

# Understanding E-Shoppers Behavior in Delhi: Based on Risk Dimensions

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## Abstract

*The risk consumers' face is considered as a prime concern affecting consumer behavior and decision making process while shopping online. The aim of this study is to examine the effect of various dimensions of perceived risk on e-shoppers behavior and also to find the relationship between various demographic variables of e-shoppers and perceived risk. The sample of the study consists of 109 e-shoppers from South Delhi. Data analysis is done using SPSS software. The results of the study revealed that the financial risk and product risk significantly affect e-shoppers behavior and Delivery risk and time risk are the most important dimensions which affects almost all the demographic variables of e-shoppers except gender. The findings of the study have important practical implications for e-retailers, by understanding the relationship between consumer behavior towards online shopping and perceived risks e-retailers may be able to formulate strategies to make online shopping experience more secure.*

**Key Words:** Consumer Behavior, Dimensions, Demographics, Online shopping, Perceived Risk.

## INTRODUCTION

The advent of Internet has strongly influenced the marketing environment worldwide and the Internet through e-commerce is a great medium for the companies to increase their business reach (Alkailani and Kumar, 2011). It has the potential to impact and influence a company's marketing strategies. Therefore, it calls for the need to better know and forecast customer online shopping behaviors with the aim to design and maintain successful retail Web sites that go with the preferences of their target (Vijayasarathy and Jones, 2000). Though the numbers of online shoppers are increasing, but still there are factors which are detrimental to online shopping, 58% of the online shoppers say that online shopping is annoying, puzzling and overpowering activity (Horrigan 2008). Prior studies on online shopping research founded that uncertainty and perceived risk is the key obstruction of online shopping (Liang and Huang 1998). While doing online

shopping, consumer is exposed to more risk and less trust than in the physical one as consumer cannot evaluate the quality of product or service, no face to face conversation with the sales staff and also the buying is affected by security and privacy issues (Laroche et al. 2005). A large body of research is available on factors affecting online shopping and consumer behavior recently. However, there have been short of consistent understanding about the impact of perceived risks on online shopping in Delhi. The researchers aimed to in depth focus on perceived risks dimensions which are recognized by past studies and integrate these dimensions of perceived risks into a research model and to identify their effect on online shopping.

## REVIEW OF LITERATURE

Dai, Forsythe and Kwon (2014) aimed to find out the impact of previous experience involved with online shopping on the perception of particular type of risks

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coupled with online shopping and how perception towards each type of risk impacts consumers' intention to purchase. The results of the study revealed that previous shopping experience negatively influences product and financial risks linked with internet shopping irrespective of product category. **Sinha and Singh (2014)** conducted a study to understand the impact of various dimensions of risks on the consumers' attitude while doing shopping using internet and the differences in the perception of these dimensions based on income and age. The results of the study revealed that product performance risk, delivery risk, and financial risk significantly influence consumers' attitude towards online shopping. In addition to this, result also revealed that the perception of all the dimensions fluctuate with age.

**Masoud (2013)** conducted a study to look at the influence of various perceived risk dimensions on e-shoppers behavior in Jordan. Researcher has taken into account six types of perceived risk (product risk, financial risk, time risk, delivery risk, social risk and information security risk). The findings of the study reflected that out of the six dimensions, four dimensions namely financial risk, time risk, delivery risk and information security risk significantly affects e-shoppers behavior and remaining two dimensions i.e. product risk and social risk donot affect e-shoppers behavior.

**Zhang et al. (2012)** conducted a study to discover the effect of eight perceived risk dimensions on consumers' buying behavior. The results indicated that there is significant influence of five dimensions out of eight dimensions on consumers' buying behavior namely health risk, quality risk, time risk, delivery risk and after-sale risk and remaining three dimensions i.e. privacy risk, social risk and economic risk negatively impact consumers' buying behavior.

**Almoussa (2011)** conducted a study on Saudi consumers to study the influence of Perceived risk dimensions on their intention while purchasing apparel using internet. In his study, he had choosen six dimensions namely performance, privacy, social, time, psychological and financial risks. The results indicated that all the six

dimensions negatively influence the Saudi consumers' intention while purchasing apparel online but the extent of influence of each dimension of perceived risk differs. Also, it had been observed performance and time risk affects the consumers' intention the most.

