Essentials of Marketing Research

Paurav Shukla

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Paurav Shukla

Marketing Research

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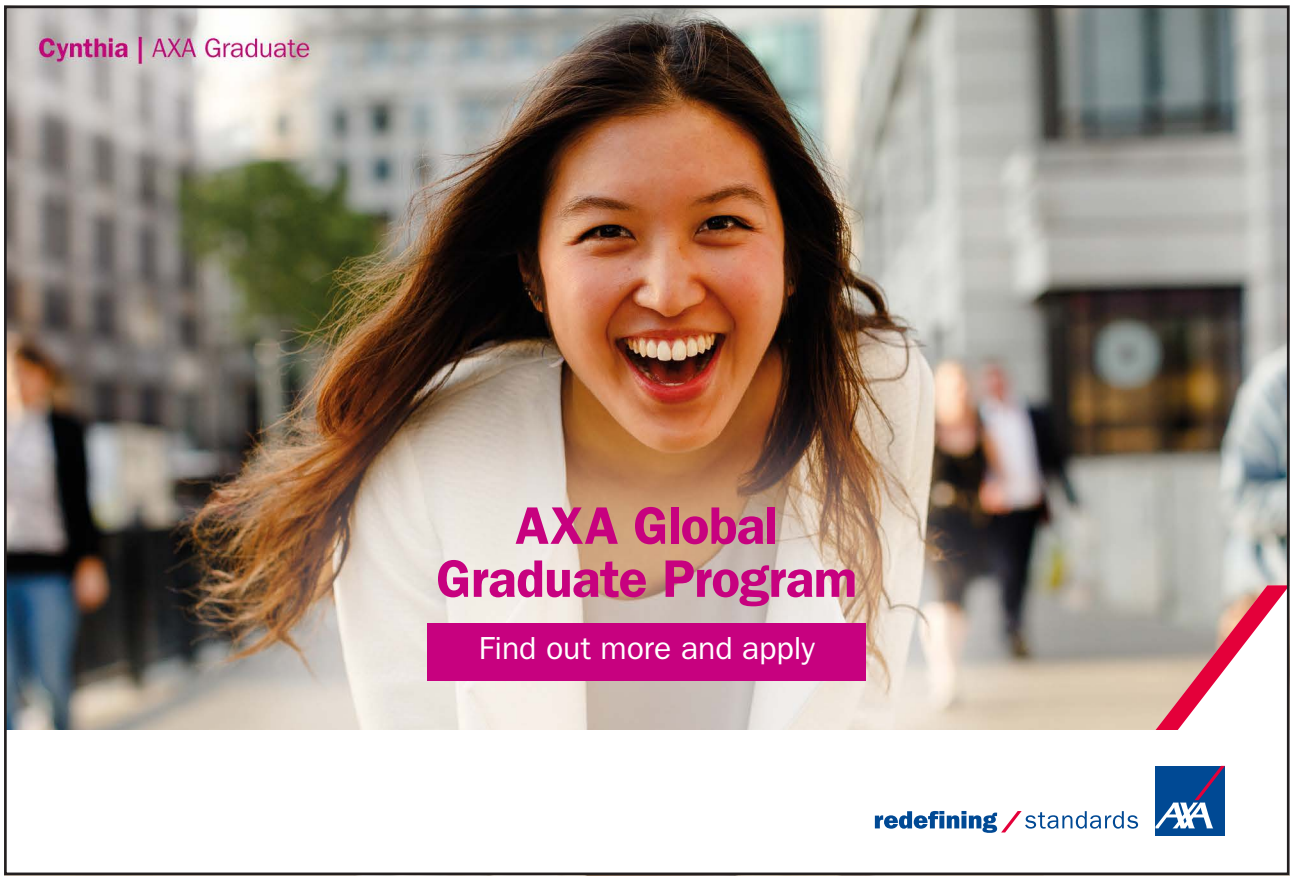

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Preface

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.

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There are eight chapters in this book, each of which focuses on a specific issue relating to the marketing research project. The first chapter introduces the marketing research process and discusses in details the scientific research approach and how to define the research problem. Chapter two and three explain the exploratory and conclusive research designs.

These chapters form the basis of the following chapters on sampling (chapter 4), measurement and scaling (chapter 5). Questionnaire building is discussed in details in chapter six followed by data preparation and preliminary data analysis (chapter 7). The last chapter focuses on report preparation and presentation issues.

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

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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.

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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.

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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.

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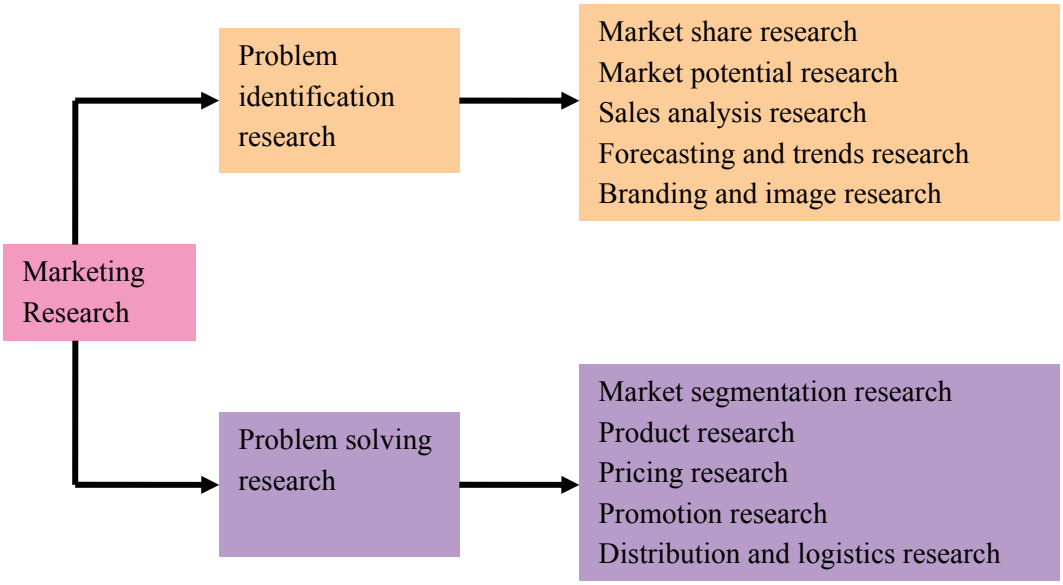

Figure 1.1: Classification of marketing research
Adapted from Malhotra, N. (2004), Marketing research: An applied orientation, Pearson Education, New Jersey.

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.

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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.

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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]

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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.

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.

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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.

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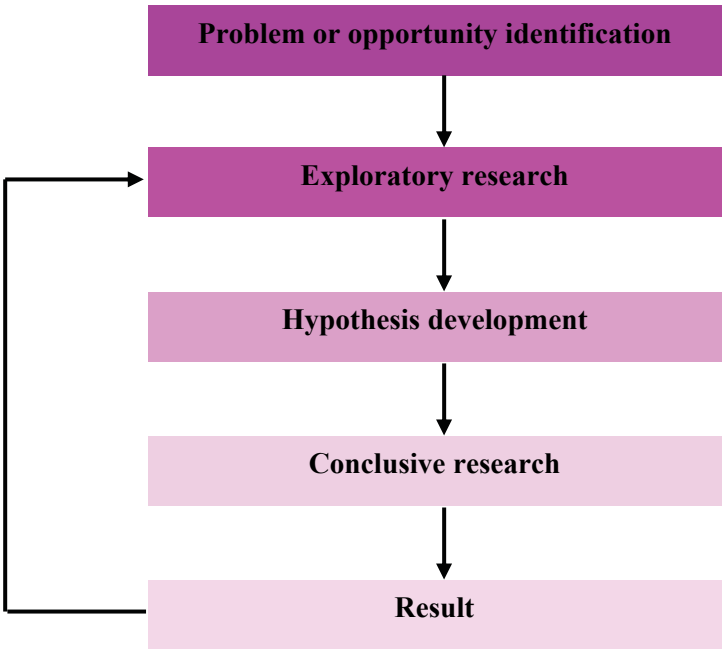

Figure 1.2: The marketing research process

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.

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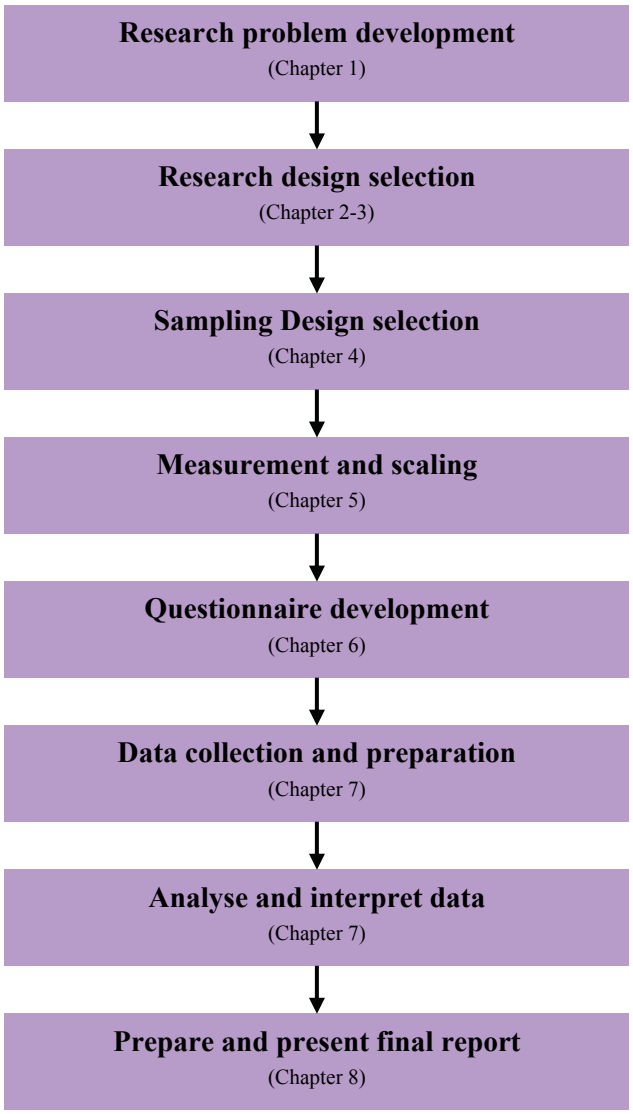

Figure 1.3: Phase wise marketing research process

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 5). Chapter 6 will discuss questionnaire development in details followed by data collection and preliminary data analysis (chapter 7). The last chapter focuses on report preparation and presentation issues.

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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.

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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.

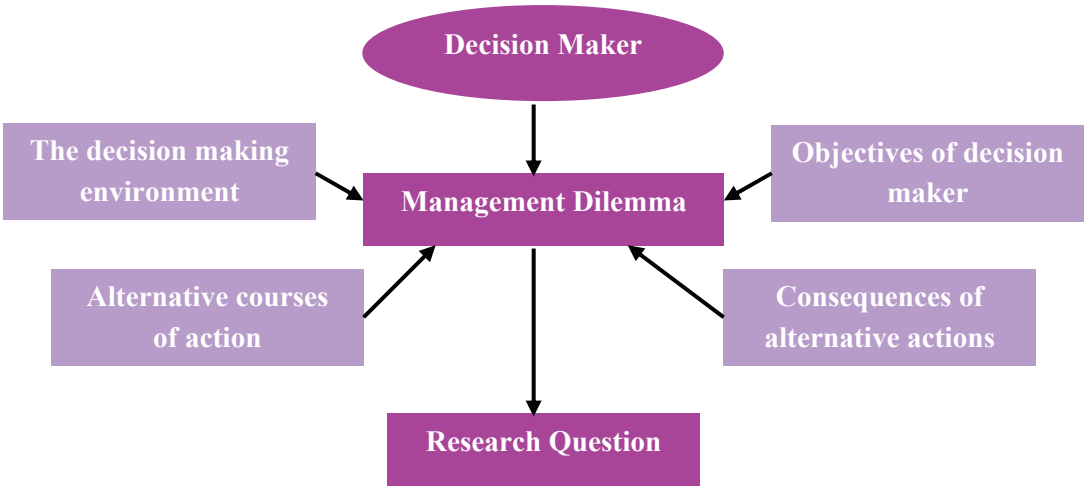

Figure 1.4: Process of developing research question

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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.

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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.

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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 then '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.

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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.

