women employees tend to be intensive online shoppers while middle and upper age women employees perceived high level of risk where shopping online as compared to traditional forms of shopping. Women employees' perception of risk is an important factor that affects online purchasing behavior.This perceived risk dimension affecting women employee's purchasing behavior and their structural relationships have to be investigated throughly.

DOI: 10.4018/IJCBPL.2017010104

The term perceived risk was coined by Bauer (1960) and quite often used to inscribe several things in consumer behavior.Those days purchasing products were considered as riskiest thing while consumers may be unaware of a purchase decision and the outcome of unfortunate decisions (Bauer, 1960). Cox and Rich (1964) studied that perceived risk is the proportion of risk taken by the consumer while making a particular buying decision. Lee and Turban (2001) stated that lower trust is one of the usual reasons as to why consumers do not prefer online shopping. Alreck & Settle, (2002); Forsythe & Shi, (2003); Garbarino & Strahilevitz, (2004) stated that high level of perceived risk often leads to obstruct the online shopping adoption of the consumers. Park and Stoel (2005) observed that the risk level may be exaggerated because of the consumers' restricted physical access to goods. Cunningham (1967) found that risk perception of consumers may differ from product to product.

1.1. Types of Perceived Risks

Ten dimensions of perceived risk was ascertained as Delivery risk,Financial risk, Product risk, Privacy risk, Psychological risk, physical risk, Source risk, Quality risk and Time risk based on Zhang et al. (2012) which has been formulated based on previous review of literature and most suitable in internet context. Zhang et al had adopted from Cases (2001), Featherman & Pavlou (2003), Crespo et al (2009) and Ko et al. (2010). Kalpan (1972) and Peter (1975) and identified the types of risk like Social, Convenience, Financial and Product risks. Bhatnagar & Ghose, (2004) found that six elements of perceived risk were recognized as physical risks. Consumers depend on the limited information about products and pictures given in the website (Jarvenpaa and Tractinsky, 1999).

Pallab (1996) states that online consumers are anxious about the security of using their debit card, credit card and personal information while shopping online; Maigan and Lukas (1997) found that more insecurity and risks are involved in online shopping while comparing to the traditional shopping. Added to that consumers' reluctance to provide their credit/debit card information over the shopping website is a major crisis to online shopping. According to another study by Senecal (2000) and Bhatnagar et al. (2002) financial risk, privacy risk and product risk were more significant among consumers.

1.2. Role of Perceived Risk in Online Shopping

Vijayasarathy & Jones (2000) and Zhang et al., (2012)proposed that the impact of perceived risk affects both attitude and intention towards online shopping. Whereas perceived risk tends to diminish with the online experience of the consumers while comparing to non- shoppers, online shoppers obsessed with lower risk. (Miyazaki and Fernandez, 2001). Product and financial risks were found to have negative impact on consumers' purchase intentions.

Even though there are lots of advantages over traditional shopping, negative facts accompanied with online shopping are also becoming crucial (Ko et al., 2004 and Lee & Tan 2003). Risk plays a crucial role in online buying behavior, and also it gives valuable inputs regarding information search and consumer decision making (Barnes et al., 2007). The perceived risk concept has been expressed through various scales by studying the perception of risky actions(Featherman and Pavlou, 2002). Risk perception diminishes the willingness of consumers to buy products over online shopping (Barnes et al., 2007). Dunn,Murphy & Skelly (1986) observed that perceived risk is considered as a negative outcome of consumers purchase decision. Even though there is a considerable growth and positive stance for internet shopping, there are some negative aspects also related with this method of shopping.

2. SIGNIFICANCE OF THE STUDY

A study by Chen et al.,(2002) consider both online buying and information search as online buying behavior. Corbett et al., (2003) revealed that there are four dimensions of online shopping behavior named as frequency of shopping, online spending, ratio of online purchase and purchase intention. There are various other broad aspects that subsist in online buying behavior such as customer characteristics, online retailer characteristics, and trust. Retailer parameters consist of their size of business and their position. Customer characteristics related to website familiarity, techno savviness and online shopping experience (Chiu, Change, Cheng & Fang, 2009).