**Tasi and Yeh (2010)** intended to study the outcome of website quality particularly product quality information, competence service quality, design and style of website and features, and transaction and delivery capabilities-on perceived risk of information security and privacy and its relationship with purchase intention. The outcome of the study revealed that consumers who purchases goods which are environmentally viable give consideration to website quality and the results further revealed that perceived ease of use and usefulness are the dimensions of information security.

**Martin and Camarero (2009)** developed a model that reveal an element of trust involved in website and has taken into account previous experience, physical stores, firm goodwill and satisfaction of consumer and included consumer perceived risk as a moderator when doing online shopping. The results of the study reflected that consumers who buy the goods frequently using internet and is satisfied based on their previous experience then consumer can trust the website and the consumers who donot have a good previous experience need to check experience of physical store and goodwill of the firm apart from quality service.

**Kim et al. (2008)** studied the influence of risk and trust on consumers' buying decision process while shopping online. The results of the study revealed that trust and risk significantly influence buying decisions. The result of the study further revealed that trust positively influences and perceived risk negatively influences consumers' purchase intention.

**Salo and Karjaluo (2007)** in their study mentioned that the type of risks involved in online shopping were not present in traditional form of shopping like incapability to touch the product, human interface missing, expenditure involved in learning how to use internet, lack of social interaction and privacy issues.

Forsythe et. al 2006) conducted a study to find out the perceived benefits and perceived risk involved in online shopping and to come up with the scale to determine the benefits and risks involved in online shopping. The results of the study showed that e-shoppers who bought the goods repeatedly and spent money are prone to better benefits and fewer risks coupled with online shopping.

Garbarino and Strahilveitz (2004) conducted a study to find out the differences in the perception of gender (men & women) related to perceived risks linked with online shopping. To achieve this objective, researchers have taken into account five types of risk namely misuse of

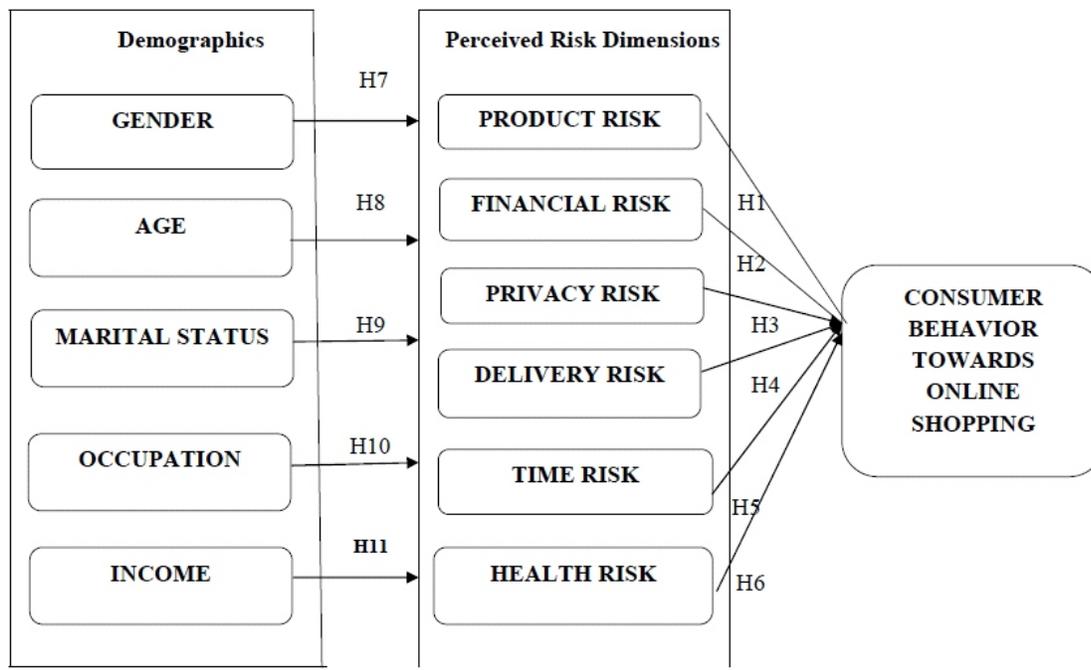
credit card information, deceptive websites, Privacy risk, delivery risk and product risk. The result of the study revealed that the women are prone to more perceived risks when compared to men.

