Consumer Online Buying Behavior-An Exploratory Factor Analysis Approach

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Abstract

Internet plays an important role in today's life and it is widely used by many individuals, business entity and service organization for various purposes. Digital marketing includes online Shopping, where the consumers directly buy the good or services at any time from any place and purchased through internet without spending extra amount. Every successful business organization`s giving more priority towards customer satisfaction.Customers are the main blood for the business without customer business cannot exit. The main objective of this study is to analyze Consumer online buying behavior using Factor Analysis Approach. A survey was conductedin order to achieve our objectives with 120 respondents. Descriptive statistic and chi square and factor analysis were used for data analysis using IBM SPSS 25.

Keywords: Buying Behavior, Consumer Satisfaction, Factor Analysisand Digital Marketing.

Introduction

Internet plays an important role in today's life and it is widely used by many individuals, business entity and service organization for various purposes. It provides variety of information and gives a big platform to meet the buyer and seller. Digital marketing includes online Shopping, where the consumers directly buy the good or services at any time from any place and purchased through internet without spending extra amount. Due to changes in working culture and latest technology, electronic shopping becomes more popular in today's world. Many factors influence the consumer to buy the product through internet like speedy

delivery, variety of products, comparison of products; can buy at any time, easy of usage, reliability, etc.

Review of Literature

Gurvider Shergill et al (2005) mentioned that factor influencing the customer to buy online mainly based on website security, reliability, privacy, web design, fulfillment and customer service.

Leena Jenefa et al (2013) The study was conducted to focus on how the customer preferred to selectthe retailshop and the influence factor to buy the products are quality, product criterion, product performance, price and promotions. Leena Jenefa et al (2015) In this research it was found that customer delight differs during the time of purchase and does not differ with gender, place, marital status, monthly income, pre-budgeting.Yi Jin Lim et al (2016) stated in their study" Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention" Internet shopping is a phenomena that is growing rapidly in modern days. And the study reveals that there is a chance of growth for ecommerce.Mohammad Anisur Rahman et al (2018) In this research they outlines that online shopping is more and more driven by the ICT infrastructure development, Development of ICT based infrastructure leads to the development of online payment system and that increases the Internet penetration.

Research Methodology

The primary data for the study was collected by using a structured questionnaire. The sample size for the study consists of 120 respondents from Delhi NCR region and from Southern region of India. The collected data was carefully scrutinized, tabulated and analyzed using simple statistical techniques like percentages, Chi Square test and Factor analysis using SPSS 25.

Analysis: Demographic Factor

Table 1.Demographic Factor

Variables		No of Respondents	Percent
Gender	Male	65	54.2
	Female	55	45.8
	Total	**120**	**100.0**

Age	Less than 25	45	37.5
	26-50	56	46.7
	51- above	19	15.8
	Total	**120**	**100.0**
Status	Single	46	38.3
	Married	74	61.7
	Total	**120**	**100.0**
Earning status	Young and Dependent	31	25.8
	Young and Independent	33	27.5
	Family with Children at home	55	45.8
	Empty nesters / retired	1	.8
	Total	120	100.0
Qualification	U.G	23	19.2
	P.G	92	76.7
	Professional	5	4.2
	Total	**120**	**100.0**
Income	Less than 5 lacs	2	1.7
	5-10 lacs	5	4.2
	10-15 lacs	20	16.7
	Above 15 lacs	93	77.5
	Total	**120**	**100.0**

Source: Primary Data

Inference: The above table 1 showsMajority of 54.2 percent of respondents are male. Majority of 46.7 belongs to 26-50 years old.Majority of 61.7 percent of respondents are married. Majority of 45.8 percent of respondents have family with Children at home.Majority of 76.7 percent of respondents have P.G qualification.Majority of 77.5 percent of respondents had earning of Income above 15 lakhs per annum.

Consumer Buying Behavior

Table 2.Respondents towards product purchase through online

Product Purchase through online	Variables	No of Respondents	Percent
	Jewelry	35	29.2
	Textiles	22	18.3
	Gift articles	6	5.0
	Books / CD's	27	22.5
	Electronic goods	28	23.3
	Others	2	1.7
	Total	**120**	**100.0**

Source: Primary Data

Inference: From the above table 2, mentioned that majority of the respondents purchased Jewelry through online.