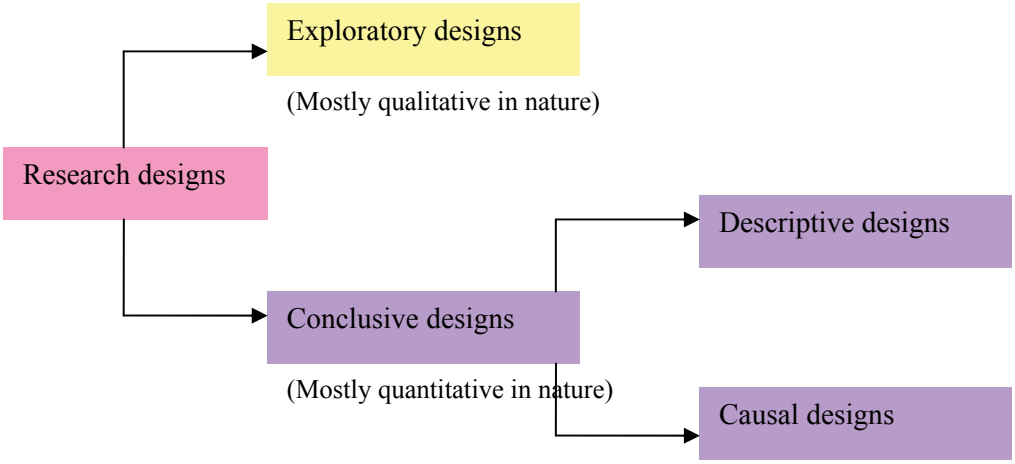

Figure 2.1: Classification of research designs

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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 emphasize 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.

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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).

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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.

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.

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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.

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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.

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 than 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 examples highlights respondents feelings about how do 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.

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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

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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 group

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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 has income got 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.

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In recent times, omnibus panels are becoming increasing 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.

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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).

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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 'prurely 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.

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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.

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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 years, 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.

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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 interview 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 results 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 draw back 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.

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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 completely 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 a 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.

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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.

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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]

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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 task[46] 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.

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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.

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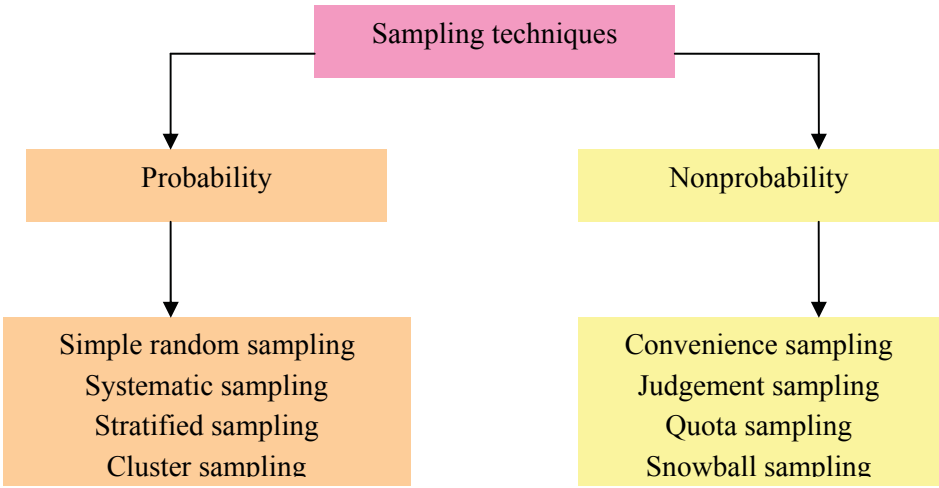

Figure 4.1: Classification of sampling techniques

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.

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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 than selects a number between 1 and 100. If, for example, number 50 is chosen by the researcher, the sample will consists 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.

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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. Ad 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.

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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 of 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.

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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.

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5 Measurement and scaling

5.1 Chapter summary

This chapter will introduce the concept of measurement and scaling. It will also provide discussion on the primary scales of measurement and go on to classify and describe both comparative and noncomparative scaling techniques. It will also discuss how an appropriate scaling technique be chosen in developing a right question. It will also focus on the concepts of validity and reliability in details.

5.2 Importance of measurement and scaling in marketing research

Like sampling we use measurement regularly in our daily lives. For example, if someone asks you of your favourite newspaper, your mind may create a list and you shall decide your favourite most newspaper from that. While deciding on that favourite newspaper your mind would have used several criteria such as your reading pattern, content of the newspaper, various other features such as writers involved, format, colour and pictures used, and columnists you prefer. Furthermore, your mind would have also told you the most preferred the second most preferred and even least preferred newspaper. The criteria your mind is using in deciding the favourite newspaper is called measurement. In research terms, measurement is nothing but the assignment of numbers or other symbols to characteristics of objects according to certain pre-specified rules. One of the important things to note here is that researchers do not measure objects but some characteristics of it. So in reality, researchers do not measure consumers but their perceptions, beliefs, attitudes, preferences and so on. The idea of assigning numbers can be helpful in two ways in accurate understanding of a phenomenon; (1) it allows statistical testing and (2) it helps facilitate easier communication as people have a clear idea with regard to what 10% or 20% means worldwide. Furthermore, numbers also provide objectivity in understanding a phenomenon. This added accuracy due to numbers is essential to effective decision making.

Scaling can be defined as an extension to the process of measurement. To successfully measure a phenomenon the researcher must gather appropriate raw data. The appropriateness of the raw data being collected depends directly on the scaling technique used by the researcher. Scaling can be defined as the process of assigning a set of descriptors or rules to represent the range of possible responses to a question about a particular phenomenon.[52] To illustrate, consider that a retail store manager wishes to know consumers' preference regarding the store's brand image. The researcher develops a scale where in 1 = extremely favourable and 10 = least favourable. The consumers now can respond using these boundaries. So scaling in a way is placing respondents n a continuum with respect to their preference of the store's brand image. Using the scale researchers can measure consumer responses easily. Moreover, can carry out some statistical analysis and also provide results which can easily be understood and acted upon by the manager. As one can observe, measurement and scaling is highly important in marketing research due to the overall objectivity they provide.

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5.3 Scales of measurement: fundamental properties

There are four primary scales of measurement: nominal, ordinal, interval and ratio. However, before we get into defining them and understanding their use in marketing research we need to focus on the basic properties which help us identify the scales. Drawing from mathematical theory, there are four scaling properties that a researcher can use in developing scales: assignment, order, distance and origin.

5.3.1 Assignment property

The assignment property is also referred as description or category property. It refers to the researcher's employment of unique descriptors, or labels to identify each object within a set. For example, a researcher asking a question 'are you going to buy a new music system in the next six months?' can assign two descriptors to record the response from consumers; namely yes or no. Similarly another question relating to more preferred brand by consumers with regard to music system can have various brand names mentioned as descriptors.

5.3.2 Order property

The second measurement scale property, order property, refers to the relative magnitude between the descriptors.[53] The relative magnitude refers to three basic properties of any object mathematically. For example, if they are two objects A and B, there are three basic mathematical possibilities: (1) A is greater than B; (2) A is lesser than B; and (3) A is equal to B. Order property helps in identifying these properties.

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5.3.3 Distance property

The distance property refers to a measurement scheme where exact difference between each of the descriptors is expressed in absolute.[54] For example, if you bought 4 cans of a drink and your friend bought 2 cans of the same drink you bought two more cans than your friend. Normally, the distance property is restricted to those situations where the raw responses represent some type of natural numerical answer.

5.3.4 Origin property

The origin property is a measurement scheme wherein exists a unique starting point in a set of scale points. For the most part, the origin property refers to a numbering system where zero is the displayed or referenced starting point in the set of possible responses. Other such origin property responses could be 'dissatisfied', 'neither dissatisfied nor satisfied', and 'highly satisfied'.

When developing scale measurements, it is important to understand and remember that the more scaling properties that can be simultaneously activated in a scale design, the more sophisticated raw data. As a scale design includes more scaling properties, it increases the amount of raw data that can be collected by the researcher. Furthermore, it is interesting to note here that each scaling property builds on the previous one. For example, a scale which includes order property will have assignment property built in. Similarly, a scale which possesses distance property will have assignment and order property both. An origin property based scale will have all assignment, origin and distance properties included in itself. This will become further clear as we discuss the basic levels of scale.

5.4 Primary scales of measurement

As stated in the last section there are four primary scales of measurement: nominal, ordinal, interval and ratio. Each of these scales of measurement provides specific scaling properties (assignment, order, distance and origin).

5.4.1 Nominal scale

A nominal scale is the most basic of four scales of measurement. It refers to figuratively labelling scheme in which the numbers serve only as labels or tags for identifying and classifying objects. In a way, it caters to researcher's need for assignment property. For example, identifying each respondent by assigning them a number is nominal scaling. Nominal scale is also used in most sports with each player assigned a specific unique number. In marketing research nominal scale is used in identifying respondents, products, attributes and so on. Nominal scale is also used for classification purposes in marketing research where scaled numbers serve as labels for classes or categories. For example, nominal scale is used in gender classification. The numbers in nominal scale do not reflect the amount of the characteristics possessed by the objects. For example, a marathon runner with a number 4500 does not mean he is superior to another marathon runner with a number 7200. The only permissible operation on the numbers in a nominal scale is counting. Only a limited number of statistical processes, such as percentages, mode, chi-square and binominal tests can be carried out using nominal scale based data.

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5.4.2 Ordinal scale

The structure of ordinal scale activates both the assignment and order scaling properties. This scale allows respondents to express relative magnitude between the answers to a question. In simple words, the ordinal scale allows respondents to order their response in a hierarchical fashion. At the start of this chapter we discussed the example of favourite newspaper. That example is an ordinal scale where a respondent can determine whether an object has more or less of a characteristic than some other object. Thus, ordinal scale provides relative magnitude however cannot provide relative distance. Common examples of ordinal scale include ranking of sportsman, ranking of brands, quality rankings and organization rankings in business magazines, several socioeconomic characteristics such as occupational status. In marketing research, ordinal scale is used to create various lists such as fortune 500 list of top global companies, best 100 companies to work with and so on. Various statistical analysis techniques can be used to describe and infer information from ordinal scale including percentile, mean, and rank-order correlation.

5.4.3 Interval scale

An interval scale possesses assignment, order and distance properties. So, an interval scale provides a researcher all the information of an ordinal scale, and at the same time, allows comparison between different objects. For example, in ordinal scale when newspapers are ranked from 1–5 it is impossible to define the preference distance between the newspapers. In simple words, we cannot possibly say that the difference of preference between newspaper 1 and newspaper 2 as well as newspaper 2 and newspaper 3 is the same. However, using interval scale we can actually provide the preferential difference between the two objects (newspapers). This kind of scale is most appropriate when the researcher wants to collect state-of-behaviour, state-of-intention or certain kind of state-of-being data.[55]

For example, if we ask two respondents about how much time do they spend reading a newspaper everyday, we can not only identify who spends more or less time in comparison to other but also we can know the exact difference in minutes (or other time interval) between the two respondents. Adding to our earlier example of best 100 companies to work with, if the researchers had asked the respondents to rate the companies on a rating scale it would have provided the distance between the companies and more meaningful information can be obtained. In an interval scale zero point (origin) is not fixed. Both origin and the units of measurement in interval scale are arbitrary. In marketing research, ratio scale is used to measure attitudes, opinions, index numbers and so on. All technique which can be applied to nominal and ordinal data can be used in interval scale measurement. Furthermore, many other statistical techniques, can be employed to analyse interval scale related data including range, mean, standard deviation, product-moment correlation, t-tests, ANOVA, regression and factor analysis.

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5.4.4 Ratio scale

A ratio scale contains all the four scaling properties (assignment, order, distance and origin) in one. In other words, it possesses all the properties of nominal, ordinal, and interval scales and in addition an origin. Thus, in ratio scale, we can identify or classify objects, rank the objects, and can compare intervals or differences. Ratio scale is the most sophisticated of all scales and it enables the researcher not only to identify the absolute differences between each scale point but also to make absolute comparisons between the responses. It is also meaningful to compute ratios of scale value. For example, the difference between 10 and 15 and is the same as 30 and 35. Furthermore, 30 is 3 times as large as 10 in an absolute sense. Regular examples concerning ratio scale include weight, height and age. In marketing research, ratio scale is used when measuring variables such as sales, cost, customer numbers and so on. All statistical techniques can be applied to ratio scale based data. This includes specialised statistics such as geometric mean, harmonic mean and coefficient of variation.

5.5 Comparative and non-comparative scaling

Researchers have identified several important characteristics for developing high quality scales. The high quality scales require (a) understanding the defined problem; (b) establishing detailed data requirements; (c) identifying and developing the constructs and (d) understanding the complete measurement scale. The above stated key features can assist marketing researchers in developing a reliable and valid scale.

As you would have observed from all of the earlier chapters that one of the major aims for managers in today's world is to understand their consumers' and market's reaction to various stimuli. This stimuli results in a specific set of reaction and researchers are mostly given task to measure and interpret the reaction prior to it occurs. Managers are interested in knowing consumers' attitudes, beliefs, preferences, as well as competitive reactions among other important market phenomena. In this section we shall discuss how researchers can take on the task of measurement using various scaling techniques.