### OBJECTIVE OF THE STUDY

The research paper has two objectives:

1. To study the effect of various dimensions of perceived risk on e-shoppers behavior.
2. To find the relationship between various demographic variables of e-shoppers and perceived risk dimensions.

Figure 1 : Proposed Research Model



### HYPOTHESIS

1. Hypothesis: There is no significant relationship between product risk and consumer behavior towards online shopping.
2. Hypothesis: There is no significant relationship

between financial risk and consumer behavior towards online shopping.

3. Hypothesis: There is no significant relationship between delivery risk and consumer behavior towards online shopping.
4. Hypothesis: There is no significant relationship

between time risk and consumer behavior towards online shopping.

5. **Hypothesis:** There is no significant relationship between privacy risk and consumer behavior towards online shopping.

6. **Hypothesis:** There is no significant relationship between health risk and consumer behavior towards online shopping.

7. **Hypothesis:** There is no relationship between gender and perceived risk dimensions.

8. **Hypothesis:** There is no relationship between age and perceived risk dimensions.

9. **Hypothesis:** There is no relationship between marital status and perceived risk dimensions.

10. **Hypothesis:** There is no relationship between occupation and perceived risk dimensions.

11. **Hypothesis:** There is no relationship between income and perceived risk dimensions.

## RESEARCH METHODOLOGY

**Sampling:** A descriptive study was undertaken in order to achieve the objectives. A sample is collected using convenience sampling technique from South Delhi.

**Sample Size:** 109

**Data Source:** Primary source of data has been used and survey questionnaire was designed for primary data collection.

### Development of Survey Questionnaire

The questionnaire had a list of 20 statements related to product risk, financial risk, privacy risk, delivery risk, time risk and health risk. Respondents had to choose one of these options: strongly agree, agree, neutral, disagree and strongly disagree.

### Data Analysis

Percentage, frequencies methods were used for analysis of Demographic Profiles. To test the hypothesis, one way ANOVA and F-test is used.

## Results and Discussion

Table 1 : Demographics of Respondents

Variable	Category	Frequency	%
Gender	Male	64	58.7
	Female	45	41.3
Age	18-29	73	66.9
	30-41	21	19.3
	41-50	15	13.8
Marital status	Married	38	34.8
	Unmarried	71	65.2
Occupation	Service	53	48.6
	Self employed	02	1.8
	Student	54	49.6
Income	No income but pocket money	52	47.7
	less than 2 Lakhs	06	5.5
	2 Lakhs -.5 Lakhs	28	25.7
	5 Lakhs and above	23	21.1
<b>Source:Primary data</b>		109	100

Table 1 depicts out of the 109 respondents in Delhi, 58.7% were male and 41.3% were female. The respondents were classified into different age group, majority of the respondents belonged to 18-29 years i.e.( 66.9%) followed by the respondents in the age group of 30-41 years(19.3%) and above the age of 50 years i.e.

(13.8%) . A majority of respondents were student (49.6%) and 47.7% of the respondents were in the income bracket of pocket money, 25.7% of the respondents were in the income bracket of Rs.2 Lakhs and above.

**Table 2 : Cronbach Alpha Value (reliability Analysis)**

<b>Cronbach's Alpha value</b>		
<b>Measured Variables</b>	<b>Question Item</b>	<b>Cronbach's Alpha value</b>
<b>Perceived risk</b>	<b>18</b>	<b>.784</b>
Product risk	3	.715
Financial risk	3	.641
Delivery risk	3	.648
Time risk	3	.664
Privacy risk	3	.697
Health risk	3	.702
Consumer behavior	2	.709
<b>Overall Alpha Value of 20 items</b>	<b>20</b>	<b>.766</b>

To further strengthen the results, reliability Analysis using Cronbach Alpha test was used (see Table 2), the Cronbach Alpha values of all the variables were calculated ranging from .6 to .7 which is more than 0.5 and proves that variables are reliable and acceptable.

*Analysis of F-Test Between Consumer Behavior And Perceived Risk Dimensions*

The first objective of the study was to find the influence of various dimensions of perceived risk on e-shoppers

behavior. To test the hypothesis **H1, H2, H3, H4, H5, H6**, one way ANOVA table was used, consumer behavior towards online shopping was taken as an independent variable and various dimensions of risk namely Product risk, Financial risk, Privacy risk, Delivery risk, Time risk and Health risk were taken as a dependent variable.

