

Applied Management Research Project

on

Customer Behavior as an Input for E-Marketing Strategies



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Introduction

- The total number of Internet users in India could reach the 150 million mark by December 2012, growing around 10 per cent from 137 million as of June this year.
- The active Internet users during the same period would reach 111 million, according to a report released by the Internet and Mobile Association of India (IAMAI).
- With the above background in mind, this research has been conducted to gain an insight into the online buying behavior of consumers.
- The objective is to understand the buying decision process, the psychographic profile of the consumers and to find the factors which influence online buying behavior.
- The findings should help an Internet marketer to determine the product/service categories to be used for marketing or to be introduced for a specific segment of consumers.



Consumer Buying Behavior

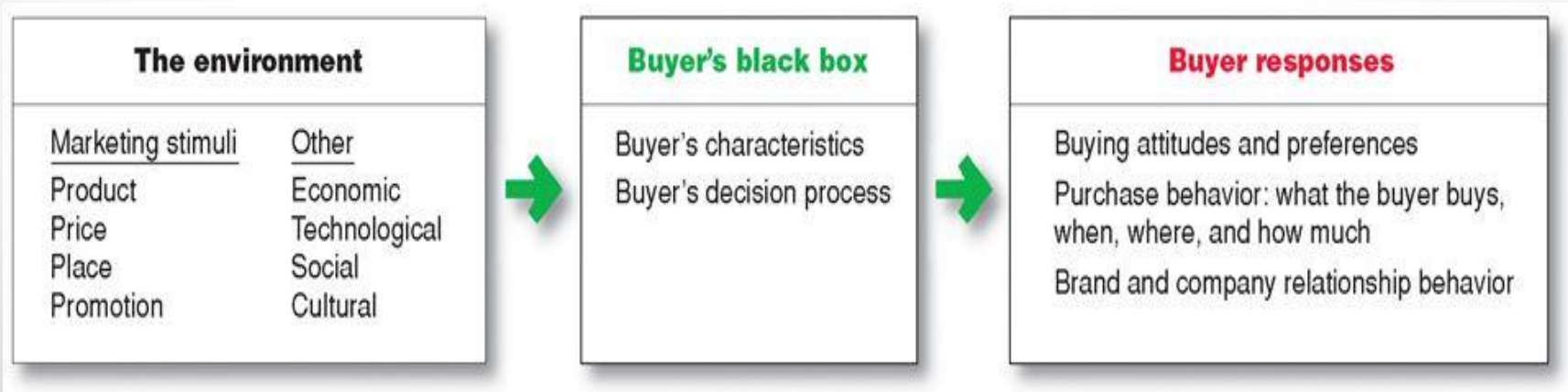
- Quality of marketing strategies depends on knowing, serving, and influencing consumers.
- The study of consumer behavior enables marketers to understand and predict buying behavior of consumers in the marketplace .
- Consumer buying behavior can be defined as the way in which consumers or buyers of goods and services tend to react or behave when purchasing products that they like.
- Factors Affecting Consumer Buying Behavior:
 - Cultural factors
 - Social factors
 - Personal factors and
 - Psychological factors



Consumer Buying Behavior

- **Stimulus-response Model**

- The stimulus–response model is a characterization of a statistical unit as a black box model, predicting a quantitative response to a quantitative stimulus.
- marketing and other stimuli enter the customers “black box” and produce certain responses.
- Marketing management must try to work out what goes on the in the mind of the customer – the “black box”.



Research Objective

Primary Research Objective

- To determine the factors and attributes which influence online buying behavior of consumers.

Secondary Research Objectives

- To determine the psychographic profile of consumers who purchase over the Internet.
- To identify the key product and service categories opted by consumers depending on their profile.
- To identify the factors influencing online shoppers and consumers.
- To study the customer's level of satisfaction with regard to online shopping.
- To determine the average spending and frequency of purchase over the internet by a consumer.



Hypotheses

To test the consumer's online buying behavior following hypothesis are proposed:

1. H1: Owning a credit card does not have any impact on the frequency of online purchase.
2. H2: Age of the respondent does not have any impact on the frequency of online purchase.
3. H3: Gender does not have any impact on the average amount spent per purchase made online.
4. H4: Gender does not have any impact on the frequency of purchase of online products and services
5. H5: Income of respondents does not have any impact on the frequency of purchase of online products and services.
6. H6: E-banking does not have any impact on the frequency of online purchase..