The scaling techniques regularly employed in marketing research can be classified into two basic strands: (a) comparative scaling and (b) non-comparative scaling. As the name suggests comparative scaling involves direct comparison of stimulus objects with one another. For example, managers are generally interested in knowing consumer preference regarding their brand in comparison to a competitor's brand. A researcher can then ask question such as what of the two brands consumer prefers and this would provide the manager a clear idea of what consumer preferences are. There are several techniques which are used in building comparative scale such as paired comparison, rank order, constant sum scale, and q-sort.

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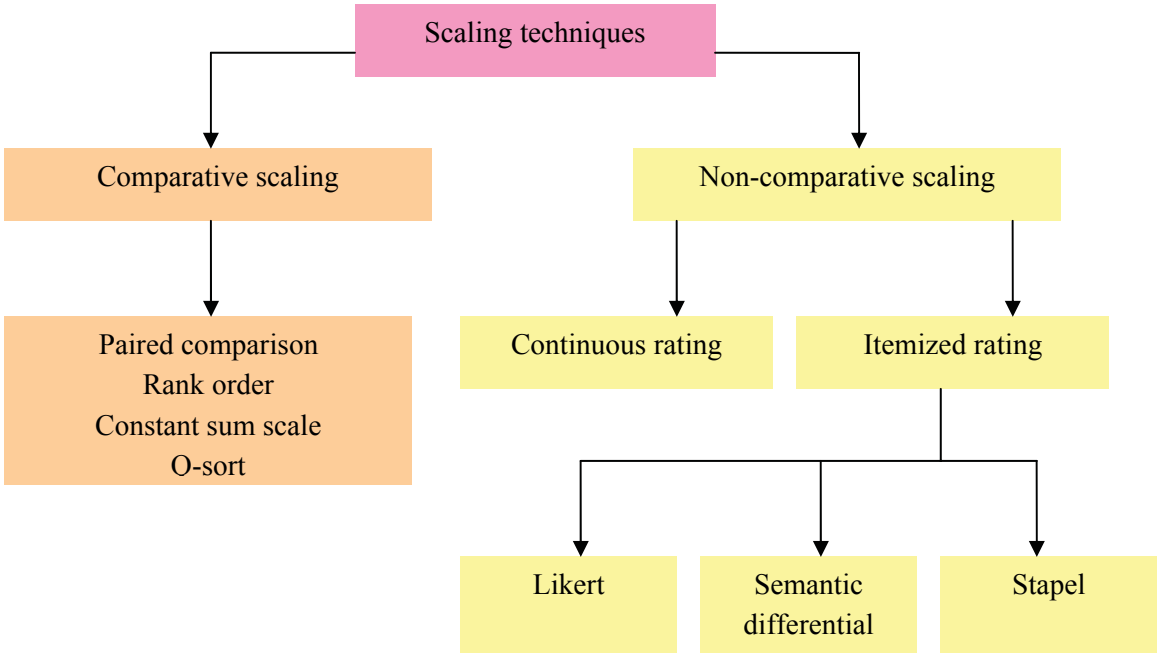

Figure 5.1: Classification of scaling techniques

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While comparative scaling is used for comparison between stimuli, on the other hand, non-comparative scaling involves each stimulus object being scaled independently of the other objects in the stimulus set. The resulting data in non-comparative scale are assumed to be interval or ratio scaled. For example, instead of direct comparison between brands researcher may ask the respondent to rate each brand separately on a scale of 1–10 and can evaluate each brand as well as compare the brands also. Non-comparative scaling techniques involve continuous rating scales as well as itemised rating scales. The itemised rating scales are further sub-divided into likert scale, semantic differential scale and stapel scale. As one can easily infer, non-comparative scaling is highly used in marketing research. In the following section we will focus on each of the scaling techniques in details.

5.6 Comparative scaling techniques

As discussed above, comparative scaling techniques provide a direct comparison between stimulus objects. Because the respondents are forced to choose one out of two (or many) stimulus objects, researchers can identify small differences between stimulus objects. One of the other advantages of comparative scaling is the easy application by researcher and easy understanding by the respondent. Comparative scaling involves fewer theoretical assumptions however as the data gathered using this technique is mostly ordinal it lacks distance and origin properties and therefore, does not provide possibility of carrying out various advance statistical techniques.

5.6.1 Paired comparison scaling

In paired comparison scaling, respondents are asked to choose one among two alternatives on a selected criterion. For example, a respondent may be asked to choose between two well-known toothpaste brands on the criterion of quality. The data obtained from paired comparison scaling is ordinal in nature. When there are more than two stimuli involved paired comparison scaling can still be useful technique to compare various stimuli. Lets say, a researcher is interested in knowing consumers preference among three different toothpaste brands, A, B and C. Using the paired comparison scaling researcher will create three questions for respondents namely:

1. Preference between toothpaste brand A and brand B
2. Preference between toothpaste brand B and brand C
3. Preference between toothpaste brand A and brand C.

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If for the first question respondent choose brand A over brand B and in the second question chose brand B over brand C, using simple logic researcher can derive that brand A will be more preferred in comparison to brand C. In simple terms, using paired comparison scaling researcher can generate a rank order among stimuli. Paired comparison scaling is used in pricing decisions frequently. It is quite helpful when the number of stimuli is limited. In such circumstances, paired comparison can reveal direct comparisons and overt choice. However, when large number of stimuli is involved, paired comparison scaling becomes a tedious technique. Paired comparison scaling is highly used in product testing. Many food companies and other Fast Moving Consumer Goods (FMCG) companies use this technique to compare their existing product with an upcoming variant or with their competitor's products. Coca-Cola is reported to have conducted more than 190,000 paired comparisons before introducing new Coke in 1985.[56]

5.6.2 Rank order scaling

Rank order scaling as the name suggests is about ranking a specific set of stimuli on a pre-defined criterion. It's also quite popular among researchers when trying to understand a specific rank order among various stimuli. The respondents are provided with various stimuli objects and asked to rank the most preferred object, the second most preferred object and so on. The earlier example of newspaper selection was kind of rank order scaling where respondents were asked to choose most preferred to least preferred newspapers. This scaling technique also uses comparison between stimuli objects using a pre-determined criterion (in the case of newspapers it may be content quality, use of relevant images and so on). In absence of such criterion this technique may deliver biased results. Furthermore, looking at the ranking in isolation also can create bias. For example, newspaper X may be the most preferred in terms of content quality however may be ranked lower in overall readability. Rank order scaling generates ordinal data and therefore lacks distance and origin properties. Due to the absence of distance and origin properties rank order scaling cannot provide an objective difference between various stimuli objects. For example, in the newspaper example, the researcher using rank order scaling cannot confidently state that the difference between preference of newspaper X, Y and Z (ranked as most to least preferred) is constant. In other way, we cannot determine if the preference difference between newspaper X and newspaper Y; and newspaper Y and newspaper Z is the same. While there are disadvantages of using rank order scaling, the ease of understanding is the greatest advantage associated with rank order scaling. When asked, most respondents can easily understand the instructions for ranking as the ranking process reflects our real life shopping environment and choice process.

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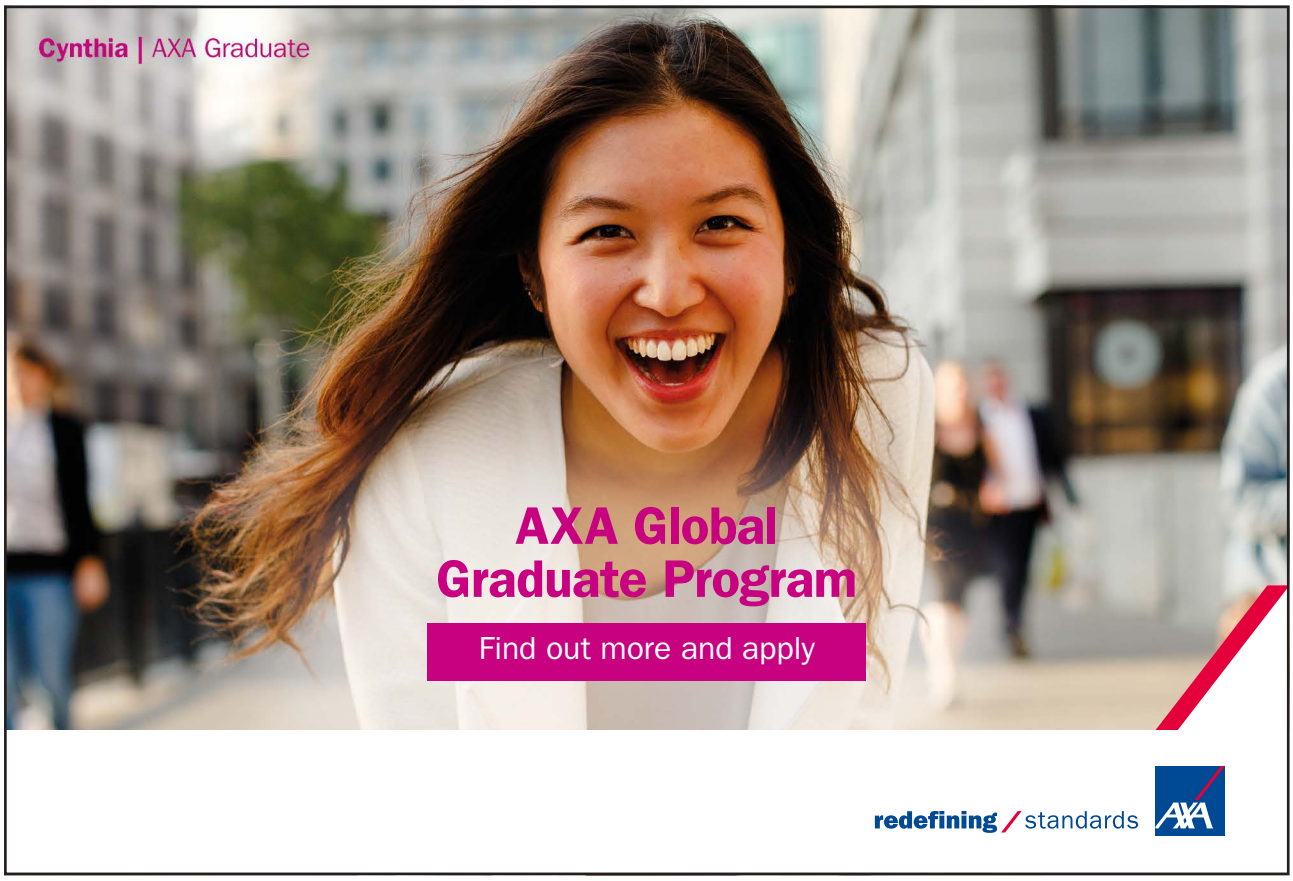
5.6.3 Constant sum scaling

In constant sum scaling, respondents are asked to assign a constant sum of units (could include points, currency, and so on) to a specific set of stimulus objects with respect to some pre-defined criterion. For example, researcher may ask the respondents to assign a number according to their perceptions of a specific stimuli object on the criteria chosen so as the total becomes 100. The attributes are scaled by counting the points assigned to each criterion by all the respondents and divided by the number of respondents. Table 5.1 below provides detailed explanation of how constant sum scaling is used in real life. The table explains respondents' preferences regarding various pre-defined criteria namely: content quality, supplements, writers (columnists) involved, images used, breadth of coverage (local, regional, local and global) and advertisements. Respondents were asked to rate each criteria in such a way that the total of their responses becomes 100. Two hundred responses were collected. From the table, it can be observed that respondents put content quality as the most preferred factor and advertisement in the newspaper to be least preferred factor. Furthermore, it can also be stated that supplements provided with the newspapers as well as images used within the newspaper are twice as important in comparison to writers or columnist involved with the newspaper. Using the numbers assigned researcher can easily convert constant sum scale into rank order scale.



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Criteria	Overall respondent preference (200 responses)
Content quality	35
Supplements	20
Writers (Columnists) involved	10
Images used	20
Breadth of coverage (local, regional, national, global)	15
Advertisements	00
Total	100

Table 5.1: Example of constant sum scaling

Constant sum scale can also help segment various respondents according to their preferences and provide groupings. Even if constant sum scale has distance and origin properties the results lack generalizability and therefore researchers suggest constant sum scale to be treated as ordinal data measurement technique.[57] One of the major advantages of constant sum scale is that it provides fine discrimination among stimulus objects without requiring too much time. The respondent disengagement at times affects the validity of this scale when the larger number of criteria is present. Furthermore, respondents may make mistakes in bringing the total 100. However, constant sum scales can be helpful when measuring consumer shopping basket preferences. Such as, how much would they spend on each specific food items if they had £100. With the advent of internet based surveys, constant sum scales have become easier to implement because software used in the background can keep track of the total and inform the respondent of the changes required.

5.6.4 Q-sort

Q-sort can be called an extension to rank order scaling. It uses a rank order procedure in which objects are sorted into piles based on similarity with respect to some pre-defined criteria. It provides grouping according to the respondents' preferences among a relative larger number of objects quickly. For example, respondents may be provided with 70 different statements relating to their preference regarding a specific phenomenon on individual cards. Thereafter, they can be asked to asked to place them into six different categories ranging from most preferred to least preferred. This kind of sorting provides how respondents group variables in their mind.

