Third Edition

esearch Methods
r Business Studies

A Practical Guide

Pervez Ghauri
Kjell Grønhaug

cleanly written introduction is ideal for business students taking a course in research methods, or
ta ng their first dissertation or report on a work placement project. Written in a concise and
ssible style, it demonstrates the importance of a scientific approach to business research and
em-solving projects. It shows students how to formulate a problem, choose a research method,
a d motivate, and how to collect, analyse and present the data.

Features:

- ov es guidelines to formulate a research problem, preparing students to y understand the questions and objectives before undertaking research.
- pla s the importance of methods and models to equip students with a st atic approach in thinking, executing and writing.
- al es different qualitative and quantitative methods and their consequences data collection and analysis so that students can choose the most pr priate research method for a given situation.
- e clear guidelines about structuring clear, concise and relevant reports.
- n s detailed discussion of research theories and their practical ol ation in business.

ed ion has extended coverage of international and -c ural research, more examples from real dissertations esearch projects from diverse areas of business such as ar d accounting, and a new chapter on qualitative research ne oftware used to analyse data.

ri d Grønhaug have produced a concise, clear and rehensive introduction to research methods, which equips nts with a systematic approach to business research.

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Research Methods in Business Studies

A Practical Guide

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Preface

The first edition of this book, published in 1995, received considerable recognition and attention, mainly from scholars in the United Kingdom, Scandinavia and the Netherlands.

The second edition, published in 2002, was also used in several American and Asian schools and has been translated into the Chinese, Portuguese (for the Brazilian market) and Estonian languages. The book was widely praised for its direct and concrete approach to research methods in business studies. Over the past ten years, we personally received many positive comments on the accessibility and directness of the book from our colleagues and the students who used it. But at the same time we also received a lot of feedback on what was missing in the book, and valuable input on how it could be improved.

About a year ago the publisher approached us for a possible third edition and at that time we started a more systematic collection of comments from the colleagues who have been using the book. The publisher also sent the second edition to ten anonymous reviewers and asked for their comments as to the strong and weak points of the book and their recommendations as to how it could be improved. We have thus received an abundance of comments on the previous editions, how the book should be improved, and what a third edition should include.

Considering the above, we have worked on the third edition and have considerably changed and, hopefully, improved it. Not only have we added a couple of chapters and about 50 pages of new text, we have also reorganized the whole book. It is now divided into three parts: (I) Challenges and ambiguities of business research; (II) The research process; and (III) Implementation. We have made the language and approach more neutral and have provided additional examples in almost all the sections. We first have a discussion on qualitative versus quantitative research methods and have explained which type of research method is more appropriate for which type of research. Each chapter now deals with both types of research method. Part III is completely new and provides concrete guidelines for designing and conducting quantitative and qualitative research, the two most commonly used research methods in business studies. The last chapter gives section by section guidelines for report writing depending on the purpose of the report. Special attention has been given to international and cross-cultural business research throughout the chapters, and the section on ethical issues has been expanded. A brand new chapter on analysing qualitative research has been included. A number of examples have been added to make the text more accessible and easy to understand. A number of new features have been introduced. These include: (1) Boxes to provide illustrations and to strengthen the text. (2) At

the end of each chapter a short list of 'further reading' has been provided. This can be particularly useful to teachers and students who want to probe deeper into a particular issue. These additional readings have been selected with great care to present a balanced and up-to-date view on different issues. (3) Questions are provided at the end of each chapter. They can be used to test the knowledge of the reader and can also be used as exam questions. (4) At the end of all chapters some exercises are provided to encourage discussion and debate in the class. We believe the third edition is a more comprehensive, but still to the point and focused, set of guidelines for research methods in business studies. The data analysis chapters have been totally rewritten, and examples are provided to make the point and to make the book readable to students without a considerable background in statistics.