Data Collection Method

Exploratory Research

For exploratory research, following techniques were used:

- A. Open-ended questionnaire- These questions were used to discover different attributes required to study the online buying behavior.
- B. Focused group discussions- A discussion among a group of students was arranged to decide upon the attributes that need to be evaluated to study the online buying behavior.

Secondary Research

Secondary research was done from the following sources:

- A. Journals and research papers available online.
- B. Expert surveys (studied through internet).



Data Collection Method

Primary research

- primary research data collection was done using questionnaire (online survey)
- The questionnaire comprised of 19 questions (Appendix) which measured responses for different factors of frequency of purchase, payment methods, preferred products, average spending, hours spent on the internet etc.
- Some questions measured respondent attitudes using Likert Scale (1-5).
- The methods used for survey was questionnaire administration with respondents filling out the responses themselves and online survey through mail posting.



Research Methodology

Data Analysis

- Post Data Reduction, the data would be analyzed to find out the impact of various factors on each other as well the correlation amongst them using SPSS.
- The factors as well as their correlation would be studied with the help of the following techniques:
 - Cross-tabs With Chi-square
 - Regression Analysis
 - Factor Analysis
 - Cluster Analysis
 - Discriminant Analysis



Questionnaire Development Process

Cross-tabs With Chi-square

The questionnaire designed specific to the proposed hypothesis are:

- 1. Do you own a credit card?
- 2. How frequently do you purchase products/services online?
- 3. What is your age?
- 4. What is your gender?
- 5. On an average, how much time (per week) do you spend while surfing the Net?
- 6. What is your annual family income?
- 7. Do you use E-banking?



Questionnaire Development Process

Regression Analysis

The Regression Analysis would be performed between the dependent variable “Average Amount spent per purchase made online” and the independent variables such as Frequency of Purchase of products and services online, Family Income, owning a Credit Card, Marital Status, Gender, Occupation, Education and Age.

Along with the questionnaire listed for CROSS-TABS WITH CHI-SQUARE, following additional questionnaire are applicable to regression analysis:

- 1. What is the highest level of education you have completed?
- 2. What is your current primary occupation?
- 3. What is your marital status?



Questionnaire Development Process

Factor Analysis

To find the major factors on which customers can be loaded, Factor Analysis would be done based on the following questionnaire and the attributes:

Q: Recall your earlier online buying/shopping experience and indicate your agreement with the following statements:

- I prefer making a purchase from internet than using local malls or stores
- I can get the latest information from the Internet regarding different products/services that is not available in the market
- Online shopping is more convenient than in-store shopping
- Online shopping saves time over in-store shopping
- It is safe to use a credit card while shopping on the Internet



Questionnaire Development Process

Factor Analysis Continued....

- Online shopping allows me to shop anywhere and at anytime
- I trust the delivery process of the shopping websites
- Products purchased through Internet are of guaranteed quality
- Internet provides regular discounts and promotional offers to me
- Cash on Delivery is a better way to pay while shopping on the Internet
- Sometimes, I can find products online which I may not find in-stores
- I have faced problems while shopping online
- I continue shopping online despite facing problems on some occasions
- I do not shop online only because I do not own a credit card

Questionnaire Development Process

Cluster Analysis

Depending on the reasons for a person to be online, consumers can be clustered into homogeneous groups. The corresponding questionnaire and factors are listed below:

Q: I usually look on the internet (please indicate the frequency):

- News or Information
- Websites of company regarding product
- Travel and leisure
- Spent time in social media sites like Facebook
- Online shopping sites such as Flipkart
- Education related sites
- Official works, email



Questionnaire Development Process

Cluster Analysis Continued....

Once the consumers are online, they can further be clustered on the basis of factors which influence them while making an online purchase. The corresponding questionnaire and factors are listed below:

Q: Mark the importance of the factors which influence you while making an online purchase?