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5.7 Non-comparative scaling

As the name suggests, in non-comparative scaling, researchers use whatever rating standard seems appropriate to them. Respondents answering non-comparative scale based questions do not compare the object being rated either to another object or to some specified standard. They evaluate only one object at a time. Non-comparative scaling involves two techniques namely: continuous and itemized rating scales. Itemized scales are further divided in Likert, semantic differential and stapel scale. Each of these scales will be discussed in details in this section.

5.7.1 Continuous rating scale

Continuous rating scale is also known as graphic rating scale in which respondents rate the objects by placing a mark at the appropriate position on a line that runs from one extreme criterion to the other. The respondent is provided with the freedom here to choose a point anywhere along the line and is not restricted to ranking only. The figure 5.2 below illustrates various types of continuous rating scale which can be used in getting responses from the respondents.

```
Q. How would you rate newspaper X with regard to content quality?

Version 1:
The worst  ------------------------------------------------------------X------------ The best

Version 2:
The worst ------------------------------------------------------------X------------ The best
        0       20              40              60              80              100

Version 3:
The worst ------------------------------------------------------------X----------- The best
                20              40              60              80              100
                Very poor               Neither poor            Very good
```

Figure 5.2: Continuous rating scale

There can be various other types wherein the line can be changed from horizontal to vertical, the scale points can be changed from positive to negative aspects and so on. Once the respondent provides the rating on the line, the researcher divides the line into as many categories as desired and assign scores based on the categories into which the ratings fall. In the example above, we can observe that the respondent exhibits a very favourable opinion towards the content quality of newspaper X. While they are easy to construct and understand, inferences from continuous rating scale is cumbersome and at times unreliable. Furthermore, this scale provides little extra information to the researcher and therefore its usage in marketing research was limited. However, with the advent of internet based surveys this rating scale is seeing a revival as using computers it is easier to handle such scale.

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5.7.2 Itemized rating scale

Itemized rating scales involve selection of a specific category out of various categories pre-defined by the researcher. A brief description is associated with each category and respondents are asked to select the best fitting category with the stimuli object. Itemized scales are widely used in marketing research. Likert, semantic differential and stapel scale are among the most used itemized rating scale and we shall describe them in details in this section.

5.7.2.1 Likert scale

Likert scale is one of the highly used scales in marketing research which focuses on degree of agreement or disagreement. The scale is named after Rensis Likert who developed the scale.[58] The respondent is presented with a series of statements about the stimulus objects and asked to provide views on agreement or disagreement with each of the statement. A typical Likert scale constitutes of five items ranging from 'strongly disagree' to 'strongly agree'. For the ease of statistics, researchers also associated numbers with Likert scale. Figure 5.3 below provides an example of Likert scale.

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Q. Following are some statement relating too Newspaper X. Please indicate how strongly you agree or disagree with the statements using the scale provided by circling one of the numbers:

1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. Newspaper X has high quality content	1	2	3	4	5
b. Newspaper X has the best writers	1	2	3	4	5
c. Newspaper X has a balance of local and national coverage	1	2	3	4	5
d. Newspaper X is my preferred newspaper	1	2	3	4	5

Figure 5.3: An example of Likert Scale

The representation of Likert scale makes it easier for the respondents to answer the questions. Researchers also use variety of number systems instead of 1 to 5, such as – 2 to + 2 or reversing the number order from 5 to 1. The analysis on Likert scale can be conducted on item basis or on the basis of the total score which can be calculated for each respondent by summing across items. Likert scale can also help in developing comparison constructs. For example, the scale can be repeated for Newspaper Y and the results can be compared. The Likert scale has several advantages including ease of development and understanding. It can be administer using any survey method. On the other hand, Likert scale can take much time to complete as respondents have to read each statement and provide a response relating to it.

5.7.2.2 Semantic differential scale

Semantic differential scale includes a seven-point bi-polar scale in comparison to Likert's five-point scale. While in Likert each item number of scale is defined in semantic differential scale the endpoints are clearly defined. For example, 'satisfaction' and 'dissatisfaction' can be used as the endpoints. Figure 5.4 provides an example of semantic differential scale for Newspaper X.

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Q. In this question we would like to know your perceptions regarding Newspaper X. Please mark 'X' on each line that best indicates your perception. Please make sure that you have put the mark on every line.

Newspaper X is:

Easy read	:-----:-----:-----:-----:-X--:-----:	Hard read
Unreliable	:-----:-----:-----:-----:-X--:-----:	Reliable
Modern	:-----:-----:-----:-X--:-----:-----:	Old fashioned
Rational	:-X--:-----:-----:-----:-----:-----:	Emotional

Figure 5.4: An example of semantic differential scale

In the above example, one can easily observe the pattern of respondent's perceptions. The respondent thinks that Newspaper X is hard to read but reliable and rational in its approach. One of the advantages of semantic differential scale is the improved design wherein the negative and positive aspects related to a stimuli object can be interchanged on right and left side. This controls the tendency of many respondents with very positive or very negative views, who tend to mark with a bias in their minds. For the ease of statistical analysis, semantic differential scale can be scored on either -3 to + 3 or 1 to 7. Similar to Likert scale semantic differential scale can also provide interesting comparison between brands, products, organizations and so on.

5.7.2.3 Stapel scale

Stapel scale consists of a single criterion in the middle of an even-numbered range of values, from -5 to +5, without a neutral point. The scale is generally presented vertically. The respondents are asked to choose a specific number describing the stimuli object of concern on the pre-defined criterion. Figure 5.5 provides a detailed description of Stapel scale. As it can be seen from the figure that Stapel scale looks fairly similar to semantic differential scale however, it's represented by numbers. The data obtained from Stapel scale can be analysed in the same way as semantic differential scale. The advantage of Stapel scale is that it does not require any phrases to achieve bipolarity as required in semantic differential scale. Of all the itemized rating scales, Stapel scale is least used in the field of marketing research. It is mainly due to the thinking that respondents will not be able to understand the scale and might provide a biased response.

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Q. In this question we would like to know how accurately a keyword describes the Newspaper X. If you think the keyword describes the Newspaper X very accurately you should choose a higher positive number. In case you think that keyword does not describe the Newspaper X very accurately choose a larger negative number. You can select any number you feel appropriate.

+5	+5	+5
+4	+4	+4
+3	+3	+3
+2	+2	+2
+1	+1	+1
Content quality	Price	News coverage
-1	-1	-1
-2	-2	-2
-3	-3	-3
-4	-4	-4
-5	-5	-5

Figure 5.5: An example of Stapel scale

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5.8 Selecting an appropriate scale

Over the years, researchers have developed many scales of measurement and many modifications have been suggested and used. As stated in the discussion above, the scales can take many different forms and therefore it becomes utmost important for researchers to take several important decisions while constructing these scales.

The decisions mostly pertain to (a) length of scale points; (b) balance of the scale; (c) forced vs. nonforced scales; (d) scale description and presentation. Length of scale points has a direct impact on respondent engagement. The longer the scale the higher the confusion however the researcher can get finer details. This paradox between engagement versus detail is always present within scales. Researchers over the years have suggested appropriate length be anywhere between five to nine scale points. In most cases, researchers develop balanced scale wherein favourable and unfavourable categories are equal however, sometimes unbalanced scales are also used. Researchers must take extra precaution in analysing unbalances scale. Forced scale choice is important when researchers are asking respondents about sensitive issues. Many times when it comes to sensitive issues, respondents tend to stay in the neutral ground and researcher may not be able to capture the real response. In such circumstance forced scale where the neutral point is removed is quite helpful. The scale description in words and the presentation may also deter respondents' engagement and therefore, extra care must be taken in developing an appropriate scale.

5.9 Scale evaluation

While researchers always attempt to develop a robust and appropriate scale to measure a specific phenomenon, error in measurement can occur due to very many reasons. Researchers have identified various sources of error in measurement. These include:

a) Respondent error: respondent characteristics such as intelligence, education can affect the test score.
b) Short-term personal factors: such as fatigue, stress, anxiety
c) Situational factors: such as noise in the surroundings, presence of other people
d) Clarity errors: such as poor framing of question or scale
e) Mechanical errors: such as poor printing, recording error and poor design
f) Interviewer error: interviewer differences and their bias in interviewing
g) Analysis error: inappropriate methods of analysis used.

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The above mentioned errors can affect the real results being reported. Researchers have defined errors in two broad streams namely, systematic error and random error. Systematic error affects the measurement constantly while random error, as the name suggests is random in nature. To avoid such errors and control the research process, after developing an appropriate scale, researcher must assess the scale on three dynamic constructs: validity, reliability and generalizability. Validity can be measured by examining content, criterion and construct validity. Construct validity is divided into three parts namely, convergent, discriminant and nomological validity. Reliability can be assessed by examining test/retest reliability, alternative forms reliability and internal consistency reliability. Figure 5.6 represents the classification graphically.

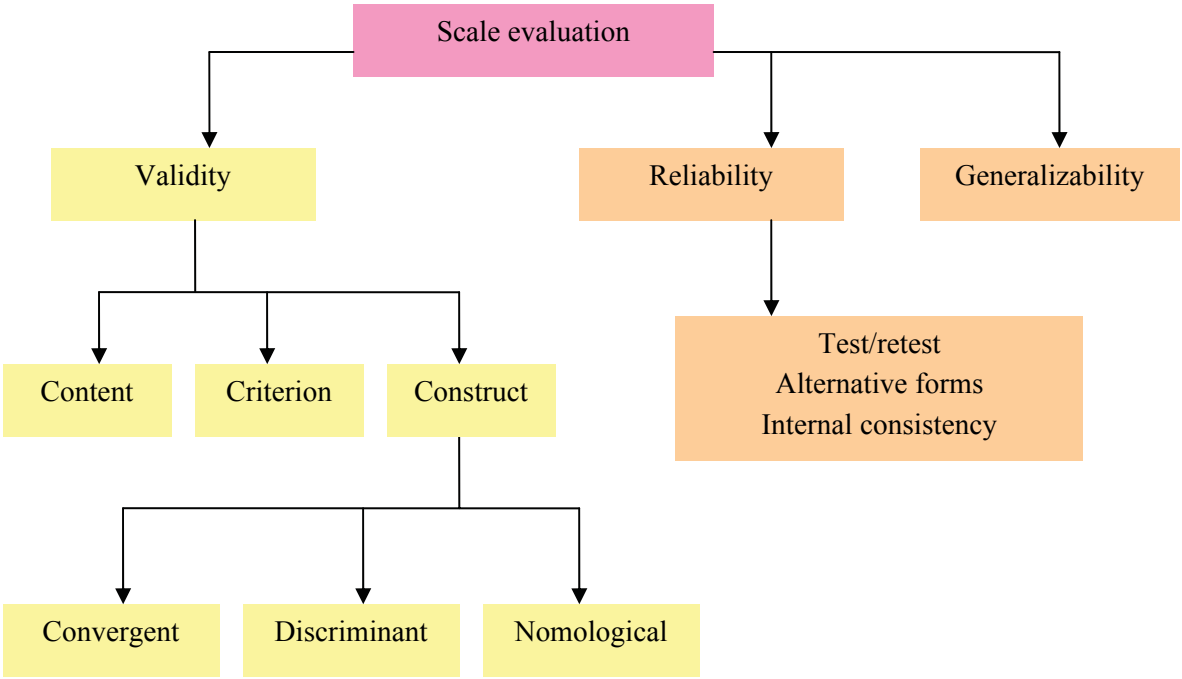

Figure 5.6: Scale evaluation classification

5.9.1 Validity

Validity of a scale is defined as the extent to which differences in observed scale scores reflect the true differences among objects on the characteristics being measured.[59] In simple words, by testing validity researcher can decide is the scale measuring what it is meant to measure. A perfectly valid scale will have no measurement errors.

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As the name suggests, content validity (or face validity as it is called some other times) refers to the content of the scale. It involves a subjective but systematic evaluation of how well the content represents the task at hand. At times, researchers as well as some other experts in the field are asked to look at the scale and provide their opinion as to weather the scale measures the phenomenon. Being a subjective evaluation technique it is not considered a sufficient measure of the validity of a scale. Criterion validity refers to examining whether the measurement scale performs as expected in relation to other variables selected as meaningful criteria. Construct validity is the bridge between theory and the scale. It explains the questions of what construct or characteristic the scale is measuring and what deductions can be made concerning the theory underlying the scale.

Construct validity is classified into three parts namely: convergent, discriminant and nomological validity. Convergent validity focuses on how well the scale's measurement positively correlates with different measurements of the same scale. Discriminant validity refers to the fact that the scale being investigated does not significantly correlate with other constructs that are operationalized as being different. Nomological validity allows researchers to evaluate how well one particular construct theoretically networks with other established constructs that are related yet different.