**Table 3 : ANOVA And F- Test Between Consumer Behavior and Perceived Risk Dimensions**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
ProductRisk	6.146	5	1.229	2.702	<b>.025</b>
FinancialRisk	8.155	5	1.631	2.266	<b>.053</b>
PrivacyRisk	4.178	5	.836	1.177	.326
DeliveryRisk	3.448	5	.690	1.211	.309
TimeRisk	2.602	5	.520	.856	.513
HealthRisk	1.661	5	.332	.606	.695

Source: Author's Research, Criteria: Significance Level= 0.05

Table 3 indicates that the hypothesis 1, 2 are rejected and hypothesis 3, 4, 5 and 6 are completed accepted. Thus, it can be said that out of all the six dimensions of perceived risk, only 2 dimensions i.e. product risk and financial risk influence the behavior of e-shoppers and there is no effect of privacy risk, delivery risk , time risk and health risk on e-shoppers behavior.

*Analysis of F-Test Between Perceived Risk Dimensions And Demographic Variables*

The second objective of the study is to find the relationship between various demographic variables of e-

shoppers and perceived risk dimensions. To test the hypothesis **H7, H8, H9, H10, H11**, one way ANOVA table was used. While applying ANOVA method, various dimensions of risk namely Product risk, financial risk, Privacy risk, Delivery risk, Time risk and Health risk were taken as a dependent variable and demographic variables were taken as an independent variable. This analysis will facilitate in understanding whether the respondents of hetrogenous demographics characteristics i.e. age, income, occupation, marital status and income groups had similar or dissimilar perception for various sub dimensions of Perceived risk.

*Comparison between Gender and Perceived risk dimensions:*

**Table 4 : Anova And F-test For Gender And Perceived Risks Dimensions**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Product risk	.193	1	.193	.391	.533
Financial risk	1.866	1	1.866	2.482	.118
Privacy risk	.454	1	.454	.631	.429
Delivery risk	.147	1	.147	.254	.616
Time risk	.247	1	.247	.407	.525
Health risk	.441	1	.441	.818	.368

Source: Author's Research, Criteria: Significance Level= 0.05

The Table 4 depicts that there is no relationship between gender and perceived risk dimensions. Thus, null hypothesis H7 is completely accepted.

*Comparison between Age and Perceived risk dimensions:*

**Table 5 : ANOVA and F-Test for Age and Perceived Risks Dimensions**

	Sum of Squares	Df	Mean Square	F	Sig.
ProductRisk	1.651	2	.826	1.704	.187
FinancialRisk	3.290	2	1.645	2.207	.115
PrivacyRisk	4.166	2	2.083	3.019	<b>.053</b>
DeliveryRisk	.302	2	.151	.259	.772
TimeRisk	5.947	2	2.973	5.318	<b>.005</b>
HealthRisk	3.212	2	1.606	3.101	<b>.049</b>

Source: Author's Research, Criteria: Significance Level= 0.05

The Table 5 reveals that the hypothesis H8 is partially rejected. Thus it can be said that there is no relationship between all the dimensions of perceived risk and age except Privacy risk, time risk and health risk.

By using ANOVA METHOD (see Table 5), it is clear that the means of respondents differ significantly for privacy risk, time risk and health risk. Therefore, Post Hoc analysis has been used to find out which pairs of age group significantly different from each other.

**Table : 5a Post-Hoc Analysis Age And Privacy Risk**

Dependent Variable	(I) AGE	(J) AGE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PrivacyRisk	18-29 Yrs	30-40 Yrs	.50359*	.20569	<b>.042</b>	.0146	.9925
		41-50 Yrs	.16073	.23548	.774	-.3990	.7205

\*The Mean difference is significant at the 0.05 level

(Table 5a) further depict that e-shoppers belonging to age group 30-40 years are majorly influenced by Privacy risk in comparison to consumer belonging to age group less than 30 years and above 40 years.