- Brand Name
- Service delivery time
- Website Content
- Recommendation by friends
- Online Ads - posters/banners
- Online reviews by users of product
- Ease of payment and security



Questionnaire Development Process

Discriminant Analysis

- The Discriminant Analysis would be performed between the dependent variable “online buyer or none buyer” and the independent variables such as Education, Gender, Monthly Income, owning a Credit Card, E-banking, use of social media sites and Age.
- The questionnaires used for Discriminant Analysis have already been listed down as part of the other statistical techniques explained above.



Data Interpretations and Analysis

Cross-tabs With Chi-square

H1: Owning a credit card does not have any impact on the frequency of online purchase.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.638 ^a	4	.020
Likelihood Ratio	12.314	4	.015
Linear-by-Linear Association	1.550	1	.213
N of Valid Cases	110		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.35.

As the p-value is lesser than 0.05, which is our assumed level of significance, we do not accept the null hypothesis, i.e. for the sample population, owning a credit card has an impact on the frequency of online purchase.

Cross-tabs With Chi-square

H2: Age of the respondent does not have any impact on the frequency of online purchase.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.292 ^a	12	.590
Likelihood Ratio	10.488	12	.573
Linear-by-Linear Association	.006	1	.940
N of Valid Cases	110		

a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is .15.

As the p-value is greater than 0.05, which is our assumed level of significance, we accept the null hypothesis, i.e. for the sample population, Age of the respondent does not have any impact on the frequency of online purchase.

Cross-tabs With Chi-square

H3: Gender does not have any impact on the average amount spent per purchase made online.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.141 ^a	4	.087
Likelihood Ratio	8.019	4	.091
Linear-by-Linear Association	.488	1	.485
N of Valid Cases	110		

a. 2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.42.

As the p-value is greater than 0.05, which is our assumed level of significance, we accept the null hypothesis, i.e. for the sample population, Gender does not have any impact on the average amount spent per purchase made online.

Cross-tabs With Chi-square

H4: Gender does not have any impact on the frequency of purchase of online products and services

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.286 ^a	4	.179
Likelihood Ratio	6.194	4	.185
Linear-by-Linear Association	3.074	1	.080
N of Valid Cases	110		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.03.

As the p-value is lesser than 0.05, which is our assumed level of significance, we do not accept the null hypothesis, i.e. for the sample population, Gender has an impact on the frequency of purchase of online products and services.

Cross-tabs With Chi-square

H5: Income of respondents does not have any impact on the frequency of purchase of online products and services.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.104 ^a	24	.348
Likelihood Ratio	30.204	24	.178
Linear-by-Linear Association	3.395	1	.065
N of Valid Cases	110		

a. 28 cells (80.0%) have expected count less than 5. The minimum expected count is .62.

As the p-value is greater than 0.05, which is our assumed level of significance, we accept the null hypothesis, i.e. for the sample population, Income of respondents does not have any impact on the frequency of purchase of online products and services.

Cross-tabs With Chi-square

H6: E-banking does not have any impact on the frequency of online purchase.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.946 ^a	4	.000
Likelihood Ratio	22.199	4	.000
Linear-by-Linear Association	6.922	1	.009
N of Valid Cases	110		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is 1.08.

As the p-value is lesser than 0.05, which is our assumed level of significance, we do not accept the null hypothesis, i.e. for the sample population, E-banking has an impact on the frequency of online purchase.

Data Interpretations and Analysis

Factor Analysis

To find the major factors on which customer's online buying characteristics can be loaded:

Rotated Component Matrix^a

	Component				
	1	2	3	4	5
V1	.133	.871	.048	-.058	-.048
V2	-.009	.551	.401	.242	.440
V3	.199	.838	-.124	.072	-.004
V4	.280	.446	.129	.510	.103
V5	.791	-.048	.182	.048	-.147
V6	.562	.136	.128	.411	.418
V7	.697	.316	.000	.141	.130
V8	.755	.190	-.037	-.005	.117
V9	.221	.194	-.270	.483	.068
V10	-.124	-.209	.041	.782	-.170
V11	.171	.150	.364	.510	.243
V12	-.085	-.126	.821	.061	-.097
V13	.346	.167	.788	-.033	-.054
V14	-.063	.052	.165	.044	-.891

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.706
Bartlett's Test of Sphericity	Approx. Chi-Square	440.527
	df	91
	Sig.	.000

Factor Analysis Continued..

