

Chapter 2

Business Research Process

The business research process involves a series of steps that systematically investigate a problem or an opportunity facing the organization. The sequence of steps involved in the business research process are as follows: problem/opportunity identification and formulation, planning a research design, selecting a research method, selecting the sampling procedure, data collection, evaluating the data and preparing the research report for presentation. The above steps provide a broad outline applicable to any business research project. However, the number and sequence of activities can vary as per the demand of an individual research project.

The process of business research can be primarily divided into three phases—planning, execution and report preparation. The planning phase begins from problem/opportunity identification and leads to selection of the sampling procedure. Data collection and evaluation can be described as the execution phase of the business research process, while report preparation can be considered as the last phase. In this chapter, we will discuss each of these phases in detail.

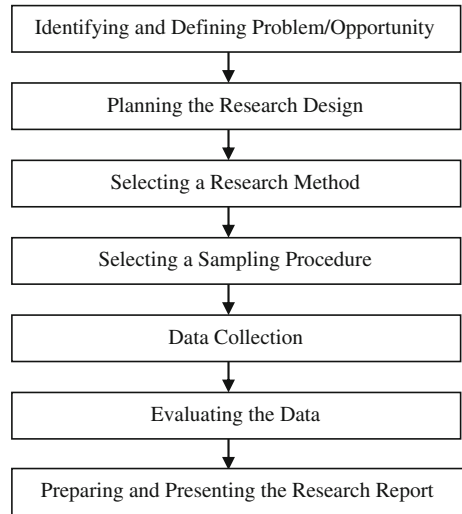
2.1 Steps in the Research Process

The steps in the research process, namely identification and definition of the problem or opportunity, planning the research design, selecting a research method, selecting a sampling procedure, data collection, evaluating the data and finally preparing and presenting the research report have been shown in the Fig. 2.1. Each of these steps in the research process is discussed below.

2.1.1 Identifying and Defining the Problem/Opportunity

The initial step in the research process is the identification of the problem or opportunity. As businesses today operate in a highly volatile environment governed by various macro environmental factors, they need to constantly assess their

Fig. 2.1 Steps in the Research Process



relative position and identify the various problem areas or opportunities they need to work upon in order to sustain themselves competitively in the market. The managers need to analyse the changing dynamics of business and to evolve a strategy to adapt to the changes taking place in the external environment. Whether these are potential problem areas or opportunities, it is very important for the manager to identify them accurately and at the earliest. Problem identification precedes the problem definition stage. For instance, a company producing cell phone wave protectors (devices that protect the cell phone from harmful radiations) may realize that its new product is not selling, but it may not know the reason for this at the outset. Although it has identified the problem in a broader perspective, it needs to define the problem specifically in terms of what is to be researched.

It is important to define the problem in a precise manner. A well-defined problem gives the researcher a proper direction for carrying out investigation. It also helps in utilizing the resources provided for the research effectively. A researcher can focus his efforts on collecting relevant information, if the problem is defined properly. Some research problems such as conducting a survey on the newspaper reading habits of a given set of the population can be clearly defined. But if a company wants to define a research problem such as declining sales, it needs to explore the research problem further through exploratory research.

2.1.2 Exploratory Research

Exploratory research aims at understanding the topic being researched. Through exploratory research, one arrives at a set of questions that are to be answered in

order to solve the problem or cash in on an opportunity. Exploratory research is undertaken in the initial stages of the research process. It is an informal process that helps in defining the identified problem. This process involves evaluating the existing studies on related topics, discussing the problem with experts, analysing the situation and so on. At the end of this process, the researchers should be clear about what type of information needs to be gathered and how the research process should proceed.

Secondary data analysis and pilot studies are the most popular tools used in exploratory research. Secondary data are the data that have already been collected previously for some other research purpose. It can be obtained from magazines, journals, online articles, company literature and so on. Data from these secondary sources needs to be analysed so that the researcher has the knowledge to define the problem. For our problem of low sales, since it is a new product in the market, it may be difficult to obtain information. But a researcher can get some related information, which may help him to a certain extent in defining the problem. Pilot studies involve collecting data from the actual respondents in order to gain insight into the topic and help the researcher in conducting a larger study. Here, data are collected informally in order to find out the views of the respondents. The researchers may casually seek the respondent's opinion of the new cell phone wave protectors. Once the research problem is identified and clearly defined, and a formal statement containing the research objectives must be developed.

