

CHAPTER 1

Research: A Way of Thinking **this chapter you will learn about:**

- Some of the reasons for doing research
- How research can be used to gather evidence to inform your practice
- The applications of research
- Characteristics and requirements of the research process
- Types of research from the perspective of applications, objectives and enquiry modes
- Research paradigms

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Research: an integral part of your practice

Research is undertaken within most professions. More than a set of skills, research is a way of thinking: examining critically the various aspects of your day-to-day professional work; understanding and formulating guiding principles that govern a particular procedure; and developing and testing new theories that contribute to the advancement of your practice and profession. It is a habit of questioning what you do, and a systematic examination of clinical observations to explain and find answers for what you perceive, with a view to instituting appropriate changes for a more effective professional service. Let us take some disciplines as examples.

Suppose you are working in the field of health. You may be a front-line service provider, supervisor or health administrator/planner. You may be in a hospital or working as an outreach community health worker. You may be a nurse, doctor, occupational therapist, physiotherapist, social worker or other paramedic. In any of these positions, some of the following questions may come to your mind or someone else may ask you for their answers:

- How many patients do I see every day?
- What are some of the most common conditions prevalent among my patients?
- What are the causes of these conditions?
- Why do some people have a particular condition whereas others do not?
- What are the health needs of the community?
- What are the benefits of this programme to the community?
- How do I demonstrate the effectiveness of my service?
- Why do some people use the service while others do not?

- What do people think about the service?
- How satisfied are patients with the service?
- How effective is the service?
- How can the service be improved?

Research: what does it mean?

The word *research* is composed of two syllables, *re* and *search*. The dictionary defines the former as a prefix meaning again, anew or over again and the latter as a verb meaning to examine closely and carefully, to test and try, or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish facts or principles. (Grinnell 1993: 4)

Grinnell further adds: ‘research is a structured inquiry that utilises acceptable scientific methodology to solve problems and creates new knowledge that is generally applicable.’ (1993: 4)

Lundberg (1942) draws a parallel between the social research process, which is considered scientific, and the process that we use in our daily lives. According to him:

Scientific methods consist of systematic observation, classification and interpretation of data. Now, obviously, this process is one in which nearly all people engage in the course of their daily lives. The main difference between our day-to-day generalisations and the conclusions usually recognised as scientific method lies in the degree of formality, rigorousness, verifiability and general validity of the latter. (Lundberg 1942: 5)

sociological research, as research, is primarily committed to establishing systematic, reliable and valid knowledge about the social world.

There are several ways of obtaining answers to your professional questions. Research is one of the ways to find answers to your questions. When you say that you are undertaking a research study to find out answers to a question, you are implying that the process being applied:

1. is being undertaken within a framework of a set of philosophies;
2. uses procedures, methods and techniques that have been tested for their validity and reliability;
3. is designed to be unbiased and objective.

Your philosophical orientation may stem from one of the several paradigms and approaches in research – positivist, interpretive, phenomenology, action or participatory, feminist, qualitative, quantitative – and the academic discipline in which you have been trained. The concept of ‘validity’ can be applied to any aspect of the research process. It ensures that in a research study correct procedure have been applied to find answers to a question. ‘Reliability’ refers to the quality of a measurement procedure that provides repeatability and accuracy. ‘Unbiased and objective’ means that you have taken each step in an unbiased manner and drawn each conclusion to the best of your ability and without introducing your own vested interest. The author makes a distinction

between **bias** and **subjectivity**. Subjectivity is an integral part of your way of thinking that is ‘conditioned’ by your educational background, discipline, philosophy, experience and skills. For example, a psychologist may look at a piece of information differently from the way in which an anthropologist or a historian looks at it. Bias, on the other hand, is a deliberate attempt to either conceal or highlight something. Adherence to the three criteria mentioned above enables the process to be called ‘research’. Therefore, when you say you are undertaking a research study to find the answer to a question, this implies that the method(s) you are adopting fulfils these expectations (discussed later in the chapter).

