

4.1 Introduction

4.2 Research Objectives

4.3 Research Design

4.4 Definition of Target Population

4.5 Sampling Methods

4.6 Determination of Necessary Sample Size

4.7 Instrument Development

4.8 Coding of the Questionnaire

4.9 Pre-testing the Questionnaire

4.10 Operational Definitions

4.11 Conclusion

4.1 Introduction

Research Methodology is a systematic and structured procedure to arrive at the conclusion of a defined problem. The present chapter discusses the methodological foundation and the research approach used to test the hypotheses developed in chapter 3. The intent of the chapter is to guide the reader through the methodological procedures used for the thesis. A well planned research methodology helps to carry forwards the study in a logical step to come to the conclusion of the research problem.

There are eleven sections in this chapter. The section 4.2 reviews the research objectives. Research design is described in section 4.3. The discussion then moves to defining the target population (section 4.4) and sampling method (section 4.5); Sample size is justified in section 4.6 and is followed by the instrument development in section 4.7; and coding of the questionnaire in section 4.8. Pre-testing the questionnaire is discussed in section 4.9 and section 4.10 discusses operational definitions used in this study. Section 4.11 summaries the research methodology adopted for this study.

4.2 Research Objectives

The main objectives of the study are as follow:

- To study about online shopping behavior
- To study the types of products being shopped online
- To study the demographic characteristics of online shoppers
- To examine the impact of demographic factor differences on online shopping behavior
- To identify the factors affecting online shopping behavior
- To examine the impact of identified factors on online shopping behavior

4.3 Research Design

Having identified the variable in a problem situation and developed the hypothetical framework, the next step is to design the research in a way that

the requisite data can be generated and analyzed to arrive at a solution (Sekaran, 2006). A research design is a frame work or blueprint for conducting the marketing research project. It is a master plan of the research methods and procedures that should be used to guide data collection and analysis tasks of the research project. It specifies the type of information to be collected, the sources of data, and the data collection procedure. Research design ensures that the study is relevant to the problem and use economical procedures (Churchil et al., 2002).

There are many research design framework. One very useful classification is in terms of the fundamental objectives of the research: exploratory, descriptive and causal.

The general objective in exploratory research is to gain insights and ideas of the topic being studied (Churchil et al., 2002). Exploratory research is used when the researcher aims to gain background information to define terms, to clarify problems or hypotheses and to explore a new topic. Through exploration researchers develops concepts more clearly, establishes priorities, develops operational definition and improve the final research design (Cooper and Schindler, 1999).

The objective of a descriptive study is to learn who, when, where and how of a topic (Cooper and Schindler, 1999). A descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables of interest in a situation (Sekaran, 2006). The descriptive research study is typically concerned with determining the frequency with which something occurs or relationship between two variables (Churchil et al., 2002). Descriptive research is used when the purpose is as follow (Churchil et al., 2002):

1. To describe the characteristics of certain groups.
2. To estimate the proportion of the people in a specified population who behave in a certain way.
3. To make specific prediction.

A causal research design is concerned with determining cause-and-effect relationships. Causal studies typically take the form of experiments because experiments are best suited to determine cause and effect (Churchil et al., 2002).

In this study, two-stage methodology was adopted. The first stage was conducted to gain a better understanding about the research area being studied. The second stage was a descriptive survey, which gathered data for testing the research hypotheses. Causal research design was not employed in this study as it was not concerned with determining cause-and-effect relationships. Exploratory research and descriptive research design employed in this study are overviewed here.

Exploratory research was used initially to gain fundamental information to identify demographic and psychographic factors explaining online shopping behavior. A variety of productive exploratory approaches (i.e., literature reviews, unstructured interviews, etc.) were used for the same.