2.1.3 Preparing the Statement of Research Objectives

Once the problem is clearly defined, it becomes absolutely essential to determine the objectives of the research. The objectives of the research should be stated in a formal research statement. The statement of objectives should be as precise as possible. Objectives act as guidelines for various steps in the research process, and therefore, they have to be developed by analysing the purpose of the research thoroughly. The objectives of the research must be brief and specific; also, it is preferable to limit the number of objectives. The research objectives comprise the research question/s and the hypothesis. If the objective of the research is to study the perceptions of the customer, a typical research question could be: 'Do the customers perceive the radiations from their cell phones to be hazardous to health?'. Once the objectives and the research questions are identified, a researcher has to develop a hypothesis statement that reflects these research objectives.

2.1.4 Developing the Hypotheses

A hypothesis is a statement based on some presumptions about the existence of a relationship between two or more variables that can be tested through empirical

data. For instance, the exploratory research for the above problem may have resulted in the hypothesis that consumers perceive that the radiations emanating from the cell phone are harmful. When a researcher is developing a hypothesis, he/she will try to assume an answer for a particular research question and then test it for its validity.

A hypothesis normally makes the research question clearer to the researcher. For instance, if the research question is—‘Why are the sales of refrigerators going up in winter? In this case, the hypothesis could be—‘The sales of refrigerators are going up during winter due to off-season discounts’ This makes the research question much clearer. The formulation of a hypothesis allows the researcher to make a presumption or ‘guess’ and can thus ensure that all the relevant aspects of the research are included in the research design. For instance, the above example gives the researcher scope to include a question on off-season discounts in the questionnaire during the research design phase.

If a research study is to be conducted about the consumption patterns of tea and coffee in India, the hypothesis could be: ‘Consumption of tea is higher in North India and coffee in South India because of the varying lifestyles of these two regions’. This hypothesis adds factors of geographic location and lifestyle to the research problem. For any research question, several hypotheses can be developed, but there are limits to the number of hypotheses that can be validated. Researchers should avoid including any hypothesis that has already been validated by other similar studies.

However, a hypothesis cannot be developed for every research question. Moreover, a vague hypothesis may be of no use at all. For example, if a company wants to know whether its sales will increase, then a hypothesis—‘The sales will increase’ versus ‘The sales will not increase’ will add little value to the research question as they are almost the same as the research question itself. Once the hypothesis is developed, the next stage in the research process, the research design phase, begins.

Before proceeding to the next stage, it is essential to consider two points. The first one is to assess the value of information that is being sought. In this stage, it is important to conduct a cost-benefit analysis, wherein the costs incurred on obtaining the needed information are compared with the benefits accruing to the organization. If the costs are more than the benefits, then it is better to halt the research, while the subsequent phases of the research process can be carried on if the benefit is greater than the cost. The second point is to ensure that the required information does not already exist as it would make the research effort futile.

2.1.5 Planning the Research Design

Once the problem or opportunity identification and definition stage is complete, the process of research design begins. Planning the research design is a crucial step in the research design process. A research design is the actual framework of a

research that provides specific details regarding the process to be followed in conducting the research. The research is designed based on the objectives formulated during the initial phases of the research. The research design includes all the details regarding the research such as where the information should be obtained from, the time and budget allotted for conducting the research, the appropriate measurement techniques and the sampling process. Factors like the research objective, the importance of the decision, costs involved in conducting the research and the availability of data sources determine the selection of an appropriate research design. The design and implementation process for business research have been discussed in [Chap. 3](#).

2.1.6 Selecting the Research Method

After developing an appropriate research plan, it is important for the researcher to select a proper research method. There are four basic methods of conducting a research study—secondary data studies, surveys, experiments and observation. The research design method is chosen based on the objectives of the study, the costs involved in conducting the study, the availability of the data and finally the importance and urgency of the decision. We will now discuss the four basic research methods.

2.1.7 Surveys

A survey is a research technique, which is used to gather information from a sample of respondents by employing a questionnaire. Surveys are normally carried out to obtain primary data. Primary data are the data that are gathered first hand to answer the research question being investigated. Surveys are conventionally conducted by meeting the respondents in person or contacting them through the telephone. In the past few years, the Internet has started being widely used for conducting surveys through email. A researcher can personally meet the respondents to survey their preferences of television channels. Another researcher may use a telephone to ask the consumer about his satisfaction levels related to a newly purchased product. Yet another researcher may send an email to a respondent to check whether he is interested in a new insurance policy. These methods have their own advantages and disadvantages. Researchers adopt any of these methods depending on their requirement.