Table 3.Respondent's behavior towards visiting online store

Visiting online store	Variables	No of Respondents	Percent
	None	2	1.7
	1-2	5	4.2
	3 -5	25	20.8
	6-10	19	15.8
	More than 10 times	69	57.5
	Total	**120**	**100.0**

Source: Primary Data

Inference: This table shows that mostly 57.5 percentage of the respondent visiting the online store more than 10 times.

Table 4.Respondent's behavior towards purchasing the products through online store

Purchasing the products through online store	Variables	No of Respondents	Percent
	Once in 10 days	90	75.0
	Once a month	10	8.3
	Once in 2 months	13	10.8
	Once in a year	7	5.8

	Total	120	100.0

Source: Primary Data

Inference: This table4 shows that mostly 75 percentage of the respondent purchasing the products through online store.

Table 5.Respondent'sbuying behavior towards total value of purchases through online in a year

Total value of purchases through on line in a year	Variables	No of Respondents	Percent
	Less than Rs 5000	68	56.7
	Between rs.10,000 - Rs 25,000	25	20.8
	Between Rs. 25,000 - Rs. 50,000	22	18.3
	More than that	5	4.2
	Total	120	100.0

Source: Primary Data

Inference: This table 5, shows that mostly 56.7 percentage of the respondent purchasing their products through online store less than Rs. 5000 in a year.

Table 6.Level of satisfaction

Level of satisfaction	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly dissatisfied
Site has related links so that the customer is able to get maximum information	17	93	7	3	0
Product selection	29	68	17	5	1
Internet sellers do not overcharge the credit or debit card	24	82	8	4	2
Correct delivery of products is ensured	25	66	16	10	3
Web site able to receive and send messages quickly	24	71	17	5	3

Source: Primary Data

Inference:93 respondents are quite satisfied with the site has related links so that the customer is able to get maximum information, 68 respondents are satisfied with the product selection,

82 respondents are satisfied with the Internet sellers do not overcharge the credit or debit card, 66 respondents are satisfied withthe Correct delivery of products is ensured and 71 respondents are satisfied with Web site able to receive and send messages quickly.

Hypothesis Framed

H0: There is no Association between gender and Level of satisfaction towards information provided in the internet

H1: There is an Association between gender and Level of satisfaction towards information provided in the internet

Table 7.Association between gender and Level of satisfaction towards information provided in the internet

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	3.941[a]	3	.268
Likelihood Ratio	5.103	3	.164
Linear-by-Linear Association	.111	1	.739
N of Valid Cases	120		
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is 1.50.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 3 degree of freedom 3.941 less than table value 7.815. Hence null hypothesis is accepted that there is no significant difference between gender &Level of satisfaction towards information provided in the internet.

Hypothesis Framed

H0: There is no Association between gender and Level of satisfaction towards product selection

H2: There is an Association between gender and Level of satisfaction towards product selection

Table 8.Associations between Gender and Level of satisfaction towards product selection

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	6.980[a]	4	.137
Likelihood Ratio	9.302	4	.054
Linear-by-Linear Association	4.774	1	.029
N of Valid Cases	120		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is .50.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 4 degree of freedom 6.980 less than table value 9.488.Hence null hypothesis is accepted that there is no significant difference between gender and Level of satisfaction towards product selection.

Hypothesis Framed

H0: There is no Association between gender and Level of satisfaction towards correct delivery of products.

H3: There is an Association between gender and Level of satisfaction towards correct delivery of products.

Table 9.Association betweenGender and Level of satisfaction

towards correct delivery of the products

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	6.875[a]	4	.143
Likelihood Ratio	7.081	4	.132
Linear-by-Linear Association	.606	1	.436
N of Valid Cases	120		
a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.50.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 4 degree of freedom 6.875 less than table value 9.488.Hence null hypothesis is accepted that there is no significant difference between gender and Level of satisfaction towards correct delivery of products.