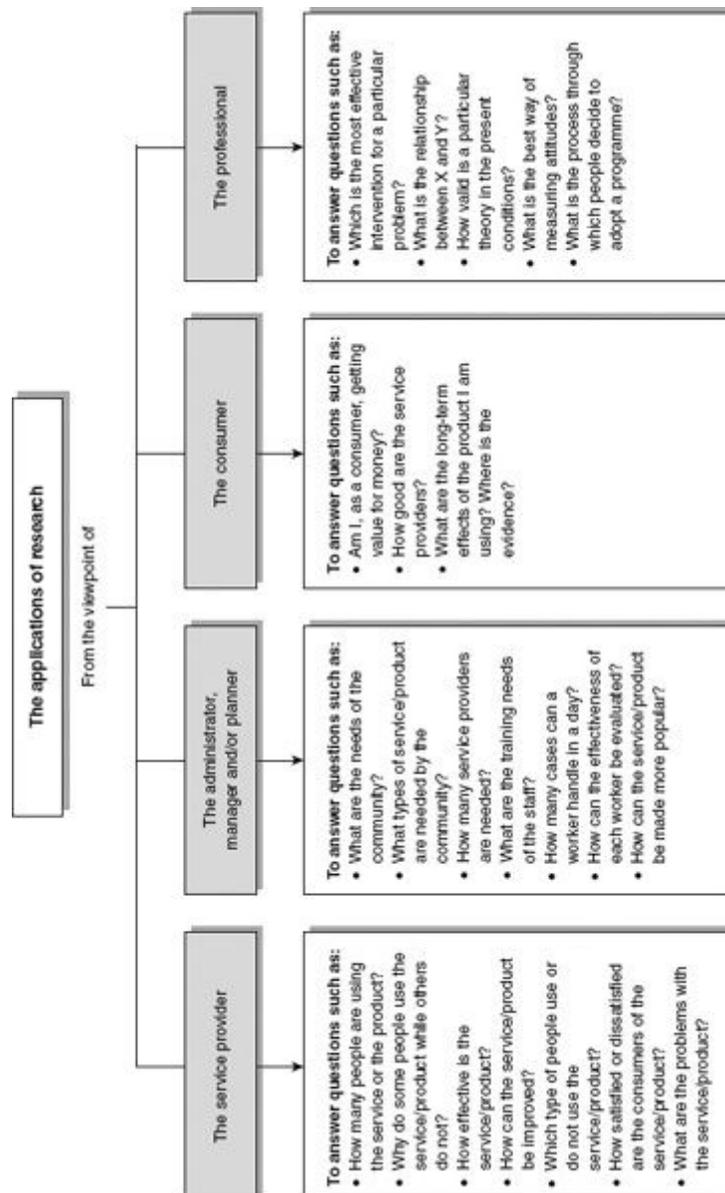


FIGURE 1.1 *The applications of research*

However, the degree to which these criteria are expected to be fulfilled varies from discipline to discipline and so the meaning of ‘research’ differs from one academic discipline to another. For example, the expectations of the research process are markedly different between the physical and

the social sciences. In the physical sciences a research endeavour is expected to be strictly controlled at each step, whereas in the social sciences rigid control cannot be enforced and sometimes is not even demanded.

Within the social sciences the level of control required also varies markedly from one discipline to another, as social scientists differ over the need for the research process to meet the above expectations. Despite these differences among disciplines, their broad approach to enquiry is similar. The research model, the basis of this book, is based upon this broad approach.

As beginners in research you should understand that research is not all technical, complex, statistics and computers. It can be a very simple activity designed to provide answers to very simple questions relating to day-to-day activities. On the other hand, research procedures can also be employed to formulate intricate theories or laws that govern our lives. The difference between research and non-research activity is, as mentioned, in the way we find answers to our research questions. For a process to be called research, it is important that it meets certain requirements and possesses certain characteristics.

The research process: characteristics and requirements

From these definitions it is clear that research is a process for collecting, analysing and interpreting information to answer questions. But to qualify as research, the process must have certain characteristics: it must, as far as possible, be controlled, rigorous, systematic, valid and verifiable, empirical and critical.