2.1.8 Experiments

In business research, experiments can be conducted for studying cause-and-effect relationships. Analysing the changes in one variable, by manipulating another variable, helps one identify cause-and-effect relationships through experiments. For instance, analysing the sales targets achieved by individual salespersons by manipulating their monetary rewards is a typical example of experimentation. Test marketing conducted by companies to test the viability of their new product in the market is a form of business experimentation.

2.1.9 Secondary Data Studies

A secondary data study is concerned with the analysis of already existing data that is related to the research topic in question. In secondary data studies, secondary data are studied in order to analyse the future sales of a product. For instance, for the cell phone wave protector research, secondary data regarding the telecommunications set-up, mobile networking, the waves used for communication in wireless telephony and its effects, may be essential for assessing the future sales trends of the cell phone wave protector. Secondary data studies help in projecting future sales trends using some mathematical models.

2.1.10 Observation Techniques

Observation technique is a process where the respondents are merely observed without any interruption by the observers. For instance, the shopping patterns of customers in supermarkets assessed by the observers or by counting the number of vehicles passing through a junction can qualify as observation research. The advantage of this method is that the observers do not depend on the respondents for their responses as they are only observed and are not asked to participate in the research process. Although the observation technique is useful, it cannot be used for studying several other factors such as motivations, attitudes and so on.

2.1.11 Analysing Research Designs

Although several research designs are available for a researcher to choose from, it is very difficult to say that a particular research design best suits a particular business research problem. Therefore, researchers should be cautious while selecting a research design. The best method to select a research design is to work

backwards; that is, a research design should be selected based on the end result that needs to be obtained. For instance, to study the cell phone usage patterns of customers in public places, an observation technique would be a better method than a survey research as it would save on research costs and would not require the researchers to rely on the responses of the respondents.

Once the researcher selects a research method that is most appropriate for the research, he now needs to develop a sampling procedure. Sampling is the most important activity pertaining to the planning phase of the business research process.

2.1.12 Selecting the Sampling Procedure

Sampling is generally a part of the research design but is considered separately in the research process. Sampling is a process that uses a small number of items or a small portion of a population to draw conclusions regarding the whole population. Alternately, a sample can be considered as a subset of a larger set called the population. A well-defined sample has the same characteristics as the population as a whole, and therefore, when a research is conducted on such sample, the results obtained will represent the characteristics of the whole population. But if errors are made in selecting the sample, then the research results will be wrong, since a wrongly selected sample does not represent the characteristics of the population as a whole. For instance, to study the petrol and diesel consumption patterns of people, if a sample is selected from a list of vehicle owners, it may not represent the whole population, since there are several others who use petrol or diesel for running generators or for purposes other than travelling. It is therefore very important to define the population before selecting the sample; otherwise, the research results may not be helpful for the manager in taking effective decisions. For example, a television manufacturing company wanting to assess its future sales potential may select a sample from a population of households having no TV sets at all. But there may be several TV owners who may want to buy a second TV set or replace the existing one, and if they are not included in the population, then the research results may not be accurate.

Another important aspect of sampling is to decide the size of the sample. How big should a sample be? The bigger the sample size the greater will be its precision. But for practical reasons, it is not feasible to select large samples. Therefore, a sample that is selected using probability sampling techniques will be sufficient for getting effective results. A sample can be selected in two ways from a population—through probability sampling, or through non-probability sampling. When the subsets of a population are chosen in such a way that it ensures a representative cross-section by giving every element in the population a known chance of being selected, it is called probability sampling. When subsets of a population in which little or no attempt is made to ensure a representative cross-section are chosen, it is

called non-probability sampling. Sampling has been extensively discussed in [Chap. 6](#).

All the steps in the business research process till selecting the sampling procedure constitute the planning phase. The execution phase of the research process begins with data collection that is the next logical step following the sampling procedure. Once a researcher decides on a sample, he needs to obtain data from this sample. We will discuss this process in the following section.

