

Essentials of Marketing Research: Part I

Paurav Shukla



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Paurav Shukla

Essentials of Marketing Research: Part I

Approach, Research Design & Sampling

Essentials of Marketing Research: Part I: Approach, Research Design & Sampling

1st edition

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ISBN 978-87-7681-572-1

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Preface

The field of marketing has experienced unprecedented developments in the 20th century which have continued at no lesser pace in the 21st century. Within the last few decades shifts have been observed in the marketing thought, marketing practice and every direct and indirect issue and function related to marketing. The constant shift in the field has led to many interesting developments including the field of marketing research.

Despite the accessibility and prevalence of research in today's society, many people when asked, share common misperceptions about exactly what research is, how research can be used, what research can tell us, and the limitations of research. For some people, the term "research" conjures up images of scientists in laboratories watching guinea pig and chemicals experiments. When asked what is 'marketing research' people associate it with telemarketer surveys, or people approaching them at the local shopping mall to "just ask you a few questions about your shopping habits." In reality, these stereotypical examples of research are only a small part of what research comprises. It is therefore not surprising that many students (and managers) are unfamiliar with the various types of research methods, the basics of how research is conducted, what research can be used for, and the limits of using research to answer questions and acquire new knowledge.

As an active researcher, academic, consultant and trainer, I find the students and managers I interact with struggling to understand the various issues associated with marketing research. When probed they express three major concerns: 1. incapability to comprehend research language used in most books; 2. the coverage of most books and its usage in real life; and 3. Relevance of the examples used. Most books in the subject area are comprehensive and cover the subject in minute details but majority of the time readers require an overview and not the most in-depth understanding of a specific phenomenon. The heavy emphasis on technical language and the little found use and relevance of the books disengages the readers from purchasing, reading and understanding the research books and in turn these readers remain distant from the research process.

Therefore, there seems a need for a research book which can cover the relevant issues in a simple and palatable form for the readers and make them engaged in the process of research. This book attempts to attend to the above stated issues by introducing technical and analytical concepts in a very accessible manner. Some of the readers may get really interested in the field of marketing research after reading this book and so this book can be called a primer and simple background for understanding advanced technical textbooks in the field.

Every attempt has been made to keep this compendium simple and accessible however sometimes the use of jargons (technical terms) becomes necessary. In such cases, examples have also been added to make it easier for you to understand the phenomenon.

At this juncture, I would like to thank Kristin and Johan at Ventus publications who motivated me for this endeavour from conceptualization to concretization. I also take this opportunity to thank my students, friends, and colleagues, who have created this learning experience for me. Their discussions, remarks and debates have helped me learn and share this learning with you via this compendium. My special thanks to Ekta, my wife, without whose sacrifice and constant support this compendium would not have seen the light of the day. Hence, I dedicate the book to her.

Brighton, 29 Oct, 2008

Paurav SHUKLA

1 Introduction to marketing research: Scientific research approach and Problem definition

Chapter summary

The chapter will provide understanding towards the nature and scope of marketing research and the scientific process involved. It will also discuss the role of research in designing and implementing successful marketing programmes. It will explain the role of marketing research in marketing information systems and decision support systems and provide the conceptual framework of marketing research process. This chapter will also explain the process of defining a problem in marketing research and its importance. It will focus on describing the tasks involved in defining a marketing research problem and also explain in detail the nature and content of various components of a defining a correct problem. The chapter will help gain understanding of practitioners' view of marketing research and the complexities involved in the overall process of marketing research. At last, the chapter will focus on the issues marketing research cannot deal with and why decision makers need to be cautious when interpreting results of marketing research.

1.1 Introduction

Broadly defined, the purpose of research is to answer questions and acquire new knowledge. This process of asking and answering question which in turn assists us in acquiring new knowledge (or in simple terms the process of research) is often viewed as the pillar of scientific progress in any field. Research is the primary tool used in virtually all areas of science to expand the frontiers of knowledge. For example, research is used in such diverse scientific fields as psychology, biology, medicine, physics, and botany, to name just a few of the areas in which research makes valuable contributions to what we know and how we think about things. Among other things, by conducting research, researchers attempt to reduce the complexity of problems, discover the relationship between seemingly unrelated events, and ultimately improve the way we live.

Although research studies are conducted in many diverse fields of science, the general goals and defining characteristics of research are typically the same across disciplines. For example, across all types of science, research is frequently used for describing an event, discovering the relationship between two or more events, or making predictions about future events. In short, research can be used for the purposes of description, explanation, and prediction, all of which make important and valuable contributions to the expansion of what we know and how we live our lives.

In recent years, the results of various research studies have taken centre stage in the popular media. No longer is research the private domain of research professors and scientists wearing white lab coats. To the contrary, the results of research studies are frequently reported on the local evening news, the Internet, and various other media outlets that are accessible to both scientists and non-scientists alike. For example, in recent years, we have all become familiar with research regarding the effects of stress on our psychological well-being and work-life balance issues, the health benefits of a low cholesterol diet, which automobiles are safest to drive, and the damaging effects of pollution and climate change. We may have even become familiar with research studies regarding the human genome, the Mars Land Rover, the use of stem cells, and genetic cloning. Not too long ago, it was unlikely that the results of such highly scientific research studies would have been shared with the general public to such a great extent and the consumers would be aware of such phenomenon and would have a viewpoint on the same.

A widely quoted definition of marketing was proposed by the American Marketing Association (AMA) in 1985 that “marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational objectives”. The definition was modified further in 2004 by stating that “marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders”. The marketing concept requires that customer satisfaction rather than profit maximization be the goal of an organization. In other words, the organization should be consumer oriented and should try to understand consumers’ requirements and satisfy them quickly and efficiently, in ways that are beneficial to both the consumer and the organization. This means that any organization should try to obtain information on consumer needs and gather marketing intelligence to help satisfy these needs efficiently. Research would be the fundamental tool to achieve that efficiency and effectiveness.

The complexity in the marketplace has increased many folds in recent years and related decision making also has got complex by the day. This dynamism of the market affects marketing continuously because of the continuous change in the external environment. The decision maker is finding it difficult to take decision in today’s environment because of such changes. For example, external factors like changing character of the market, growing concern for environmental quality, emergence of activist consumerism groups, increase in competition, growing shortage of raw materials, volatility of the political relationships, rapidly changing technology and shift in international economy power give rise to the growing difficulties in making efficient marketing decisions.

As these complexities in market increase, the decision makers feel increasing need for understanding the market and its players be it customers, suppliers or any other stakeholder. Managers must know who their customers are, what they want, what their competitors are doing, if they are to make sound decisions.¹ Due to the increase in complexity each right or wrong decision may cost company a fortune.

1.2 Marketing Research

Marketing research is a critical part of such marketing decision making; it helps in improving management decision making by providing relevant, accurate, and timely information. Every decision poses unique needs for information, and relevant strategies can be developed based on the information gathered through marketing research in action. Too often, marketing research is considered narrowly as the gathering and analyzing of data for someone else to use. However, firms can actually achieve and sustain a competitive advantage through the creative use of market information generated by marketing research. Hence, marketing research is defined as information input to decisions, not simply the evaluation of decisions that have been made. Market research alone, however, does not guarantee success; the intelligent use of market research is the key to business achievement. A competitive edge is more the result of how information is used than of who does or does not have the information.

1.2.1 The need for marketing research

As stated above understanding customers and more importantly identifying who they are, what they want in terms of products or services, how and where they want it to be available and delivered and at what price they will purchase it are some of the most important decision criteria a manager must be aware of. However, due to the globalised and very complicated system of branch offices, wholesalers, and retailers a barrier is created between managers and their widely scattered consumers. Therefore, most managers are far removed from their customers – the individuals who in the final analysis determine success or failure of an organization.²

Organizations worldwide lose half their customers every five years. But most managers fail to address that fact head-on by striving to learn why those defectors left.³ More than two – thirds of organizations fail to satisfy superior customer needs because their perceptions of what their customers really want are far from reality.⁴ It is not because they don't care about the customer's needs; but they try to reach the wrong end with the wrong mean. More often than not, companies conduct research to learn what went wrong. After-the-fact research is the most common type of research in world.⁵

From the above discussion it can be observed that, marketing research can help organizations in various decision making processes which can be put into two separate strands; (a) problem identification research and (b) problem solving research. The problem identification research is undertaken to help identify problems that are not necessarily apparent on the surface and yet exist or likely to arise in the future. On the other hand, problem solving research is undertaken to help solve specific research problems. The figure below provides classification of problem identification and problem solving research.

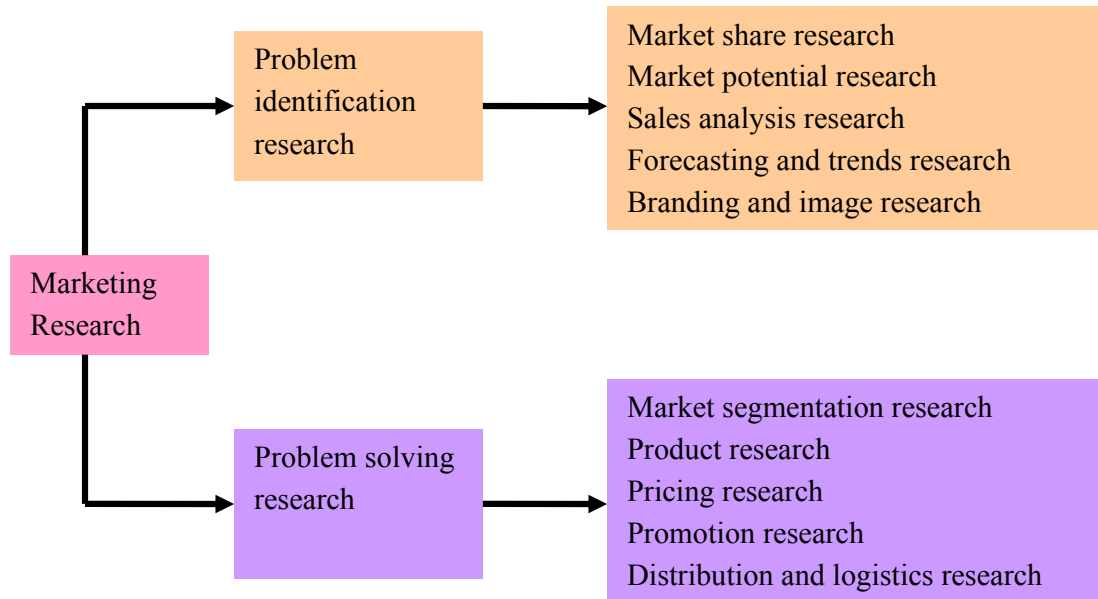


Figure 1.1: Classification of marketing research

Adapted from Malhotra, N. (2004), *Marketing research: An applied orientation*, Pearson Education, New Jersey.

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Classifying marketing research aids our understanding from theoretical as well as practice perspectives. However, there are no water-tight compartments between these two strands of research. A research project may involve both problem identification and a problem solving research simultaneously.

For example, a research project focusing on consumers' preference of green tea in the UK provided results on the following:

1. Analysis of market trends as well as global production of green tea, and the growing importance of green tea in comparison to black variants and UK green tea consumption with forecasts to 2007. (Problem identification research)
2. The key health benefits attributed to green tea and awareness of such benefits among various consumer groups according their age, gender, income class and such other demographics. (Problem solving research)
3. Profiles of more than 30 tea players offering green tea in the UK market. (Problem identification research)
4. Consumer choice process and preferences in buying tea and related products. (Problem solving research)

The example demonstrates that a single marketing research can encompass both problem identification and problem solving research. Furthermore, the research process involving both these research strands is common in nature.

1.2.2 Marketing research defined

The European Society for Opinion and Marketing Research (ESOMAR) defines marketing research as follows:

Marketing research is a key element within the total field of marketing information. It is the consumer, customer and public to the marketer through information which is used to identify and define marketing opportunities and problems; to generate, refine and evaluate marketing actions; and to improve understanding of marketing as a process and of the ways in which specific marketing activities can be made more effective.

Marketing research specifies the information required to address these issues; designs the method for collecting information; manages and implements the data collection process; analyses the results; and communicates the findings and their implications.

There are several aspects of this definition which are important in understanding marketing research as well as its role in the real life environment. Firstly we need to note that marketing research is one of the key elements of the total marketing information domain. That means there are other key elements also which help in decision making process and marketing research is not the only element which can assist in the overall process.

We also need to understand the focus provided on all the players involved in the market: Customer (a person who buys the product or services) the consumer (a person who consumes the product or services) and the public (an individual or group who is directly or indirectly affected by the buying or consumption of the product or services). Marketing research provides information regarding all these players to the manager using which the manager can make the right decision which create win-all situation.

Furthermore, we can also observe the way in which marketing research can assist a manager in decision making. Marketing decisions involve issues that range from fundamental shifts in the positioning of a business or the decision to enter a new market to narrow tactical questions of how best to stock a grocery shelf. The context for these decisions is the market planning process, which proceeds sequentially through four stages; situation analysis, strategy development, marketing program development, and implementation.⁶ During each stage, marketing research makes a major contribution to clarifying and resolving issues.