Let us briefly examine these characteristics to understand what they mean:

- **Controlled** – In real life there are many factors that affect an outcome. A particular event is seldom the result of a one-to-one relationship. Some relationships are more complex than others. Most outcomes are a sequel to the interplay of a multiplicity of relationships and interacting factors. In a study of cause-and-effect relationships it is important to be able to link the effect(s) with the cause(s) and vice versa. In the study of causation, the establishment of this linkage is essential; however, in practice, particularly in the social sciences, it is extremely difficult – and often impossible – to make the link.

The concept of control implies that, in exploring causality in relation to two variables, you set up your study in a way that minimises the effects of other factors affecting the relationship. This can be achieved to a large extent in the physical sciences, as most of the research is done in a laboratory. However, in the social sciences it is extremely difficult as research is carried out on issues relating to human beings living in society, where such controls are impossible. Therefore, in the social sciences, as you cannot control external factors, you attempt to quantify their impact.

- **Rigorous** – You must be scrupulous in ensuring that the procedures followed to find answers to questions are relevant, appropriate and justified. Again, the degree of rigour varies markedly between the physical and the social sciences and within the social sciences.

- **Systematic** – This implies that the procedures adopted to undertake an investigation follow a certain logical sequence. The different steps cannot be taken in a haphazard way. Some procedures must follow others.
- **Valid and verifiable** – This concept implies that whatever you conclude on the basis of your findings is correct and can be verified by you and others.
- **Empirical** – This means that any conclusions drawn are based upon hard evidence gathered from information collected from real-life experiences or observations.
- **Critical** – Critical scrutiny of the procedures used and the methods employed is crucial to a research enquiry. The process of investigation must be foolproof and free from any drawbacks. The process adopted and the procedures used must be able to withstand critical scrutiny.

For a process to be called research, it is imperative that it has the above characteristics.

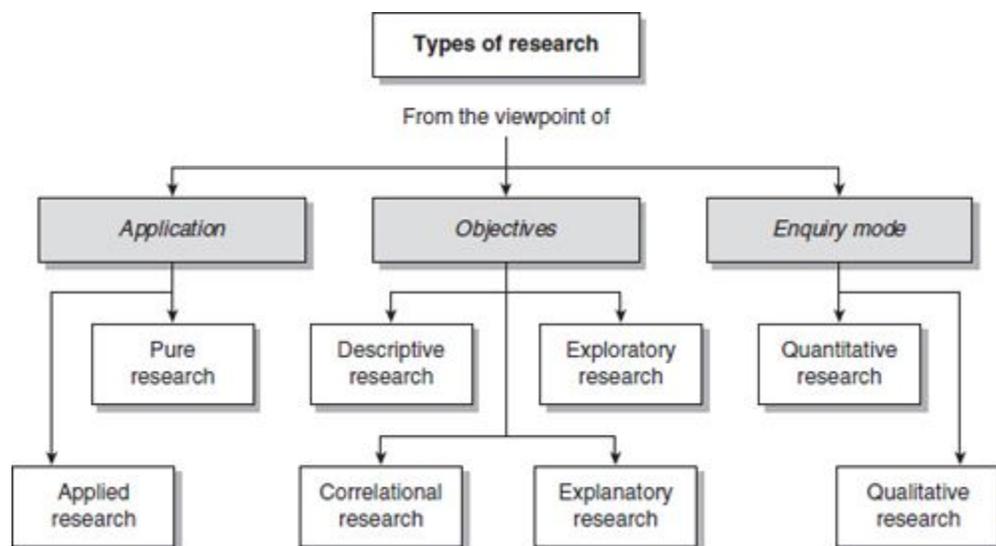


FIGURE 1.2 *Types of research*

Types of research

Types of research can be looked at from three different perspectives ([Figure 1.2](#)):

1. *applications* of the findings of the research study;
2. *objectives* of the study;
3. *mode of enquiry* used in conducting the study.

The classification of the types of a study on the basis of these perspectives is *not* mutually exclusive: that is, a research study classified from the viewpoint of ‘application’ can also be classified from the perspectives of ‘objectives’ and ‘enquiry mode’ employed. For example, a

research project may be classified as pure or applied research (from the perspective of application), as descriptive, correlational, explanatory or exploratory (from the perspective of objectives) and as qualitative or quantitative (from the perspective of the enquiry mode employed).