2.1.13 Data Collection

After preparing a suitable sample, the researcher collects the data from the units in this sample. As there are several research techniques, there are a number of data collection methods as well. For instance, in the survey method, the data are collected by asking the respondents to fill out a questionnaire administered to them, while in the observation technique, the respondents are just observed without their direct participation in the research. Whatever the method used to collect the data, it is very important that the data are collected without any errors. Errors may creep in during the data collection process in several forms. Potential data collection errors may arise if the interviewee does not understand the question or if the interviewer records the answers inaccurately. The various types of data collection errors are discussed in [Chap. 4](#).

Data collection is done in two stages—pre-testing and the main study. Pre-testing involves collecting data from a small subsample to test whether the data collection plan for the main study is appropriate. This helps the researchers to minimize any potential errors that may crop up during the main study. The pre-test results may also be used to decide on a way of tabulating the collected data. If the results of a pre-test are not appropriate for decision-making, then the researcher may consider altering the research design.

Once the data are collected to the satisfaction of the researcher, the research process enters the next stage, which is evaluation of the data.

2.1.14 Evaluating the Data

Once the data have been collected, the next important phase in the research process is evaluating the data. The most important aspect of data evaluation is to convert the data collected into a format which will facilitate the manager in effective decision-making. The reason for analysing the data is to obtain research results and to prepare the research report. Several mathematical and statistical models are used to evaluate the data. Evaluation of data normally starts with editing and coding of the data. Editing is undertaken to verify the data and check for any potential errors or for any inconsistencies and so on. Another task of editing is to remove any

errors that may have cropped up during the interview such as recording the answers under the wrong columns of a questionnaire and so on. Coding is a process of assigning different symbols to different sets of responses. The coding process is done so that the data can be fed in and interpreted easily using computers. These days, technological advances have made it possible for data to be collected and directly fed into computers, removing the possibility of human error. For instance, an interviewer may question respondents through telephone and record the answers directly into a computer, where the data are processed almost immediately, thus eliminating the scope for errors which may arise if conventional methods of data collection are used.

2.1.15 Analysis

The interpretation of the data that have been collected by using different analytical techniques according to the requirements of the management is called analysis. Several statistical tools are used for data analysis, in order to make the analysis suitable for effective decision-making. The statistical analysis of the data may range from simple frequency distribution tables to complex multivariate analysis.

2.1.16 Preparing and Presenting the Research Report

After the evaluation of the data, the last and the major phase that comes into picture is the preparation of a research report. The research reports can be presented either in oral or in written format. The research report should contain a brief description of the objectives of the research, a summary of the research design adopted, a summary of the major findings and conclude with the limitations and recommendations. The purpose of conducting any research is to obtain information that can aid in efficient decision-making. Therefore, it is very important to carefully analyse the information obtained and present it according to the requirements of the management of the company. At this stage, the research report should be developed most efficiently and it should portray the research findings most effectively. Most often researchers fill the research reports with all the technical details. This should be avoided to the maximum possible extent, as the management is more interested in the actual research results and they have to be presented lucidly in a concise format. The amount of information provided in the research report should be based on the requirements of the manager. A research report also acts as a historical document, in the sense that the manager may refer to this document in the future if a research on the same lines is being conducted sometime in the future.

2.2 Summary

The business research process can be considered as the framework of the entire topic of business research. It involves a series of steps starting from the identification of the problem or opportunity to the stage of preparing the research report. These stages are as follows: identification and definition of the problem or opportunity, planning the research design, selecting a research method, selecting a sampling procedure, data collection, evaluating the data and finally preparing and presenting the research report. Any business research is primarily conducted for taking effective managerial decisions regarding various problems or opportunities identified by the organization.

Whenever a company identifies a potential problem or opportunity, it recognizes the need for conducting a research study. Once the problem is clearly identified, the manager can check whether the required information is already present; if such information is easily accessible, then the manager need not spend a lot of resources in obtaining the same information again. After clearly identifying the problem, it needs to be defined accordingly, and subsequently, the objectives of the research are determined. Development of the hypothesis plays a crucial role in the research process. Once this is done, the research boundaries are defined followed by estimating the value of information to be obtained against the costs incurred on conducting the research. At this stage, the most important part of the research begins, that is, planning the research design and involves the selection of the sample and the measurement technique. After this, the data are collected and evaluated and are later presented in the form of a report to the company's management for decision-making.



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