For literature review, secondary data were collected from following sources:

- Various books on consumer behavior and retailing,
- Journals like Journal of Marketing, Journal of Consumer Research, Journal of Retailing, Journal of Consumer Affairs, Journal of Marketing Research, Academy of Marketing Science Review, Journal of Academy of Marketing Science, International Journal of Electronic Commerce, Journal of Interactive Marketing, etc.,
- Internet

To collect the secondary data, various libraries of various institutes and associations were visited.

Apart from literature review, interviews with professors of leading Management Institutions, regular online shoppers and people engaged in online business were conducted to gain insights into the relevant factors and their relationships to the consumer response towards shopping behavior while shopping products online.

Descriptive research was used to validate the hypothesis generated from the exploratory research. Quantitative data were collected using structured questionnaire. Descriptive research was most appropriate to be conducted for the second stage of research because descriptive research enables the researcher to identify key demographic and psychographic variables, and to examine how these factors influence online shopping behavior.

4.4 Definition of the Target Population

In this study, the population was from Gujarat. In fact, population was composed of individuals who had shopped product or service for personal use or for others (for gift purpose) with the help of internet via broad band, mobile phone, data card, cyber cafe or any other means in large cities of Gujarat State. This group was chosen as they represented a group of individuals who had the purchasing power and also the resources to access and use the Internet.

4.5 Sampling Method

To ensure proper coverage of the sample, it was decided to draw sample from major cities of Gujarat i.e. Ahmedabad, Vadodara, Surat, Rajkot, Bhuj, Mehsana. Data were collected from online shoppers residing in these cities. Data were collected during the month of August to December, 2013. A snowball sampling method was undertaken for this study. Firstly, some shoppers who had brought products online were approached and requested to participate in the survey. Then they were asked to give reference of those who were in their contact and shopped product or service online. Questionnaire was hand carried and personally explained to respondents by the researcher. Researcher gave instructions for completing the questionnaire and waited while respondent independently filled out questionnaire.

Apart from personal contact, data also collected through mail questionnaire. Some identified and well communicated respondents even mailed the questionnaire and requested to reply properly. Thus, personal contact and mail questionnaire both methods were used to collect data.

4.6 Justification of the Sample Size

In order to collect the data, more than seven hundred respondents were contacted through mail questionnaire as well as personally. Due to non-response and incomplete questionnaire, finally **518 responses** were used to analyze the data. This sample size can be justified by following two arguments.

First, following formula can be used to determine sample size (Nargundakar, 2003).

$$n = p (1 - p) \frac{Z^2}{e^2}$$

Where,

n = Sample Size

Z = Z value from the standard normal distribution for the confidence level desired by the researcher. For this study, we assumed 95 percent confidence level. Then from the standard distribution tables, the Z value is 1.96.

p = Frequency of occurrence of something expressed as a proportion.

e = Tolerable error. This can be decided by the researcher. For this study we assumed tolerable error 0.05.

Using above formula, whatever be the value of p, the sample size comes to be less than 385. This implies that the sample size of 518 was more than sufficient to estimate the population proportions with 95 percent confidence level and allowing tolerable limit of 0.05.

Second, as this research used multivariate techniques to test the proposed hypotheses, a sample size of 518 respondents was deemed to be most appropriate for this study that measured independent variables.

4.7 Instrument Development

The function of a research instrument is to satisfy research objectives through the measurement of independent and dependent variables of interest. Based on the objectives of the study stated in Chapter 1 and hypotheses developed

in chapter 3, structure questionnaire was developed as an instrument of measurement. As the first step in questionnaire development, a bank of items suitable for measuring the constructs under study was gathered from the relevant literature. A detailed description of scales and types of measurement used to measure demographic and psychographic variables in this thesis is described in Table 4.1

Table 4.1 Description of the measurement scales

Variable	Scale used to measure this variable	Type of measurement used to measure this variable	No. of statements
Demographic Factors			
Gender	Nominal Scale	Dichotomous Question	2
Age	Ratio Scale	Multiple Choice Question	4
Education	Nominal Scale	Multiple Choice Question	4
Annual Household Income	Ratio Scale	Multiple Choice Question	4
Marital Status	Nominal Scale	Multiple Choice Question	2