**Table 5b : Post-hoc Analysis And Time Risk**

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Time risk	18-29 Yrs	30-40 Yrs	-.25310	.18516	.362	-.6933	.1871
		41-50 Yrs	-.67215*	.21198	<b>.005</b>	-1.1760	-.1682

\*The Mean difference is significant at the 0.05 level

**Table 5c : Post-hoc Analysis Between Age and Health Risk**

Dependent Variable	(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Health risk	18-29 Yrs	30-40 Yrs	.34029	.17819	.141	-.0833	.7639
		41-50 Yrs	-.24384	.20400	.459	-.7288	.2411
	30-40 Yrs	18-29 Yrs	-.34029	.17819	.141	-.7639	.0833
		41-50 Yrs	-.58413*	.24327	<b>.047</b>	-1.1624	-.0059

\*The Mean difference is significant at the 0.05 level

Post Hoc analysis (Table 5b & 5c) further depict that e-shoppers belonging to age group 41-50 years are majorly influenced by Time risk and Health risk in comparison to customer belonging to age group less than 40 years.

*Comparison between Marital status and Perceived risk dimensions:*

**Table 6 : ANOVA and F-Test Between Marital Status and Perceived risks Dimensions**

	Sum of Squares	df	Mean Square	F	Sig.
ProductRisk	0.551	1	0.551	1.125	0.291
FinancialRisk	0.236	1	0.236	0.308	0.580
DeliveryRisk	2.246	1	2.246	4.016	<b>0.048</b>
TimeRisk	3.859	1	3.859	6.730	<b>0.011</b>
HealthRisk	0.073	1	0.073	0.135	0.714

Source: Author's Research, Criteria: Significance Level= 0.05

The Table 6 reveals that the hypothesis H9 is partially rejected. Thus it can be said that there is no relationship between all the dimensions of perceived risk and marital status except Delivery risk and Time risk.

*Comparison between Occupation and Perceived risk dimensions:*

**Table 7 : Anova and-test Between Occupation and Perceived Risks Dimensions**

	Sum Of Squares	Df	Mean Square	F	Sig.
Product risk	.789	2	.394	0.801	.452
Financial risk	1.584	2	.792	1.040	.357
Privacy risk	1.731	2	.866	1.214	.301
Delivery risk	3.242	2	1.621	2.920	<b>.058</b>
Time risk	2.424	2	1.212	2.046	.134
Health risk	.101	2	.050	0.092	.912

Source: Author's Research, Criteria: Significance Level= 0.05

The Table 7 reveals that the hypothesis H10 is partially rejected. Thus it can be said that there is no relationship between all the dimensions of perceived risk and occupation except Delivery risk.

**Table 7a : Post-hoc Analysis Occupation and Delivery Risk**

Dependent Variable	(I) Occupation	(J) Occupation	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Delivery risk	Service	Self Employed	.10063	.981	-1.1751	1.3763
		Student	.34754*	<b>.046</b>	.0051	.6900

\* The Mean difference is significant at the 0.05 level

Post Hoc analysis (Table 7 a) further depict that e-shoppers who belong to service or self employed class are less effected by delivery risk than the student.

*Comparison between Income and Perceived risk dimensions:*  
**Table 8 : Anova and F-test Between Income and Risk Dimensions**

	Sum Of Squares	Df	Mean Square	Sig.
Product risk	1.739	3	.580	.325
Financial risk	3.643	3	1.214	.160
Privacy risk	1.158	3	.386	.655
Delivery risk	4.744	3	1.581	<b>.034</b>
Time risk	6.620	3	2.207	<b>.010</b>
Health risk	2.771	3	.924	.152

Source: Author's Research, Criteria: Significance Level= 0.05

The Table 8 reveals that the hypothesis H11 is partially rejected. Thus it can be said that there is no relationship between all the dimensions of perceived risk and income except Delivery risk and Time risk.

**Table 8a : Post-hoc Analysis : Income and Delivery Risk**

Dependent Variable	(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Delivery risk	Pocket Money	Less than 2 lakhs	-.86389	.34007	.050	-1.7530	.0253
		2 lakhs to 5 lakhs	-.29167	.18092	.377	-0.7647	.1814
		5 lakhs and above	-.33635	.18352	.264	-0.8162	.1435

In addition to one way ANOVA results, Post Hoc analysis (Table 8a) further depict that e-shoppers belonging to less than 2 lakhs Income are majorly influenced by delivery risk when compared to income group above 2 lakhs and having pocket money.