We take this opportunity to thank our families who afford us time and stimulate us in these endeavours. Robert-Jan Bulter at Manchester Business School deserves our special thanks for helping us in preparing the manuscript and for typing and retyping several versions of the book. Finally we are grateful to Heather Fyfe and Amanda Thompson, at Pearson Education, for their professional help and for sending us all those 'nice' emails encouraging us to finish the manuscript on time.

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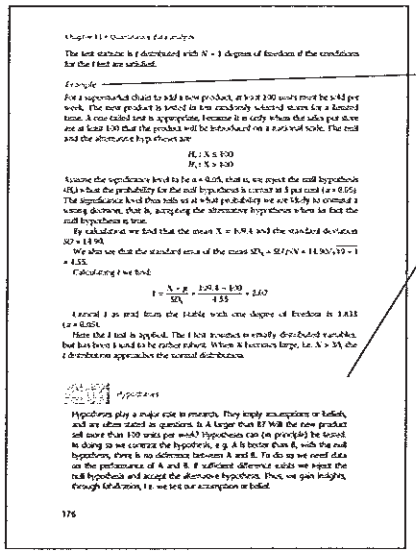
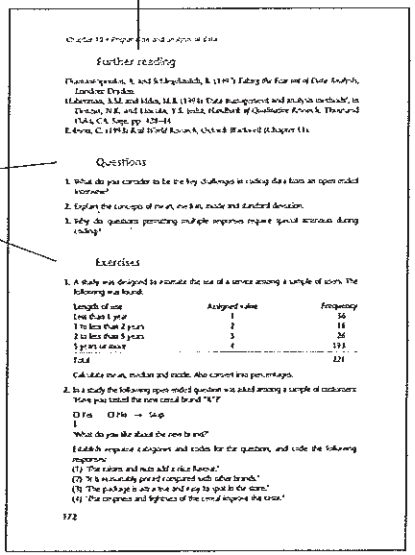
Bergen

Guided tour of the book



Examples and boxed illustrations from a wide range of sources help to explain the ideas being discussed.

Further reading presents a balanced and up-to-date view of different issues – ideal if you want to probe deeper.



Questions test your understanding of the chapter and **Exercises** test how well you can put the ideas into practice.

A new **Instructor's Manual** and corresponding **PowerPoint slides** are now available online for lecturers at www.pearsoned.co.uk/ghauri.

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Challenges and ambiguities of business research

Part I (Chapters 1 and 2) explains the purpose of the book and the challenges related to doing research in business studies. It sets the scene for the book and explains its perspective, target group and the purpose of doing research in general. It also takes up the ethical responsibilities of the researcher.

Introduction

Facts do not simply lie around waiting to be picked up. Facts must be carved out of the continuous web of ongoing reality, must be observed within a specified frame of reference, must be measured with precision, must be observed where they can be related to other relevant facts. All of this involves methods.

(Rose and Peterson, 1965: 11)

One of the most frustrating things for business students is writing theses and research reports. Students often have problems understanding the importance of theory and methodology in writing good business reports and theses. This frustration is further aggravated by the absence of a suitable text that they can use as a guide to methodological issues in their project work. The message of this book is that scientific methods are a question of consciousness and awareness, and should not be seen as difficult, strange or unnecessary.

Research is a process of planning, executing and investigating in order to find answers to our specific questions. In order to get reliable answers to our questions, we need to do this investigation in a systematic manner, so that it is easier for others to understand the logic of and believe in our report.

Students need to understand the basic methodological approaches to management and business research. This understanding helps them in the initial stages of their thesis and project work, providing them with confidence and purpose. We do not intend to give students ready-made tools or advocate a particular approach. The idea is to let students understand that there is not one 'best' method for business research and that the choice of method depends upon the research problem, the research design and the purpose for the research. Moreover, it is also dependent on the capabilities and resources we have for the particular research. It is more important to first understand what you really want to know, than to look for a systematic and an easy/quick way to do it. Although there are several schools and opinions on management and on the study of management and other social sciences, our purpose is not to get involved in this discussion (see e.g. Whitley, 1984; Pfeffer, 1993, 1995; Alvesson, 1995; van Maanen, 1995; Holland, 1999). Instead, we want to synthesize and simplify this research to provide practical guidelines to students so that they can efficiently handle their research projects and write good dissertations and project reports.