Most of the studies related to online buying behavior have concentrated mostly on psychographic, demographic and personality attributes. It is warned that demographic characteristics alone elucidate a very low amount of variance in the buying behavior of the consumers(Bellman et al.1999). According to Burke (2002) four important factors like age, education,gender, and income have a moderating impact on attitude towards online shopping behavior.

A study by Bellman et al., (1999), Liao and Cheung (2001) found that young consumers are willing to buy products by using new technologies like online to search information and to compare products. While older consumers evade online shopping due to the fear of risk involved in shopping (Bellman et al., 1999; Liao & Cheung, 2001). According to the reports, even though male online consumers are more optimistic, female online shoppers frequently shop online while comparing to male consumers. Hence there are enough facts in the literature which state that perceived risk vary across age and gender.The online consumer profile which includes age, income, education level, gender, marital status, occupation and attitude influence the decision to shop online.The demographics of on line shoppers is a dimension to understand the buying behavior (Hashim & Ghani, 2009; Liebermann & Stashevsky, 2009). Thereby, to explore risk reducing strategies during online purchasing the study objectives are formulated .

2.1. Research Objectives

- To know the online shopping characteristics of Metropolitan women employees.
- To study the effect of perceived risk on online shopping behavior of Metropolitan women employees.

3. METHOD

To understand current scenario in India where a major transformation is happening in shopping pattern using technology it is decisive to collect opinion on various types of perceived risk in online shopping .Consequently the metropolitan shoppers constitute the most in online shopping.As a result, a study was launched with respondents from East, West, North and South regions of Chennai metropolitan city .

3.1. Research Instrument

The opinion of online shoppers was collected by the research instrument questionnaire which consisted of demographic profile such as age, qualification, income, marital status and family type. Based on online shopping experience in terms of years, the Metropolitan women were classified as beginner if their experience in onlineshopping was below two years, between 2-5 years as intermediate and above 5 years as experts. The risk factors are listed as Delivery risk, Source risk, Quality risk, Financial risk, Social risk, Information security risk, Product risk, Physical risk, Psychological risk and time risk (Table 7 in Appendix A) in five point rating scale with intensity ranging from Strongly, Agree to Strongly Disagree.This sort of classification is found in studies of similar nature based on the shoppers' skills online and number of years experienced in web (Arulkumar & Kannaiah, 2015; Kehoe, 1999).

3.2. Pilot Testing

The survey questionnaire was distributed to the respondents for a pre-test of the research instrument. The pre-test was conducted on a random sample of 50 Women employees across Chennai to fill out the questionnaire. The respondents were encouraged to make comments on the questions or statements which were ambiguous or unclear. Some minor modifications to the questionnaire were made as a result of this process.

3.3. Sampling

Cluster sampling method was used to choose samples. Cluster sampling has the advantage of an unbiased estimate of population parameters. 400 women employees were selected from four divisions of Chennai. Incomplete questionnaires were considered as un-usable and the rate of return was around 92.5% i.e 370 usable questionnaire were obtained.

4. RESULTS

The demographic characteristics of the respondents are presented in Table 1. Nearly three fourth of the sample fall between 19 to 29 years (73.2%) with post graduation (75.1%) and income less than 40,000 Indian National Rupees (73.8%) . 57.8% were single and 68.9% were from nuclear family. Propotionate rate of return (nearing 25%) was found representing all four directions of Chennai City.

Table 1. Demographic characteristics of the respondents

Sample characteristics	Category	Frequency	Percent
Age	19-29 years	271	73.2
	30 – 39 years	85	23.0
	40 – 49 years	10	2.7
	≥ 50 years	4	1.1
Qualification	UG	92	24.9
	PG	278	75.1
Monthly income	≤ 40,000 INR	273	73.8
	40,001 – 60,000 INR	73	19.7
	60,001 – 80,000 INR	11	3.0
	> 80,000 INR	13	3.5
Marital status	Married	156	42.2
	Single	214	57.8
Family type	Nuclear	255	68.9
	Joint	115	31.1
Geographical Divisions	North Chennai	91	24.6
	South Chennai	96	25.9
	East Chennai	92	24.9
	West Chennai	91	24.6
Online shopping experience of Metropolitan Women Employees	Beginner	0	0
	Intermediate	196	53
	Expert	174	47

Basedon online shopping experience, respondents were classified into three groups namely beginner, intermediate and expert. The respondents were asked to denote their skill level on these classifications.From the results it was observed that 53% of respondents were in the intermediate level. 47% of respondents were in the expert stage based on shopping experience . So all the respondents were having knowledge about the procedures for experience in online shopping. In this study no respondent was beginner i.e. with less than 2 years of online shopping experience. Thereby the category beginner was not considered for the future analysis.