Attributes loading on various factors/components:

Loaded on factor 1:- V5, V6, V7, V8,

Loaded on factor 2:- V1, V2, V3,

Loaded on factor 3:- V12, V13,

Loaded on factor 4:- V4, V9, V10, V11

Loaded on factor 5:- V14

Depending on the eigenvalues >1 , there are 5 resulting factors which respondents look for:

Factor 1:Trust

Factor 2:Convenience

Factor 3:Risk propensity

Factor 4:The Power Shopping

Factor 5:Neglect

Data Interpretations and Analysis

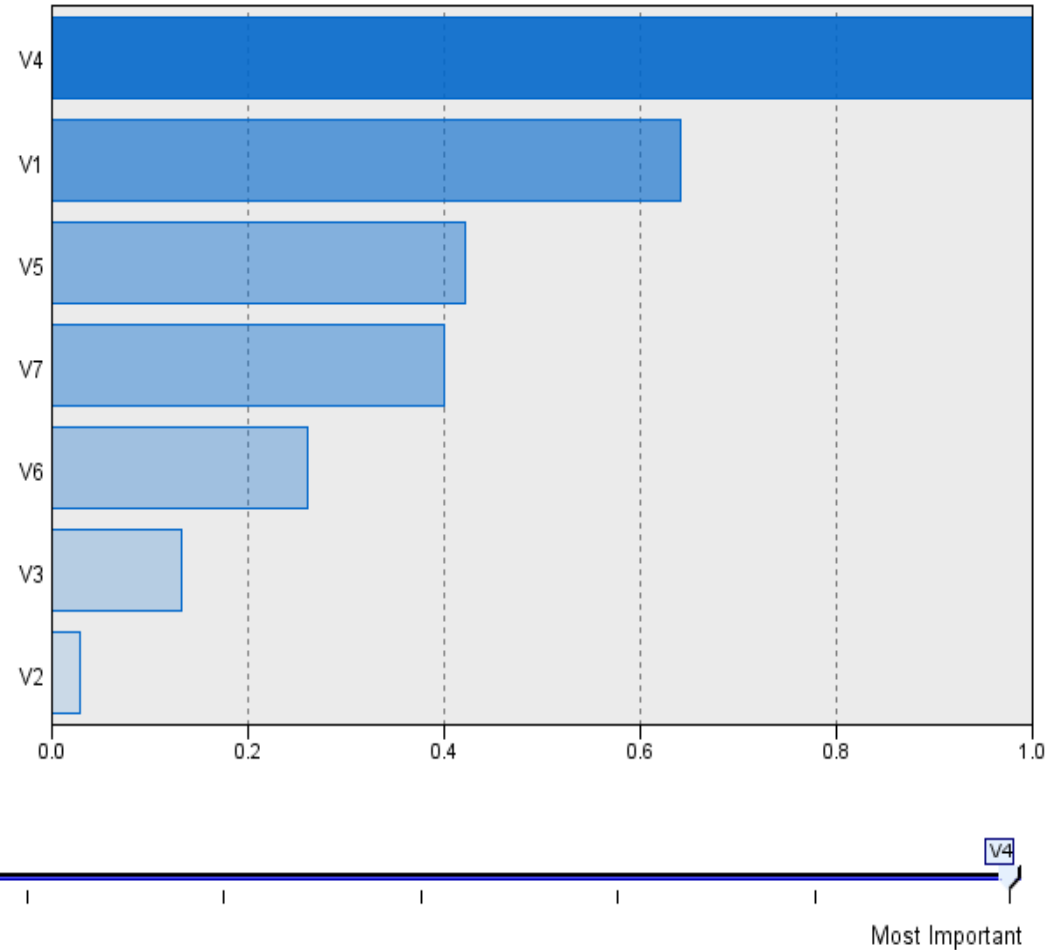
Cluster Analysis

Depending on the reasons for a person to be online, consumers can be clustered into homogeneous groups.