Purpose

The purpose of this book is to help students get rid of the myth that research is 'too scientific' or 'too abstract' and unnecessary in business studies. It is also intended to help them understand the language and approach of science and research. It will assist them in understanding how properly structured and argued reports can be more convincing and reliable than reports based on a practical approach or on common sense. In our opinion, a scientific approach and common sense have much in common. The scientific approach, however, is a more systematic and controlled treatment of common sense. A layperson uses theories and concepts but in a loose manner. Often, people accept whatever sounds consistent with their beliefs and values: an increase in unemployment is because of immigrants or, in a business setting, the more money you spend on advertising the more you can sell, etc. A scientific approach, on the other hand, systematically examines assumptions and hypotheses before either believing or discarding them.

We have written this book to give practical guidelines for students and researchers. It is based on our own experience as researchers and as supervisors for numerous PhD and Master's theses, and that of many colleagues and students in business studies. The third edition has also been improved and expanded with help and assistance from our colleagues and students who have been using the first two editions. In this edition particular attention has been given to two important issues: the impact of cross-cultural issues, and ethical issues in research. These two issues are dealt with in each and every chapter. Moreover, we have added examples throughout to make the text more accessible and easy to understand.

This book is designed to help students understand that a conscious (scientific) approach is the most appropriate for research and problem-solving projects. This means making students understand that, before beginning research on a project, they must be aware of what they are doing and what they are not doing. They have to clarify for themselves and for the reader the perspective they have chosen, and they must identify who should benefit from the study. In other words they must learn how to formulate a problem, how to choose a particular method and how to argue and motivate. They must also learn how to write a valid and reliable report, which is useful for the purpose of research and for managers or decision makers. We provide students and others involved in research in business studies with clear, hands-on guidelines for doing research. The book will deal with the following:

- highlighting the importance of systematic research and problem solving;
- explaining how to cope with problems associated with doing research;
- explaining different types of research, the role of the researcher and the importance of methods and models;
- the practicalities of research, such as problem formulation, relating the research to previous studies, choosing a suitable methodology, presenting results and findings and drawing conclusions;

- a discussion of different methods of data collection and analysis, qualitative as well as quantitative, and their advantages and disadvantages; which type of method is suitable for which type of research problem and conditions;
- the role of the researcher and ethical issues in doing research;
- how to test the assumptions necessary for the method and techniques being used, and whether these assumptions are valid: in other words, validation of methods and models and not only validation of hypotheses;
- the impact of cross-cultural (international) issues on the research process and how to handle these issues;
- the practical issues around research in business studies, providing some practical guidelines for questionnaire development, interviewing and data analysis;
- step-by-step guidelines for report writing, the format and writing of a report as a thesis and for publication purposes;
- concrete guidelines for oral presentation.

Readership

This book is primarily meant for MBA, Master of Science (MSc) and undergraduate students in business studies. It is also meant for PhD students and other researchers at the earlier stages of their research endeavours. Most schools and universities require their graduate as well as undergraduate students to write a thesis or a research report at the final stage of their studies. These students are the primary target for this text. Students often find the books available in the market either too general or too narrow, dealing with only one aspect of research, such as surveys, interviews or case studies, or else at a higher philosophical level that is often irrelevant and difficult to comprehend. This book, on the other hand, has an integrative approach and is especially adapted to research in business studies. It will also be highly useful for consultants and business people working with research projects, problem solving and report writing. Considering the above mentioned target groups, we have kept the language and discussion simple and accessible. A rather direct and to-the-point stance is taken and a number of examples are given to make the reader understand and comprehend the point under discussion. The book is organized in three parts: Part I (Chapters 1–2) dealing with the challenges of business research, Part II (Chapters 3–10) dealing with the research process, and Part III (Chapters 11–13) dealing with analysis, implementation and report writing.