Variable	Scale used to measure this variable	Type of measurement used to measure this variable	No. of statements	Source of the scale
Behavioral Factors				
Online shopping behavior	Interval Scale	Five Point Rating Likert Scale	3	Forsythe et al., 2006; Karayanni, 2003; Swinyard and Smith, 2003;
Financial Risk	Interval Scale	Five Point Rating Likert Scale	4	Swinyard and Smith, 2003; Forsythe et al., 2006
Product Risk	Interval Scale	Five Point Rating Likert Scale	3	Swinyard and Smith, 2003; Forsythe et al., 2006
Non product	Interval	Five Point Rating	3	Forsythe et al.,

delivery	Scale	Likert Scale		2006
Product Return Policy	Interval Scale	Five Point Rating Likert Scale	3	Lewis, 2006
Service Infrastructural	Interval Scale	Five Point Rating Likert Scale	3	Lewis, 2006
Trust	Interval Scale	Five Point Rating Likert Scale	4	Bianchi and Andrews, 2012
Shopping Habits	Interval Scale	Five Point Rating Likert Scale	4	Researcher own
Shopping Enjoyment	Interval Scale	Five Point Rating Likert Scale	4	Ghani et al., 1991; Chen, 2009
Time Saving	Interval Scale	Five Point Rating Likert Scale	4	Lee et al., 2003; Chen, 2009
Cost Reduction	Interval Scale	Five Point Rating Likert Scale	3	Lee et al., 2003; Chen, 2009
Attitude towards online shopping	Interval Scale	Five Point Rating Likert Scale	4	George, 2004
Subjective Norms	Interval Scale	Five Point Rating Likert Scale	4	George, 2004; Swinyard and Smith, 2003
Perceived Behavioral Control	Interval Scale	Five Point Rating Likert Scale	3	George, 2004; Forsythe et al., 2006
Domain Specific Innovativeness	Interval Scale	Five Point Rating Likert Scale	4	Citrin et al., 2000; Goldsmith and Hofacker, 1991; George, 2004; Lassar et al., 2005; Hui and Wan, 2004

4.8 Coding the Questionnaire

Coding is defined as assigning a code usually a number to each possible response to each question (Malhotra, 2006). Table 4.2 shows the coding of the questions used in this study.

Table 4.2: Coding of the Questionnaire

Questions Number	Description	Coding
Section:1 Demographic and General Information		
Q 1	Gender of the respondent	1 Male 2 Female
Q 2	Age of the respondent in year	1 Under 20 2 21-40 3 41-60 4 more than 60
Q 3	Education of respondents	1 Up to High School 2 College/Uni. Graduate 3 Post-Graduate 4 Other
Q 4	Annual Household Income of respondents	1 < than 2,00,000 2 2,00,001 to 5,00,000 3 5,00,001 to 10,00,000 4 > than 10,00,000
Q 5	Marital Status of the respondents	1 Married 2 Unmarried
Q 6	Possession of Computer	1 Yes 2 No
Q 7	Internet Connection at Home	1 Yes 2 No
Q 8	Place of use of Internet	1 Home 2 Office 3 Café 4 Other
Q 9	Level of Internet using skill	1 Skilled 2 Knowledgeable 3 Less Knowledgeable 4 Want to learn Internet Search and browsing Technique
Q 10	Duration of active use of Internet	1 < 6 Months 2 6 - 12 Months 3 1 - 3 Years 4 3 - 6 Years 5 More than 6 Years
Q 11	Purpose of Internet use	1 Browsing 2 Information search 3 E-mails 4 Chatting 5 Work 6 Social Networking 7 Blogging 8 Entertainment