The definition also provides a clear understanding of how marketing research process takes place. The process is founded upon an understanding of the marketing decision needing support.⁷ The most important aspect here is to define a correct problem. Many times loosely defined problems lead to results which would not help in final decision making. For example, there could be hundreds of reasons behind a sales decline. If the manager defines the problem to be 'sales decline' the research will not lead to the correct identification of problem/opportunity. The manager has to provide further focus to the problem statement such as: what are the factors which lead to decline in sales?

If the problem is defined correctly the right kind of information can be gathered through employment of range of appropriate data collection methods. The data will then be analysed, interpreted and inferences will be drawn and finally the finding and their implications will assist the marketer in correct decision making.

The problems addressed by marketing research are as varied as its methods. Some of the most common include forecasting, buyer analysis, segmentation, choice processes and information processing as well as factor choice and testing.⁸ It is also interesting to note here that how marketing research differs in various situations. A consumer preference study regarding a new choice of soft drink may involve large sample surveys or experiments as well as employment of advance statistical methods. On the other hand, a study understanding the buying behaviour of consumers related to soft drink may involve a longitudinal study (a study carried out over a long period of time) or a consumer panel. Research in the developing nations is most likely to be a struggle to collect reliable data.^{9, 10}

1.3 Scientific marketing research process

In the above discussion we observed how marketing research can assist managers in taking relevant decisions. However, the question here is that how the information required for the marketing research can be obtained? The questions arises because much of the marketing information is difficult to come by, expensive to obtain and in case of emerging markets sometimes it does not even exist. Furthermore, the manager also would like to know the optimal process to find and utilize this information? In this section we will discuss about the scientific process of marketing research.

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Before delving deep into the marketing research process there surely is a need to define the idea of scientific method and process. The development of the scientific method is usually credited to Roger Bacon, a philosopher and scientist from 13th century England; although some argue that the Italian scientist Galileo Galilee played an important role in formulating the scientific method. Later contributions to the scientific method were made by the philosophers Francis Bacon and René Descartes. Although some disagreement exists regarding the exact characteristics of the scientific method, most agree that it is characterized by the following elements:

- Empirical approach
- Observations
- Questions
- Hypotheses
- Experiments
- Analyses
- Conclusions
- Replication

There has been some disagreement among researchers over the years regarding the elements that compose the scientific method. In fact, some researchers have even argued that it is impossible to define a universal approach to scientific investigation. Nevertheless, for over 100 years, the scientific method has been the defining feature of scientific research. Researchers generally agree that the scientific method is composed of the above mentioned key elements.

Before proceeding any further, one word of caution is necessary. In the brief discussion of the scientific marketing research process that follows, there will be several new terms and concepts that are related to scientific marketing research process. Do not be intimidated if you are unfamiliar with some of the words in this discussion. The purpose of the following is simply to set the stage for the chapters that follow, and each of the term would explained in the later chapters of the book.

Most marketing research involves obtaining information from marketplace directly or indirectly and therefore the common ground is in the realm of method and technique. The scientific marketing research process can therefore be defined in five stages. (1) Problem or opportunity identification; (2) Exploratory research; (3) Hypothesis development; (4) Conclusive research and; (5) Result. Marketing research being a continuous process most times the results provide a new perspective but at the same time point towards further research required to improve the understanding of the dynamic marketplace. The process is explained figuratively in the figure below.

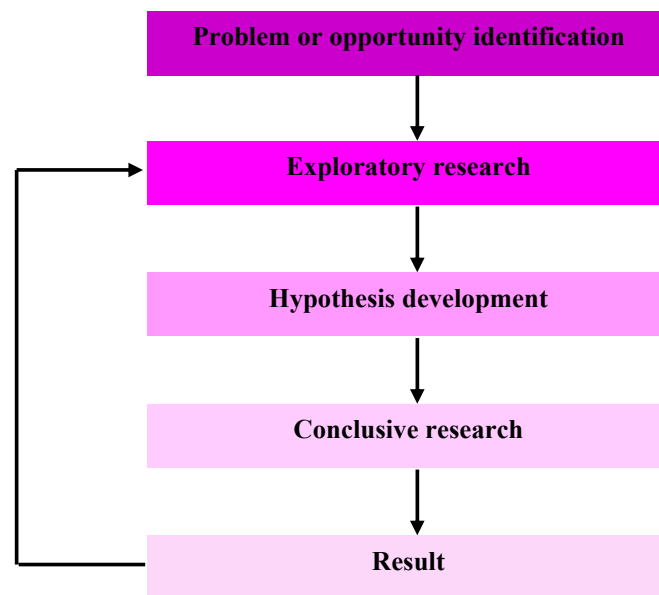


Figure 1.2: The marketing research process

The problem or opportunity identification stage relates to managements' understanding of the market forces and interpretation. This will become the basis for the exploratory research which is conducted to explore and gather further insight and ideas specific to the problem or opportunity. Exploratory research is generally found to be qualitative. The exploration into the problem or opportunity will lead a researcher to ideas which can be further defined and measured quantitatively. This stage is called hypothesis development. The hypothesis is tested using the conclusive research through a larger sample size. Conclusive research tends to be largely quantitative. The conclusive research will lead to the final results which as stated earlier will lead to further exploration. We will discuss each of the above steps in details in coming chapters.

1.3.1 Phase wise marketing research process

Figure 2 above provides a brief illustration of the marketing research process from scientific perspective. However, to a novice research it would be difficult to understand how these can be actually conducted in the real life scenario. Figure 3 below explains the marketing research process implementation step by step.

Various researchers provide different diagrammatic explanation for the marketing research process. However, the implementation of marketing research project will largely follow the process mentioned in figure 3. At this juncture, it is also necessary to understand that in most instances researchers would follow the four phases in order, although, the individual steps may be shifted or omitted. We will discuss such issues in details in later chapters.

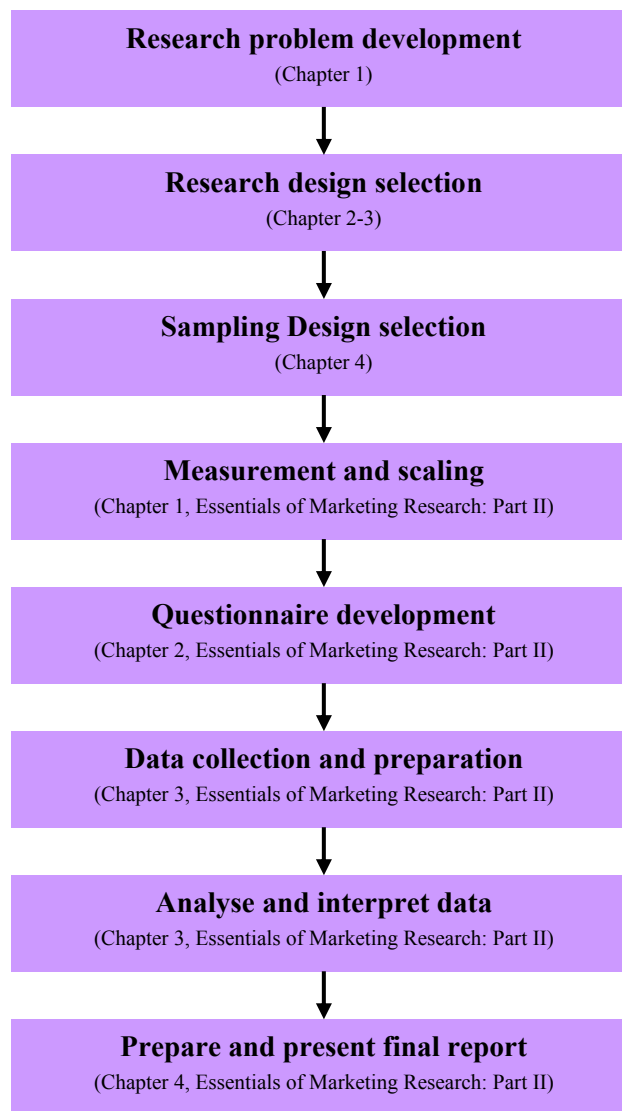


Figure 1.3: Phase wise marketing research process

This book has been developed with the practical marketing research process in mind and so the chapter structure also follows the marketing research process structure. Chapter 1 focuses on the marketing research process and research problem identification from management dilemma. Chapters 2 and 3 focus on research design both exploratory and conclusive to create a blueprint of the research project. Chapter 4 deals with sampling as a phenomenon which is followed by a chapter on measurement and scaling (chapter 1, *Essentials of Marketing Research: Part II – Measurement, Questionnaires, Analysis & Reporting*). Chapter 2 (*Essentials of Marketing Research: Part II – Measurement, Questionnaires, Analysis & Reporting*) will discuss questionnaire development in details followed by data collection and preliminary data analysis (chapter 3, *Essentials of Marketing Research: Part II – Measurement, Questionnaires, Analysis & Reporting*). The last chapter (*Essentials of Marketing Research: Part II – Measurement, Questionnaires, Analysis & Reporting*) focuses on report preparation and presentation issues.

1.4 Defining a problem

Research in general is related to queries and queries arise when we observe some anomaly (or inconsistency). This anomaly can provide the basis for a problem or opportunity. Thus, defining a research problem or opportunity correctly is of major importance in any research. If the problem defined is not exhaustive the research may lead to incorrect or in some cases contrasting findings. In the following discussion we will touch upon the issue of how can correct problem definition be achieved and how it can enhance the chances of making the 'right' marketing decision?

1.4.1 The importance of defining a right problem

An old adage says, "A problem well defined is half solved". Defining a problem in general circumstance is not very hard as we keep on identifying right problems. Such as, while driving (Which way to drive? Not to change the lanes suddenly etc.), walking (Walking in a way without hitting any obstacle), eating (Eating food which we are comfortable with, Choice of places to eat, etc.), breathing (yes, even to breath or not to breath is a choice like, while underwater we define correctly that we should not breath without the right gear) and so on.

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We can answer such questions easily because every decision has a pattern involved in it. The simplest of decision situation can be characterized by the following condition:

1. A decision maker is operating in a set but dynamic environment in which there is a problem. (*underwater environment and breathing as a problem*)
2. There are at least two courses of action to choose from. (*breath or not to breath*)
3. Any of the choices made regarding the course of action will lead to two possible outcomes of that choice and the decision maker prefers one over the other. (*breathing: death by drowning; not breathing: bringing oneself on surface and survival*)
4. There is a chance, but not equal chance, that each course of action will lead to the desired outcome. If the chances are equal, the choice does not matter.¹¹

The decision situation and defining of problem may sound easy in most situations; however, problem definition becomes sticky in most business situations because both marketing managers and marketing researchers often flounder in answering several important questions. This is because the decision is not taken by a single person but generally by a team and so it is important to have agreement on various issues for defining a 'right' problem. Following are the questions which must be asked before a marketing research problem is identified.

1. Have the decision makers and researchers framed an initial question and looked at the alternatives clearly? Is there an agreement on the initial question and the alternatives among most participants?
2. Is there agreement on the basis for selecting one alternative over others? Have acceptable criteria been developed?
3. What consequences would a 'wrong' decision bring upon?
4. Is there a serious disagreement among the team members with regards to choice of research alternatives and their adoption?

If the answers to all four questions are yes, marketing research information is needed to reduce the chance of making the wrong decision. In most failed research exercises it is observed that the team members did not define the answers to the first two questions clearly. If the answer to question three leads to serious consequences and similarly in the case of question four serious disagreements among the team members are found the problem definition needs to be revisited. An example of the same is explained below.

1.4.2 Converting management dilemma into research question

One of the largest cinema chains in the UK faced with a problem of declining audiences. The team in the first meeting came up with the initial problem statement as ‘to discover why cinema audiences are declining.’ However, several members of the team were unhappy and stated that research into this problem will lead to vague answers and unimplementable results. An alternative statement of problem was developed ‘to identify ways in which more people could be attracted to attend the cinema.’

Although the two problem statements look quite similar, the outcomes of the research defined after revision will be action oriented in the case of the findings of the second statement, which would not be possible with the general statement defined as the former problem statement. The problem defined at first might bring answers which are beyond the remit of influence for the cinema chain managers. For example, if people stated that the movies now a days are not matching their tastes, it can’t be acted upon by the management of the chain. However, with the second research problem the management can reliably know what the people want from a cinema theatre and such improvements can assist the management in attracting more people towards the cinema.

The above example demonstrates the importance of defining the right problem and how it can have a huge effect on the outcome of any research. The major question facing most managers is how to convert a management dilemma into a researchable problem. In real life situation it is not hard to define a management dilemma, however, the difficult thing is to identify a single dilemma on which to focus. As discussed above, choosing a wrong or incorrectly defined management dilemma will result in waste of resources as well as may lead to wrong decisions costing further on the company’s bottom-line. The figure below shows the process of formulating a research question out of management dilemma. It also provides the factors to be considered by a researcher in the process of developing research question.