Number of Cases in each Cluster

Cluster	1	38.000
	2	16.000
	3	56.000
Valid		110.000
Missing		.000

Predictor Importance



Cluster Analysis Continued..

The various attributes used in CLUSTER Analysis have been coded as follow:

- V1: News or Information
- V2: Websites of company regarding product
- V3: Travel and leisure
- V4: Spent time in social media sites like Facebook
- V5: Online shopping sites such as Flipkart
- V6: Education related sites
- V7: Official works, email

The three resulting clusters can be described as follow:

Cluster 1: internet users who are Leisure Hunter (relatively high values on variables V1, V4 and V5)

Cluster 2: internet users who are Regular Web Person (medium values on all the variables)

Cluster 3: internet users who are Dedicated Surfer (relatively high values on variables V2, V3 and V6)

Data Interpretations and Analysis

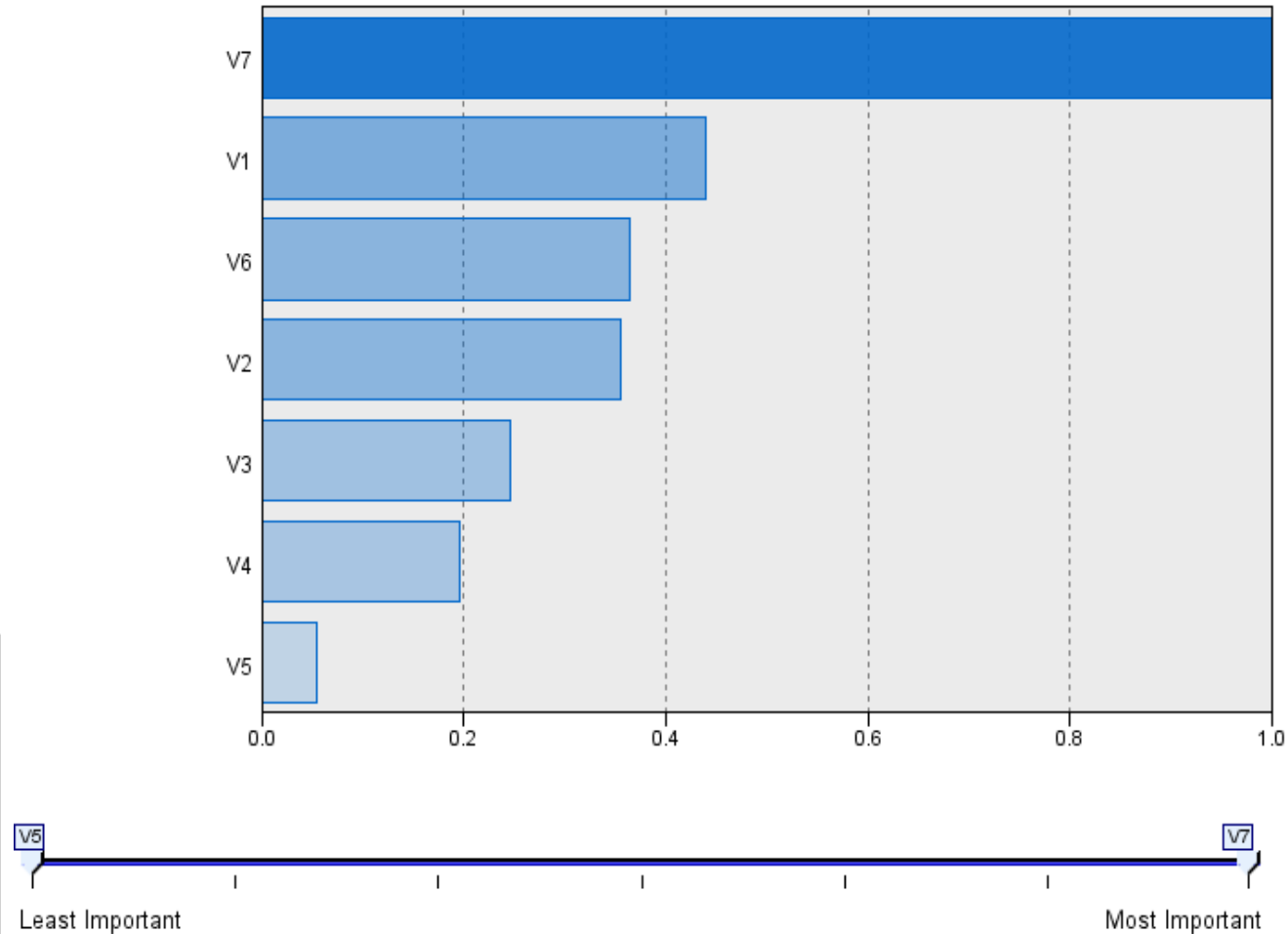
Cluster Analysis-2

Users can further be clustered on the basis of factors which influence them while making an online purchase:-

Number of Cases in each Cluster

Cluster	1	36.000
	2	2.000
	3	41.000
	4	31.000
Valid		110.000
Missing		.000

Predictor Importance



Cluster Analysis-2 Continued..

The various attributes used in CLUSTER Analysis have been coded as follow:

- V1: Brand Name
- V2: Service delivery time
- V3: Website Content
- V4: Recommendation by friends
- V5: Online Ads - posters/banners
- V6: Online reviews by users of product
- V7: Ease of payment and security

The four resulting clusters can be described as follow:

Cluster 1: The Surgical Shopper (relatively high values on variables V4 and V6)