4.1. Reliability

Cronbach's alpha co-efficient is a measure of the internal consistency of a measurement tool i.e questionnaire.The co-efficient may range from 0 to 1 and shows the degrees to which all items in a measurement scale measure the same attribute. A value of 0.6 and above generally indicates satisfactory internal consistency (Nunnally and Bernstein, 1994).Thereby the instrument was found to be reliable as the Cronbach alpha (Table 2) ranged between 0.680 to 0.906 and the overall alpha value for the entire items together was 0.864. Table 7 in Appendix A provides details on these Independent variables stating each item, mean value and Standard deviation.

4.2. Discriminant Analysis

The dependent variable is online shopping experience (categorical variable) which was found out from the demographic data (Table 1) collected from the sample in terms of number of years experienced in on line shopping as intermediate and Experts. There were no beginners (below 2 years of experience) in this study. The independent variables are perceived risk dimensions such as Financial risk, Product risk, Time risk, Delivery risk, Social risk, Privacy risk, Psychological risk, physical risk, Source risk, Quality risk (metric variable) These independent variables are the factors by which the shoppers can be discriminated and that order of discrimination can be used by marketers to reformulate their strategies.

Discriminate analysis was conducted to determine the group differences on level of internet shopping experience on perceived risk.For understanding differences in the level of experience discriminate analysis gives insight into the dimensions of discrimination of perceived risk and online experience level of metropolitan women. As we have two groups (Intermediate and Expert), the computational method used to derive the discriminant function simultaneously to estimate

Table 2. Cronbach's Alpha Values

Independent Variables	No.of items	Cronbach alpha
Financial risk	8	0.734
Product risk	5	0.895
Time risk	8	0.706
Delivery risk	4	0.687
Social risk	6	0.680
Information security risk	6	0.817
Psychological risk	3	0.846
Physical risk	5	0.869
Source risk	6	0.906
Quality risk	5	0.786
Overall value	56	0.864

the perceived risk variables. To evaluate the level of significance, Wilk's Lambda is used and the hypothesis is framed as follows:

H_0—Metropolitan women Employees of two different online shopping experience level such as Intermediate and expert could be discriminated by their risk perception such as Delivery risk, Source risk, Quality risk, Financial risk, Social risk, Information security risk, Product risk, Physical risk, Psychological risk, Time risk with equal magnitude.

Eigen value indicates the ratio between the explained and unexplained model. The value 0.053, literally a large value point out a strong correlation between discriminant scores and groups.(Table 3).

Since the significance value (Table 3) is lesser than 0.05, it indicates that group means differ from each other function and statistically significant. Classification results (Table 4) provide the weight of the classification capability of the discriminant function. On the whole, nearly 66 per cent of the cases are projected correctly by the discriminant function. If one takes a glance at the prediction ability of the function intermediate level (nearly 70.9 per cent) is predicted correctly. In expert level it is 61.50 per cent. Since we have two groups the prediction is favorable.

Z_1 = 1.259 Physical risk +0.612 Product risk +0.274 Psychological risk + 0.056 Quality risk **- 0**.444 Information security risk – 0.417 Time risk – 0.376 Delivery risk – 0.282 Social risk – 0.109 source risk – 0.044 Financial risk.

Table 5 allows us to understand that, when the variables measured different scales the canonical correlation measures the association between the groups in the dependent variable and the discriminant function. A high value implies a high level of association between the two and vice-versa. The variables which are found with high significance in discriminating the group are according to function 1 (Table 5) physical risk and product risk which implies high level of contribution towards discriminate function.

