Physical Evidence in Virtual Online Market:
A Study on Consumer Online Buying Decisions

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Abstract

Physical evidence in case of services refers to something associated with service, which can be seen, touched or experienced by the customer. In case of online shopping of goods, which basically involves dominance of services, there are few areas where physical evidence is involved like suitable packaging of the product at the time of delivery or physical stores of such online service providers. Recent scholars have classified physical evidence related to e-tail industry under two categories- traditional physical evidence and virtual physical evidence. In the present research work physical evidence related four factors have been selected and consumer preferences regarding such evidences have been collected. It is analysed that among those four factors which factor/s have been preferred by consumers. Consumer's actual online purchase related data has also been collected and its relationship with consumer's preferences towards physical evidence related factors has been analysed in the research work. For analysis purposes reliability analysis, central tendencies, correlation and regression analysis have been applied in the related data.

Keywords: online shopping, physical evidence, marketing mix, consumer behaviour

Introduction

Consumer's online buying decisions get influenced from different factors. Few factors are related to consumer and their nearby environment and some other factors are related to e-tail companies and also government. Efforts made by e-tail companies, generally termed as their marketing mix, can be classified under seven Ps i.e. product, price, place, promotion, people, process, physical evidence. This research paper focuses on physical evidence in this non-physical online market of shopping. Physical evidence especially in case of services refers to something which can be seen, touched or experienced by the customer in relation to service. In case of product offers by e-tail stores certain physical evidence related factors are involved including suitable packaging of the

product while delivery or physical stores of such online service providers etc. In case of e-tail business, physical evidence can also be categorised under traditional and virtual physical evidence. Traditional physical evidence includes all those elements which can be touched or experienced. Virtual physical evidence is more important which incorporates e-tail website and various features of such website like ease of using website, response time of website etc. In the present paper, after discussing with subject experts and corporate practitioners, physical evidence related four parameters have been selected for the purpose of study i.e. easy to use website, quick response time of website, good star rating of sellers by online store, good packaging of delivered product.

Through survey data, it is analysed by the

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researcher that out of above mentioned physical related factors which factor/s have been regarded as important by the respondents. Thereafter consumer preferences regarding physical evidence related factors have been studied with their actual online buying of goods. It was analysed that whether there is any relationship between consumer's preferences towards physical evidence related factors and their actual online buying decisions. This relationship is studied for the buying of specific goods category (electronic goods) as consumer online buying decisions may vary for different type of goods. Therefore this research work also aims to study that for consumers, while purchasing online by spending more amount, what are the main reasons of their purchases, out of physical evidence related factors.

Review of Literature

Pogorelova in his research paper explained that physical evidence in e-business could be divided into two components. First relates with the traditional physical evidence, second one relates to virtual physical evidence. Traditional physical environment can be experienced through delivery points, off-line shops including offices of the company. But in case of online selling, virtual environment gains a special importance in the electronic environment due to the accessibility and convenience at the time of purchase. Virtual environment primarily includes company's website and community pages in social networks (Pogorelova E.V. et.al. 2016). Dave Chaffey (2006) in his book namely 'Internet Marketing' suitably explained service marketing mix components in relation to Electronic Retail business environment.

Kalyanam & McIntyre (2002) developed the e-marketing mix model. This is a construct that identifies different e-marketing functions and provides arrangement of e-marketing tools. In

comparison to the traditional marketing mix this model indicates that the e-marketing mix includes 4Ps and further contributes several new elements, and directly represents personalization which is a form of segmentation as an endogenous function. The resulting e-marketing mix is presented in the following acronym: $4Ps + P^2C^2S^3$, where traditional 4P's stands for product, price, place, and promotion; P^2 refers to personalization and privacy; C stands for customer service and community whereas S stands for site, security, and sales promotion. The product, price, place, promotion are already described in the traditional marketing mix. As per Kalyanam all the new elements are essential from an e-marketing perspective and they may overlap across the other elements. In his work in place of physical evidence terms like personalization and site were used. So many researchers and academicians expressed their doubts about half a century old Marketing Mix components along with service marketing mix components but simplicity, applicability and richness of concept given by Booms and Bitner (1981) maintained its relevance across the different business models and formats including e-retail. Therefore it became suitable to use service marketing mix model and make use of physical related factors in the present study.