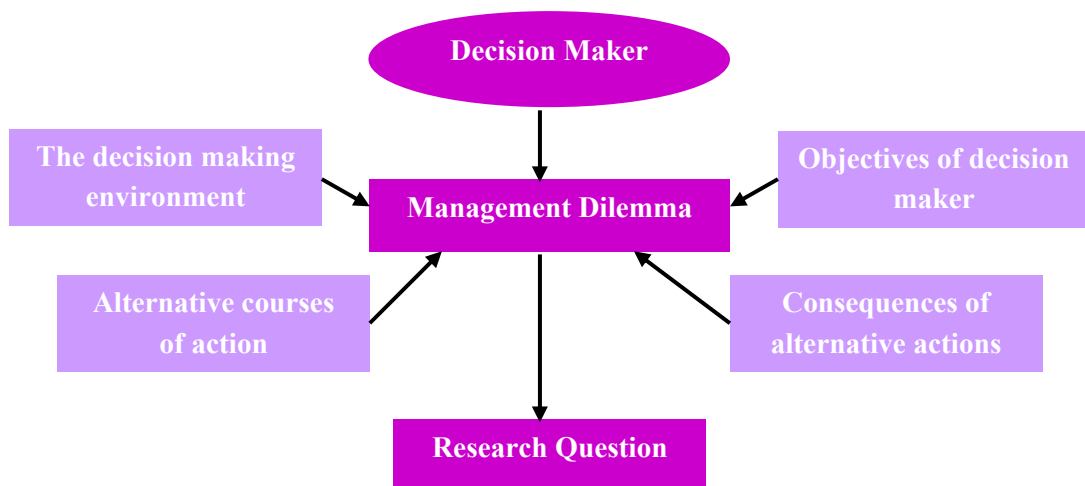


Figure 1.4: Process of developing research question

The above figure explains the process of developing a clearer research question. A manager when faced with a dilemma is surrounded by various elements of decision making namely: (1) The decision making environment; (2) Objectives of decision maker; (3) Alternative courses of action and (4) Consequences of alternative actions. If the research question is developed without keeping the above four elements in mind there are all chances that there would a bias in the early stage of the research which will carry itself further in the total process and may lead to wrong conclusion.

For example, a private radio station with declining listener numbers wanted to understand consumers' listening preferences and a team of researchers were asked to prepare a research proposal for the same. The entrepreneur in charge of the operations at the station stated to the researchers that he already knew what the consumers wanted and wanted the researchers to work on a project the way he had planned it.

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The above situation is observed quite often in real life situations where the managers have already made up their mind regarding the research and its findings and so the research in such cases becomes a futile exercise. Being unbiased through the complete research project is one of the most important aspects of marketing research. Many times, real objectives of conducting the research are seldom exposed to the researcher (most to do with researcher being an outside organization and company not intending to divulge confidential information). Therefore, it becomes utmost important for the researcher to probe deeper and bring on surface the real objectives of the research. One effective technique for uncovering the objectives is to confront the decision maker with expected outcomes of the research and asking the decisive course of action from the decision maker.

Research can be properly designed only when the alternative course of action being considered are known. The more obvious course of action is generally provided to the researcher but it is the researcher's duty to probe deeper and find out other alternatives which are not being communicated by the decision maker. Quite often the researcher will not be informed of some of the options being considered. The researcher should check to see that all implicit options have been made explicit,¹² since it is important that the research be relevant to all alternatives. Researcher at times must adopt the role of detective in order to discover the hidden agendas and alternatives lurking beneath the surface in any decision situation.¹³ If a critical piece of information remains undiscovered, even the most sophisticated research techniques cannot solve the problem. In the case of the radio firm it was found later that the managers were forcing the researchers to conduct the research in a certain format as the plan was to sell of the business using the research results.

A great deal of marketing research is intended to determine the consequences of alternative course of action. To achieve success in the marketplace a decision maker has to continuously balance the strategy against the changing micro and macro environmental factors. Marketing research is undertaken by organizations to accurately assess the alternative courses of actions and provide support to the decision maker in the process of decision making. However, many times due to various market pressures an organization pursues a blinded version of marketing research without understanding the consequences of the same and could face trouble.

A detailed understanding of the decision making environment; objectives of the decision maker; alternative courses of action and consequences of alternative actions would enable researchers to translate the management dilemma into an accurate research problem.

1.5 What marketing research cannot do?

All the above discussion was focused on how marketing research can be effectively used in the real life marketing environment. However, this should not make one feel that marketing research can provide solutions to every management problem. If manager is uncertain of a market phenomenon and cannot find support at hand within the organizational knowledge pool, marketing research can assist in providing support and reduce the risk in taking an intuition based decision. However, many marketers recount cases where the use of marketing research has resulted in failure or where decisions based on gut feeling or intuition have proved to be successful.¹⁴ Given the above critique of marketing research, it is fair to point that there are cases where the use of marketing research has resulted in poor decision making or even failure. There are two areas of misconception of the role of marketing research.¹⁵

Marketing research cannot provide decisions. Marketing research's role is not to make decisions. Rather, marketing research gathers data on an uncertain and dynamic marketplace and rearranges it into a form which can assist the decision maker in understanding the phenomenon better and take good decisions on the basis of the same. Realistically, it has been observed that research recommendations are often used as a stepping stone for decision making after the appropriate approval is granted.

Marketing research cannot guarantee success. Marketing research at best can improve the odds of making a correct decision. Anyone who expects to eliminate the possibility of a failure by conducting marketing research is both unrealistic and likely to be disappointed. The real value of research however lies in the improvement of the long term decision making and improved bottom-line performance.

London's campaign to win the 2012 Olympics has been panned as being out of step with the British public and told that the effort might have had more success with 'Beat the French', rather than the 'Back the Bid' slogan says a report from ad agency Publicis. The report from Publicis highlights public petulance and impatience as an increasingly effective marketing tool. According to the report, 77% of British argue more, 44% enjoy ranting and a whopping 92% agree that more people are willing to say what they think rather than hold their silence, which has in the past been seen as a typical British consumer trait. The report goes on to say that through the act of petulance, consumers are reacting "against" not "for" things, demanding honesty and choice on their terms rather than being told what to do.¹⁶

The above mentioned example provides an interesting insight into what researchers said and what managers did. While researchers suggested for the London Olympic bid 2012 the public message to be 'beat the French' rather than 'back the bid' the managers kept the later message flowing and London won the bid for the 2012 Olympic.

1.6 Conclusion

Marketing is becoming a highly challenging task for the marketers in today's dynamic and ever changing environment. It is becoming more and more difficult for marketing managers to get the right products or services for the target consumers at the right place with a right price using the right promotion due to various internal as well as external forces prevailing within the organization and the market.

Marketing research provides a ray of certainty in the uncertain marketplace if the managers follow the marketing research process through the various phases of marketing decision making within the organization. It plays a key role in providing the information for managers to shape the marketing mix. Moreover, the interaction between the market researcher and manager also has to be focused upon and there must be a continuous interaction between both parties.

Defining a correct problem is an utmost importance task in conducting marketing research. If the team involved in marketing research project fails to define a correct research problem from the existing research dilemma there are chances that the research may lead to wrong conclusion which in turn can hurt a company's bottomline.

Scientific marketing research process which resembles with the decision making process also sometimes is misunderstood by managers as decision making tool itself. Marketing research should be used as a decision support tool. Furthermore, marketing research cannot guarantee success but it can reduce the chances of failure if used in correct manner.



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2 Exploratory research design

2.1 Chapter summary

This chapter will start with defining research design, classifying various designs and explaining the difference between exploratory and conclusive research designs by comparing and contrasting the basic research designs: exploratory, descriptive and causal. It will explain how the problem definition is linked with the selection of research design and will then explore the exploratory research design in detail. It will provide classification of exploratory research design and discuss important research techniques such as in-depth interviews, focus groups and projective techniques.

2.2 Research design and its importance in research

The term 'research design' is used in variety of ways by researchers. It is referred as a master-plan, blueprint, and even as a sequence of research tasks and activities. Research design in simple terms is a plan of the methods and procedures that is used by researchers to collect and analyze the data needed by the manager. The research design provides a plan of how the researcher will go about answering the research question(s) defined by the manager and researcher together (clearly defining the problem into a researchable question is extremely important). The research design also contains clear objectives, derived from research question(s), specify the information sources from which data will be collected, the type of data, the design technique(s) (survey, observation, experimentation etc.), the sampling methodology and procedures, the schedule and the budget. There should be clear justification with regard to the research design based on the research question and objectives.

As stated above, the purpose of any research design is to obtain evidence which addresses the research question and objectives. Usually, however, there are a number of ways in which it can be achieved. Although, every research question is unique, most research objectives can be met by using one of the three types of research designs: exploratory, descriptive and causal. In real-life situations, while addressing research question and objectives a researcher needs to make number of trade-offs with regard to various elements of research design.

Research design holds all the parts and phases of the research project together. A poorly developed design fails to provide accurate answers to the research question under investigation and in turn does not assist the manager in the decision making process. The foundations of research design are firmly based on scientific rigour and objectivity. Any personal, procedural, or methodological bias involved in research design will have an impact on entire research process. Therefore, developing a sound research design is an extremely important aspect of any research project.

2.3 Classification and differences between research designs

Researchers have mixed different styles of inquiries for many years. They have recognized that all methods have their inherent strengths and weaknesses. Most researchers broadly classify research designs into two types: exploratory and conclusive. Furthermore, some researchers classify conclusive research designs as descriptive or causal. Therefore, there are 3 major classifications of research designs namely; exploratory, descriptive and causal.

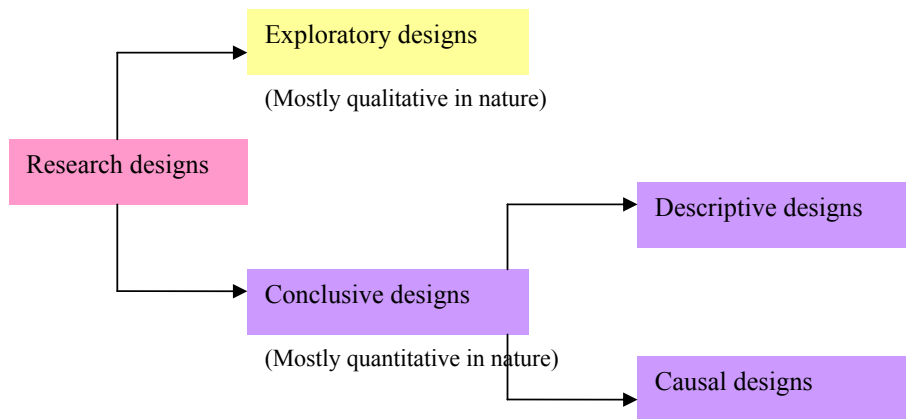


Figure 2.1: Classification of research designs

The research designs involve two types of data collection: secondary and primary. Secondary data involves collection of data that already exists. These data may be collected and assembled for some research problem situation other than the current situation. Secondary data and analysis is useful at all stages of the marketing research process. However, it is particularly useful at the problem definition and exploratory research design stage. Secondary data mostly involves desk or library research and can serve managers’ needs for information on their markets, competitors, customers and overall environment. In some cases if done thoroughly, secondary data collection can solve the research problem at hand without requiring more expensive stage of primary data collection. The table below provides examples of several secondary data sources. Please remember the table below provides a generic idea and is not an exhaustive list.

Data source	Example
Internal data	In company reports, memos etc.
Syndicated data	Syndication services like AC Nielson
Expert advice	Newspaper, interviews, reports
Internet	Various search engines, portals and websites
Industry data	Industry or trade associations
Macro data	Government and international publications
Market research report	Independent market research firms

Table 2.1: Secondary data sources

While secondary data is collected from various established sources, primary data are originated by the researcher for the specific purpose of addressing the problem at hand. Primary data may be qualitative or quantitative in nature. As stated in chapter 1, the distinction between qualitative and quantitative research data parallels with distinction between exploratory and conclusive research.

In recent years, qualitative research has come to refer to selected research methods used in exploratory research designs. One of the major aims of qualitative research is to gain preliminary insights into decision problems and opportunities. This technique of data collection focuses on collection of data from a relatively small number of respondents by asking questions and observing behaviour. In qualitative research most questions are open-ended in nature. Advantages of qualitative methods include: economic and timely data collection; rich data; accuracy of recording market behaviour; and preliminary insights. On the other hand, disadvantages of qualitative methods include: lack of generalizability, reliability and validity.



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Quantitative research methods, seek to quantify the data and typically apply some statistical analysis. They put heavy emphasis on using formalised standard questions and predetermined response options in questionnaires or surveys administered to large number of respondents. Today, quantitative research is commonly associated with surveys and experiments and is still considered the mainstay of the research industry for collecting marketing data.¹⁷ Quantitative research designs are more directly related to descriptive and causal designs than the exploratory design. The main objective of quantitative research is to provide specific facts which can help decision maker take an informed decision. Furthermore, it provides insights relating to relationships between phenomena. Due to large sample size and statistical rigour quantitative research provides advantage in terms of generalizability, reliability and validity however, is time consuming and at times very costly.

