CHAPTER 5
RESEARCH METHODOLOGY

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Research is a scientific and systematic search for pertinent information on a specific topic. The formidable problem that follows the task of the defining the research problem is the preparation of the design of the research project, popularly known as the “research design”. Decision regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design.

5.1. Introduction

India is a developing country and Gujarat is one of the prominent states of India. Information Technology is a revolutionary change for Indian commercial and economic environment. A part of revolution of Information Technology, Electronic commerce plays an important role to conduct global (international) business. E-Commerce make obtainable and provides ways to exchange information between individuals, companies and countries and most important of each and every one, between computers. E-Commerce is the movement of business onto the WWW (World Wide Web). This movement has been broken up into two main sectors consisting of B2B (Business-to-Business) and B2C (Business-to-Consumer). E-Commerce refers to marketing, selling and buying goods and services over the Internet. It is very important to understand the role of consumer in use of internet based services. Consumers do have choices to purchase goods or to avail services. Firstly, consumers can buy personally by visiting retail store or any mall. Alternatively, consumers can buy through online facilities like internet & web sites.

My research is mainly focused to measure an impact of online services in consumption of goods and services. In short, I measured several important aspects which decide about the consumer’s online behavior. In Research Methodology section, I have mentioned about the population size, sample size, sample methodology, hypothesis, statistical tools etc.
5.2 Statement of the Research Problem

The title of the research study – “A Study To Measure The Impact of Electronic (Digital) Marketing Among The Gujarat Based Customers & Firms”

Day by day, uses of electronic (digital) marketing services are increasing drastically and dramatically in all over the country India. In this era of change, it is necessary to understand by all the firms to know about consumer’s online as well as offline buying patterns. In this research study, I measured consumers related several important attitudinal demographic, geographic and other variables to know about how it affects in buying behavior of them. It is important to know for all online marketers about all the new buying patterns of consumptions. The Internet is the most measurable and accountable of all communication media when it comes to business statistics. The power to be able to monitor the effectiveness and continually fine-tune Web sites, Internet marketing (eMarketing) campaigns and strategies is one of its most powerful strengths for any marketer. Online marketing is an all-inclusive term for marketing products and/or services online - and like many all-inclusive terms, Internet marketing means different things to different people. In any or most business, it is very important to advertise the products. Many small businesses work hard to attract clients and customers. Having a website and covering the web design basics is just one way to attract new customers or market the business. Hence, the Internet can be a powerful tool that can help advertise and market goods and services. But every good thing has a dark side. No doubt internet is a very useful tool but should not forget it is dark side. Al though we people know how it’s better than purchasing personally, we trust less on online transactions. Still some of the online transactions are not safe to be done in purchasing transactions. People hesitate to do any transactions online. It is a matter of trustworthiness while purchasing. I researched to understand these underlying considerations of electronic (digital) marketing among the consumers and firms of Gujarat State.
5.3 Research Questions of the Study

1. What is traditional marketing and e-Marketing? How e-Marketing is adopted in the present day marketing stature? Discuss with literature.
2. Does demographic and geographic variables affect in purchase goods online?
3. Is eMarketing preferred more than Traditional Marketing?
4. What is E-buying frequency?
5. Which are online services opted more by consumers?
6. Does the consumer feel safe while purchasing online?

5.4 Objectives of the Research Study

The study is undertaken with the following objectives:

1. To analyze the conceptual background of traditional marketing effectiveness as well as eMarketing effectiveness.
2. To identify the various eMarketing facilities & it is appropriateness.
3. To understand the online customer’s level of satisfaction & preferences.
4. To measure the consumer’s e-buying intensions and frequency.
5. To know the drawbacks of online transactions for online customers.

5.5 Universe of the Study

The universe of the study consists of consumers as well as firms from different sub-geographical urban areas of Gujarat state, India. Because the number of such consumers and firms throughout the country Gujarat is large, it may be beyond the capacity of the individual researcher to pursue the study on one hundred percent enumerative basis. Hence the study has been carried out on the basis of an adequate size of sampled consumers and firms in selected areas throughout the Gujarat State.
It is decided logically as well as rationally right number of respondents to be surveyed for research work. So, research work has been conducted on finite population of respondents of Gujarat.

5.6 Sample Design

Research design constitutes the blueprint for the data collection, measurement and analysis of data. In this study the researcher measured the impact of electronic (digital) marketing among the consumers of Gujarat state. This is a descriptive research study.

Research study describes the buying patterns of consumers. Descriptive research includes surveys & fact-finding enquiries of sampled respondents. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening.

5.6.1 Sampling Units

There is consideration of Gujarat State as population size of research study; there will be the sub-geographical urban areas of Gujarat State as sampling units. So, sampling units are city areas of Gujarat State like Ahmedabad, Baroda, Surat, and Rajkot.

5.6.2 Sampling Method

All the samples are selected haphazardly from the sub-geographical urban areas of the Gujarat State. So, area sampling method was adopted to find the list of respondents for the research study.