Cluster 2: The Enthusiast Shopper (relatively high values on variables V1, V2, V3, V5, and V7)

Cluster 3: The Casual Shopper (relatively high values on variables V1, V2, V3, and V7)

Cluster 4: The Reluctant Shopper (relatively low values on all the variables) ●

Data Interpretations and Analysis

Discriminant Analysis

Dependent variable: online buyer or none buyer

Independent variables: Education, Gender, Monthly Income, owning a Credit Card, E-banking, use of social media sites and Age.

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Highest level of education	.996	.397	1	108	.530
Gender	.930	8.098	1	108	.005
Family Income	.966	3.781	1	108	.054
Credit Card	.944	6.464	1	108	.012
E-banking	.638	61.246	1	108	.000
Use of SNS	.943	6.534	1	108	.012
Age	.939	7.025	1	108	.009

When the predictors are considered individually, only Gender, Credit Card, E-banking, Use of SNS and Age significantly differentiate between those who shop online and those who do not.

Discriminant Analysis Continued..

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.591	54.895	7	.000

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.691 ^a	100.0	100.0	.639

a. First 1 canonical discriminant functions were used in the analysis.

Because there are two groups, only one discriminant function is estimated. The eigenvalue associated with this function is 0.691 and it accounts for 100 percent of the explained variance. The canonical correlation associated with this function is 0.639. The square of this correlation, $(0.639)^2 = 0.408$, indicates that 40.8% of the variance in the dependent variable is explained or accounted for by this model.