2.4 Exploratory research design

As the term suggests, exploratory research design deals with exploring into the phenomenon. In case of marketing research, it is used in cases when the problem must be defined more precisely, and to gain additional insights before an approach can be developed. It is not used most times to generate a course of action for decision making. At the exploratory design stage, the information is loosely defined. Exploratory research design focuses on collecting either secondary or primary data using an unstructured format or informal procedures to interpret them. Among all the three classified research designs above, exploratory research designs incorporates the least amount of scientific method and rigour because of aims and structure. Some examples of exploratory research designs include in-depth interviews, focus groups, and projective techniques. We shall discuss each of them in details.

2.4.1 In-depth interviews

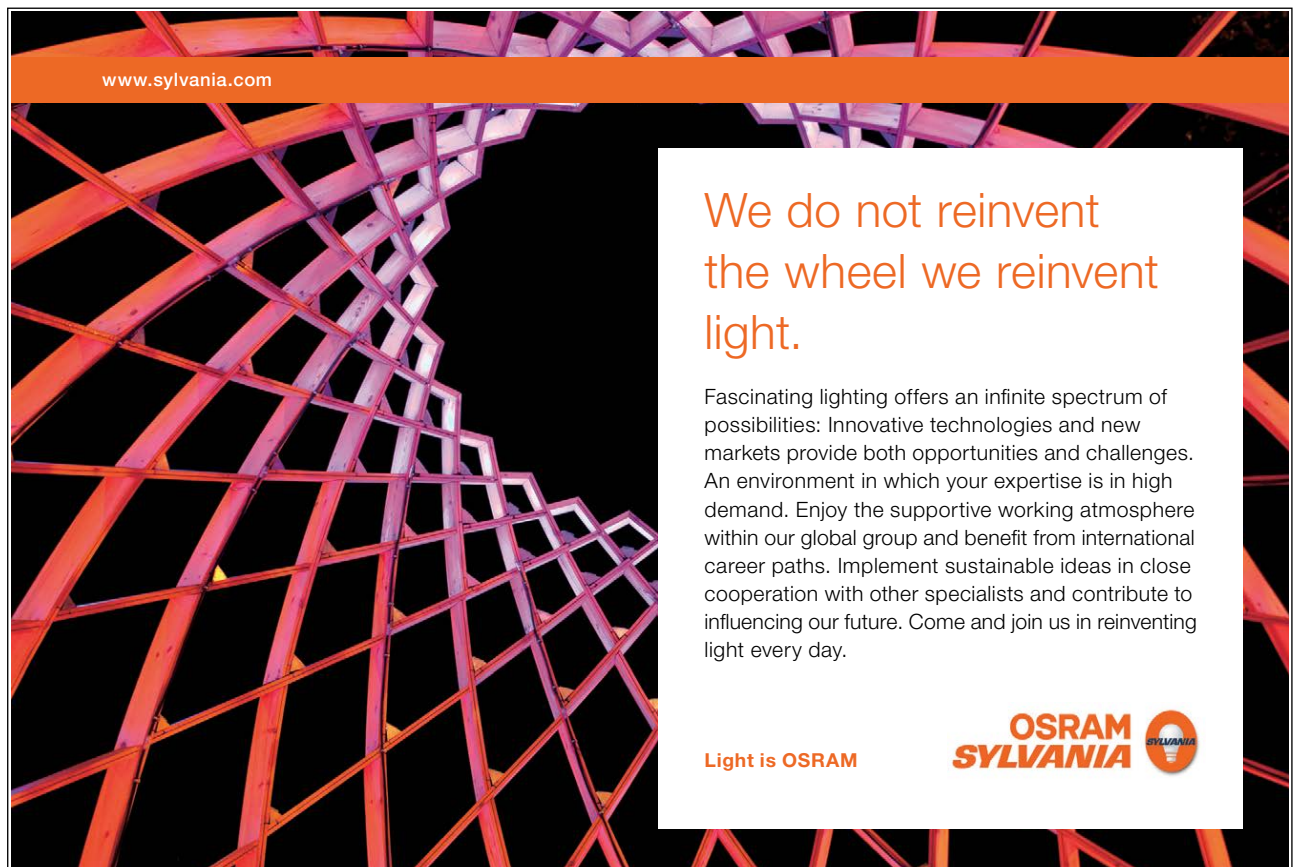
In-depth interviews are an unstructured and direct technique of obtaining insights in which a single respondent is probed by a skilled interviewer to uncover underlying motivations, beliefs, attitudes and feelings on the topic of enquiry.¹⁸ It endeavours to understand the nature and make-up of the area being researched, rather than precise measurement.¹⁹ In-depth interviews can last from 30 minutes to 2 hours and can provide ample information. This technique allows the researcher to collect both attitudinal and behavioural data from the respondent from all time frames (past, present and future).²⁰ A unique characteristic of this technique is that the interviewer has ample chance at probing the respondent and collect in-depth data. The interviewer can use the answers provided by respondent and turn them into related questions ensuring a more detailed answer.

In recent years, three in-depth interviewing techniques have gained popularity among researchers. They are (a) laddering, (b) hidden test questioning and (c) symbolic analysis.²¹ In laddering, the line of questioning proceeds from product characteristics to user characteristics. This technique allows the researcher to tap into the customer's network of meanings and provides an effective way to probe into customer's deep psychological and emotional reasons that affect their purchase behaviour. Laddering is useful in developing 'mind map' of a consumer's view towards the targeted product. Several such consumer mind maps when combined together can provide detailed insights relating to underlying motivations and behaviour of a group of consumers and can help form a decision for a manager. The second technique, hidden test questioning, focuses on not just socially shared values but also personal concerns of a consumer. This kind of questioning can lead to unravel much deeply felt beliefs rather than general lifestyle and attitude of consumers. As the name suggests, symbolic analysis, attempts to analyse the symbolic meanings consumers associate with products. In this technique researchers use deductive logic and attempt to understand the meaning in the consumer's mind by comparing the product or idea with its opposite. For example, researcher may ask a consumer what a certain product is not and by asking such question limit the scope of discussion and symbolic meaning may appear. As one can gauge from the above discussion that these techniques of in-depth interviewing compliment each other. In most in-depth interviews these techniques are used together rather than in isolation. For example, asking a question such as 'what do you think people feel about brand X?' (laddering question) can lead to a question 'what do you feel about brand X personally?' (hidden test questioning). This questions in turn may lead to another question such as 'if brand X was an animal what would it be and why?' (symbolic analysis).

As the questions asked in this technique of data collection are probing, unstructured and connected, an interviewer must possess excellent interpersonal communication, listening, probing and interpretive skills. The interviewer's role is critical to the success of the in-depth interview. If conducted in correct manner, in-depth interviews provide researcher the flexibility, large amount of data collection from a single respondent and reveal much hidden attitudes, motivations, feelings and behaviour. However, as discussed earlier the data collected are subject to the same general limitations of exploratory methods. Although the data generated is large, the lack of structure makes the results less generalizable to a wider population (as it is a single respondent's view). Furthermore, it is not easy to find expert in-depth interviewers and because it is a one-to-one interaction cost and time involved in conducting and analysing is higher than most other techniques.

2.4.2 Focus groups

Focus groups are one of the most popular qualitative research methods used around the world. Many times researchers and managers use the term focus groups to define qualitative research.²² Focus group is a formalized process of bringing a small group of people together for an interactive, informal and spontaneous discussion on a particular topic or concept. A focus group generally involves eight to twelve participants and can capture vast array of information. The focus groups timing can vary from 1 to 3 hours and is usually conducted in a congenial surrounding such as a hotel or specialist focus group research facility. By getting the group members to talk at length about the topic, the moderator can gather vast amount of information on ideas, attitudes, feelings and experiences about a particular issue. Focus groups are usually constructed using similar participants to encourage positive discussion. The advantage of selecting participants from the same demographics (age, income, gender and such other variables are called demographics) helps ensure that group members feel at ease with each other. It is believed that people with similar characteristics are more like to divulge their opinions in a group. However, in some cases a diverse group can also be selected to encourage a wider viewpoint relating to a concept or product. This is an extremely important issue as it is hard to control group dynamics when more than 12 people are involved in a discussion.




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The group of participants is guided by a leader of the focus group who is called moderator. The discussion at start is led by the moderator who introduces the topic of discussion and attempts to get everyone to participate in a honest discussion and debate. The moderator maintains a certain degree of control over the discussion by directing it whenever the discussion moves too far from the research objectives set forth.

The major goal of any focus group is to provide as much information as possible to the decision maker regarding the issue at hand. With a group of people involved, group dynamics becomes a very crucial issue in focus group discussions. The success of any focus group relies heavily on the overall group dynamics, willingness of members to engage in an interactive dialogue, and moderator's ability to keep the discussion on track.

Focus groups are conducted for variety of different objectives. For example they may be conducted for:

- a) Understanding the effect of an advertisement prior launch on the target market
- b) Launching new products or services in an existing or a new market
- c) Understanding changing customer preferences and choices
- d) Finding the effects of change in marketing mix variables (i.e. product, price, place and promotion)
- e) Revealing hidden consumer preferences, motives, expectations and their relation to overall behaviour.

There are several variations in focus group discussion groups which involve smaller or larger group sizes, single or multiple moderators, direct organizational involvement or neutral setting.

There are several advantages of focus group technique. Focus group can help generate creative ideas, thoughts and opinions relating to a topic. They can highlight the underlying reasons for a specific set of actions by a consumer and overall behaviour. They also allow client participation and provide consumer response in a direct manner. They also provide an interaction opportunity for organization to reach specific market segments. While there are many advantages of focus groups, they also have disadvantages. The major weaknesses of focus groups are inherently similar to qualitative research techniques. They include the limited generalizability of results to the target market, involve subjectivity (bias) of representation and interpretation, data reliability and validity and are costlier than in-depth interviews as it brings diverse groups of respondents together.

2.4.3 Projective techniques

Projective techniques involve indirect form of questioning which allows the respondent to project their beliefs, opinions, feelings, attitudes and emotions on an issue of concern. Projective techniques consist of several techniques of qualitative data collection. These techniques are useful when the respondent is not at ease in answering questions. The underlying objective is to learn more about the subject in situations where they might not reveal their true thoughts under direct questioning. The techniques relating to this area were developed in the field of motivational science and clinical psychology. The techniques include pictorial construction, word association tests, sentence completion tests and role plays. In marketing research, these techniques are used to describe association with a product or an organization indirectly, without explicitly stating the association.

In pictorial construction technique, the respondent is shown a picture and instructed to describe his or her reactions by writing a short narrative story relating to the picture. At times this technique is used in focus groups scenarios to get a better idea of how respondents perceive an organization or product in a group setting. The difficulty with such techniques comes in understanding and interpreting what the response really means. Traditionally, this technique has proven quite useful in communications industry where experts have used it in testing the impact of product packaging, labels, brochures and advertisements.

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In word association technique, respondents are exposed to preselected words one at a time and are asked to respond what comes to their mind regarding that word. This is put into the context of a brand name or a product attribute. For example, respondent may be asked to think what word comes in their mind when they are exposed to the word 'call'. Some may answer mobile phone, texting, Nokia, friends, Motorola etc. After completing the list of words, researchers then look for hidden meanings and highlight associations between the words and the responses. This technique has been used successfully in research relating to positioning and branding.

In sentence completion technique, incomplete sentences are provided to the respondents who are then asked to complete them. The researchers hope that such completion will reveal hidden motives, feelings and behaviour towards the issue at hand. For example, researchers may ask people who play on Xbox are _____ and people who play on Wii are _____. This example highlights respondents' feelings about how they profile Xbox and Wii consumers in their own minds. From these data collected, researchers' task is to interpret and evaluate meaningful themes. The themes can help in identifying competitive positioning within the marketplace.

Respondents are asked to assume a particular role of a third person, such as a neighbour or a friend in role plays. They are then exposed to a particular, predetermined situation, and asked to verbalize how they would act in the situation. The researchers hope that the respondent will reveal their attitudes and thoughts through their actions and behaviour when placed in a different role-playing situation. This technique requires high amount of interpretive exercise as the respondent and response bias is continuously existent.

2.5 Conclusion

A research design is a framework or blueprint for conducting a marketing research project. It provides a clear plan of how the research should be conducted and helps researchers in sticking to the plan. Research designs can be broadly classified as exploratory and conclusive. Conclusive research designs are further classified as descriptive and causal. Exploratory research designs mostly use qualitative data collection techniques. Conclusive research designs mostly use quantitative data collection techniques. Therefore, many times these two terms are used interchangeably.

Desk research can play an important role in all stages of marketing research. Desk research generally deals with secondary data which is data collected for different purposes by other researchers. There are various sources within the marketplace to obtain secondary data and such data collection is relatively inexpensive in comparison to primary data collection. Primary data collection requires researchers to get directly involved in the data collection process for the issue at hand.