5.9.2 Reliability

Reliability in research relates to consistency of results over a period of time. A scale is called reliable if it produces consistent results when repeated measurements are made.[60] Systematic errors do not have an effect on reliability however random errors do. There are three ways in which reliability is measured: test-retest reliability, alternative forms reliability and internal consistency reliability.

As the name suggests, in test-retest reliability measurement, same respondents are administered identical sets of scale items at two different times (usually 2–4 weeks). The degree of similarity between the measurements (measured through correlation between both measurements) determines the reliability. The higher the correlation between the two measurements, the higher the scale reliability. In measuring alternative forms reliability, two equivalent forms of the scale are constructed and then the same respondents are measured at two different times.[61] Internal consistency reliability is used to assess the reliability of a summated scale where several items are summated to form a total score. In simple words, each item in the scale must measure part of what the scale is developed to measure. Various techniques such as 'split-half reliability' or 'coefficient alpha' (also known as Cronbach's alpha) are used to measure internal consistency reliability. In split-half reliability the scale is broken in two halves and the resulting half scores are correlated. High correlation between the two halves shows higher internal consistency. In case of coefficient alpha the average of all possible split-half coefficients is calculated. The value beyond 0.7 suggests acceptable internal reliability.[62]

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5.9.3 Generalizability

Generalizability refers to the extent to which one can generalize from the observations at hand to a universe of generalizations.[63] For example, a researcher may wish to generalize a scale developed for use in personal interviews to other modes of data collection, such as mall-intercept and telephone interviews. Likewise, one may wish to generalize from a sample of observers to a universe of observers, from a sample of times of measurement to the universe of times of measurement, from a sample of items to the universe of items and so on.[64] To generalize to other universes, generalizability theory procedures must be employed.

5.10 Conclusion

In this chapter we focused on the concepts of measurement and scaling. Both these constructs are very important in marketing research as they help in developing a better construct measurement, appropriate analysis and provide ease of interpretation and communication of the findings. Scales of measurement have four fundamental properties: assignment property, order property, distance property and origin property. The progression into each property is such that the later scale possesses the earlier scale's property. For example, origin property possesses assignment, order and distance properties.

There are four primary scales of measurement namely: nominal, ordinal, interval and ratio scale. Nominal scale possesses only assignment property; ordinal scale possesses order property, interval scale possesses distance property and ratio scale possesses origin property. However, as stated above it can be understood that ratio scale in a way possesses all the four properties.

Comparative and non-comparative scaling are the two types of scaling methods used in marketing research. Comparative scaling includes paired comparison, rank order, constant sum and q-sort scaling techniques. Non-comparative scaling includes two types: continuous rating and itemized rating scales. Itemized scaling is further divided into Likert, semantic differential and Stapel scaling.

Selecting an appropriate scale requires consideration of various factors including (a) length of scale points; (b) balance of the scale; (c) forced vs. nonforced scales; (d) scale description and presentation. Scales should also be evaluated on for their validity, reliability and generalizability. There are three major types of validity measured by researchers: content, criterion and construct validity. Construct validity is further divided into convergent, discriminant and nonological validity. There are three types of reliability measures including test/retest, alternative forms and internal consistency reliability.

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6 Questionnaire design

6.1 Chapter summary

Once researchers have taken a decision to employ a specific research design and sampling procedure and determined the measurement and scaling method, they can now develop a questionnaire to collect the data required for the study. This chapter will focus on the questionnaire design and development. We will start by discussing the significance of questionnaire design in marketing research. Next, we shall describe the steps involved in questionnaire design and several guidelines for developing an appropriate questionnaire based on question structure, layout and wording. The chapter will also discuss the importance of pilot testing.

6.2 Significance of questionnaire building

A researcher's ability to design an appropriate measurement scale does not by itself provide guarantee that relevant data will automatically collected. Therefore, understanding what involves in building a questionnaire becomes utmost important for a researcher and manager. Much of the primary data collection required for solving marketing problems involves asking questions to respondents and recording their response. Most problems in the field of marketing research are complex in the nature and require primary data collection. In such cases, a questionnaire becomes a potent tool for collecting primary data.

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A questionnaire is a formalized set of questions involving one or more measurement scales designed to collect specified primary data. Measurement scales discussed in the previous chapter provide the building blocks for questionnaire design. Regardless of the form of administration, a questionnaire is characterized by two main objectives. First, it must convert the information required by managers in a format of questions. Second, the questions asked must be created in a format in which respondent will understand it and be willing to answer them. The first objective poses a tough challenge to researchers in converting management dilemma into a researchable questionnaire which respondents will be willing to answer. The second objective requires researcher to build a questionnaire in a format that will encourage and motivate the respondents in becoming involved and complete the interviewing process. Incomplete interviews seldom provide any useful insights and therefore the researcher must strive for reducing respondent disengagement as much as possible. A well-designed questionnaire would generally overcome the problem of disengagement. The researcher must also keep a tab on the various errors stemming from the process including the response, respondent and researcher errors as discussed earlier in chapter 3.

6.3 Process of questionnaire design

Designing questionnaire has been always an issue of debate in marketing research as some researchers view it as art which is based on experience of the researcher,[65] while others consider it as a science based on sound theoretical development.[66] While the debate is still going on with regard to what a questionnaire design is all about, there is consensus among the research community that the designing process involves some established rules of logic, objectivity and systematic procedures.[67] While the systematic procedure provides guidelines to avoid major mistakes, each questionnaire requires a customized path for development. The generic structure in developing questionnaire is described as follows:

a) Specification of the information needed in researchable format
b) Selection of interview method
c) Determination of question composition
d) Determination of individual question content
e) Developing question order, form and layout
f) Pilot testing the questionnaire

In this section each of these steps will be discussed in details. Before proceeding however it is important to note that while the process stated above is quite helpful, researcher may need to follow a different pattern in developing the questionnaire. For example, the researcher may develop the form and layout of the questionnaire simultaneously or prior to piloting the questionnaire the researcher may fine tune the questionnaire.

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6.3.1 Specification of the information needed in researchable format

The first step in developing a questionnaire is to specify the information needed in researchable format. A dummy table (discussed in chapter 3) could be very helpful in converting information needed into researchable format. The researcher should also look at the research objectives and hypotheses and match this information. At this stage, it is very important to have a clear idea of target population and sample. The characteristics of the respondents have a great influence on questionnaire design. For example, questions which are appropriate for elderly consumers might not be appropriate for young consumers. Unclear understanding of the information needed could lead to the development of an improper questionnaire which has direct effect on the analysis and the final results.

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6.3.2 Selection of interview method

In the chapter 3 we discussed various methods of interview including personal, mail, telephone and internet based interviews. The type of interviewing method also plays an important role in questionnaire design. For example, in personal interview situations, respondents are able to see the questionnaire and interact in person with the interviewer. This provides an opportunity to ask varied questions involving complexities because instant feedback mechanism is available. Due to the personal interaction it is also possible sometimes to ask lengthy questions. In telephone interviews, because the respondent cannot see the questionnaire it is quite hard to ask complex and lengthy questions. Therefore, the questions should be short and to the point involving little complexity. Even with the use of computer assisted telephone interviews (which involves sophisticated skip patterns and randomization) the questions have to be kept simple. The length related issues can be dealt with in mail questionnaire however because in this situation the respondent is left on his or her own it is recommended that the questions be kept simple. Internet based questionnaire provide high level of interactivity however, as the respondent is trying to tackle each question on his or her own, the researcher must take this into consideration in questionnaire development process. The interview method also has an effect on the scaling technique due to the issue of complexity. In personal interviews most complex scales can easily be used however, in telephone interviews researchers tend to prefer nominal scales. At times researchers have used other scales in telephone interviews with varied effects. In mail interviews complex scales can be used however, detailed explanation with examples is always desirable. Similar pattern is also observed in internet based interviews.

6.3.3 Determination of question composition

Once the information is specified in the researchable format and the interview method is decided, the next stage for the researchers will be to determine what kind of question are they going to ask to the respondents. There are two major types of question structures: unstructured (also called open ended questions) and structured (also called close ended questions).

Unstructured questions (or open-ended questions) are questions in which respondents are asked to answer the questions in their own words. These types of questions allow the respondents to express their general attitude and opinions and provide rich insights relating to the respondents views about a certain phenomenon. Unstructured questions are highly used in exploratory research. While unstructured questions provide freedom of expression there are inherent disadvantages associated with them with regard to interviewer bias. If the interviewer is recording the answers by writing the summary down while respondents speaks, the recording may be biased as its based on skills of interviewer on deriving the main points. It is always advisable to use audio recording if possible. Another disadvantage of this questioning is creating coding and interpretations. The overall coding of unstructured questions is costly and time consuming.[68] To avoid mistakes of response recording and coding related errors, researchers use pre-coding wherein they identify possible answers and assign responses to the categories they have identified.

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Most conclusive studies employ structured (or close-ended) questions. These types of questions allow the respondents to answer the questions in a pre-defined format. There are three main types of structured questions, dichotomous, multiple choice and scale questions. This type of question format reduces the amount of thinking and effort required by respondents. Interviewer bias in eliminated with unstructured questions because either the interviewer or respondents themselves have to check a box or a line, circle a category, hit a key on a keyboard or record a number.[69] In simple words, structured format gives the researcher an opportunity to control the respondent's thinking and allows simplicity. Of the three major types of structured questions, dichotomous question is the simple most questioning category.

A dichotomous question has only two response alternatives, yes or no, male or female and so on. Sometimes, a neutral alternative is also added in the questions such as 'don't know' or 'no opinion'. While simplicity is the greatest advantage of dichotomous questions, the response bias becomes a great disadvantage also. Dichotomous questions are good when considering collecting demographic information however, with attitude measurement they are of little use. Multiple choice questions provide an extension to the dichotomous question wherein a respondent is provided with a set of alternatives and is allowed to choose more than one alternative. Multiple choice questions also have an inherent position and order bias wherein respondents tend to choose the first or last statement in the list. To avoid such bias several forms of the questions with the same alternatives should be prepared. This can easily be handled when interviewing respondents on internet or on telephone using CATI. Another disadvantage of multiple choice questions is the effort required in developing an effective question. A theoretical exploration as well as an exploratory study can assist in such process. The third alternative for structured questionnaire is scale questions, which were discussed in detail in chapter 5.

6.3.4 Determination of individual question content

Each individual question is unique from its content perspective and therefore must be treated with caution in the development process. Using components such as words, order, tenses and so on, each question attempts to fulfil the overarching research objectives.

One of the most important components of any question is words. Researchers have to be very clear in the choice of words which can easily be understood in the correct manner by respondents. If the researchers and respondents do not assign the same meaning to the used words, the response will be biased.[70] Wording of a question could create problems such as ambiguity, abstraction, and connotation. To avoid these problems researchers can take several steps such as:

1) Use ordinary words which can easily be understood by the respondents
   - For example, instead of using the word 'ambidextrous' one can use 'skilful'
2. Avoid ambiguous words
   - For example, word 'hot' or 'cool' change their meaning according to the context they are used in

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3) Avoid leading questions
   - For example, do you think immigration is hurting local economy and making locals lose their jobs?
4. Avoid implicit questions
   - For example, do you think a government backed website will have more trust and credibility?
5. Avoid generalizations
   - For example, what is the per capita annual milk consumption in your family?
6. Avoid double barrelled questions
   - For example, do you think you will purchase this product for low price and high quality?

There are several other considerations before researcher decides the final question. Once the question is developed researchers need to ask 'Is this question necessary?' 'Does it fulfil the part of the research objective as desired?' Sometimes it is possible that a single question might not suffice a phenomenon to be studied and may require more than one question. For example, instead of asking 'what is the per capita annual milk consumption in your family?' a researcher will be better off asking following two questions:

- What is the total weekly (monthly) milk consumption in terms of litres (pints) in your family?
- How many people including you live in your household?

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The researchers also need to understand the problem of memory loss which has been discussed in earlier chapters. The memory loss issue can hamper respondent's ability and willingness to answer. For example, 'what did you eat Wednesday two weeks ago?' will be a question which will be impossible for most respondents to answer because they do not remember the phenomenon. Similarly, asking respondents to rank 20 items in a single question will make it too difficult for them and most will be unwilling to attempt the same.

6.3.5 Developing question order, form and layout

The question order, format and layout can have a significant impact on respondent engagement. Questionnaire with unclear order, format and layout generally get very low response rate and in turn become costly exercise. The questionnaire can be divided in three main parts generally: forward and opening questions; generic information questions; specific information questions.

The forward and opening questions are highly important in gaining respondents' trust and making them feel comfortable with the study. It also improves the response rate among the respondent if they find it worthwhile and interesting. Questions pertaining to opinion can give a good start to most questionnaires as everyone likes to give some opinion about issues at hand. At times, when it is necessary to qualify a respondent (i.e. determine if they are part of the defined target population), opening questions can act as qualification questions.