Types of research: objectives perspective

If you examine a research study from the perspective of its objectives, broadly a research endeavour can be classified as descriptive, correlational, explanatory or exploratory.

A research study classified as a **descriptive study** attempts to describe systematically a situation, problem, phenomenon, service or programme, or provides information about, say, the living conditions of a community, or describes attitudes towards an issue. For example, it may attempt to describe the types of service provided by an organisation, the administrative structure of an organisation, the living conditions of Aboriginal people in the outback, the needs of a community, what it means to go through a divorce, how a child feels living in a house with domestic violence, or the attitudes of employees towards management. The main purpose of such studies is to describe what is prevalent with respect to the issue/problem under study.

The main emphasis in a **correlational study** is to discover or establish the existence of a relationship/association/interdependence between two or more aspects of a situation. What is the impact of an advertising campaign on the sale of a product? What is the relationship between stressful living and the incidence of heart attack? What is the relationship between fertility and mortality? What is the relationship between technology and unemployment? What is the effect of a health service on the control of a disease, or the home environment on educational achievement? These studies examine whether there is a relationship between two or more aspects of a situation or phenomenon and, therefore, are called correlational studies.

Explanatory research attempts to clarify why and how there is a relationship between two aspects of a situation or phenomenon. This type of research attempts to explain, for example, why stressful living results in heart attacks; why a decline in mortality is followed by a fertility decline; or how the home environment affects children's level of academic achievement.

The fourth type of research, from the viewpoint of the objectives of a study, is called **exploratory research**. This is when a study is undertaken with the objective either to explore an area where little is known or to investigate the possibilities of undertaking a particular research study. When a study is carried out to determine its feasibility it is also called a **feasibility study** or a **pilot study**. It is usually carried out when a researcher wants to explore areas about which s/he has little or no knowledge. A small-scale study is undertaken to decide if it is worth carrying out a detailed investigation. On the basis of the assessment made during the exploratory study, a full study may eventuate. Exploratory studies are also conducted to develop, refine and/or test measurement tools and procedures. [Table 1.1](#) shows the types of research study from the viewpoint of objectives.

Although, theoretically, a research study can be classified in one of the above objectives–perspective categories, in practice, most studies are a combination of the first three; that is, they contain elements of descriptive, correlational and explanatory research. In this book the guidelines suggested for writing a research report encourage you to integrate these aspects.

Types of research: mode of enquiry perspective

The third perspective in our typology of research concerns the process you adopt to find answers to your research questions. Broadly, there are two approaches to enquiry:

1. the *structured* approach;
2. the *unstructured* approach.

In the structured approach everything that forms the research process – objectives, design, sample, and the questions that you plan to ask of respondents – is predetermined. The unstructured approach, by contrast, allows flexibility in all these aspects of the process. The structured approach is more appropriate to determine the *extent* of a problem, issue or phenomenon, whereas the unstructured approach is predominantly used to explore its *nature*, in other words, variation/diversity per se in a phenomenon, issue, problem or attitude towards an issue. For example, if you want to research the different perspectives of an issue, the problems experienced by people living in a community or the different views people hold towards an issue, then these are better explored using unstructured enquiries. On the other hand, to find out how many people have a particular perspective, how many people have a particular problem, or how many people hold a particular view, you need to have a structured approach to enquiry. Before undertaking a structured enquiry, in the author's opinion, an unstructured enquiry must be undertaken to ascertain the diversity in a phenomenon which can then be quantified through the structured enquiry. Both approaches have their place in research. Both have their strengths and weaknesses. Therefore, you should not 'lock' yourself solely into a structured or unstructured approach.