Exploratory research design involves many qualitative data collection techniques such as in-depth interviews, focus groups and projective techniques. In-depth interviews are one-to-one interviews with respondents while focus group involves a group of 6–12 respondents in a congenial setting. Focus groups is one of the most popular qualitative research techniques. Projective techniques involve various psychological testing such as pictorial construction, word association tests, sentence completion tests and role plays. They are used in understanding the hidden associations in a consumer's mind. The qualitative data collection techniques provide a lot of rich information but at the same time is hard to interpret and involves limitation with regard to generalizability, reliability and validity.



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3 Conclusive research design

3.1 Chapter summary

In previous chapters we discussed marketing research process and problem definition (chapter 1) and research design focusing especially on exploratory research design (chapter 2). In this chapter the topic of research design will be extended to the conclusive research design. The chapter will focus on both descriptive and causal designs. Furthermore, it will specifically elaborate on survey methods and observation as they are one of highly used research techniques for collecting data in present day field of marketing.

3.2 Conclusive research design

In the earlier chapter on exploratory research design one could observe that the findings derived from such techniques should be approached with caution due to the issues of generalizability, reliability and validity. However, one also has to remember the depth of insight available from such techniques. Conclusive research design provides a way to verify and quantify the insights gained from exploratory research. Techniques relating to conclusive research are specifically designed to assist the manager in determining, evaluating and selecting the best course of action to take in a given situation.²³ The techniques used in conclusive research contrast with exploratory research as they are typically more formal and structured. Most conclusive research techniques are based on large representative samples and data obtained through is subjected to quantitative analysis. As the findings represent a larger group of respondents many times they are directly used for managerial decision making. At this juncture, it has to be noted that even if the sample used is large, it does not mean that the findings are the voice of all the consumers but this kind of studies provide a general guideline regarding the consumer and market behaviour. In some instances, the research may come close to suggest precise consumer and market behaviour; however in other cases, the research may partially clarify the situation and much will be left to the manager's judgement.

As discussed in chapter 2, conclusive research is classified into two major categories, descriptive and causal. The table below provides the basic differences between exploratory, descriptive and causal designs.

	Exploratory	Descriptive	Causal
Emphasis	Discovery of ideas and insights	Frequency of occurrences	Determine cause and effect
Features	Flexible, unstructured	Hypotheses based, structured	Variable control
Techniques used	Focus groups, in-depth interview, mostly qualitative research	Surveys, observation, panel data, mostly quantitative research	Experimentation

Table 3.1: Comparison of research designs

3.3 Descriptive design

As seen in the table above descriptive research design is typically concerned with determining the frequency with which an event occurs or the relationship between two variables. This type of design is typically guided by an initial relationship between two variables. For example, an investigation of the trends to understand the consumption of cola drinks in relation to respondents' age, income, occupation etc. would be a descriptive study. Descriptive research design is quite prevalent in the field of marketing. It is used when the purpose of research is:

- a) To make predictions of market and consumer behaviour. For example, a manager will be highly interested in knowing differences in consumption pattern of cola drinks during different seasons and will be able to develop a marketing campaign accordingly for the forthcoming season.
- b) To describe characteristics of a certain groups. For example, using its loyalty clubcard scheme Tesco (the largest retailer in the UK) is able to identify who are most profitable and least profitable shoppers by developing their generic socio-demographic profile which includes age, spending in Tesco (number of visits and spend per visit), gender, regularly consumed items and less frequently bought items etc.

As it can be seen from the above example, descriptive research design focuses on description however such studies should not be conducted as fact-gathering expeditions. Many times due to the relative ease of conducting such studies managers start these studies with hazy objectives and inadequate planning.²⁴ This results in much of the data becoming useless for decision-making. Therefore, to be of value, a descriptive study must collect data for a definite purpose. In comparison to exploratory design, descriptive research design requires a clear specification of the who, what, when, where, why and how of the research.²⁵ Therefore, descriptive research design requires clear planning with regard to collection of data. Unless the study design provides specified methods for selecting sources of information and for collecting data from those sources, the information obtained may be inaccurate or inappropriate.

Income group	Store preference		
	Store A	Store B	Store C
Income group A			
Income group B			
Income group C			

Table 3.2: Dummy table for store preference by income groupW

To get meaningful results from descriptive studies researchers use methods such as dummy tables and objective-question specification. A dummy table is a table that is used to catalogue the data collected. For example, a manager is interested in knowing how income has an effect on preference of the shopping store selection. The researcher conducting this descriptive study can develop a dummy table as to know how the analysis will be conducted and results will be interpreted. Table above provides an idea of how a dummy table can be prepared. Using the dummy table researcher and manager can agree on the store selection as well as the income group selection. For example, a high end luxury store manager will not be interested in comparing results with a discount store and vice versa. Dummy tables provide further specifications to the research process and enhance the decision making. An alternative method is objective-question specification wherein the objectives behind the descriptive study are matched with the questions asked to the respondent. This technique provides a robust way to keep the research on track and lessens the confusion between the manager and researcher regarding the study.

To facilitate the discussion on descriptive research designs researchers divide descriptive research designs into two categories.

- a) Cross-sectional design
- b) Longitudinal design



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3.3.1 Cross-sectional design

The cross-sectional design is the most common and most familiar way of conducting marketing research. It involves collection of information from any given sample of population elements only once. In simple terms, cross-section studies are just conducted once. For example, the manager of a cola company wants to know the preference of teenagers regarding their cola brand. This kind of study provides a snapshot of the variables of interest at that point in time, as contrasted to the longitudinal study that provides a series of pictures, which, when pieced together, provide a movie of the situation and the changes that are occurring.

The objective of cross-sectional design many times is to establish categories such that classification in one category implies classification in one or more other categories. For example, a manager believes that gender is an important factor in consumption of their perfumes. Further, he or she also wishes to examine does the age group of a consumer affects their perfume buying behaviour. These hypotheses could be examined in a cross-sectional study. Measurement would be taken from a representative sample of the population with respect to their gender, age group and frequency of buying perfumes. A dummy table for such a research will look as follows:

	Age group			
	Group A	Group B	Group C	Group D
Male				
Female				

Table 3.3: Dummy table for a cross-sectional study

As it can be observed, the emphasis would be on the relative frequency of occurrence of the joint phenomenon (i.e. frequency of perfume buying among Male in group A; frequency of perfume buying among Female in group A and so on).

One advancement into the cross-section analysis in recent times is the development of 'cohort analysis'. Cohort analysis consists of a series of surveys conducted at appropriate time intervals. Cohort refers to the group of respondents who experience the same event within the same time interval. A very common analysis emphasis is on birth cohorts or groups of people born within the same time intervals.²⁶ Analysis techniques such as cohort analysis can provide partial longitudinal data however, a rather serious limitation of such data is that their accuracy depends heavily on the quality of respondents' memories of past events and intentions about future behaviour. It has been established through various studies that consumers' memories are highly unreliable, particularly with respect to things that occurred in past or when they are predicting their future behaviour.^{27, 28} The problem becomes increasingly severe as the time frame extends further into past or future.

In recent times, omnibus panels are becoming increasingly popular as a source of consumer insights. Omnibus panel consists of a larger number of panel members who are asked about different research issues at various times. For example, 1000 selected members of an omnibus panel consisting of 10,000 members in total may be asked about their attitudes towards advertisements and some of them may be asked in a relatively short period of time about a new product launch. Several commercial firms maintain their own omnibus panels as a source of samples for cross-sectional studies.

3.3.2 Longitudinal design

A longitudinal design is much more reliable than a cross-sectional design for monitoring changes over time, because it relies less on consumers' mental capabilities and more frequently monitors events as close to their time of occurrence as feasible. The primary objective of longitudinal design is to monitor change over a period of time. It involves a fixed sample of population elements that is measured repeatedly. The sample remains the same over a period of time, thus providing a series of pictures which, when viewed together, portray a detailed illustration of the situation and changes that are taking place over a period of time. The major difference between cohort analysis and longitudinal design thus is the sample. While longitudinal design adheres to a single sample, it changes every time the research is conducted in cohort analysis. In simple terms, the same people are studied over time and same variables are measured. For example, a cola company manager wishes to measure the purchase frequency of various brands of cola beverages among consumers over a period of time. For such research questions longitudinal study is a desirable way of measuring the phenomenon accurately.

Sometimes, the term panel is used interchangeably with the term longitudinal design. A panel consists of a sample of respondents, generally households that have agreed to provide information at specified intervals over an extended period. Such panels are called true panels. Longitudinal analysis can be performed only on true panels related data as repeated measurements are required from the same entities over a period of time. Such analysis cannot be conducted using omnibus panels. A true panel is also capable of generating more data directly pertaining to the research for the reasons being: (a) captive sample of willing respondents are likely to tolerate extended interviews and lengthy questionnaire and (b) background details and other demographics information collection is not required every time providing researcher an opportunity to collect more relevant data.²⁹

Data obtained from such panels not only provide information on market shares that are based on extended period of time, but also allow the researcher to examine changes in market share over time. These changes cannot be determined by cross-sectional designs.

3.3.3 Advantages and disadvantages of cross-sectional and longitudinal designs

Considering that information is available from panels for multiple periods, the unique advantage of longitudinal analysis becomes obvious. A manager can look at changes in individual's behaviour and attempt to relate them to a succession of marketing tactics. For example, change in advertising campaign, change in packaging, price change etc. Furthermore, since the same respondents are measured before and after changes in the marketing variables, small changes in the behaviour are more easily identified than if separate cross-sectional studies were conducted using two or more independent samples.

Although the major advantage of a panel is analytical, panels also have disadvantages with respect to the information collected in a study. This is particularly true with respect to classification information, such as income, education, age and occupation as it may change over a period of time. In many studies, such information is crucial for decision making. Cross-sectional design fails to provide a complete picture in that regard as it just takes a snapshot at a time. Most panel members are compensated for their involvement in the panel and therefore provide an opportunity to capture longer-term data. As stated earlier longitudinal true panels provide an added advantage of collecting more relevant information as the background information of respondents is known.



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Panel data are also believed to be more accurate than cross-sectional data because panel data tend to be relatively freer from the errors associated with reporting past behaviour. A typical cross-sectional study requires respondents to recall past purchase and behaviour and these data can be inaccurate due to memory lapses.³⁰ In comparison, panel data, which rely on continuous recording of purchases in a diary, place less reliance on respondents' memory and therefore are more accurate.³¹

Errors also occur because the interviewer and respondent represent distinct personalities and different social roles. Very often respondents say what they think the interviewer wants to hear or what they feel the interviewer should hear.³² The panel designs help reduce such interaction bias because of frequent contact and rapport generation between the interviewer and respondents.

While there are many advantages of longitudinal design (consumer panels) over cross-sectional design (one-shot surveys), the consumer panels themselves are not without drawbacks. The main disadvantage of consumer panels is that they are nonrepresentative at times. The agreement to participate involves a commitment on the part of the designated respondent. Some respondents refuse this commitment. Sometimes they are not interested in filling out diaries or test products or evaluate advertising copy. Furthermore, creating a consumer panel in itself is a difficult task as some members of the society are hard to find or hard to reach and many times are not ready to participate at all. Mortality is another concern associated with consumer panels. Furthermore, payments may cause certain group of people to be attracted to a panel making the group unrepresentative. Another disadvantage of panels is the response bias. New panel members are often found to be biased in their initial response.³³ They tend to increase the behaviour being measured, such as food purchasing and consumption. This bias decreases as the respondents overcome the novelty of being on the panel. Furthermore, seasoned panel members also give biased responses, as they want to look good and think they are experts at things.

Because of the potential limitations of true panels, researchers may be wise to restrict their use to situations in which periodic monitoring of the same respondents is essential.

3.4 Causal designs

As it can be observed from the above discussion relating to descriptive design that such designs are commonly used as direct bases for marketing decisions. However, one of the common problems is that descriptive designs do not provide direct cause and effect relationships. On the other hand, managers continually make decisions based on assumed causal relationships. As these assumptions are based on intuitions, they are hardly justifiable and validity of such causation should be examined with causal research.³⁴ For example, one of the common causation related judgements relates to pricing decisions. Managers are constantly facing the challenge of setting the right price and knowing the impact of price increase or decrease on sales, brand image or other such variables is utmost important for them. Causal design provides answer to such questions by explaining which variables are the cause (independent variables) and which are the effect (dependent variables).

Causal research is most appropriate when the research objectives include the need to understand the reasons why certain market phenomena happen as they do. In other words, causal research helps in understanding which market variable (for example, packaging change) causes what effect on other market variables (supermarket sales). To measure this however, the data must be gathered under controlled conditions – that is, holding constant, or neutralizing the effect of, all variables other than the causation variable (in the case above packaging change). After neutralizing the effects of other variables researchers manipulate the causation variable and measure the change in the effect variable (in the case above supermarket sales). Manipulation of the presumed causal variable and control of other relevant variables are distinct features of causal design.