In Chapter 2 we discuss the meaning of research with special reference to business studies. The focus here is to discuss the difference between research and practical problem solving or common sense, and the different research orientations and knowledge and skills required for research. The final part of the chapter deals with ethical issues and responsibilities. In Chapter 3 the role of theory in business research is discussed. Here the focus is on the research process and on

the explanation of important concepts, such as theory, models and knowledge. Chapter 4 deals with the research problem. It is our observation that most students of business studies face difficulties in formulating the research problem, and in differentiating between a research problem and a research topic. In this chapter we also discuss the importance of models and systematic thinking in research and the role of reviewing past literature.

Chapter 5 deals with the research design and problems related to the choice of research design: how the research problem is, and should be, related to the design. Different types of research designs are presented and their usage discussed. Examples are used to illustrate the importance and relevance of research design. Problems related to validity and reliability are also dealt with in this chapter.

Chapter 6 handles the important problem of measurement and operationalization of research concepts and data. Measurement of empirical research is a difficult task as the quality of information depends to a large extent upon the measurement procedures used in gathering and analysing data. The chapter takes us through different types, levels and scales of measurement. Validity and reliability in measurement are particularly stressed. Some guidelines are provided to improve the measurement. A special section is devoted to measurements in qualitative research. Chapter 7 deals with different types of data resources and what is meant by the right kind of data. Sources of secondary as well as primary data collection and their advantages and disadvantages are discussed.

Chapter 8 thoroughly explains data collection methods. It starts with a discussion on qualitative versus quantitative methods and explains when to use which type of data collection method. It then explains main methods of data collection in business studies, such as surveys, interviews and focus groups. Chapter 9 discusses different types of sampling techniques and how we should go about drawing a sample. Some suggestions are also given for sampling in qualitative research. Chapter 10 takes up the difficult job of preparing and analysing data. It handles issues such as coding and editing and explains the role of statistics in data analysis and presentation. The chapter also thoroughly discusses the role of computers and how the use of computers can help improve our data analysis. The last section deals with data analysis in qualitative research.

Chapter 11 provides guidelines and a practical demonstration of how to actually conduct data analysis. A number of techniques are presented and discussed for conducting both quantitative and qualitative data analysis. The chapter explains and gives examples on the most commonly used statistical techniques in our field. Chapter 12 provides guidelines on designing and conducting a case study. It discusses when to use a case study, how to collect data through this method and how to analyse data collected through a case study.

Finally, Chapter 13 provides guidelines for writing a report. The process of writing up the final report is tiresome work. The report has to be concise, consistent and convincing. The writing style of the report is also important in order to convince the reader that the report is valid and reliable. In this chapter the structure of reports is discussed section by section, with examples and illustrations.

Guidelines for form and style, for usage of footnotes and a bibliography are also provided. Different types of reports are discussed such as thesis, oral presentation and a report written for publication.

On the use of the book

When working with the book, it is recommended that the reader first scans the whole text and thoroughly reads Chapters 1–5 before starting to work on a business research project. A thorough understanding of the role of theory in practical research and the objective of the research is needed. When actually working on the research projects, researchers should read Chapters 6–10; this will enable them to decide which research design is the most suitable and which data collection method is most appropriate for their research problem. At this stage they can also get help on how they should go about sampling and collecting data and on which type of analysis will be the most appropriate. While conducting the actual data collection and analysis, the researcher is advised to read the respective chapter from Part III, whichever is relevant. Finally, before sitting down to write up the report and findings, the researcher should read Chapter 13 about writing the report. The chapter provides concrete guidelines for report writing for different purposes. An added feature in the third edition is that at the end of each chapter a list of further reading is provided. Researchers who want to look more deeply into a particular issue (e.g. on different opinions on the study of management, on ethical issues on secondary data or how to handle a particular problem caused by cross-cultural data collection) can quickly look up these readings to enhance their understanding.