Objectives

Research work has following two main objectives:
1. To study importance level of physical evidence related factors out of four selected factors
2. To study importance of physical evidence related factors in consumer online buying decisions

Hypotheses

Research work has following hypotheses as per research objectives:

1. There is no relationship between easy to use website and consumer online buying decision
2. There is no relationship between quick response time of website and consumer online buying decision
3. There is no relationship between good star rating of sellers by online store and consumer online buying decision
4. There is no relationship between good packaging of delivered product and consumer online buying decision

Research Design

Research work is empirical in nature. Internet survey method (using google forms) was used for the purpose of data collection. Survey was executed in four Tier-II cities of Madhya Pradesh. Survey was conducted only for those respondents who had purchased any electronic article in last one year time period. Survey was done from first week of February to last week of June, 2017. Surveyed cities were Jabalpur, Indore, Gwalior and Bhopal. Overall sample size of 500 respondents was selected. Structured questionnaire was prepared and used for data collection purposes. Questionnaire was framed using five point Likert scale for physical evidence related statements ranging from *Not at all important* (score 1) to *Extremely important* (score 5). Statements were: *While buying electronic goods from online store you presumed following factors important:*

Easy to Use Website	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
Quick Response Time of Website					
Good Star rating of Sellers on website by Online store					
Good Packaging of Delivered Product					

Table 1 showing Reliability statistics for above mentioned physical evidence related four statements is 0.875 (using Cronbach's Alpha). This level of reliability statistics is significantly more than general acceptable range for social science researches. This shows that above mentioned statements were suitable framed and responses are consistent in nature.

Table1. Reliability Statistics of Parameters related to Physical Evidence

Cronbach's Alpha	N of Items
.875	4

Analysis & Discussion

Table no. 2 is summarizing the mean values and standard deviation of four physical evidence related factors. Out of these four factors three factors are showing mean value more than 4. This shows the level of importance of such factors for consumers. Even the lowest mean value is slightly less than 4. 'Purchase due to easy to use website' is showing highest level of importance (mean value 4.10) for the customers whereas 'purchase due to good star rating of sellers by online store' (mean value 3.88) is showing comparatively the lowest level of importance, among four factors. 'Purchase due to quick response time of website' (mean value 4.08) and 'purchase due to good packaging of delivered product' (mean value 4.05) are showing comparatively moderate level of importance.

Table 2. Mean Values and Standard deviation of Parameters related to Physical Evidence

	Purchase due to Easy to Use Website	Purchase due to Quick Response Time of Website	Purchase due to Good Star rating of Sellers by Online Store	Purchase due to Good Packaging of Delivered Product
NValid	500	500	500	500
Missing	0	0	0	0
Mean	4.10	4.08	3.88	4.05
Std. Deviation	1.038	1.037	1.071	1.092

After going through individual mean values of physical evidence related parameters it is inevitable to analyse overall (average) mean value of four factors, as given in table no. 3. Overall mean value is 4.0645 (on 5 point scale). This showcases that physical evidence related factors in totality are presumed as extremely important by the respondents as above calculated value is significantly more than mid value (3-Moderately Important) of the scale.

Table 3. Overall mean Values of Physical Evidence Related Four Parameters

	Mean	Std. Deviation	N
AVG Physical Evidence	4.0645	.56622	500

One sample T-test needs to be applied for analyzing importance of individual parameters in comparison to overall mean value (4.0645). Overall value (average value) is treated as test value and it is compared with individual values of below mentioned four parameters (table 4).