Generic information questions are divided into two main areas: classification information questions and identification information questions. Most socioeconomic and demographic questions (age, gender, income group, family size and so on) provide classification information. On the other hand, respondent name, address, and other contact information provide identification information. It is advisable to collect classification information before identification information as most respondents do not like their personal information collected by researchers and this process may alienate the respondent from the interview.

The specific information questions are questions directly associated with the research objectives. They mostly involve various scales and are complex in nature. This type of questions should be asked later in the questionnaire after the rapport has been established between the researcher and the respondent. Most researchers agree that it is good to start with forward and opening questions followed progressively by specific information question and concluding with classification and identification information questions.

The format and layout of the questionnaire has a direct impact on respondent engagement. It is always suggested that the questionnaire format and layout should have some type of symmetry. This can lead to higher response rate.

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6.3.6 Pilot testing the questionnaire

Once the preliminary questionnaire has been developed using the above stated process a researcher should assign coding (discussed in the next chapter) to every question and test the questionnaire on a small sample of respondents to identify and eliminate potential problems. This sampling process is called pilot testing. It is advised that, a questionnaire should not be used in the field survey without being adequately pilot tested. A pilot test provides testing of all aspects of a questionnaire including, content, wording, order, form and layout.[71] The sample respondents selected for the pilot test must be similar to those who will be included in the actual survey in terms of their background characteristics, familiarity with the topic and attitudes and behaviours of interest. An initial personal interview based pilot test is recommended for all types of surveys because the researcher can observe respondents' attitudes and reactions towards each question. Once the necessary changes have been made using the initial personal interview based pilot test, another pilot test could be conducted for mail, telephone or internet based survey. Most researchers recommend a pilot test sample between 15 and 30 respondents. If the study is very large involving multiple stages, a larger pilot test sample may be required. Finally, the response obtained from the pilot test sample should be coded and analysed. These responses can provide a check on the adequacy of the data obtained in answering the issue at hand.

6.4 Conclusion

In this chapter we focused on an important aspect of overall research process, questionnaire design. A questionnaire is a robust tool in collecting primary data for both exploratory and conclusive studies. Regardless of the form of administration, a questionnaire is characterized by two main objectives. First, it must convert the information required by managers in a format of questions. Second, the questions asked must be created in a format in which respondent will understand it and be willing to answer them.

While every questionnaire design involves unique set of solutions, researchers agree that a structured process can be employed in preparing an appropriate questionnaire. The steps of this process include; specification of information needed in researchable format; selection of interview method; determination of question composition; determination of individual question content; developing question order, form and layout and pilot testing the questionnaire. Each of these steps is important however their order may differ from one study to the other.

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7 Data preparation and preliminary data analysis

7.1 Chapter summary

After developing an appropriate questionnaire and pilot testing the same, researchers need to undertake the field study and collect the data for analysis. In this chapter, we shall focus on the fieldwork and data collection process. Furthermore, once the data is collected it is important to use editing and coding procedures to input the data in the appropriate statistical software. Once the data is entered into the software it is also important to check the data before the final analysis is carried out. This chapter also deals with the how to code the data, input the data and clean the data. It will further discuss the preliminary data analysis such as normality and outlier check. The last section of this chapter will focus on the preliminary data analysis techniques such as frequency distribution and also discuss hypothesis testing using various analysis techniques.

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7.2 Survey fieldwork and data collection

As stated earlier, many marketing research problems require collection of primary data and surveys are one of the most employed techniques for collection of primary data. Primary data collection therefore, in the field of marketing research requires fieldwork. In the field of marketing (especially in the case of corporate research) primary data is rarely collected by the person who designed the research. It is generally collected by the either people in the research department or an agency specialising in fieldwork. Issues have been raised with regard to fieldwork and ethics. If a proper recruitment procedure is followed, such concerns rarely get raised. The process of data collection can be defined in four stages: (a) selection of fieldworkers; (b) training of fieldworkers; (c) supervision of fieldworkers and (d) evaluation of fieldwork and fieldworkers.

Prior to selecting any fieldworker the researcher must have clarity as to what kind of fieldworker will be suitable for a particular study. This is critical in case personal and telephone interview because the respondent must feel comfortable interacting with the fieldworker. Many times researchers leave the fieldworkers on their own and this can have a direct impact on overall response rate and quality of data collected. It is very important for the researcher to train the fieldworker with regard to what the questionnaire and the study aim to achieve. Most fieldworkers have little idea of what exactly research process is and if not trained properly, they might not conduct the interviews in the correct manner. Researchers have prepared guidelines for fieldworkers in asking questions. The guidelines[72] include:

a) Be thoroughly familiar with the questionnaire.
b) Ask the questions in the order in which they appear in the questionnaire.
c) Use the exact wording given in the questionnaire.
d) Read each question slowly.
e) Repeat questions that are not understood.
f) Ask every applicable question.
g) Follow instructions and skip patterns, probing carefully.

The researcher should also train the fieldworkers in probing techniques. Probing helps in motivating the respondent and helps focus on a specific issue. However, if not done properly, it can generate bias in the process. There are several probing techniques[73]:

a) Repeating the question
b) Repeating the respondents' reply
c) Boosting or reassuring the respondent
d) Eliciting clarification
e) Using a pause (silent probe)
f) Using objective/neutral questions or comments

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The fieldworkers also should be trained on how to record the responses and how to terminate the interviews politely. A trained fieldworker can become a good asset in the whole of the research process in comparison to a fieldworker who is feeling disengagement with the whole process.

It is important to remember that fieldworkers are generally paid on hourly or daily basis and paid minimum wages in many cases. Therefore, their motivation to conduct the interviews may not be as high as a researcher overlooking the whole process. This brings about the issue of supervision, through which, researchers can keep a control over the fieldworkers by making sure that they are following the procedures and techniques in which they were trained. Supervision provides advantages in terms of facilitating quality and control, keeping a tab on ethical standards employed in the field, and control over cheating.

The fourth issue with regard to fieldwork is the issue of evaluating fieldwork and fieldworkers. Evaluating fieldwork is important from the perspective of authenticity of the interviews conducted. The researcher can call 10–20% of the sample respondents to inquire the fieldworker actually conducted the interviews or not. The supervisor could ask several questions within the questionnaire to reconfirm the data authenticity. The fieldworkers should be evaluated on the total cost incurred, response rates, quality of interviewing and the data.

7.3 Nature and scope of data preparation

Once the data is collected, researchers' attention turns to data analysis. If the project has been organized and carried out correctly, the analysis planning is already done using the pilot test data. However, once the final data has been captured, researchers cannot start analysing them straightaway. There are several steps which are required to prepare the data ready for analysis. The steps generally involve data editing and coding, data entry, and data cleaning.

The above stated steps help in creating a data which is ready for analysis. It is important to follow these steps in data preparation because incorrect data can results into incorrect analysis and wrong conclusion hampering the objectives of the research as well as wrong decision making by the manager.

7.3.1 Editing

The usual first step in data preparation is to edit the raw data collected through the questionnaire. Editing detects errors and omissions, corrects them where possible, and certifies that minimum data quality standards have been achieved. The purpose of editing is to generate data which is: accurate; consistent with intent of the question and other information in the survey; uniformly entered; complete; and arranged to simplify coding and tabulation.

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Sometimes it becomes obvious that an entry in the questionnaire is incorrect or entered in the wrong place. Such errors could have occurred in interpretation or recording. When responses are inappropriate or missing, the researcher has three choices:

a) Researcher can sometimes detect the proper answer by reviewing the other information in the schedule. This practice, however, should be limited to those few cases where it is obvious what the correct answer is.
b) Researcher can contact the respondent for correct information, if the identification information has been collected as well as if time and budget allow.
c) Researcher strike out the answer if it is clearly inappropriate. Here an editing entry of 'no answer' or 'unknown' is called for. This procedure, however, is not very useful if your sample size is small, as striking out an answer generates a missing value and often means that the observation cannot be used in the analyses that contain this variable.

One of the major editing problem concerns with faking of an interview. Such fake interviews are hard to spot till they come to editing stage and if the interview contains only tick boxes it becomes highly difficult to spot such fraudulent data. One of the best ways to tackle the fraudulent interviews is to add a few open-ended questions within the questionnaire. These are the most difficult to fake. Distinctive response patterns in other questions will often emerge if faking is occurring. To uncover this, the editor must analyse the instruments used by each interviewer.

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7.3.2 Coding

Coding involves assigning numbers or other symbols to answers so the responses can be grouped into a limited number of classes or categories. Specifically, coding entails the assignment of numerical values to each individual response for each question within the survey. The classifying of data into limited categories sacrifices some data detail but is necessary for efficient analysis. Instead of requesting the word male or female in response to a question that asks for the identification of one's gender, we could use the codes 'M' or 'F'. Normally this variable would be coded 1 for male and 2 for female or 0 and 1. Similarly, a Likert scale can be coded as: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree and 5 = strongly agree. Coding the data in this format helps the overall analysis process as most statistical software understand the numbers easily. Coding helps the researcher to reduce several thousand replies to a few categories containing the critical information needed for analysis. In coding, categories are the partitioning of a set; and categorization is the process of using rules to partition a body of data.

One of the easiest ways to develop coding structure for the questionnaire is to develop a codebook. A codebook, or coding scheme, contains each variable in the study and specifies the application of coding rules to the variable. It is used by the researcher or research staff as a guide to make data entry less prone to error and more efficient. It is also the definitive source for locating the positions of variables in the data file during analysis. Most codebooks – computerized or not – contain the question number, variable name, location of the variable's code on the input medium, descriptors for the response options, and whether the variable is alpha (containing a–z) or numeric (containing 0–9). Table 7.1 below provides an example of a codebook.

Variable instructions	SPSS Variable name	Coding
Identification n°	ID	Number of each respondent
Movie rentals(1)	Rent	1 = yes 2 = no
Movie genre(2)	Genre	1 = comedy 2 = action/adventure 3 = thriller 4 = drama 5 = family 6 = horror 7 = documentary
DVD rental sources(3)	Source	1 = in-store 2 = online
Renting for(4)	Time	1 = less than 6 months 2 = 6 months–1 year 3 = 1–2 years 4 = 2–5 years 5 = above 5 years

Table 7.1: Sample codebook for a study on DVD rentals

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Coding close ended questions is much easier as they are structured questions and the responses obtained are predetermined. As seen in the table 7.1 the coding of close ended question follows a certain order. However, coding open ended questions is tricky. The variety of answer one may encounter is staggering. For example, an open ended question relating to what makes you rent a DVD in the above questionnaire created more than 65 different types of response patterns among 230 responses. In such situations, content analysis is used, which provides an objective, systematic and quantitative description of the response.[74] Content analysis guards against selective perception of the content, provides for the rigorous application of reliability and validity criteria, and is amenable to computerization.

7.3.3 Data entry

Once the questionnaire is coded appropriately, researchers input the data into statistical software package. This process is called data entry. There are various methods of data entry. Manual data entry or keyboarding remains a mainstay for researchers who need to create a data file immediately and store it in a minimal space on a variety of media. Manual data entry is highly error prone when complex data is being entered and therefore it becomes necessary to verify the data or at least a portion of it. Many large scale studies now involve optical character recognition or optical mark recognition wherein a questionnaire is scanned using optical scanners and computer itself converts the questionnaire into a statistical output. Such methods improve the overall effectiveness and efficiency of data entry. In case of CATI or CAPI data is directly added into the computer memory and therefore there is no need for data entry at a later stage. Many firms now a days use electronic devices such as PDAs, Teblet PCs and so on in fieldwork itself and thereby eliminating the data entry process later on. However, as the data is being manually entered in this process, researchers must look for anomalies and go through the editing process.

7.3.4 Data cleaning

Data cleaning focuses on error detection and consistency checks as well as treatment of missing responses. The first step in the data cleaning process is to check each variable for data that are out of the range or as otherwise called logically inconsistent data. Such data must be corrected as they can hamper the overall analysis process. Most advance statistical packages provide an output relating to such inconsistent data. Inconsistent data must be closely examined as sometimes they might not be inconsistent and be representing legitimate response.

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In most surveys, it happens so that respondent has either provided ambiguous response or the response has been improperly recorded. In such cases, missing value analysis is conducted for cleaning the data. If the proportion of missing values is more than 10%, it poses greater problems. There are four options for treating missing values: (a) substituting missing value with a neutral value (generally mean value for the variable); (b) substituting an imputed response by following a pattern of respondent's other responses; (c) casewise deletion, in which respondents with any missing responses are discarded from the analysis and (d) pairwise deletion, wherein only the respondents with complete responses for that specific variable are included. The different procedures for data cleaning may yield different results and therefore, researcher should take utmost care when cleaning the data. The data cleaning should be kept at a minimum if possible.