		9 Buying 10 Banking 11 Product Search 12 Others
Q 12	Duration of use of Internet for shopping	1 < 6 Months 2 6 - 12 Months 3 1 - 3 Years 4 3 - 6 Years 5 More than 6 Years
Q 13	Product buy online	1 Books 2 Computer Accessories 3 Apparels and Footwear 4 Online Travel (Air/Train/Bus Ticket) 5 Consumer Electronics 6 Gifts/Flower 7 Hotel Reservation 8 Financial Products 9 Mobile phones 10 Insurance Premium 11 Utility Bill 12 Other
Q 14	Possession of Credit Card	1 Yes 2 No
Q 15	Mode of payment for online shopping	1 Credit Card 2 Debit Card 3 Cash Card 4 Cheque 5 Cash on delivery 6 Online Banking 7 Others
Q 16	Frequency of online shopping	1 1-2 2 3-5 3 6-10 4 11 or more
Section II, III and IV		
Statements	These sections contain statements measured on five Point Likert Scale	1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

4.9 Pre-testing the questionnaire

The purpose of the pretest is to identify if the questionnaire is able to provide all the information as expected by the researchers (Aaker et al., 2004). The idea is to determine if the respondents are comfortable in answering all the

questions, that there are no ambiguous questions, or that the time taken to complete the questionnaire is not too long.

For the current study, the questionnaire was developed by the researcher and the content and the format of the questionnaire were then discussed with the supervisor. At the end of the discussion, some changes were made in the questionnaire.

Twenty five respondents were invited to answer to the questionnaire at the presence of researcher. They were given the questionnaire and completed it. They were requested to comment on the underlying aspects to determine any difficulties; they might had in understanding and completing this questionnaire. Comments were taken into account for further questionnaire modification.

During the Pilot Study, I got views from respondents. I made following changes in questionnaire.

1. Researcher did not mention level of Agreement in likert scale from 1 to 5 (Strongly Disagree to Strongly Agree) in the questionnaire. Researcher had added same scale in revised questionnaire.
2. Questionnaire was prepared in 11 font size in 3 pages, but on the basis of suggestion, Researcher kept 12 font size and changed the structure of Questionnaire in 4 pages.
3. In the question no. 12, Researcher did not mention "Online Banking" as one of the modes of Payment. In the revised questionnaire, Researcher had added it.
4. In the questionnaire, Researcher included one question like "I feel that my credit-card details may be compromised and misused if I shop online". Researcher had replaced the word credit-card with card only.

4.10 Operational Definitions

The operational definitions of these variables are adopted from the previous studies and are presented in Table 4.3:

Table 4.3: Operational Definitions

S. N.	Variables	Operational Definition
1	Gender	Gender of the respondents: Male or Female
2	Age	Age of the respondents: Under 20; 21-40; 41-60; above 60
3	Education	Level of Education of respondents: Up to High School, College/Univ. Graduate, Post-Graduate, Other
4	Annual Income of Household	Annual income of household of respondents: Less than 2,00,000; 2,00,001 to 5,00,000; 5,00,001 to 10,00,000; more than 10,00,000
5	Marital Status	Marital Status of the respondents: Married or Unmarried
6	Place of Internet use	Use of Internet by respondents: Home, Office, café and others
7	Level of Internet Using skill	Level of Internet using skill of the respondents: Skilled, Knowledgeable, Less Knowledgeable, Want to learn Internet Search and browsing Technique
8	Own of Computer	Own of the computer by respondents: Yes or No
9	Internet Connection	Internet Connection possess by the respondents: Yes or No
10	Time duration for Internet use	Time duration for internet use by respondents: Less than 6 months, 6-12 months, 1-3 years, 3-6 years and more than 6 years
11	Purpose of Internet use	Purpose of internet use by the respondents: Browsing, Information search, E-mails, Chatting, Work, Social Networking, Blogging, Entertainment, Buying, Banking, Product Search, Others
12	Time duration for Internet use for shopping purpose	Time duration for Internet use for shopping purpose by respondents: Less than 6 months, 6-12 months, 1-3 years, 3-6 years and more than 6 years
13	Products buy online	Books, Computer Accessories, Apparels and Footwear, Online Travel (Air/Train/Bus Ticket), Consumer Electronics, Gifts/Flower, Hotel Reservation, Financial Products, Mobile phones, Insurance Premium, Utility Bill, Other
14	Possession of Credit card	Possession of Credit card by respondents: Yes or No
15	Mode of online	Mode of online shopping payment adopted by