Research in business studies

If we have mentioned the actual results of investigation first, the reader could have labelled these obvious also. Obviously, something is wrong with the entire argument of obviousness. It should really be turned on its head. Since every kind of human reaction is conceivable, it's of great importance to know which reactions actually occur most frequently and under what conditions; only then will a more advanced social science develop.

(Lazarsfeld, 1959: 480)

The purpose of this chapter is to explain what we mean by research in business studies and to discuss differences between systematic research and common sense or practical problem solving. Different research orientations are also discussed to illustrate the influence of researchers' backgrounds and basic beliefs surrounding the research methods and processes. We believe that research papers or theses at the Master's level, when successfully completed, should demonstrate that the candidate can systematically handle and analyse a problem, arriving at valid conclusions. In other words, it is a professional training process through which we can learn to think and work systematically. The advantage of systematic thinking is that it contributes to accuracy and a more orderly approach and is reliable in handling research as well as business problems.

Example

A business firm experiences declining sales and – of course – managers and employees feel frustrated. Through systematic observations and thinking it becomes clear that the declining sales are caused by a newly introduced substitute. This results in a systematic effort to develop and introduce a new and improved product offering.

The increasingly complex nature of business operations and decision making demands a systematic and thoughtful approach. The importance of research in business studies, in schools, and in businesses has therefore increased. Practical problem solving and decision making are (or at least should be) becoming more and more similar to research. Business and marketing research are common activities in medium-sized and larger companies. And most of the decision making in these companies is based on research. For example, whether a company is launching a new product or trying to enter a new market, it has first to undertake

some research to decide which segment to target, whether there will be some demand for its product (sales forecast) and how to develop a market plan for the new product or new market. All this requires research that has to be undertaken by the company itself or by a marketing research company that sells its services.

Why we do research

The basic purpose of research in education is to teach students to work systematically and for them to learn critically to analyse issues/matters before believing in them or acting upon them. However, research is essential for understanding even basic everyday phenomena that need to be handled by individuals and organizations. If we want to buy a car, we do some research, finding out which car satisfies our needs/criteria and where it is available; we compare prices at different dealers, or among different cars that fit into our criteria, and so on. In the same manner a company has to do research while making important decisions, whether it is to reorganise its structure or to merge or take over another company. Businesses are these days doing systematic research to handle their day-to-day activities (Sekaran, 1992).

> Businesses are beginning to develop a strategic monitoring program to identify and understand competitors' strengths, weaknesses and overall business strategies. Any firm can establish a competitor-analysis system that provides management with essential information about a wide range of strategies that rivals are likely to pursue. The key is knowing where to gather relevant information and how to combine separate pieces of data into a coherent profile of each competing operation.
>
> (Svatko, 1989)

We really cannot take decisions on important issues unless we investigate (research) more deeply the relevant information, gathering more information on the particular aspect we are interested in. Then we analyse all this information to make a judgement about the right solution to our problem or answer to our questions. In business studies we normally work with problems faced by managers and companies. For example: How to enter a particular market? What are the factors that influence performance in joint venture relationships? What are the factors that influence the successful launch of a new product? Is advertising necessary, or how much advertising is necessary to market a certain product? Would acquiring a particular company fulfil our strategic objectives? And so on.

Without research we cannot answer the above or similar questions. As well as learning systematic information collection and critical analysis, we need to learn how things work, through research done by others, and then perhaps use that knowledge to see whether it is applicable to our problems/situations. Sometimes we need to make/suggest changes and apply them to our own problems. When this process has been done by several researchers, the ideas/theories are tested. Once theories are properly tested we can even predict the future. We can say with

confidence that in this type of situation/problem, this should be the solution/answer. The research, therefore, makes our life easier, not only in business but in general. The research can thus be considered as a process of problem solving for a specific problem under specific conditions (Kuhn, 1970).