Table 4. One-Sample Test of Four Parameters with Overall Physical Evidence Value

	Test Value = 4.0645					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Purchase due to Easy to Use Website	.808	499	.420	.038	-.05	.13
Purchase due to Quick Response Time of Website	.248	499	.804	.011	-.08	.10
Purchase due to Good Star rating of Sellers by Online Store	-3.851	499	.000	-.184	-.28	-.09
Purchase due to Good Packaging of Delivered Product	-.215	499	.830	-.010	-.11	.09

It is clearly visible in above mentioned tale 4 that three parameters (purchase due to easy to use website, purchase due to quick response time of website, purchase due to good packaging of delivered product) are showing significance values above 0.05 (*p value = 0.420, 0.804 and 0.830 respectively*). This shows that all three parameters are quite close to test value or average value. It can also be said that these three parameters are equally important. Whereas fourth parameter 'purchase due to good star rating of sellers by online store' is showing significance value less than 0.05 (p value = 0.000) therefore it can be said that this parameter is found comparatively less important than other three parameters.

Below mentioned table no. 5 shows overall relationship between consumer online buying decisions and average value of consumer preferences towards physical evidence related factors. As per below mentioned Karl Pearson's Coefficient of correlation value (0.624) and significance value (p value = 0.000) it can be

inferred that there is a strong relationship between consumer online buying decisions and their preferences towards physical evidence related factors. Therefore it can also be said that the as the consumers are purchasing from online stores by spending comparatively heavier amount, their preferences towards importance of physical evidence related factors increases. In nut shell physical evidence related factors, in totality, are more important for consumers of higher spending powers in relation to online buying of goods.

Table 5. Correlations between Consumer Online Buying Decision and Overall Value of Physical Evidence Parameters

		COBD	AVG_PHYSICAL_EVI
COBD	Pearson Correlation	1	.624**
	Sig. (2-tailed)		.000
	N	500	500
AVG_PHYSICAL_EVI	Pearson Correlation	.624**	1
	Sig. (2-tailed)	.000	
	N	500	500

**. Correlation is significant at the 0.01 level (2-tailed).*

Thereafter this relationship of consumer online buying decision is studied with individual physical evidence related parameter through table no. 6. As per Karl Pearson's coefficient of correlation shown in table it can be said that almost all the factors are witnessing moderate level of correlation (r is close to 0.5 or above).

Specially two factors 'purchase due to easy to use website', 'purchase due to quick response time of website' are showing correlation values above 0.55 (Karl Pearson's coefficient of correlation r = 0.578, 0.566 respectively). Other two factors 'purchase due to good star rating of sellers by online store', 'purchase due to good packaging of delivered product' are showing coefficient of correlation close to 0.5 (Karl Pearson's coefficient of correlation r = 0.485, 0.504 respectively). All the values are showing significance value less than 0.05 (*p value =0.00*).

Table 6. Correlations between Consumer Online Buying Decision and Individual Physical Evidence Parameters

	Purchase due to Easy to Use Website	Purchase due to Quick Response Time of Website	Purchase due to Good Star rating of Sellers by Online Store	Purchase due to Good Packaging of Delivered Product
COBDPearson Correlation	.578**	.566**	.485**	.504**
Sig. (2-tailed)	.000	.000	.000	.000
N	500	500	500	500

**. Correlation is significant at the 0.01 level (2-tailed).*

Table 7 shows the summary of the model using Regression analysis. Regression analysis better explains the relationship. Prediction power of the model is shown through Adjusted R-Square value i.e. 39.3%. This value refers that consumer online buying decision can be predicted through physical evidence related factors to the extent of accuracy close to 40%.

Table 7. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578a	.335	.333	.842
2	.611b	.373	.371	.818
3	.625c	.391	.387	.808
4	.631d	.398	.393	.804

a. Predictors: (Constant), Purchase due to Easy to Use Websiteb.
b. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Websitec.
c. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Website, Purchase due to Good Packaging of Delivered Product
d. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Website, Purchase due to Good Packaging of Delivered Product, Purchase due to Good Star rating of Sellers by Online Store

ANOVA table no. 8 shows the significance level for different model situations. Also shown in situation '*d*' significance value is less than 0.05 (*p value = 0.000*) and F-calculated value is 81.817 (much more than F table value).