TABLE 1.1 *Types of research studies from the perspective of objectives*

| Examples | Aim | Main theme | Type of research |
|--|---|---|--------------------------------------|
| <ul style="list-style-type: none"> Socioeconomic characteristics of residents of a community Attitudes of students towards quality of teaching Types of service provided by an agency Needs of a community Sale of a product Attitudes of nurses towards death and dying Attitudes of workers towards management Number of people living in a community Problems faced by new immigrants Extent of occupational mobility among immigrants Consumers' likes and dislikes with regard to a product Effects of living in a house with domestic violence Strategies put in place by a company to increase productivity of workers | <p>To describe what is prevalent regarding:</p> <ul style="list-style-type: none"> a group of people a community a phenomenon a situation a programme an outcome | <p>To describe what is prevalent</p> | <p>Descriptive research</p> |
| <ul style="list-style-type: none"> Impact of a programme Relationship between stressful living and incidence of heart attacks Impact of technology on employment Impact of maternal and child health services on infant mortality Effectiveness of a marriage counselling service on extent of marital problems Impact of an advertising campaign on sale of a product Impact of incentives on productivity of workers Effectiveness of an immunisation programme in controlling infectious disease | <p>To establish or explore:</p> <ul style="list-style-type: none"> a relationship an association an interdependence | <p>To ascertain if there is a relationship</p> | <p>Correlational research</p> |
| <ul style="list-style-type: none"> Why does stressful living result in heart attacks? How does technology create unemployment/employment? How do maternal and child health services affect infant mortality? Why do some people have a positive attitude towards an issue while others do not? Why does a particular intervention work for some people and not for others? Why do some people use a product while others do not? Why do some people migrate to another country while others do not? Why do some people adopt a programme while others do not? | <p>To explain:</p> <ul style="list-style-type: none"> why a relationship, association or interdependence exists why a particular event occurs | <p>To explain why the relationship is formed</p> | <p>Explanatory research</p> |

The structured approach to enquiry is usually classified as **quantitative research** and unstructured as **qualitative research**. Other distinctions between quantitative and qualitative research are outlined in [Table 2.1](#) in [Chapter 2](#). The choice between quantitative and qualitative approaches (or structured or unstructured) should depend upon:

- **Aim of your enquiry** – exploration, confirmation or quantification.
- **Use of the findings** – policy formulation or process understanding.

The distinction between quantitative and qualitative research, in addition to the structured/unstructured process of enquiry, is also dependent upon some other considerations which are briefly presented in [Table 2.1](#).

A study is classified as qualitative if the purpose of the study is primarily to describe a situation, phenomenon, problem or event; if the information is gathered through the use of variables measured on nominal or ordinal scales (qualitative measurement scales); and if the analysis is done *to establish the variation* in the situation, phenomenon or problem *without quantifying it*. The description of an observed situation, the historical enumeration of events, an account of the different opinions people have about an issue, and a description of the living conditions of a community are examples of qualitative research.

On the other hand, the study is classified as quantitative if you want to *quantify the variation* in a phenomenon, situation, problem or issue; if information is gathered using predominantly quantitative variables; and if the analysis is geared to ascertain the *magnitude of the variation*. Examples of quantitative aspects of a research study are: How many people have a particular problem? How many people hold a particular attitude?

The use of statistics is *not* an integral part of a quantitative study. The main function of statistics is to act as a test to confirm or contradict the conclusions that you have drawn on the basis of your understanding of analysed data. Statistics, among other things, help you to quantify the magnitude of an association or relationship, provide an indication of the confidence you can place in your findings and help you to isolate the effect of different variables.

It is strongly recommended that you do not 'lock yourself' into becoming either solely a quantitative or solely a qualitative researcher. It is true that there are disciplines that lend themselves predominantly either to qualitative or to quantitative research. For example, such disciplines as anthropology, history and sociology are more inclined towards qualitative research, whereas psychology, epidemiology, education, economics, public health and marketing are more inclined towards quantitative research. However, this does not mean that an economist or a psychologist never uses the qualitative approach, or that an anthropologist never uses quantitative information. There is increasing recognition by most disciplines in the social sciences that both types of research are important for a good research study. The research problem itself should determine whether the study is carried out using quantitative or qualitative methodologies.