Experimentation as a technique is generally used when conducting causal research. There are two kinds of experimentation techniques available to researchers namely (a) laboratory experiment and (b) field experiment. A laboratory experiment is one in which a researcher creates a situation with the desired conditions and then manipulates some while controlling other variables. The researcher is consequently able to observe and measure the effect of the manipulation of the independent variables on the dependent variable or variables in a situation in which the impact of other relevant factors is minimized. A field experiment on the other hand is a research study in a realistic or natural situation, although it too, involves the manipulation of one or more independent variables under as carefully controlled conditions as the situation will permit. As it can be seen from above discussion, that both techniques provide a degree of control and manipulation, the major distinction between these two experiment techniques is the environment.³⁵ A specially designed laboratory experiment (artificial situation) provides more control however; it might not be able to replicate the natural behaviour completely.

Data collected through experimentation can provide much stronger evidence of cause and effect than can data collected through descriptive research. However, this does not mean that analysis of descriptive research data cannot suggest possible causal links. In fact, rather than viewing descriptive designs versus experimental designs, one should think them as conclusive designs varying from 'purely descriptive with no control' at one extreme to 'purely experimental with strict control and manipulation' at the other extreme.³⁶ Virtually all real-life research falls somewhere along this continuum, although where 'descriptive' ends and 'experimentation' begins is subjective. Descriptive designs based data merely suggests causation, while data generated through causal design increases our degree of confidence in any suggested issue.

While experimentation is a robust technique to find causation and assist manager in decision making there are several limitation associated with it. These limitation mostly concern with the time involved in experimentation, costs and administration difficulties. Descriptive designs in comparison are less time consuming, less costly and easy to administer. These advantages have made descriptive designs more popular in comparison to causal designs. In the next section we will discuss two of the most popular descriptive data collection techniques namely, survey methods and observation.

3.5 Survey methods

Survey methods tend to be the mainstay of marketing research in general. They tend to involve a structured questionnaire given to respondents and designed to elicit specific information. In simple terms, it involves questioning the respondents regarding the issue at hand and asking their opinion about it. Respondents are asked variety of questions regarding their feelings, motivations, behaviour, attitudes, intentions, emotions, demographics and such other variables. The questions are asked via direct face to face contact, post, telephone or internet. The responses are recorded in a structured, precise manner. In most cases, for conducting survey research, research problems or opportunities are well defined and there is agreement in the precise data requirement between manager and the researcher.

The survey method is popular for various reasons. One of the major reasons is that data collection is a function of correctly designing and administering the survey instrument (i.e. a questionnaire). This means unlike exploratory design based techniques survey methods rely less on communication, moderation and interpretation skills of the researcher. Survey research allows the researcher to create information for precisely answering who, what, how, where and when questions relating to the marketplace. Furthermore, survey methods have ability to accommodate large sample size and therefore increase generalizability of results. While exploratory designs provide a detailed picture, due to various biases involved with regard to interviewer (moderator) communication and interpretation, details mentioned by the respondent may get skewed. In case of survey methods researcher can easily distinguish small differences. Furthermore, researcher can easily adopt robust advance statistical methods on collected data for gaining results. Such advantages make survey methods quite popular.

While survey methods provide several advantages, they are not without limitations. These limitations stem mostly from instrument development, respondent errors and response bias. Developing accurate survey instruments is a difficult task and at times is time consuming. Furthermore, due to instrument measurement being structured in nature, in-depth and detailed data structures as gathered in exploratory research cannot be collected. One of the major problems with survey methods is to determine whether the respondents are responding truthfully or not. There is little cross-checking and flexibility available in comparison to exploratory designs. There is also a possibility of misinterpretations of data results and employment of inappropriate statistical analysis procedure.

There are four main types of survey methods namely, (a) personal interviews; (b) telephone interviews; (c) mail interviews and (d) online interviews. In the next section we shall deal with each of these techniques in details.

3.5.1 Personal interviews

Personal interviews are one of the most used survey methods in marketing research. In this technique the survey instrument (mostly a questionnaire) is administered by a trained interviewer who asks questions and record the respondent's answers. While personal interview is still quite popular, the recent advancements in communication technology such as internet are slowly gathering momentum. Nonetheless, personal interviews techniques will continue to be employed by researchers in the future, just at a lower frequency than in past years.³⁷

There are various ways in which the personal interviews are conducted. The major types are in-home interviews, executive interviews, mall-intercept interviews and purchase-intercept interviews. In-home interviews are conducted in respondent's home with a structured question and answer exchange between interviewer and the respondent. As the respondent is in the comfort of their home the likelihood of them answering the questions is higher in comparison. In case of executive interview, the exchange happens in the office of the business executive. These types of interviews are conducted to gather industry related or market related information. Mall-intercept interviews, as the name suggests, are face-to-face personal interviews which take place in a shopping mall. Mall shoppers are stopped and asked for feedback or certain issues. In case of purchase-intercept interviews respondents are stopped and asked for feedback on the product bought.

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Each of the above mentioned technique has its own advantage and disadvantage. While in-home and executive interviews provide comfortable environment advantage, they are time consuming and expensive. Mall intercept interviews are less expensive however; consumer willingness to talk in a shopping mall as well as the bias of the environment cannot be negated. Purchase intercept interviews are a robust method to avoid memory loss related problems however, there is a response bias as those consumers who decided not to buy the product are excluded and at the same time willingness of those who bought the product to talk about it becomes an issue.

In comparison to other techniques (telephone, mail and internet) personal interviews are expensive and time consuming. However, are useful when dealing with complex questions which require clarifications. The response rate for personal interviews is higher in comparison to other methods as respondents find it hard to refuse someone face-to-face.

3.5.2 Telephone interviews

Telephone interviewing is quick and relatively inexpensive because respondents can be contacted more quickly, lowering the labour costs. The researcher can also reach houses and people who cannot be reached via personal interviews. In simple terms, telephone interviews are personal interviews conducted over telephone. An added advantage of this technique is that interviews still can be closely supervised if the interviews are being carried out from a single central location. Researchers can record the calls and review them later. Furthermore, this technique allows the possibility of follow up as the respondents (if they did not provide answer in an earlier interview) can be reached again. Furthermore, it has been observed that respondents perceive telephone interviews to be more anonymous in comparison to personal interviews and divulge more details. The technique is also quite useful in conducting executive interviews as sometimes executives are not ready for personal interviews but do answer telephone calls.

This method does possess several disadvantages also such as; the respondent might not be ready to be a part of the interview. Secondly, visual stimuli such as pictures of drawing cannot be seen by a respondent and so it may become difficult for them to talk about new product experiences or such other phenomena. Furthermore, complex tasks cannot be performed in telephone interviews. For example, a structure scale with different scaling of agreement/disagreement or like/dislike preference will be hard to administer on telephone. Added to that, the telephone interviews tend to be short in comparison to personal interviews as respondents generally do not like long telephone interviews.

In recent year, Computer Assisted Telephone Interviewing (CATI), has become quite popular than tradition telephone methods. CATI uses a computerized questionnaire administered to respondents over telephone. The interviewer sits in front of a computer and wears a headset. The computer replaces the pencil and paper and headset replaces the telephone. The interviewer reads the questions posed on the computer screen and records the answer by the respondent directly on the screen. The computer systematically guides the interviewer showing one question at a time.

Using more sophisticated software, researchers have also devised fully automated telephone interviewing data collection process which is called – Completely Automated Telephone Survey (CATS). This system uses no human interviewer. The survey is completely administered by a computer only. The respondent listens to a pre-recorded human voice and is asked to punch keys on their telephone to suggest their views. CATS has successfully been used in service quality monitoring surveys, customer satisfaction surveys, and even pre-election day polls.³⁸ In recent years, however, due to the negative perception relating to telemarketing, use of this technique has decreased.

3.5.3 Mail interviews

Mail interviews are relatively inexpensive in comparison to personal and telephone interviews as the administration costs involve, questionnaire, covering letter, response paid envelop, associated material and postal charges. In the traditional mail interview, questionnaires are mailed to preselected potential respondents. The researchers have to be careful in selecting a list that accurately reflects the target population. Sometimes obtaining the required mailing addresses is an easy task, but in other cases it may prove to be time-consuming and difficult.

Mail interviews provide cost advantage. Furthermore, they also provide advantage with regard to the length of the questionnaire. Questionnaires can be fairly long in comparison to personal or telephone interviewing. However, mail interviews have relatively low response rate. The response bias tends to be high in mail interview as the interviewer has no control over the process. The researcher has no way to find out who filled the survey and at the same time researcher has no control over who will send the response back. Another major problem with mail interviews is the misinterpreted or skipped questions by the respondents. Mail interviews make it difficult to handle problems of both vagueness and potential misinterpretations in question and answer setup as the respondents do not have a possible feedback mechanism. This may result in people providing unclear or at times wrong answer and also may skip the question entirely. While they are inexpensive, mail interviews can also be time consuming as respondent may take time to answer the questions and return them back.

Some of the disadvantages of mail interviews have been tackled by research organization by using mail panels. Mail panels consist of members who have agreed in advance to participate. This way high response rates are achieved in timely fashion with low costs. Most longitudinal studies are carried out with such mail panels. While mail panels provide several advantages the major drawback associated with them is representativeness. They might not be the right group to represent the topic or issue at hand. Researchers have also used personalization (in covering letter) and provision of incentives in increasing mail interview related responses.

3.5.4 Online interviews

The rise of internet technologies has created unforeseen changes in the world of marketing research. Internet provides interactivity, faster data acquisition, retrieval and reporting. The use of internet technologies in marketing research has been titled as online interviewing. The traditional survey methods now-a-days are tagged as offline interviewing. Online interviewing provides the fundamental advantages of all the offline methods however adds the interactivity and speed as stated earlier. Online interviews are conducted either by emails or administered on the internet using a specific website.

An email based interview is conducted using email lists. The questionnaire is written within the body of the email and respondents are asked to reply via email. Once the response is received the data is entered and tabulated using various office or statistical software. The questions in email interviews can either be open or close ended. Email based interviews have several limitation in providing interactivity as well as handling complex questions.

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The limitations of email based interviews are solved by using internet website based interviews. The respondents are asked to go to a particular webpage to complete the survey. The list of respondents is obtained from mailing lists or at times asking panel members in offline channels to register for the online channel. Internet interviews provide many advantages over email based surveys as they allow interactivity and graphic addition within the survey. Furthermore, the data collected can be gathered in format which is ready for analysis in office or statistical software. This kind of research can be as representative and effective as other traditional methods, especially as the internet population continues to grow.³⁹ However, it must be kept in mind that not all survey methods are appropriate in a given situation.⁴⁰ Therefore, the researcher should conduct a comparative evaluation to determine which methods are appropriate.

3.6 Observation

In observation studies, the researcher observes the behaviour of consumers in real-life setting. This type of research originated in anthropology and has percolated into many other fields of research. There is still a debate among researchers as to whether observation is a qualitative or quantitative technique. Observation methods are widely used in organization research to examine how people behave in groups, in teams and as organization members. This technique is also used in recruitment and selection of new employees as well as promoting existing employees in many organizations. The observation studies are extremely useful in collecting behavioural data as oppose to attitudinal data. This technique allows marketers to collect data on what people actually do, rather than what they say they will do.⁴¹

The main characteristic of all observation techniques is that researcher must rely heavily on their powers of observing rather than actually communicating with people to collect primary data. Using observation a lot of different information about the behaviour of people and objects can be observed including their physical actions (e.g. shopping patterns), expressive behaviours (e.g. expressions in engaging with various products and services); verbal behaviour (e.g. respondent conversation); temporal behavioural patterns (e.g. time spent in activities); spatial relationships and locations (e.g. location and brand associations); and so on. The type of data acquired can be used to amplify or reinforce other data patterns collected through other research designs by providing complimentary evidence concerning respondent's true feelings related to a product or brand.⁴² Observation is used quite regularly in retailing. Via observation retailers get useful information relating to areas of high versus low footfall; high versus low profit making product and consumer engagement with them; among other. It was through observation only; we understood the impact of product placement at eye-level for various groups of consumers.

Observation techniques have several advantages and disadvantages. One of the most important advantages of observation techniques is the accurate collection of behavioural data in real-life setting. In addition, observation techniques help in reducing the recall error (memory loss), response bias and refusal to participate. Mechanical audio-visual devices provide researchers opportunity to gather accurate observational data which provides in-depth insights into consumer behaviour. On the other hand, one of the major limitations of observation techniques is the data generalization. It is difficult to make accurate prediction of larger consumer groups, thus representativeness becomes an issue in observation. Furthermore, it is not easy to interpret behaviour as to why a respondent behaved in a certain way. Furthermore, observations being a real-time phenomenon it is very hard to observe all the behavioural actions of the targeted consumers.

3.6.1 Methods of observation

The choice relating to the methods of observation depends on researchers need for (a) directness of approach; (b) respondent's awareness of being observed; (c) the rigour of information and structure and (d) observation recording method. With regard to directness researchers can choose either use disguised observation or undisguised observation. In disguised observation the respondent is unaware that s/he is being observed. The reason for disguised observation is that respondents tend to behave differently when they know they are being observed. In case of structured observation researcher clearly defines the behaviours to be observed and the method by which they will be measured. On the other hand, with unstructured observation researcher observes all aspects of the phenomenon without specifying the details in advance. The recording can be done by human observer or by mechanical devices.