Table 8. ANOVA^e

1	Regression	177.727	1	177.727	250.482	.000a
	Residual	353.351	498	.710		
	Total	531.078	499			
2	Regression	198.322	2	99.161	148.106	.000b
	Residual	332.756	497	.670		
	Total	531.078	499			
3	Regression	207.493	3	69.164	106.017	.000c
	Residual	323.585	496	.652		
	Total	531.078	499			
4	Regression	211.373	4	52.843	81.817	.000d
	Residual	319.705	495	.646		
	Total	531.078	499			

a. Predictors: (Constant), Purchase due to Easy to Use Website
b. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Website
c. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Website, Purchase due to Good Packaging of Delivered Product
d. Predictors: (Constant), Purchase due to Easy to Use Website, Purchase due to Quick Response Time of Website, Purchase due to Good Packaging of Delivered Product, Purchase due to Good Star rating of Sellers by Online Store
e. Dependent Variable: COBD

Coefficients table no. 9 shows detailed description of this relationship. For predicting consumer online buying decisions 'purchase due to easy to use website', 'purchase due to quick response time of website', 'purchase due to good packaging of delivered product' and 'purchase due to good star rating of sellers by online store' have regression coefficient values of 0.283, 0.191, 0.125 and 0.115 subsequently.

Table 9. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.580	.154		10.280	.000
	Purchase due to Easy to Use Website	.575	.036	.578	15.827	.000
2	(Constant)	1.287	.158		8.131	.000
	Purchase due to Easy to Use Website	.349	.054	.351	6.480	.000
	Purchase due to Quick Response Time of Website	.299	.054	.301	5.546	.000
3	(Constant)	1.122	.162		6.907	.000
	Purchase due to Easy to Use Website	.293	.055	.295	5.307	.000
	Purchase due to Quick Response Time of Website	.230	.056	.232	4.094	.000
	Purchase due to Good Packaging of Delivered Product	.166	.044	.176	3.749	.000
4	(Constant)	1.046	.164		6.362	.000
	Purchase due to Easy to Use Website	.283	.055	.284	5.128	.000
	Purchase due to Quick Response Time of Website	.191	.058	.192	3.276	.001
	Purchase due to Good Packaging of Delivered Product	.125	.047	.132	2.645	.008
	Purchase due to Good Star rating of Sellers by Online Store	.115	.047	.120	2.451	.015

a. Dependent Variable: COBD

This relationship can also be expressed in form of Regression Equation mentioned ahead.

> Y (COBD) = 1.046 + 0.283 Purchase due to Easy to Use Website + 0.191 Purchase due to Quick Response Time of Website + 0.125 Purchase due to Good Packaging of Delivered Product + 0.115 Purchase due to Good Star rating of Sellers by Online Store

Therefore as per above mentioned regression equation it can be inferred that among physical evidence related factors 'purchase due to easy to use website' has the highest weightage. Afterwards 'purchase due to quick response time of website' and 'purchase due to good packaging of delivered

product' are also significantly helping in predicting consumer's online buying decision. 'Purchase due to good star rating of sellers by online store' also helped in predicting consumer online buying decisions.

As a part of hypothesis testing, using the above mentioned correlation, regression, significance and F-values it was found that consumer online buying decisions are related to all four physical evidence related parameters. This also makes significant effect on consumer's online buying decisions. Therefore all four null hypotheses get rejected. Therefore it can be inferred that there is significant relationship between physical evidence related parameters and consumer online buying decision.

Conclusion

Finally it can be summarized that consumer buying decisions in relation to online shopping gets significantly affected from physical evidence related factors. All four physical evidence related parameters 'purchase due to easy to use website', 'purchase due to quick response time of website', 'purchase due to good packaging of delivered product' and 'purchase due to good star rating of sellers by online store' create significant effect on consumer's online buying decision. Companies involved in online shopping businesses should notice that output of this research work. Companies should focus on maintenance of their websites in line with the recommendations of this research work. This should be considered limitation of this research work as survey has been done on buyers of electronic goods from e-stores.

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