Example

Through systematic research it was found that serious stomach and digestion problems were caused by the salmonella bacteria. Research also learnt that the salmonella bacteria did not survive at a temperature of 80°C or higher, resulting in the practice of heating food to that temperature when suspecting the bacteria.

Research versus common sense

There is a common belief that research is an academic activity undertaken by researchers who are not at all familiar with managerial culture and the nature of problems faced by business managers. At the same time, several studies have revealed that managers do not know how to use research findings and therefore cannot utilize the results and conclusions of research (Whitley, 1984; Gill and Johnson, 1991). In our opinion, research in business studies and managerial problem solving are not much different from each other. Managers need to have some knowledge and evaluation capabilities to understand the consequences of their decisions. In other words, managerial decision making or problem solving, if done systematically, should lead to better decisions and results than those decisions made exclusively through intuition or personal likes and dislikes. Managers must have the capability to analyse their situations and to use investigative approaches to decision making and problem solving. The systematic procedures and approaches of advancing knowledge, suggested by the research process, also serve as a disciplined and systematic procedure for managerial problem solving.

Example

In business life firms and their managers experience negative surprises, for example that customers become dissatisfied and frustrated. An ability to obtain systematic insights into what causes dissatisfaction and frustration is crucial to solve the problem and improve.

As a first step, actors in both management and research activities need to decide what they want to achieve. This is followed by collecting relevant information and facts that can help in achieving the first objective. The information collected needs to be analysed and put into a structure that helps to achieve a purpose or initiate different actions. This process, deciding what to do, collecting information, discarding irrelevant information, analysing the relevant information and arriving at a conclusion/decision in a systematic procedure, is useful for the cumulative knowledge as well as the personal development of the researcher and

manager alike (Revans, 1971; Gill and Johnson, 2002). Although some scholars differentiate between academic research and research done by companies, for practical problem solving, we believe in 'trans-disciplinarity' in research, where boundaries of a single contributing discipline can be crossed. The production of knowledge is thus not restricted to academic research. It involves academics, policy makers and managers, and useful knowledge is developed and exploited more quickly than if a different type of knowledge was developed by different parties (Gibbons et al., 1994; Tranfield and Starkey, 1998; Bryman and Bell, 2003).

The purposes of doing research are multiple, such as to describe, explain, understand, foresee, criticize and/or analyse already existing knowledge or phenomena in social sciences. The job of a researcher is often that of an observer, and each observation is prone to error; therefore we go out and research to find a better 'truth' or answers to our questions.

Why do firms (organizations) exist?

It is costly to perform transactions. In a classic article, 'The nature of the firm', R.H. Coase raised the 'obvious' question: Why do firms exist? Coase was trained as an neo-classical economist. In neo-classical economics firms do not exist in highly competitive markets. Rather transactions are mediated through markets. Coase explained the existence of firms as due to 'frictions' – or transaction costs. This insight is useful to understand why firms in some cases use the market to perform transactions, whereas in other cases they (transactions) are conducted internally.

If the role of a researcher is that of an observer, then what is the difference between an observer who can draw conclusions with common sense and a researcher? The difference is that observations made by the researcher should be systematic, arguable and challengeable. The researcher explains to us how he or she collects information, argues for the results obtained and explains their limitations. In an ideal situation, if anybody else had made observations using the same methods they would come up with more or less the same results. The role of the researcher thus becomes very important. When we look and observe, we see differently depending upon our background and what we know and expect. Two different people observing the same object may see two different things. It is thus very important to discuss both the object and the observer and biases. For this reason the observer has to explain and convince the reader of the purpose and methods of observation.

Example

Research findings show that employees tend to see problems and solutions from their position and tasks they are involved in. For example, a marketing person

tends to see marketing problems, a person involved in production sees most problems as production problems. The main reason is that individual actors are constrained by their limited cognitive capacity, that is limited capacity to notice, make sense of, store, retrieve and make use of information (data).