3.7 Conclusion

In this chapter, we focused on types of conclusive research designs. Conclusive research is conducted to test specific hypothesis or examine specific relationships. The findings from the conclusive research are mostly generalizable, reliable and valid due to the usage of structured research methods and rigorous statistical analysis. Conclusive research findings are used as an input by managers in the decision making process. Conclusive research can be of two types: descriptive or causal.

Descriptive research design is employed to describe a market phenomenon or characteristics. It requires clear structure and general agreement between manager and researcher as to what is being measured. Descriptive research can be further classified into cross-sectional and longitudinal research. Cross-sectional research involves collection of information from respondents at a single point in time. On the other hand, longitudinal research involves repeated measurement from the same respondents over a long period of time. Causal designs are primarily employed to specify the cause and effect relationship between variables. Experimentation as a technique is widely used in causal designs.

Survey methods and observation are the two highly used techniques for obtaining primary quantitative data. Survey methods involve direct questioning of the respondents. There are several ways in which surveys are carried out including; personal interviews, telephone interviews, mail interviews and online interviews.

Observations provide an opportunity to collect highly valuable behavioural information when used in right fashion. From a manager’s perspective, observation and survey methods provide complimentary information and should be used as complimentary techniques rather than competitive techniques by researchers.

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4 Sampling

4.1 Chapter summary

In this chapter we will focus on a very important construct in the field of marketing research, sampling. The chapter will start with a discussion on the importance of sampling in marketing research which will be followed by understanding some basic constructs and terms used by researchers in the field of sampling. The chapter will also discuss briefly on how to determine the sample size. Both probability and nonprobability methods will be discussed in details in this chapter with advantages and disadvantages associated with each technique. It will also focus on what criteria should be kept in mind when selecting an appropriate sampling technique.

4.2 Importance of sampling in marketing research

Sampling is one of the very important aspects of marketing research. From a general perspective, sampling involves selecting a relatively small number of elements (characteristics) from a larger defined group of elements and expecting that the information gathered from the small group of elements will provide accurate judgement about the larger group. We use sampling in our decision making almost every time. For example, before buying a book we flick through few pages and decide weather it suits our reading preferences. For a complex buy such as a mobile phone, we first decide several features as essential and others as desirable. Then we decide on the brand and select the mobile phone on the brand, price of the product and several other such variables. While making the final decision there are many such variables which we don't take into consideration. In a way, we use few elements (characteristics) of mobile phone (or a book) and expect that they will cover most of what we desire. We use sampling when selecting a job, choosing a restaurant and even selecting TV channels. As we consumers use sampling in our regular decision making, managers can also benefit by understanding sampling process in providing better matched products with our needs.

Almost every newspaper everyday reports the results of studies in which public opinion on some question is estimated by collecting opinions from a few selected individuals. Much marketing information is obtained in a similar fashion, using a sample of consumers. Therefore, it is very important for a market researcher to understand the concept of sampling. Furthermore, sampling provides several benefits overall. For example, as not every consumer of the product is being studied, the total cost of research can be lowered with the use of sampling. A sample would require fewer fieldworkers. Therefore, better personnel could be selected and trained and their work could be closely supervised. It is observed that the lesser administrative problems encountered in collecting data from a sample lead to more accurate data than could be obtained by collecting data from all units.⁴³

4.3 Sampling: basic constructs

As we defined sampling above, there are several other constructs which need defining before delving deeply into the phenomenon of sampling. Sampling is conducted when conducting a census is impossible or unreasonable. The studies which cover all the members of population are called 'census' which are generally carried out by national governments in various countries. Most countries carry out such surveys every 10 years. Census studies involve the population overall. In research terms, 'population' is defined as the totality of cases that confirm to some designated specifications.⁴⁴ For example, if a manager of brand X of washing machine was interested in understanding customer satisfaction relating to washing machines, the researcher will need to study all consumers who owned a washing machine (i.e. population) to get an accurate idea. However, studying population will be unreasonable in this case because the number of people owning washing machine will be huge and so the study will require unreasonable amount of resources in terms of cost and time. Most managers that require research data for decision making are not interested in total population response, but rather with a prescribed segment of the total. Such prescribed segments are defined as 'target population'. A target population consists of the complete group of elements (people or objects) that are specifically identified for investigation according to the objectives of the research project.⁴⁵ Continuing the earlier example, the defined target population for the washing machine study will be washing machine owners of brand X.


A precise definition of the target population is essential and usually done in terms of 'elements', 'sampling units' and 'sampling frame'. An element is defined as a person or object from which data is sought and about which inferences are to be made. For example, target population elements for the washing machine study might include a particular brand (i.e. Brand X); specific group of people (i.e. females). Sampling units are the target population elements available for selection during the sampling process. Using the washing machine example, a sampling unit may be females who have purchased new washing machines rather than a second hand one. Choice of elements and sampling units may redefine the study. In case of washing machine it may now change from 'customer satisfaction among washing machine owners' to 'customer satisfaction among new brand X washing machine owner females'. The above example gives a brief overview of selecting target population, elements and sampling unit. However, in real life, deciding a target population is a highly complex task⁴⁶ as many other variables are involved.


A sampling frame is a representation of the elements of the target population. It consists of a list or set of directions for identifying the target population. Some common sources of sampling frame are lists of voters, commercial directories, telephone directories, or even maps. Many commercial organizations provide a database consisting of names, addresses, and telephone numbers of potential sampling frame for various studies. Regardless of the sources, it is very difficult and expensive to obtain truly accurate or representative sampling frames.⁴⁷ For example, it will not be easy to obtain the addresses and names of new washing machine owners. However, in comparison it will be very difficult if the study was focused on second hand washing machine owners.

Such difficulties in obtaining an accurate sampling frame leads to 'sampling frame error'. It can be defined as the variation between the population defined by the researcher and the population used. For example, telephone directories can be a source for such errors as it does not provide unlisted numbers or numbers which are obtained after the publication dates. At the same time it does provide numbers which might be cancelled or disconnected.

Throughout the research process a researcher can make errors in judgement that results in creating some type of bias. All such types of errors are classified in marketing research as sampling or nonsampling errors. Sampling errors represent any type of bias that is attributable to mistakes in either drawing a sample or demining the sample size. This leads to the sample being non-representative to the population and is at times called random sampling error also. Nonsampling errors represent a bias that occurs regardless of sample or census being used. Nonsampling errors can be categories as nonresponse error (respondent is unable or unwilling to respond) or response errors (inaccurate, misreported or misanalysed response).

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4.4 Determining sample size

Determining sample size is a complex task and involves much clarity with regard to the balance between the resources available and number or accuracy or information obtained. Since data collection is generally one of the most expansive components of any research project various factors play a crucial role in determining the final sample size. Several qualitative and quantitative factors are considered when determining the sample size. The qualitative issues considered may include factors such as: (a) nature of research and expected outcome; (b) importance of the decision to organization; (c) number of variables being studied; (d) sample size in similar studies; (e) nature of analysis and (f) resource constraints. Various quantitative measures are also considered when determining sample size such as: (a) variability of the population characteristics (greater the variability, larger the sample required); (b) level of confidence desired (higher the confidence desired, larger the sample required); and (c) degree of precision desired in estimating population characteristics (more precise the study, larger the sample required).

The size of sample also depends on the type of study that is being undertaken. Problem identification research (as defined in chapter 1) may require a sample of 1000 in comparison to problem solving research in the range of 300–500.

4.5 Classification of sampling techniques

How to obtain a sample is an important issue relating to research design. There are two basic sampling designs: probability and nonprobability sampling design. Of these two techniques, probability sampling is more robust in comparison as in this technique each sampling unit has a known, nonzero chance of getting selected in the final sample. Nonprobability techniques on the other hand, do not use chance selection procedure. Rather, they rely on the personal judgement of the researcher. The results obtained by using probability sampling can be generalized to the target population within a specified margin of error through the use of statistical methods. Put simply, probability sampling allows researchers to judge the reliability and validity of the findings in comparison to the defined target population. In case of nonprobability sampling, the selection of each sampling unit is unknown and therefore, the potential error between the sample and target population cannot be computed. Thus, generalizability of findings generated through nonprobability sampling is limited. While probability sampling techniques are robust in comparison one of the major disadvantages of such techniques is the difficulty in obtaining a complete, current and accurate listing of target population elements.

Both probability and nonprobability sampling procedures can be further sub-divided into specific sampling techniques that are appropriate for different circumstances. Figure 4.1 provides details relating to the classification of sampling techniques.

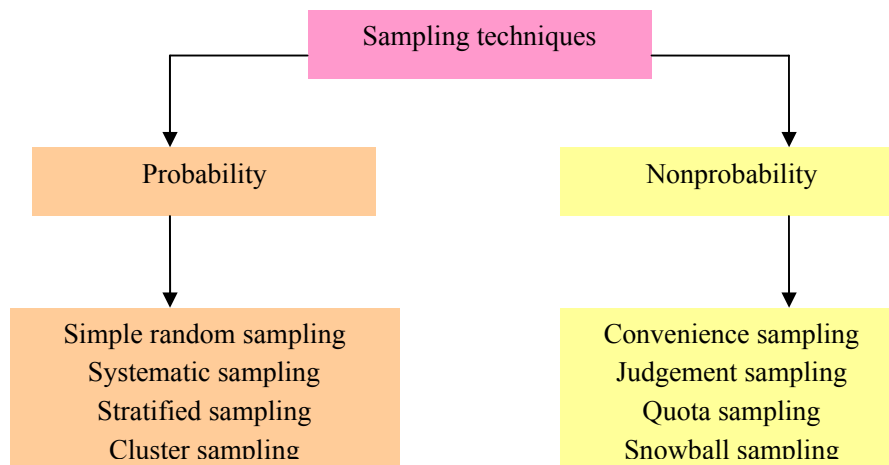


Figure 4.1: Classification of sampling techniques

In the following section we shall discuss each of the sampling techniques.

4.6 Probability sampling techniques

As stated in figure 4.1 probability sampling techniques can be classified into four sub-categories namely; simple random sampling; systematic sampling, stratified sampling and cluster sampling.

4.6.1 Simple random sampling

Simple random sampling is a probability sampling technique wherein each population element is assigned a number and the desired sample is determined by generating random numbers appropriate for the relevant sample size. In simple random sampling, researchers use a table of random numbers, random digit dialling or some other random selection methods that ensures that each sampling unit has a known, equal and nonzero chance of getting selected into the sample. For example, let us assume that the manager of the washing machine Brand X had the name and addressees of all new washing machine buying females (assume the total number is 1000). The manager could create a label associating with each person and put them in a big jar and select washing machine owners from the same. This way each washing machine owner female has an equal, nonzero chance of getting selected. If the number of owners was much larger a random number table can be used however, the chance of each owner getting selected still remains equal and nonzero.

4.6.2 Systematic random sampling

In systematic random sampling the sample is chosen by selecting a random starting point and then picking each i th element in succession from the sampling frame. The sampling interval i , is determined by dividing the population size N by the sample size n and rounding to the nearest integer. For example, if there were 10,000 owners of new washing machine and a sample of 100 is to be desired, the sampling interval i is 100. The researcher then selects a number between 1 and 100. If, for example, number 50 is chosen by the researcher, the sample will consist of elements 50, 100, 150, 200, 250 and so on.⁴⁸ In simple terms, systematic sampling is similar to the simple random sampling however requires that the target population be ordered in some way. Systematic random sample elements can be obtained via various means such as customer list, membership list, taxpayer roll and so on. This technique is frequently used as it is a relative easy way to draw sample while ensuring randomness. One of the drawbacks of this technique is that if a hidden pattern exists in the data the finding may not be truly representative of the target population. However, the potential small loss in overall representativeness is normally countered by significantly larger gains in time, effort and cost.

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4.6.3 Stratified sampling

Stratified sampling is distinguished by the two-step procedure it involves. In the first step the population is divided into mutually exclusive and collectively exhaustive sub-populations, which are called strata. In the second step, a simple random sample of elements is chosen independently from each group or strata. This technique is used when there is considerable diversity among the population elements. The major aim of this technique is to reduce cost without lose in precision. There are two types of stratified random sampling; (a) proportionate stratified sampling and (b) disproportionate stratified sampling. In proportionate stratified sampling, the sample size from each stratum is dependent on that stratum's size relative to the defined target population. Therefore, the larger strata are sampled more heavily using this method as they make up a larger percentage of the target population. On the other hand, in disproportionate stratified sampling, the sample selected from each stratum is independent of that stratum's proportion of the total defined target population. There are several advantages of stratified sampling including the assurance of representativeness, comparison between strata and understanding of each stratum as well as its unique characteristics. One of the major difficulty however, is to identify the correct stratifying variable.