Hypothesis Framed

H0: There is no Association between gender and Level of satisfaction towards Web site able to receive and send messages

H4: There is an Association between gender and Level of satisfaction towards Web site able to receive and send messages

**Table 10.Association between gender and Level of satisfaction
towards website able to receive and send messages**

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	3.456[a]	4	.485
Likelihood Ratio	3.596	4	.463
Linear-by-Linear Association	1.142	1	.285
N of Valid Cases	120		
a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.50.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 4 degree of freedom 3.456 less than table value 9.488.Hence null hypothesis is accepted that there is no significant difference between gender and Level of satisfaction towards Web site able to receive and send messages.

Hypothesis Framed

H0: There is no Association between Qualification and Level of satisfaction towards information provided in the internet

H5: There is an Association between Qualification and Level of satisfaction towards information provided in the internet

Table 11.Association betweenQualifications and Level of

satisfaction towards information provided in the internet

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	4.419[a]	6	.620
Likelihood Ratio	6.561	6	.363
Linear-by-Linear Association	1.516	1	.218
N of Valid Cases	120		
a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is .13.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 6 degree of freedom 4.419 less than table value 12.592.Hence null hypothesis is accepted that there is no significant difference between Qualification and Level of satisfaction towards information provided in the internet.

Hypothesis Framed

H0: There is no Association between qualification and Level of satisfaction towards product selection

H6: There is an Association between qualification and Level of satisfaction towards product selection

Table 12.Association betweenQualifications and Level of satisfaction towards product selection

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	21.144[a]	8	.007
Likelihood Ratio	12.942	8	.114
Linear-by-Linear Association	2.372	1	.124
N of Valid Cases	120		
a. 10 cells (66.7%) have expected count less than 5. The minimum expected count is .04.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 8 degree of freedom 21.144 more than table value 15.507.Hence null hypothesis is rejected that there is a significant difference between qualification and Level of satisfaction towards product selection.

Hypothesis Framed

H0: There is no Association between qualification and Level of satisfaction towards correct delivery of products

H7: There is an Association between qualification and Level of satisfaction towards correct delivery of products

Table 13.Associations between qualification and Level of satisfaction towards correct delivery of products

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	6.848[a]	8	.553
Likelihood Ratio	10.221	8	.250
Linear-by-Linear Association	.180	1	.672
N of Valid Cases	120		
a. 10 cells (66.7%) have expected count less than 5. The minimum expected count is .13.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 8 degree of freedom 6.848 less than table value 15.507. Hence null hypothesis is accepted that there is no significant difference between qualification and Level of satisfaction towards correct delivery of products.

Hypothesis Framed

H0: There is no Association between qualification and Level of satisfaction towards Web site able to receive and send messages

H 4: There is an Association between qualification and Level of satisfaction towards Web site able to receive and send messages

Table 14.Association between qualification and Level of satisfaction towards website able to receive and send messages

Chi-Square Tests			
	Value	**df**	**Asymptotic Significance (2-sided)**
Pearson Chi-Square	25.967[a]	8	.001

Likelihood Ratio	14.498	8	.070
Linear-by-Linear Association	3.297	1	.069
N of Valid Cases	120		
a. 11 cells (73.3%) have expected count less than 5. The minimum expected count is .13.			

Source: Computed Data

Inference:Test statistics showed that Chi-Square calculated at 8 degree of freedom 25.967more than table value 15.507.Hence null hypothesis is rejectedthat there is a significant difference between qualification and Level of satisfaction towards Web site able to receive and send messages.

Factor Analysis

Table 15.Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Security	2.1500	1.00962	120
Ease of usage	1.4833	.84995	120
Reliability	1.9167	.52793	120
Deals offered by the company	1.7583	.64815	120
Gathering information	1.7583	.64815	120
Wide range of choice	1.9500	.57759	120
Easy payment mechanism	1.9250	.55250	120
Quick delivery of products and services	1.9333	.54593	120

It is concluded that security that influence the customers to buy the product online. It has highest mean of 2.15. Factor Analysis is the statistical tool that has been used to Measure of Sampling Adequacy.In this research it shows the value of .690 and has been found significant as shown in Table 15. And it was found out after the test that Factor Analysis can be applied on the data.