The canonical structure matrix (Table 6) reveals the correlation between each variables in the model and the discriminant function .We can say they are factor loadings of the variables on each discriminant function.Generally any variable with a correlation of 0.3 or more is considered to be important.Thereby it is confimed that physical risk and product risk are the most vital variables

Table 3. Eigenvalues & Wilk's Lambda

Function	EigenValue	% of Variance	Cumulative %	Canonical Correlation	Wilks' Lambda	Chi-square	df	Sig.
1	.053(a)	100.0	100.0	.225	.950	18.795	10	.043

Note: (a) Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

Table 4. Classification Results

Actual Cluster Membership	Predicted Group Membership		
	Intermediate	Expert	Total
Intermediate	139(70.91%)	57(29.09%)	196(100%)
Expert	67(38.50%)	107(61.50%)	174(100%)

Note: 66.5% of original grouped cases were correctly classified and 57.6% of cross-validated grouped cases were correctly classified.

Table 5. Standardized Canonical Discriminant Function Coefficients

Independent Variables	Function 1
Deliveryrisk	-.376
Financialrisk	-.044
Productrisk	.612
Psychologicalrisk	.274
Timerisk	-.417
Socialrisk	-.282
Physicalrisk	1.259
Sourcerisk	-.109
Qualityrisk	.056
Infosecurityrisk	-.444

contributing to discriminate intermediate and expert (by online shopping experience) employed women online shoppers.

5. DISCUSSION

Perceived risk is of crucial concern in Indian e-commerce. To diminish the risk perception and to boost the purchase, online retailers must understand the quite alarming risk cognition of metropolitan women employees. Ten types of risk dimensions associated with online shopping. were assumed to be critical in previous studies .But the present study interprets that physical risk and product risk imply high level of contribution among various types of perceived risk.

Marketers should motivate the consumers to minimize the risk related to products, especially provide more information about products to deal with the uncertainty accompanied with consumers inability to touch or feel the products in order to enable the consumers to extend a complete idea about the product. Marketers should deliver the products through the trusted shipping services to stay away from delay or damage during the shipment of the products.If the Purchased product may not be up

Table 6. Structure Matrix

Independent Variables	Function 1
Physical risk	.576
Product risk	.429
Source risk	.383
Quality risk	.368
Psychological risk	.258
Financial risk	.188
Infosecurity risk	-.093
Delivery risk	.082
Time risk	.058
Social risk	.056

to the level of consumers expectations and it's very difficult to ascertain the product characteristics through online, marketers should assure about the features of the product in detail.

Most of the women online shoppers will consume lot of time to select a product, but staying online for too long time and ending up with purchase of counterfeit products would affect them physically as well as psychologically .In addition to that Consumers become frustrated for waiting for the long time to return their counterfeit products or to get serviced for the damaged ones. Hence, marketers should emphazise the process of returned goods. In addition, many women employees still have to get used to the shopping process on the internet and the unique purchase environment it provides. Online retailers should streamline the online shopping process and inform the public about it. Online retailers in India are challenged to design and implement systems that ensure a pleasant functional and uncomplicated shopping experience on the Internet to meet out consumer expectation.

This study was limited to women employees in Chennai. It is suggested that the research can be expanded to include other geographical and culture groups. The present study covered metropolitan women working from different sectors and age group between 19 to 50 years and the sample profile fulfilled the criteria for the target population. However generalization of the outcome should be considered with concern beyond the reach of this sample.This research is limited on using a multi product online shopping category.Future studies can focus on particular product category to replicate the findings.

ACKNOWLEDGMENT

We are grateful to the Publishers, Editors- in- Chief, Robert Atkinson & Zheng Yan for their insights and fast track publication and we thank the anonymous reviewers for their comments on the earlier version of the manuscript. We also thank Dr.Merlin Mythili.S for her proofreading and inputs.