As both qualitative and quantitative approaches have their **strengths and weaknesses**, and advantages and disadvantages, 'neither one is markedly superior to the other in all respects' (Ackroyd & Hughes 1992: 30). The measurement and analysis of the variables about which information is obtained in a research study are dependent upon the purpose of the study. In many studies you need to combine both qualitative and quantitative approaches. For example, suppose you want to find out the types of service available to victims of domestic violence in a city and the extent of their utilisation. Types of service is the qualitative aspect of the study as finding out about them entails description of the services. The extent of utilisation of the services is the quantitative aspect as it involves estimating the number of people who use the services and calculating other indicators that reflect the extent of utilisation.

Paradigms of research

There are two main paradigms that form the basis of research in the social sciences. It is beyond the scope of this book to go into any detail about these. The crucial question that divides the two is whether the methodology of the physical sciences can be applied to the study of social phenomena. The paradigm that is rooted in the physical sciences is called the systematic, scientific or positivist approach. The opposite paradigm has come to be known as the qualitative,

ethnographic, ecological or naturalistic approach. The advocates of the two opposing sides have developed their own values, terminology, methods and techniques to understand social phenomena. However, since the mid-1960s there has been a growing recognition that both paradigms have their place. It is the purpose for which a research activity is undertaken that should determine the mode of enquiry, hence the paradigm. To indiscriminately apply one approach to all the research problems can be misleading and inappropriate.

A positivist paradigm lends itself to both quantitative and qualitative research. However, the author makes a distinction between qualitative data on the one hand and qualitative research on the other as the first is confined to the measurement of variables and the second to a use of methodology.

The author believes that no matter what paradigm the researcher works within, s/he should adhere to certain values regarding the control of bias, and the maintenance of objectivity in terms of both the research process itself and the conclusions drawn. It is the application of these values to the process of information gathering, analysis and interpretation that enables it to be called a research process.

Summary

There are several ways of collecting and understanding information and finding answers to your questions – research is one way. The difference between research and other ways of obtaining answers to your questions is that in a process that is classified as research, you work within a framework of a set of philosophies, use methods that have been tested for validity and reliability, and attempt to be unbiased and objective.

Research has many applications. You need to have research skills to be an effective service provider, administrator/manager or planner. As a professional who has a responsibility to enhance professional knowledge, research skills are essential.

The typology of research can be looked at from three perspectives: application, objectives and the enquiry process. From the point of view of the application of research, there is applied and pure research. Most of the research undertaken in the social sciences is applied, the findings being designed either for use in understanding a phenomenon/issue or to bring change in a programme/situation. Pure research is academic in nature and is undertaken in order to gain knowledge about phenomena that may or may not have applications in the near future, and to develop new techniques and procedures that form the body of research methodology. A research study can be carried out with four objectives: to describe a situation, phenomenon, problem or issue (descriptive research); to establish or explore a relationship between two or more variables (correlational research); to explain why certain things happen the way they do (explanatory research); and to examine the feasibility of conducting a study or exploring a subject area where nothing or little is known (exploratory research). From the point of view of the mode of enquiry, there are two types of research: quantitative (structured approach) and qualitative (unstructured approach). The main objective of a qualitative study is to describe the variation and diversity in a phenomenon, situation or attitude with a very flexible approach so as to identify as much variation and diversity as possible, whereas quantitative research, in addition, helps you to quantify the variation and diversity. There are many who strongly advocate a combined approach to social enquiries.

These are the two paradigms that form the basis of social science research. Though these may provide values, terminology, methods and techniques for you to apply to your research, it is the purpose of research rather than the paradigm that should determine the mode of enquiry.

For You to Think About

- Refamiliarise yourself with the keywords listed at the beginning of this chapter and if you are uncertain about the meaning or application of any of them revisit these in the chapter before moving on.
- Consider how you would go about convincing a service provider that evidence-based research might benefit them.
- Identify two or three research questions, related to your own academic field or professional area, that could be answered by undertaking each of the following types of research:
 - descriptive research;
 - correlational research;
 - explanatory research;
 - exploratory research.
- Consider how both unstructured and structured approaches to research could be applied to improve practice in your own professional area.
- Critically examine your own research philosophy in relation to the two research paradigms.