7.4 Preliminary data analysis

In the earlier part of this chapter, we discussed how responses are coded and entered. Creating numerical summaries of this process provides valuable insights into its effectiveness. For example, missing data, information that is missing about a respondent or case for which other information is present, may be detected. Mis-coded, out-of-range data, extreme values and other problems also may be rectified after a preliminary look at the dataset. Once the data is cleaned a researcher can embark on the journey of data analysis. In this section we will focus on the first stage of data analysis which is mostly concerned with descriptive statistics.

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Descriptive statistics, as the name suggests, describe the characteristics of the data as well as provide initial analysis of any violations of the assumptions underlying the statistical techniques. It also helps in addressing specific research questions. This analysis is important because many advance statistical tests are sensitive to violations in the data. The descriptive tests provide clarity to the researchers as to where and how violation is occurring within the dataset. Descriptive statistics include the mean, standard deviation, range of scores, skewness and kurtosis. This statistics can be obtained using frequencies, descriptives or explore command in SPSS. To make it clear, SPSS is one of the most used statistical software packages in the world. There are several other such software packages available in the market which include, Minitab, SAS, Stata and many others.[75]

For analysis purposes, researchers define the primary scales of measurements (nominal, ordinal, interval and ratio) into two categories. They are named as categorical variables (also called as non-metric data) and continuous variables (also called as metric data). Nominal and ordinal scale based variables are called categorical variables (such as gender, marital status and so on) while interval and ratio scale based variables are called continuous variables (such as height, length, distance, temperature and so on).

Programmes such as SPSS can provide descriptive statistics for both categorical and continuous variables. The figure below provides how to get descriptive statistics in SPSS for both kinds of variables.

Categorical variables:
SPSS menu
Analyse > Descriptive statistics > Frequencies
(Choose appropriate variables and transfer them into the variables box using the arrow button. Then choose the required analysis to be carried out using the statistics, charts and format button in the same window. Press OK and then you will see the results appear in another window)

Continuous variables:
SPSS menu
Analyse > Descriptive statistics > Descriptives
(Choose all the continuous variables and transfer them into the variables box using the arrow button. Then clicking the options button, choose the various analyses you wish to perform. Press OK and then you will see the results appear in another window)

Figure 7.1: Descriptive analysis process

The descriptive data statistics for categorical variables provide details regarding frequency (how many times the specific data occurs for that variable such as number of male and number of female respondents) and percentages. The descriptive data statistics for continuous variables provide details regarding mean, standard deviation, skewness and kurtosis.

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7.5 Assessing for normality and outliers

To conduct many advance statistical techniques, researchers have to assume that the data provided is normal (means it is symmetrical on a bell curve) and free of outliers. In simple terms, if the data was plotted on a bell curve, the highest number of data points will be available in the middle and the data points will reduce on either side in a proportional fashion as we move away from the middle. The skewness and kurtosis analysis can provide some idea with regard to the normality. Positive skewness values suggest clustering of data points on the low values (left hand side of the bell curve) and negative skewness values suggest clustering of datapoints on the high values (right hand side of the bell curve). Positive kurtosis values suggest that the datapoints have peaked (gathered in centre) with long thin tails. Kurtosis values below 0 suggest that the distribution of datapoints is relatively flat (i.e. too many cases in the extreme).

There are other techniques available too in SPSS which can help assess normality. The explore function as described in the figure below can also help assess normality.

Checking normality using explore option
SPSS menu
Analyse > Descriptive statistics > Explore
(Choose all the continuous variables and transfer them into the dependent list box using the arrow button. Click on the independent or grouping variable that you wish to choose (such as gender). Move that specific variable into the factor list box. Click on display section and tick both. In the plots button, click histogram and normality plots with tests. Click on case id variable and move into the section label cases. Click on the statistics button and check outliers. In the options button, click on exclude cases pairwise. Press OK and then you will see the results appear in another window)

Figure 7.1: Checking normality using explore option

The output generated through this technique provides quite a few tables and figures. However, the main things to look for are:

a) 5% trimmed mean (if there is a big difference between original and 5% trimmed mean there are many extreme values in the dataset.)
b) Skewness and kurtosis values are also provided through this technique.
c) The test of normality with significance value of more than 0.05 indicates normality. However, it must be remembered that in case of large sample, this test generally indicates the data is non-normal.
d) The histograms provide the visual representation of data distribution. Normal probability plots also provide the same.
e) Boxplots provided in this output also help identify the outliers. Any cases which are considered outliers by SPSS will be marked as small rounds at the edge of the boxplot lines.

The tests of normality and outliers are important if the researcher wishes to know and rectify any anomalies in the data.

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7.6 Hypothesis testing

Once the data is cleaned and ready for analysis, researchers generally undertake hypothesis testing. Hypothesis is an empirically testable though yet unproven statement developed in order to explain a phenomena. Hypothesis is generally based on some preconceived notion of the relationship between the data derived by the manager or the researcher. These preconceived notions generally arrive from existing theory or practices observed in the marketplace. For example, a hypothesis could be that 'consumption of soft drinks is higher among young adults (pertaining to age group 18–25) in comparison to middle aged consumers (pertaining to age group 35–45)'. In the case of the above stated hypothesis we are comparing two groups of consumers and the two samples are independent of each other. On the other hand, a researcher may wish to compare the consumption pattern relating to hard drinks and soft drinks among the young adults. In this case the sample is related. Various tests are employed to analyse hypothesis relating to independent samples or related samples.

7.6.1 Generic process for hypothesis testing

Testing for statistical significance follows a relatively well-defined pattern, although authors differ in the number and sequence of steps. The generic process is described below.

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1. **Formulate the hypothesis**

   While developing hypothesis, researchers use two specific terms: null hypothesis and alternative hypothesis. The null hypothesis states that there is no difference between the phenomena. On the other hand, alternative hypothesis states that there is true difference between the phenomena. While developing null hypothesis, researcher assumes that any change from what has been thought to be true is due to random sampling error. In developing alternative hypothesis researcher assumes that the difference exists in reality and is not simply due to random error.[76] For example, in the earlier explained hypothesis relating to hard drinks and cola drinks, if after analysis, null hypothesis is accepted, we can conclude that there is no difference between the drinking behaviour among young adults. However, if the null hypothesis is rejected, we accept the alternative hypothesis that there is difference between the drinking of hard and soft drinks among young adults. In research terms null hypothesis is denoted via H_0 and alternative hypothesis as H_1.

2. **Select an appropriate test**

   Statistical techniques can be classified into two streams namely univariate and multivariate (bivariate techniques have been included as multivariate analysis here). Univariate techniques are appropriate when there is a single measurement of each element in the sample, or there are several measurements of each elements but each variable is analysed in isolation. On the other hand, multivariate techniques are suitable for analysing data when there are two or more measurements of each element and the variables are analysed simultaneously.[77] The major difference between univariate and multivariate analysis is the focus of analysis where univariate analysis techniques focus on averages and variances, multivariate analysis techniques focus on degree of relationships (correlations and covariances).[78] Univariate techniques are further classified on the basis of the nature of the data (i.e. categorical or continuous). Multivariate techniques are classified on the basis of dependency (i.e. dependence techniques and independence techniques).

   The figure below explains the various types of analysis techniques researchers use when analysing data.

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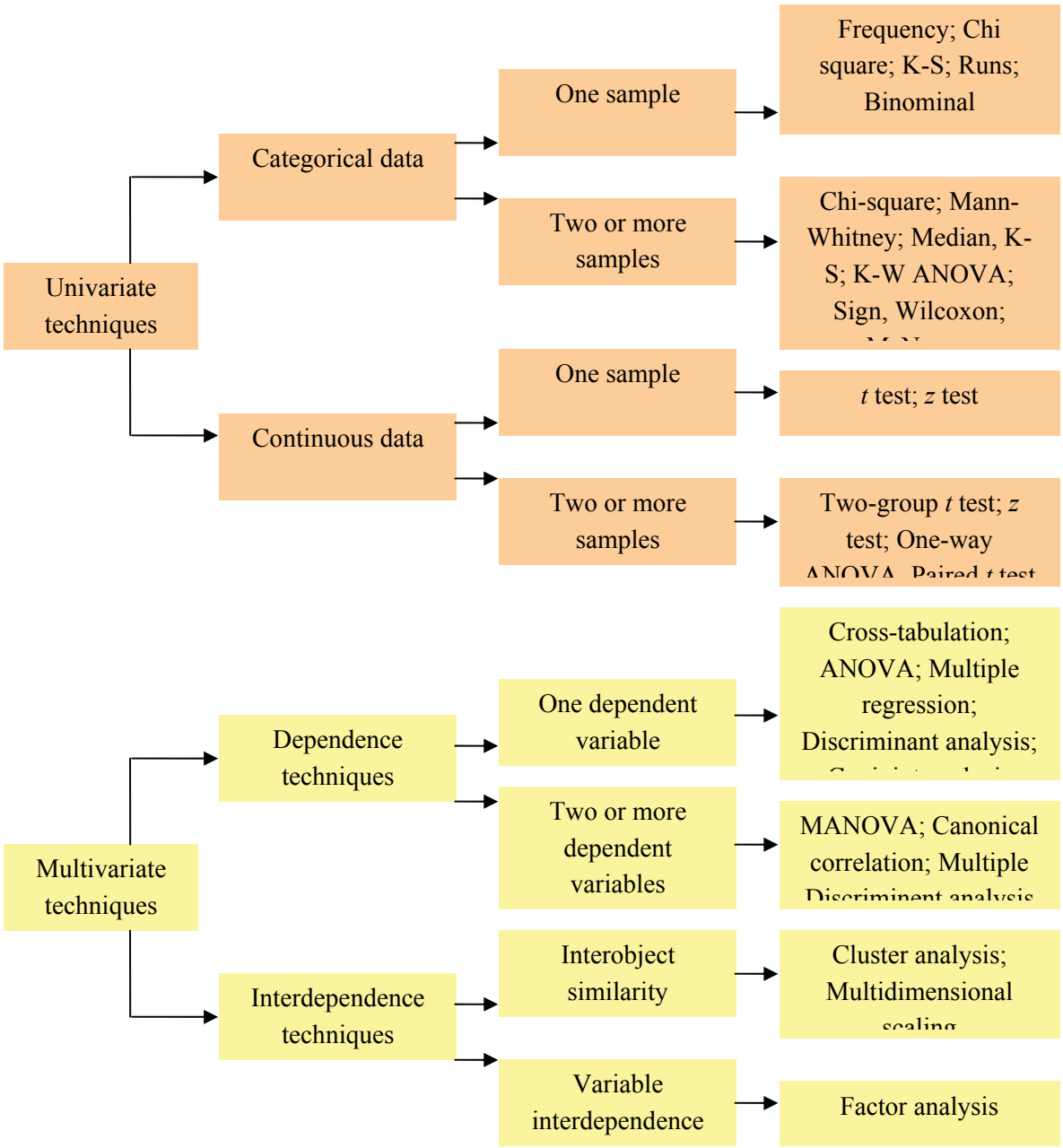

Figure 7.2 Classification of Univariate and Multivariate techniques

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As seen from the figure above there are many types of univariate and multivariate analysis techniques. For categorical data (involving nominal and ordinal scales), when there is only one sample, frequency distribution, chi-square, Kolmogorov-Smirnov, runs and binominal tests can be used. However, when there two or more samples involved, analysis techniques such as chi-square, Mann Whitney, Median, K-S, and Kruskal-Wallis Analysis of Variance (ANOVA) can be useful for independent samples and sign, McNemar, and Wilcoxon tests can be useful for related samples. Multivariate techniques involving dependencies and one dependent variable could involve cross-tabulation, ANOVA, multiple regression, discriminant analysis and conjoint analysis. However, if there are two or more dependent variables in these dependence techniques, multivariate analysis of variance (MANOVA), canonical correlation, and multiple discriminant analysis can be used. For the interdependence multivariate techniques when a researcher wishes to measure interobject similarity cluster analysis and multidimensional scaling can be used. On the other hand, if a researcher wishes to measure variable interdependence factor analysis can be used. We shall not be covering these techniques in details as they are quite advance in nature and it is beyond the remit of this book.

3. **Select desired level of significance**

   In marketing research, we accept or reject a hypothesis on the basis of the information provided by our respondent sample. Since any sample will almost surely vary somewhat from its population, we must judge whether the differences between groups are statistically significant or insignificant. A difference has statistical significance if there is good reason to believe the difference does not represent random sampling fluctuations only. For example, in case of the first hypothesis we developed relating to the young adults and middle aged consumers, we found that the young adults consume 21 soft drinks a week and the middle aged people consumer 16 soft drinks a week. Can we state there is a meaningful difference between the groups? To define this meaningfulness we need to conduct significance testing.