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APPENDIX

Table 7. List of Rsik factors

S.NO	ITEMS	MEAN	SD
	DELIVERY RISK		
1	Express delivery option is restricted to some areas.	3.74	.988
2	I might not receive the product ordered online	3.14	1.033
3	Can be delivered to the wrong place	3.05	1.104
4	It is not easy to cancel orders during delivery	3.37	1.139
	FINANCIAL RISK		
5	Use of online payment services will invite an additional fee.	3.61	1.119
6	Substitute products may be of lesser cost	3.38	1.084
7	Online shopping may cost more than the store	3.25	1.020
8	My credit card number may not be secure.	3.58	1.146
9	I may buy the same product at a lower price from somewhere else	3.79	.934
10	Shopping online can involve a waste of money	3.37	1.151
11	I am concerned about the ultimate price of the on- line product because there might be hidden costs	3.51	.999
12	Price negotiation is not possible in online shopping.	3.91	.945
	PRODUCT RISK		
13	It is difficult for me to judge products texture adequately on the Internet.	4.22	.904
14	The product purchased online may not perform as expected	3.78	.891
15	I might not get what I ordered through online shopping	3.27	1.024
16	I can‘t touch and examine the actual product	3.70	1.066
17	It is difficult to ascertain the characteristics of the products such as quality, size, color, and style by just looking at pictures on the Web	3.76	1.060
	SOCIAL RISK		
18	Product purchased may result in disapproval by family	3.44	1.096
19	Online shopping may make others reduce my image.	3.29	1.066
20	If I buy a product online, I think my friends would critizite it	3.08	1.045
21	Online products may not be recognized by relatives and neighbours	3.31	.988
22	If I buy a product online my collegues may feel I am crazy	3.15	1.149
23	If I buy products online, my family members would think I am trying to show off	3.28	.997
	INFORMATION SECURITY RISK		
24	My E-mail address may be abused by others.	3.26	1.067
25	My bank details may be stolen by others.	3.37	.999
26	My personal information may be disclosed to others companies	3.37	1.157
27	Online retailers may track my shopping habits and history of purchases	3.41	1.071

continued on following page

Table 7. Continued

S.NO	ITEMS	MEAN	SD
28	I may be contacted by online retailers (e.g. via email, phone calls, letters) without my consent after the completion of transaction	3.23	1.101
29	Online shopping provides me incomplete information	3.15	1.041
	PSYCHOLOGICAL RISKS		
30	The thought of online shopping makes me feel uncomfortable	3.26	1.050
31	The thought of online shopping causes me to experience unnecessary tension	3.35	.951
32	Online shopping will lead to huge social isolation	3.45	1.106
	PHYSICAL RISK		
33	I could experience eyestrain because of frequent exposure to computer screen during online shopping	3.30	1.107
34	I am concerned about getting carpal tunnel syndrome while shopping On line	3.26	.933
35	I am concerned about sleep disturbance because of shopping online	3.45	1.051
36	Buying counterfeit products can damage my health.	3.28	1.033
37	It would make me frustrated to the process to return or repair products	3.53	.991
	SOURCE RISK		
38	It is difficult to ascertain the expertise of some online companies	3.72	1.001
39	It is difficult to ascertain the reputation of some online companies	3.56	.973
40	I am concerned about the trustworthiness and believability of some online companies	3.58	.878
41	If the products have problem, hard to find the seller interference.	3.45	1.017
42	Difficult to solve commercial disputes in online shopping.	3.64	.992
43	Products purchased online may miss after-sales service guarantee	3.42	.908
	QUALITY RISK		
44	Online shopping may endup with counterfeit products	3.44	1.000
45	The actual quality of the goods does not match its description.	3.70	.933
46	The product may not meet my needs.	3.87	.987
47	Online shopping is not a good judge of product quality.	3.90	1.031
48	Goods ordered online can‘t be tried personally	3.88	.949
	TIME RISK		
49	Communicating with the seller and the service may require a lot of time.	3.72	.944
50	Buying a product online is waste of time	3.04	1.038
51	Difficult to find appropriate websites ontime	3.16	.997
52	Finding right product online is difficult	3.45	.960
53	If I shop online I cannot wait till the product arrives	3.18	.996
54	Too complicated to place order in time	3.19	1.111
55	Return online merchandise is time consuming	3.44	1.096
56	I am afraid that products purchased from online vendors will not be delivered on time	3.29	1.066

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