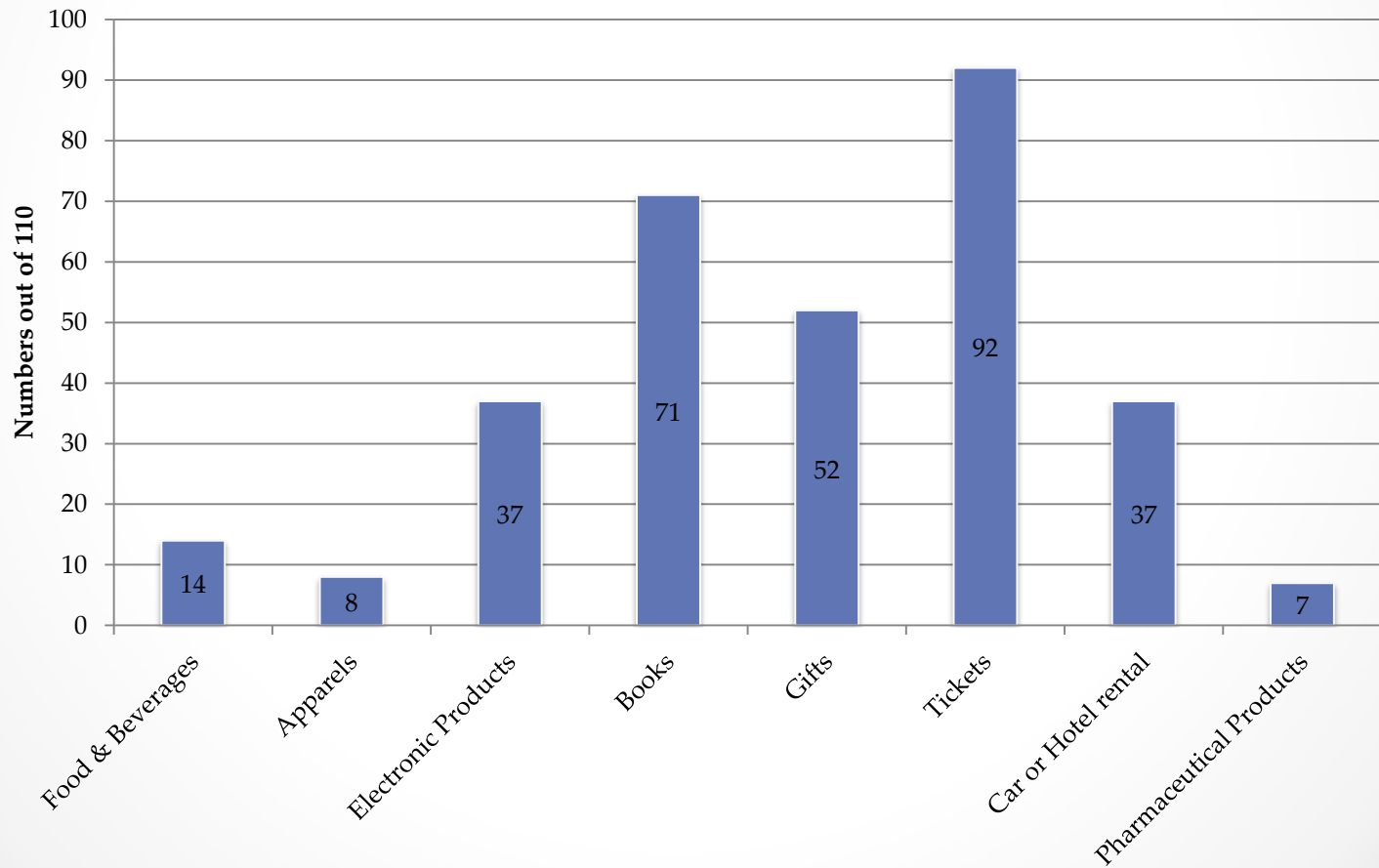
Results And Interpretations

- Owning a credit card, gender and E-banking has a significant impact on the frequency of online purchases whereas age and income of the respondent does not. Also, gender does not have any impact on the average amount spent per purchase made online.
- Based on cluster analysis we could divide the internet users in three clearly distinct groups: - 'Leisure Hunter', 'Regular Web Person' and 'Dedicated Surfer'.
- Shoppers have been further divided into four clusters as 'The Surgical Shopper', 'The Enthusiast Shopper', 'The Casual Shopper' and 'The Reluctant Shopper'.
- There are five factors of buying behavior which can explain the data with 66.88% significance. These factors are 'Trust', 'Convenience', 'Risk propensity', 'The Power Shopping' and 'Neglect'.
- Discriminant analysis shows that Gender, Credit Card, E-banking, Use of SNS and Age significantly differentiate between those who shop online and those who do not.

Results And Interpretations

- The most popular product category sold online is Air/Rail Tickets followed by books.

Product purchased online



Suggestions and Recommendations

- Induce Credibility in Payment System.
- Provide Discount and lucrative offers with the use of credit card and E-banking.
- Minimize Untimely Delivery of Products.
- Consumers often display a bias for brands that they know well and have had a good experience in the past.
- To infuse more credibility in online shopping, make the deliverables as per the customers' expectations.
- Make oneself ready to face high competition and leaner margins.
- Demand and supply matching for seasonal fluctuations.
- Reduce the risks associated to consumer incompetence.
- Use of Social Networking Sites for advertising.
- The feedback of an online buyer should be captured to identify flaws in service delivery.

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