Table 16.KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.690
Bartlett's Test of Sphericity	Approx. Chi-Square	475.925
	df	28

	Sig.	.000

The researchers to identify significant and smaller numbers of factors as the respondents were asked for eight observed variables related to customer satisfaction have used the factor analysis technique. The Principal Component Analysis extraction method was used to analyze the data with Varimax Rotation Method.

Table 17.Principal Component Analysis

Communalities		
	Initial	**Extraction**
Security	1.000	.787
Ease of usage	1.000	.449
Reliability	1.000	.101
Deals offered by the company	1.000	.638
Gathering information	1.000	.565
Wide range of choice	1.000	.737
Easy payment mechanism	1.000	.845
Quick delivery of products and services	1.000	.821

Note: Extraction Method: Principal Component Analysis.

The communalities which show how much of the variance in the variables has been accounted for by the extracted factors. 85% of the variance in "Easy payment mechanism" is accounted for, while 10% of the variance in "Reliability" is accounted for.

Table 18.Rotation converged in 3 iterations

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.792	47.403	47.403	3.792	47.403	47.403	3.590	44.871	44.871
2	1.149	14.368	61.771	1.149	14.368	61.771	1.352	16.900	61.771
3	.948	11.853	73.624						

4	.837	10.462	84.086						
5	.566	7.071	91.157						
6	.337	4.214	95.371						
7	.284	3.544	98.915						
8	.087	1.085	100.000						
Extraction Method: Principal Component Analysis.									
Before extraction it is assumed that each of the original variables has as Eigen value=1).									
As evident from Table 18 it is found that the number of variables have been reduced from 8 to 2 underlying factors.									

The table shows that these two components are Eigen value more than 1, so the two components will be used. The cumulative percent of the variance explained by these factors is 61.771%. Factor loading is the correlation between a variable and a factor that has been extracted from the data. For rotated factor loadings we will consider only those statements whose factor loading is more than 0.5.Rotation with factor loading is used to eliminate all the statements whose factor loading is less than 0.5.

Table 19.Rotated Component Matrix[a]

	Component	
	1	**2**
Easy payment mechanism	.917	
Quick delivery of products and services	.905	
Wide range of choice	.858	
Deals offered by the company	.743	
Gathering information	.693	
Reliability		
Security		-.883
Ease of usage	.301	.599

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization, a.

The knowledge of consumer behavior helps the marketer to understand how consumers think, feel and select from alternatives offered like Easy payment mechanism, Quick delivery of products and services, Wide range of choice, Deals offered by the company and Gathering information.
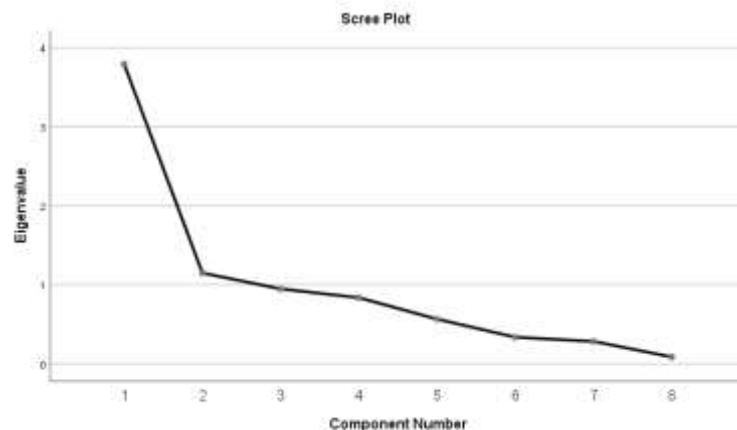
Conclusion

Figure 2.Scree Plot

Majority of the respondents purchased Jewelry through online for more than 10 times amounted to Rs 5000. Under Factor Analysis, Significant Factors for Customer Satisfaction towards online buying behavior towards consumer goods were identified. The factors influencing the buying behavior of the customers most are Easy payment mechanism, Quick delivery of products and services, Wide range of choice, Deals offered by the company and Gathering information.This research proved there is no significant difference between gender & Level of satisfaction towards information provided in the internet,product selection and correct delivery of products.

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