**Table 8 b : Post-hoc Analysis: Income and Time Risk**

Dependent Variable	(I) Income	(J) Income	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Time risk	Pocket Money	Less than 2 lakhs	-.44722	.34916	.577	-1.3601	.4657
		2 lakhs to 5 lakhs	.05556	.18575	.991	-.4301	.5412
		5 lakhs and above	-.57186*	.18842	<b>.016</b>	-1.0645	-.0792

\*The Mean difference is significant at the 0.05 level

Post Hoc analysis (Table 8b) further depict that e-shoppers belonging to Income group 5 lakhs and above are majorly influenced by time risk in comparison to customer belonging to income group below 5 Lakhs and having pocket money.

## CONCLUSION

Perceived risk involved while doing online shopping is an imperative concern in electronic commerce. Although online shopping offers various blessings but still it is thought as a risky activity. In order to maximize sales, e-retailers should recognize which dimensions of the perceived risks matters the most to the Delhi consumers. To achieve these objectives, six dimensions of perceived risk are studied in context of behavior of e-shoppers and also in context to demographic characteristics of consumers. Hypothesis testing results reveals that out of six dimensions Product risk and Financial risk has a statistically significant influence on consumer behavior online shopping and Delivery risk and time risk are the most important dimensions which affects almost all the demographic variables except gender.

Findings of this study have important practical implications for e-retailers. By understanding the relationship between consumer behavior towards online shopping and types of perceived risks e-retailers may be

able to formulate strategies to make online shopping experience more comfortable and trustworthy to e-shoppers.

Also as it has been observed that the product risk and financial risk are most significant factors in consumers' mind, thus e-tailers need to build a robust system to provide and build trust with consumers. Trust can be build in various ways like, easy return policy, guarantee on product, providing after sales service, secure networks, genuine product, correct specification / details of product, keeping commitments, certified reviews and more.

## Limitations of the Study

Although the objective of the study is well achieved in the research study, but still the study have some limitations:

1. Due to lack of time, this study doesn't include all the dimensions of internet perceived risks like social risk, performance, psychological, website design risks can be studied in future research.
2. This study doesnot examine the buyers' varying experience towards the perceived risks and online shopping using various online websites. This study focuses on generic experience.

3. Sample size of the study is small and besides convenience sampling method was used.
4. The study is conducted on limited consumers of Delhi.

#### Scope for Future Research Work

The current research is based on limited dimensions of perceived risks which affects the consumer behavior. Therefore researchers can use other dimensions of perceived risks such as social, performance, psychological, website design risk etc. Further, studies can be conducted on larger geographical area i.e. respondents from different states of India. Rise in mobile app for shopping has opened up possibility of expanding the future scope of study in this context also.

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#### Appendix : 1

	Mean	Std. Deviation
<b>PRODUCT RISK</b>		
It is not easy to test the quality of the product ordered	1.9908	.81075
I might not get what I ordered	2.7339	1.05972
I am unable to try goods bought	2.7248	1.19313
<b>FINANCIAL RISK</b>		
Credit card details misused	3.0459	1.10876
Credit card information compromised to third party	3.0826	1.09822
Overcharging due to undisclosed information	2.8257	1.23861
<b>PRIVACY RISK</b>		
Disclosure of personal information	2.8532	1.16925
e-retailers may follow my shopping behavior and past purchases	2.3211	1.05304
I may receive telephonic calls, emails without my permission	2.5505	1.21325
<b>DELIVERY RISK</b>		
Product not delivered on time	2.7064	1.12466
Delivery at wrong address	3.2844	.93385
Home delivery by stranger not safe	2.7890	1.10616
<b>TIME RISK</b>		
Difficult and tedious to choose from various options available	2.7982	1.12035
One has to wait a lot after placing the order till the delivery of product	2.7339	1.14376
Exchange, Cancellation or return the product consume lot of time and energy	2.2752	1.15367
<b>HEALTH RISK</b>		
Prolonged use of computer may cause vision problems	2.8257	1.08733
It creates excessive pressure on Heart	3.3853	.96137
Receiving counterfeit products will result in health issue	2.7615	.98975
<b>CONSUMER BEHAVIOR</b>		
Using Internet for online shopping is pleasant	2.2844	.82878
Using Internet for online shopping is helpful	1.8991	.66590