4.6.4 Cluster sampling

Cluster sampling is quite similar to stratified sampling wherein in the first step the population is also divided into mutually exclusive and collectively exhaustive sub-populations, which are called clusters. Then a random sample of clusters is selected, based on probability random sampling such as simple random sampling. The major difference between stratified and cluster sampling is that in stratified sampling, all the subpopulations (strata) are selected for further sampling whereas in cluster sampling only a sample of subpopulations (clusters) is chosen. The objectives of these methods are also different. The objective of stratified sampling is to increase precision while cluster sampling strives to increase sampling efficiency by decreasing costs. Because one chooses a sample of subgroups with cluster sampling, it is desirable that each subgroup be a small scale model of the population. Thus, the subgroups (clusters) ideally should be formed to be as heterogeneous as possible. If all elements in each selected cluster are included in the sample, the procedure is called one-stage clustering. However, if a sample of elements is drawn probabilistically from each selected cluster, the procedure is called two-stage clustering. The most common form of cluster sampling is area sampling in which the clusters consists of geographical areas. There are several advantages of cluster sampling including the reduction in costs due to available data with regard to population groups (such as telephone directories and address lists) and feasibility of implementation. However, one of the major disadvantages of cluster sampling is the homogeneity among the selected cluster. Ideally each cluster should represent the population at large however, in reality it is quite difficult to achieve.

4.7 Nonprobability sampling techniques

The selection of probability and nonprobability sampling is based on various considerations including, the nature of research, variability in population, statistical consideration, operational efficiency and sampling versus nonsampling errors. Nonprobability sampling is mainly used in product testing, name testing, advertising testing where researchers and managers want to have a rough idea of population reaction rather than a precise understanding. As depicted in figure 4.1 there are various types of nonprobability sampling including, convenience sampling, judgement sampling, quota sampling, snowball sampling.

4.7.1 Convenience sampling

As the name implies, in convenience sampling, the selection of the respondent sample is left entirely to the researcher. Many of the mall intercept studies (discussed in chapter 3 under survey methods) use convenience sampling. The researcher makes assumption that the target population is homogenous and the individuals interviewed are similar to the overall defined target population. This in itself leads to considerable sampling error as there is no way to judge the representativeness of the sample. Furthermore, the results generated are hard to generalize to a wider population. While it has a big disadvantages relating to sampling error, representativeness and generalizability, convenience sampling is least time consuming and least costly among all methods.

4.7.2 Judgement sampling

Judgement sampling, also known as purposive sampling is an extension to the convenience sampling. In this procedure, respondents are selected according to an experienced researcher's belief that they will meet the requirements of the study. This method also incorporates a great deal of sampling error since the researcher's judgement may be wrong however it tends to be used in industrial markets quite regularly when small well-defined populations are to be researched. For example, if a manager wishes to the satisfaction level among the key large-scale business customers judgement sampling will be highly appropriate. Same as convenience sampling, judgement sampling also has disadvantages relating to sampling error, representativeness of sample and generalizability however the costs and time involvement is considerably less.

4.7.3 Quota sampling

Quota sampling is a procedure that restricts the selection of the sample by controlling the number of respondents by one or more criterion. The restriction generally involves quotas regarding respondents' demographic characteristics (e.g. age, race, income), specific attitudes (e.g. satisfaction level, quality consciousness), or specific behaviours (e.g. frequency of purchase, usage patterns). These quotas are assigned in a way that there remains similarity between quotas and populations with respect to the characteristics of interest. Quota sampling is also viewed as a two-stage restricted judgement sampling. In the first stage restricted categories are built as discussed above and in the second stage respondents are selected on the basis of convenience or judgement of the researcher. For example, if the researcher knows that 20% of the population is represented by the age group 18–25, then in the final sample s/he will try to make sure that of the total sample 20% of them represent the age group 18–25. This procedure is used quite frequently in marketing research as it is easier to manage in comparison to stratified random or cluster sampling. Quota sampling is often called as the most refined form of nonprobability sampling.⁴⁹ It also reduces or eliminates selection bias on the part of field workers which is strongly present in convenience sampling. However, being a nonprobability method it has disadvantages in terms of representativeness and generalizability of findings to a larger population.

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4.7.4 Snowball sampling

In snowball sampling, an initial group of respondents is selected, usually at random. After being interviewed however, these respondents are asked to identify others who belong to the target population of interest. Subsequent respondents are then selected on the basis of referral. Therefore, this procedure is also called referral sampling. Snowball sampling is used in researcher situations where defined target population is rare and unique and compiling a complete list of sampling units is a nearly impossible task.⁵⁰ For example, in the case of the earlier discussed example of the manager of brand X of washing machine, if s/he wanted to study the owners of the second hand washing machines it will be very difficult to identify the owners of such washing machines and therefore, snowball sampling may provide a way forward. If traditional probability of nonprobability methods were used for such a study, they will take too much time and incur high costs. The main underlying logic of this method is that rare groups of people tend to form their own unique social circles.⁵¹ While there are several disadvantages in using this procedure as it is a nonprobability technique. However, on the other hand it is a good procedure for identifying and selecting hard-to-reach, unique target populations at a reasonable cost and time.

4.8 Selecting an appropriate sampling technique

As discussed above, both probability and nonprobability sampling techniques have their own advantages and disadvantages. Overall, it depends on various factors to choose the most appropriate sampling technique. A researcher has to consider the research objectives first as to do they call for qualitative or quantitative research. Secondly, available resources should be kept in mind including the time frame available for conducting the researcher and making the findings available. The knowledge regarding the target population as well as the scope or research also is important in selecting the right kind of sampling technique. Researcher should also focus on the need for statistical analysis and degree of accuracy required with regard to the research and the expected outcomes. On the basis of these parameters a researcher can identify an appropriate sampling technique.

4.9 Conclusion

This chapter focused on one of the most important research issue in marketing research, sampling. As detailed in the chapter sampling is quite a common phenomenon in our decision making process. Before delving deeply into the sampling process one must be aware of several basic constructs involved with sampling namely; population, target population, elements, sampling unit and sampling frame. Determining the final sample size for research involves various qualitative and quantitative considerations.

There are two basic techniques of selecting sample; probability sampling techniques and nonprobability sampling techniques. Probability sampling techniques are more robust in comparison to nonprobability sampling. Findings based on nonprobability are hard to generalize to a wider population.

Probability sampling is sub-divided into simple random sampling, systematic sampling, stratified sampling and cluster sampling. While being robust probability sampling techniques are resource intensive in terms of cost and time involved. Nonprobability sampling is sub-divided into convenience sampling, judgement sampling, quota sampling and snowball sampling. Nonprobability sampling techniques are less costly and less time consuming however they have problems relating to selection bias also.

Selecting an appropriate sampling technique depends on various factors such as research objectives, available resources, knowledge of target population and scope of research, degree of accuracy and statistical analysis required for result interpretation.



Question:
What do Skype and Spotify have in common with color screen graphics and the computer mouse?

–They are all Swedish inventions.

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5 References

1. Boyd, H., R. Westfall, and S. Stasch (1989), *Marketing research: Text and Cases*. Boston: Irwin.
2. ——— (1989), *Marketing research: Text and Cases*. Boston: Irwin.
3. Reichheld, F. (1996), "Learning From Customer Defections," *Harvard Business Review*, 74 (March-April), 56–69.
4. Shukla, P. (2002), "Managing Customer Expectations: The Ethical Way," in *Ethics in Management: Emerging Issues in the New Millennium*, B. Prajapati (Ed.). North Gujarat University, India.
5. Malhotra, N. (2004b), *Marketing Research: An Applied Orientation*. New Jersey: Pearson Education.
6. Aaker, D. and G. Day (1980), *Marketing Research*. New York: John Wiley & Sons.
7. Malhotra, N. and D. Birks (2003), *Marketing Research: An Applied Approach*. London: Prentice Hall.
8. Lehmann, D. (1979), *Market Research and Analysis*. New York: Irwin.
9. Malhotra, N. (2004a), *Marketing Research* (4th ed.). Harlow: Prentice Hall.
10. Lehmann, D. (1979), *Market Research and Analysis*. New York: Irwin.
11. Churchill, G. (1983), *Marketing Research* (3rd ed.). Hinsdale, Illinois: Dryden Press.
12. Fryer, E. (2004), "Researcher-practitioner: an unholy marriage?," *Educational Studies*, 30 (2), 175–85.
13. Churchill, G. (1983), *Marketing Research* (3rd ed.). Hinsdale, Illinois: Dryden Press.
14. Malhotra, N. and D. Birks (2003), *Marketing Research: An Applied Approach*. London: Prentice Hall.
15. Lehmann, D. (1979), *Market Research and Analysis*. New York: Irwin.
16. Matthews, Sam (2005), "Beat the French not back the bid should be the Olympic message says Publicis," Vol. 2008. London: Brand Republic
17. Kent, Ray (2006), *Marketing Research: Approaches, methods and applications in Europe*. London: Thomson.
18. Brech, Poppy (2002), "Research proves the obvious," in *Marketing*, Mar 21, p. 48.
19. Willis, Kate (2002), "In-depth interviews," in *The handbook of international market research techniques*, Robin Birn, Ed. London: Kogan Page.
20. Hair, Joseph, Robert Bush, and David Ortinau (2003), *Marketing Research: Within a changing information environment* (2nd ed.). London: McGraw-Hill.
21. Malhotra, N. (2004a), *Marketing Research* (4th ed.). Harlow: Prentice Hall.
22. Gordon, W. (1999), *Goodthinking: A Guide to Qualitative Research*. Henley-on-Thames: Admap.
23. Malhotra, N. (2004b), *Marketing Research: An Applied Orientation*. New Jersey: Pearson Education.

24. Churchill, G. (1983), *Marketing Research* (3rd ed.). Hinsdale, Illinois: Dryden Press.
25. Boyd, H., R. Westfall, and S. Stasch (1989), *Marketing research: Text and Cases*. Boston: Irwin.
26. Rentz, J.O., F.D. Reynolds, and R.G. Stout (1983), "Analyzing Changing Consumption Patterns with Cohort Analysis," *Journal of Marketing Research*, 20 (1), 12–20.
27. Gilbert, D.T. (2007), *Stumbling on Happiness*. New York: Vintage.
28. Morwitz, V. (1997), "Why Consumers Don't Always Accurately Predict Their Own Future Behavior," *Marketing Letters*, 8 (1), 57–70.
29. Sudman, S. and B. Wansink (2002), *Consumer Panels*. Chicago: American Marketing Association.
30. Malhotra, N. (2004b), *Marketing Research: An Applied Orientation*. New Jersey: Pearson Education.
31. Sudman, S. and B. Wansink (2002), *Consumer Panels*. Chicago: American Marketing Association.
32. Boyd, H., R. Westfall, and S. Stasch (1989), *Marketing research: Text and Cases*. Boston: Irwin.
33. Matyas, L. and P. Sevestre *The Econometrics of panel data*. Norwell: MA: Kluwer Academic.
34. Hulland, J., Y.H. Chow, and S. Lam (1996), "Use of causal models in marketing research: A review," *International Journal of Research in Marketing*, 13 (2), 181–97.
35. Sawyer, A.G., P.M. Worthing, and P.E. Sendak (1979), "The role of laboratory experiments to test marketing strategies," *Journal of Marketing*, 43 (3), 60–67.
36. Parasuraman, A., D. Grewal, and R. Krishnan (2007), *Marketing Research* (2nd ed.). Boston: MA: Houghton Mifflin Company.
37. Malhotra, N. (2003), "Attitude and affect: new frontiers of research in the 21st century," *Journal of Business Research*, 58 (4), 477–82.
38. DePaulo, Peter J. and Rick Weitzer (Interactive phone technology delivers survey data quickly), "Marketing News," 28, 1 (Jan), 15.
39. Gorman, J.W. (2000), "An Opposing View of Online Surveying," *Marketing News*, 34 (9), 48.
40. Malhotra, N.K., J. Agarwal, and M. Peterson (1996), "Methodological issues in cross-cultural marketing research," *International Marketing Review*, 13 (5), 7–43.
41. Underhill, Paco (2004), *Why We Buy: The Science of Shopping*. Sutton Valence, Kent: Touchstone.
42. Hair, Joseph, Robert Bush, and David Ortinau (2003), *Marketing Research: Within a changing information environment* (2nd ed.). London: McGraw-Hill.
43. Boyd, H., R. Westfall, and S. Stasch (1989), *Marketing research: Text and Cases*. Boston: Irwin.
44. Churchill, G. (1983), *Marketing Research* (3rd ed.). Hinsdale, Illinois: Dryden Press.
45. Hair, Joseph, Robert Bush, and David Ortinau (2003), *Marketing Research: Within a changing information environment* (2nd ed.). London: McGraw-Hill.
46. Henry, G.T. (1990), *Practical Sampling*. Thousand Oaks: Sage Publications Inc.
47. Garland, Susan B. (1990), "Money, power, and numbers: a firestorm over the census," *Business Week* (17 Sep), 45.

48. Malhotra, N. (2004a), *Marketing Research* (4th ed.). Harlow: Prentice Hall.
49. Bryman, A. (2001), *Social Research Methods*. London: Oxford University Press.
50. Biernacki, P. and D. Waldorf (1981), "Snowball Sampling: Problems and Techniques of Chain Referral Sampling," *Sociological Method and Research*, 10 (2), 141–63.
51. Hair, Joseph, Robert Bush, and David Ortinau (2003), *Marketing Research: Within a changing information environment* (2nd ed.). London: McGraw-Hill.

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