5.6.3 Sample Size

In research study, 500 respondents have been considered to measure an impact of electronic (digital) marketing among them. Since the focus of this study is on different attitudes and perceptions about online purchasing, only Internet savvy respondents are considered.
5.7 Sources of Data

To accomplish the objectives of the study, the researcher had to depend on both the primary and secondary data. Primary data are those which are collected afresh and for the first time and thus happen to be original in character. Secondary, data are those which have already been collected by someone else and which have already been passes on through the statistical process. The secondary data needed for the study were collected from the relevant online research thesis, online research articles, journals, books, magazines & websites. For the primary data, it was preferred to use a very structured and systematic way collect the replies from 500 respondents in the survey of research study. It was preferred to use an oral (enumeration) mode of communication with the respondents to ask and get the replies as per the predefined sequence. So, research fact finding tools have been managed accordingly the need of research requirements.

5.7.1 Questionnaire Development

A well-structured questionnaire was developed after an extensive review of Internet commerce literatures. The questionnaire has two parts. Part I consists of general information about respondents’ backgrounds. Part II consists of questions relating to attitudes and perceptions. Total numbers of 34 close ended questions have been asked to each respondent from the questionnaire. The respondents were requested to assess dichotomous questions, multi-dichotomous questions, ranking scale, constant sum scale questions, numerical scale questions and some of the scale items on a Likert point scale used for each statement where 1 = strongly disagree (not important at each and every one) and 5 = strongly agree (extremely important). Questionnaires were administered in English to consumers near office premises, shopping mall, colleges and Internet centers.

A pilot study and survey was conducted with a small one number of 25 respondents to arrive at the twelve factors that the consumer feels are significant and also to understand the degree to which respondents understand the questions.
5.8 Research Hypothesis

Research hypothesis provides the base to derive the research conclusions. It was preferred to test hypothesis at significance level ($\alpha$) of 5% and at confidence level (1-$\alpha$) of 95%. This allowed to fix the acceptance region is equal to 95% & the rejection region is equal to 5% to accept or reject the null hypothesis $H_0$ or alternative hypothesis $H_a$. Following is the list of hypothesis used to verify in this research study.

1. $H_0$: Gender is an independent of online purchase.
2. $H_0$: Age is an independent of the mode of online purchase.
3. $H_0$: Qualification is an independent of online purchase hours.
4. $H_0$: Occupation is independent of online purchase frequency.
5. $H_0$: Residential area is an independent of internet medium.
6. $H_0$: Experience is an independent of internet access.
7. $H_0$: Buying frequency is an independent of Income.
8. $H_0$: Market preference is an independent of Age.
9. $H_0$: Market preference is an independent of Gender.
10. $H_0$: eTrust is an independent of Age.
11. $H_0$: There is no significant difference between eBuying preference & Personal buying preference.
12. $H_0$: There is no significant difference between eCatalog preference & Catalog preference.
13. $H_0$: E-purchasing is independent of traditional purchasing.
14. $H_0$: There is no significant difference among the 12 eMarketing influencing factors.

5.9 Data Analysis and Statistical Tools

Statistical tools are useful in analysis of collected data. Statistical data helps to provide conclusion with numerical evidence. This is quantitative research not a qualitative research. Quantitative research takes up the hypothesis to verify and to provide the conclusions. Mainly two categories of statistical tools (a) Parametric Statistics (b) Non-parametric Statistics are used in this research study. Following tools are used in research study.
(a) Cross Tabulation Analysis  
(b) ANOVA (Analysis of Variance – One Factor)  
(c) Chi-square Contingency (Test of Independence)  
(d) Phi Correlation Test  
(e) Contingency Coefficient Test  
(f) Cramer’s V Test  
(g) One Sample Sign Test  
(h) Two Sample Sign Test  
(i) McNemer Test  
(j) Wilcoxon Matched Rank Test  
(k) Factor Analysis  

I used several kinds of charting as well as graphical techniques to analyze qualitative aspects and provided inference for each charts/graphs. The charts like pie, bar, line, etc. are used to analysis the consumer behavior aspect.

5.10 Supportive Technology  

There could be the support of information technology and computer to speed up calculations all the way with acceptable accuracy of research study. I used MS-Excel application software of MS-OFFICE package for sorting all the collected data with the numerical codes. I used Statistical Package of Social Science (SPSS) software with version 19 to process the collected data and give appropriate conclusions according the selected hypothesis of this research study.

5.11 Limitations of the Study  

The present study is based on primary statistics and facts taken from various respondents of Gujarat state by filling a prescribed questionnaire. The purity of the result is depends on the purity of the statistics and facts. Each conclusions and suggestions are given from the statistical analysis of the several coded data. The perspective of electronic (digital) marketing can be measured through several other ways.
The basic inherent limitations of figures, calculations, statistical analysis and human error are the limitations of the study. Much care and diligence have been exercised in making each calculation, statistical analysis and deriving conclusions from it but then also there can be some human error, which will make the study weaker to that extent. The study is carried out for limited numbers of sampling units only. It is hard and difficult to draw conclusions from sample for the whole Gujarat State. Hence the limitations of sample study and survey apply to this research also. The study is carried out for the Gujarat state to derive conclusions about the perspective of electronic (digital) marketing of fix number of selected respondents only. The concept of electronic (digital) marketing is universal. So the generalization cannot be feasible.