   In either accepting or rejecting a null hypothesis, we can make incorrect decisions. A null hypothesis may get accepted when it should have been rejected or rejected when it should have been accepted. These incorrect decisions lead to errors which are termed as Type I error and Type II error. When a Type I error (Also termed as alpha error – α) occurs, a true null hypothesis is rejected. When a Type II error (also termed as beta error – β) one fails to reject a false null hypothesis. Although β is unknown as it is a population parameter, it is related to α. An extremely low value of α (e.g. $\alpha = 0.0001$) will result in intolerably high β errors. So it is necessary to balance the two errors. Marketing researchers therefore use α value generally as 0.05 or 0.01. Increasing sample size also can help control Type I and II errors.

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4. **Compute the calculated difference value**
   After the data are collected, researchers use a formula for the appropriate significance test to obtain the calculated value.

5. **Obtain the critical value**
   Once the test is conducted for t value or chi-square or other measure, researchers must look up the critical value in the appropriate table for that distribution. These tables are generally available in many research books or can be easily obtained from internet.[79] The critical value is the criterion that defines the region of rejection from the region of acceptance of the null hypothesis.

6. **Compare the calculated and critical values**
   Once the calculated and critical values are obtained the researcher then compares the values. If the calculated value of the test statistics is greater than the critical value of the test statistics, the null hypothesis is rejected. Furthermore, if the probability associated with the calculated value of the test statistics is less than the level of significance (α) then the null hypothesis is rejected.

7. **Marketing research interpretation**
   The conclusion reached by hypothesis testing must be converted into a language which can be understood by managers. In this way, what was stated as a managerial problem gets answered.

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7.7 Conclusion

In this chapter, we discussed three aspects of marketing research process: data collection, data preparation and preliminary data analysis. Once the questionnaire is designed, to collect primary data researchers need to involve fieldworkers. It is very important for the researcher to control the selection, training and supervision process of the fieldworkers as it can have a direct impact on the quality of the data collected.

Once the data is collected using fieldwork, the next stage for the researcher is to edit and code the data. The editing and coding process can be tedious at times but are important in the data entry process. The editing and coding processes help identify anomalies within the data which can at times be solved using various data cleaning methods.

The clean data is then used for analysis purposes by researchers. The first step for analysis is to look for normality and outliers. It is important to do these tests as many advance statistical tests are quite sensitive to extreme values in dataset.

After the preliminary data is analysed for normality, researchers undertake hypothesis testing. Researchers first develop a null hypothesis which stats there is no difference between the phenomena being measured. Once an appropriate hypothesis is formulated, researchers choose between various statistical tests which are classified broadly into two categories: univariate and multivariate techniques. Researchers then select the desired level of significance to avoid Type I (α) and Type II (β) errors. After that they compute the critical value and obtain the calculated value. Once both the values are obtained, researchers compare the values and decide on the acceptance or rejection of null hypothesis.

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8 Report preparation and presentation

8.1 Chapter summary

In this chapter we focus on the last two aspects of marketing research process: report preparation and presentation. One of the important aspects of any research project is to assist managers in decision making process and lot depends on how the researcher communicates the findings of the research project to the managers. If the results of the research are not effectively communicated to the manager, the decision making process may not be as sound as expected. An effective research report can overcome this challenge. This chapter therefore, will focus on how to write a research report which can be easily understood by manager as well as can help in decision making process as desired. We shall focus on the issue of content, format, layout and style.

8.2 Importance of marketing research report

As discussed in the summary above, marketing research report is the bridge between researcher and manager with regard to the research findings. Even if the research project is carried out with most meticulous design and methodology, if the research results are not effectively communicated using the research report to the manager, the research project may not be a success. This is because the research results will not help in achieving the major aim of any research project, which is to support the decision making process. Research report is a tangible output of the research project and not only helps in decision making but also provides documentary evidence and serves as a historical record of the project. Many a times, managers are only involved in looking at the research report (i.e. oral presentation and written report) and therefore most times the research project is judged by the quality of the research report. This has direct association with the relationship between the researcher and manager. All of the above reasons suggest the importance of marketing research report.

8.3 Reporting the results: key issues to remember

Before communicating the results of the project to the manager, the researcher should keep several issues in mind for effective communication. The first and foremost rule for writing the report is to empathize. The researcher must keep in mind that the manager who is going to read and utilize the findings of the research project might not be as technically knowledgeable with statistical techniques or at times with the methodology. Furthermore, the manager will be more interested in knowing how results can be used for decision making rather than how they have been derived. Therefore, the jargons and technical terms should be kept at minimum. If the jargons cannot be avoided, then researcher should provide a brief explanation for the manager to understand it.

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The second rule researcher should keep in mind is related to the structure of the report. The report should be logically structured and easy to follow. The manager should easily be able to grasp the inherent linkages and connections within the report. The write up should be succinct and to the point. A clear and uniform pattern should be employed. One of the best ways to check weather the structure of the report is sound or not, the report should be critically looked at by some of the research team members.

Furthermore, researcher must make sure that the scientific rigour and objectivity is not lost when presenting the research project findings. At times, because of the heavy involvement of researcher in the overall research process, it is possible that there is a loss of objectivity. Therefore, researcher should keep a tab on the aspects of objectivity of the overall report. Many times managers do not like to see the results which oppose their judgemental beliefs however the researcher must have the courage to present the findings without any slant to conform to the expectations and beliefs of the managers.

A professionally developed report is always well received as it makes the important first impression in manager's mind. It is therefore very important for researcher to focus on the presentation of the report. The other important aspect is the use of figures, graphs and tables. There is an old saying that, 'a picture is worth 1000 words' and that is quite true when reporting the results of a research project. Use of figures, graphs and tables can help in interpretations as well as greatly enhance the look and feel of the report which in turn can augment the reader engagement.

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If the report is prepared keeping in mind the above stated key issues, the overall credibility of the research report as well as of the researcher can be greatly enhanced.

8.4 Generic marketing research report

A professional marketing research report must focus on several issues including (a) effective communication of findings to the manager; (b) provide sound and logical recommendation on the basis of the findings; and (c) develop report in a manner that it serves for future reference.

As the client needs, research problem definition, research objectives and methods very for each situation, every marketing research report is unique in its own sense. However, many parts of the basic format of any marketing research report remains generic. Following provides the format for a generic marketing research report.

1. Title page
2. Table of contents
3. Executive summary
    a) Research objectives
    b) Brief discussion on methodology
    c) Major findings
    d) Conclusion
    e) Recommendations
4. Introduction
    a) Problem definition
5. Research design
    a) Type of design used
    b) Data collection
    c) Scaling techniques
    d) Questionnaire development and pilot testing
    e) Sampling
    f) Fieldwork
6. Data analysis and findings
    a) Analysis techniques employed
    b) Results
7. Conclusion and recommendation
8. Limitations and future directions
9. Appendices
    a) Questionnaire and forms
    b) Statistical output

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As one can observe, the above stated format closely resembles with the marketing research process itself. In the discussion below we will focus on each of the above stated generic parts of a marketing research report.

Title page

The title page indicates the subject of the report, information regarding researcher and his/her associations and the name of the recipient, along with organizational details. The title should reflect the nature and objective of the project succinctly.

Table of contents

The table of contents should list the topics covered with appropriate page numbers. In most reports, only major headings and subheadings are included. It is also common to provide list of tables and figures after the table of contents.

Executive summary

The executive summary is a very important part of the overall report. Many consider it the soul of the report and it has been observed that at times executives only read the summary of the report and decide on the quality of the report as well as sometimes take decisions only on the basis of the summary. The executive summary therefore is a brief and meticulously prepared part of the overall report. The executive summary should focus on: (a) why and how the research was carried out; (b) what was found; and (c) what can be interpreted and acted upon by the manager. Therefore, in most reports executive summary contains research objectives, brief description of methodology employed, major findings, conclusions and recommendations.

Introduction

The introduction provides background information necessary for a clear understanding of the report. It may include definition of terms, relevant background details for the project (sometimes using secondary data analysis), and scope of the research. Furthermore, it also provides detailed explanation of the research problem and research objectives. After reading the introduction, the reader should know precisely as to what is the research about, why was it conducted, and what gap the research addresses which was not addressed previously.

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Research design

The research design section of a report focuses on details relating to how the research was conducted. It focuses specifically on what type of research design was used with clear justifications. Furthermore, it explains both secondary and primary data collection processes. It describes how were the measurement scales developed and provide information on their validity and reliability. It further informs the reader about the development of the questionnaire and the pilot testing. It discusses what changes or tweaks were performed and why. This section also describes in details the sampling process including sample population definition, sample size, sample type, and the sampling technique. It further describes the fieldwork procedures employed.

Data analysis and findings

In this section researcher should describe the structure of data analysis and various techniques employed to achieve the objectives of analysis without using much technical details and jargons. Many times researchers do get carried away in explaining this in too much technicality. This can make the reader disengaged with the report as they might not be able to grasp what is being said. It is always good to provide the reader with some details regarding why a specific analysis technique was used and how the results can be interpreted.

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The sophisticated analysis related data should be provided in appendices for the reader to look at if they are interested in it. The presentation of findings should directly be correlated with the research problem.

It is important to use graphs and tables as they help reader understand the details much easily in most cases. However, unnecessary use of figures and tables should also be avoided.

Conclusion and recommendation

This section is derived out of the findings section and so closely correlates with the analysis and findings section. Conclusions can be considered broad generalizations that focus on answering questions related to the research objectives. They are succinct in nature and provide the reader with a clear interpretation of what the findings convey. Recommendations on the other hand, are generated by critical thinking and are associated with the ability of researcher to suggest the future solutions for the problem. The researcher should use each conclusion derived from the research and critically analyse it before suggesting any recommendations. Recommendations should focus on how the manager can use them to generate competitive advantage.

Limitations and future directions

Most scientific research projects follow a rigorous research approach; however several limitations at times are unavoidable. Common limitations associated with marketing research include sampling bias, time and cost constraints, measurement errors, and so on. As every study is unique in its own way, there are study specific limitations also. Researcher should clearly state the limitations of the project in the report. This also provides an opportunity to the researcher for reflection on the project and how future projects can be improved without the specific limitations relating to the project at hand.

Appendices

The appendices section should include the other relevant details which might be helpful to the reader. The questionnaire form and sophisticated technical analysis should be added in this section also. Cross-referencing should be done within the report so the reader can find this information easily.

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8.5 What not to do when writing reports

While the above section discussed how to prepare a good marketing research report one also needs to understand what not to do when writing reports. There are several issues the researchers must keep an eye on. When writing a research report the researchers should make sure that the explanations provided for each aspects of the process. Furthermore, many times it happens so that the researcher in the zeal to describe the phenomena goes over the top with regard to explanation and provides too much detail which disengages the reader. This tends to happen mostly in the analysis part where statistical processes are explained. Sometimes, it has also been observed that researchers are too focused on the packaging, style and format and not the content and substance. This can affect the quality of the report, credibility of the researcher, and the overall relationship between researcher and manager. With many research projects it has been seen that several other interesting findings are observed. However, when the findings are not relevant with the key research objectives they should be avoided. If included they can confuse the reader and can disengage them.

8.6 Report presentation

The presentation has become an integral part of most marketing research projects. Most managers are finding it hard to read the entire report and so prefer the researcher to present the report in an oral presentation. Furthermore, the presentation provides an opportunity for the research and management team to interact the issues of concern and in that way it becomes an important exercise.

For any presentation, the most important aspect is preparation. Researcher should first develop an outline of the presentation keeping the audience in mind. Once the outline is developed, the researcher should focus on the content management and decide as to what is relevant and important and what is not. Use of various audio-visual aids as well as other materials such as chalkboards or flipcharts should be planned out in advance. While audio-visual presentation adds to the overall engagement, chalkboards and flipcharts provide flexibility in presentation.

The rules regarding what to do and what not to do when writing reports also apply to the presentation and researcher must keep in mind that the presentation is being done for the managers to grasp the results. Researcher must remember that the research was conducted for assistance in decision making and was not a statistical exercise. Therefore, the focus of the presentation should be on how the research can help managers in making a better informed decision.

8.7 Conclusion

As discussed in this chapter, the prime objective of any marketing research report is to communicate in an effective manner, the results of the research, so the manager can take informed decisions. Marketing research report provides the communication bridge between the researcher and the manager and that is why it is an important aspect of the overall research process.

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It is very important for the researcher to remember that the report is being prepared for the manager and therefore researcher must empathize with the manager in the writing process. The report must be logically structured and easy to follow. The objectivity of the research is also a supreme concern and researcher should oppose inclusion of any judgement beliefs which cannot be supported. The researcher should make sure that the report is well written and looks professional.

The generic marketing research project follows a format which includes title page, table of contents, executive summary, introduction, research design, data analysis and findings, conclusion and recommendations, limitations and future directions, and appendices. Each component of the report has its own importance and should therefore be carefully prepared.

Researcher must make sure that they do not over or under emphasize the relevant issues. It is easy to get carried away when developing research project report. The researcher must focus on managers' needs and should make sure that the report consistently adheres to it. The same rules apply when preparing report presentation which also has become an integral part of any research project.

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