	shopping payment	respondents: Credit Card, Debit Card, Cash Card, Cheque, Cash on delivery, Online Banking and Others	
16	Number of times products brought online in past 6 months	Number of times products brought online in past 6 months by the respondents 1-2; 3-5; 6-10; and more than 11	
S. N.	Variables	Operational Definition	Source
17	Perceived Risks	Perceived risks refer to the nature and amount of risk perceived by a consumer in contemplating a particular purchase decision.	(Cox and Rich, 1964)
18	Financial risk	Financial risk is a possibility with shopping online results in loss of money or other resources.	(Forsythe et al., 2006)
19	Product risk	Product risk is the risk of making a poor or inappropriate purchasing decision.	(Doolin et al., 2002)
20	Delivery risk	The probability that a purchase results in problems when delivering the product to the customer.	(Nicolas and Castillo, 2008)
21	Time Reduction	It refers to reduction in time for queuing, searching and selecting the product,	(Chung, 2001)
22	Cost Reduction	It refers to reduction in product, shipping and travel cost	(Rox, 2007)
23	Shopping Enjoyment	Shopping enjoyment refers to the fun and excitement observed by consumer during the shopping in this context during online shopping.	(Liu and Forsythe, 2011)
24	Shopping Habits	Shopping habits refer to an instinctive action generated as the same action has been performed in the past.	(Triandis, 1979)
25	Product return policy	It refers to the system which is adopted to return the product which is according to the order.	(Forsythe, 2006)
26	Service Infrastructure	It refers to the structure that assists in buying and getting product online.	(Lewis, 2006)
27	Trust	It refers to the reliance on a service provider.	(Zaltman and Moorman, 1988)
28	Non product	The risk of delayed and non-	(Lewis, 2006)

	delivery	delivery of product.	
29	Attitude towards online shopping	Attitude refers to a consumer's state of mind in terms of buying products or services on the Internet	(Yang et al., 2003)
30	Subjective Norm	It is an individual's perception of social norms, peer pressures, or relevant other's beliefs that he or she should or should not perform some behavior.	(Ajzen, 1985)
31	Perceived Behavior Control	It refers to the sense of uncertainty that influences behavior indirectly or directly through its impacts on intention.	(Ajzen 1985)
32	Innovativeness	Innovativeness means the desire to seek out the new and different. In the present context it refers to the individual's willingness, urge and acceptance of new technology (i.e., Internet). This is domain specific innovativeness.	(Hirschman, 1980)
33	Intention	Intention refers to an indication about the willingness of a person to perform a behavior.	(Ajzen, 1985)
34	Behavior	Behavior refers to the process of purchasing products or services via the Internet.	(Li and Zhang, 2002)

4.11 Conclusion

This chapter discusses the research methodology adopted for this study. This is briefly described below:

1. The Universe: The population comprised of shoppers of major cities of Gujarat who had bought products or service online.
2. Sampling technique: Snowball sampling
3. Sample size: 518 respondents
4. Method of data collection: Personal interview with structured questionnaire and mail questionnaire.
5. Data Analysis: Data collected were then analyzed using statistical techniques. Statistical measures used in data analysis were exploratory factor analysis, ANOVA and multiple regression analysis.
6. Software used for data analysis: Statistical Package for Social Study (SPSS) version 20 was used for data preparation and data analysis.