The usefulness of research is often discussed, especially when it comes to things that seem self-explanatory and common sense. But the very same common sense and self-explanatory objects/beliefs have proven to be wrong through research. Common sense and beliefs, influenced by society and culture, provide us with a non-conscious ideology, and we believe in things without being aware of the reality. As Bem (1979: 89) said, 'Only a very unparochial and intellectual fish is aware that his environment is wet.' This is further illustrated by the following example:

> A man and his son are involved in an automobile accident. The man is killed and the boy, seriously injured, is rushed to the hospital for surgery. The surgeon takes one look at him and says, 'I am sorry, but I cannot operate on this boy. He is my son.'
>
> (Selltiz et al., 1976: 4)

Whenever we tell this story to our students many of them do not understand the catch. We unconsciously believe that a surgeon is always a man and therefore do not even consider the thought that the surgeon can be the mother of that boy.

Scientific research often challenges these non-conscious ideologies and beliefs by scrutinizing them. Challenging old beliefs, turning things upside down and creating new beliefs is not always comfortable. For example, in a number of somewhat conservative states, it is not allowed to include Darwin's evolution theory in the school curriculum, as it challenges the belief promoted by religion about the creation of mankind. Research corrects our misbeliefs, generates new concepts and broadens our perspectives and perceptions. This is particularly true because research does all that which is often beyond common sense – while common sense considers most things as given. The fundamental difference here is, as mentioned earlier, that research involves systematic methods. The conclusions drawn from research lead to new theories and beliefs. The purpose, however, and we hope everybody can agree, is to improve social life. In business research, the purpose is to understand how and why things happen. The research corrects our misbeliefs and provides new perspectives. At times it can be uncomfortable, as illustrated by the following example:

> A well-known scientist (some say it was Bertrand Russell) once gave a public lecture on astronomy. He described how the earth orbits around the sun and how the sun, in turn, orbits around the center of a vast collection of stars called a galaxy. At the end of the lecture, a little old lady at the back of the room got up and said, 'What you have told us is rubbish. The world is really a flat plate supported on the back of a giant tortoise.' The scientist gave a superior smile before replying, and asked 'What is the tortoise standing on?' 'You are very clever, young man, very clever,' said the lady, 'But it's turtles all the way down.'
>
> (Hawkins, 1988: 1)

The above discussion makes it clear that the difference between a scientific observation and a layperson's observation is that scientific research is done systematically and is based on logic and not beliefs: therefore, we stress a logical relationship between cause and effect. Most students in business studies get confused by the terminology used in books on traditional research methods. Although the language and the scientific approach is somewhat different from common sense, it is not strange or difficult to comprehend. In fact, quite the contrary, as, when understood, it seems logical and natural. As Whitehead (1911) stated, common sense is not the right start for research: 'Its sole criterion for judgement is that the new ideas shall look like the old ones.' It therefore prepares us for new realities.

According to one idea, science is a systematic and controlled extension of common sense, as common sense is a series of concepts and conceptual schemes satisfactory for the practical uses of mankind (Conant, 1951: 32–3). Others believe that these concepts and conceptual schemes can be misleading in modern times. For example, it was self-evident common sense for many in the last century to use punishment as a basic tool of pedagogy. It has however been proved that this old view of 'common sense' may be quite wrong as rewards seem more effective in aiding learning (Kerlinger, 1964: 4). According to this belief, science and common sense differ in several ways (*ibid.*):

1. The first difference is that laypersons use 'concepts' and 'theories' loosely. They often accept explanations that fit easily with their beliefs and values, for example that illness is due to sinfulness. Scientists, on the other hand, systematically build up theories and test them for internal as well as external consistency. Moreover, they believe that the concepts they are using are human-made terms that may or may not exhibit a close relation to reality.
2. Laypersons often select theories and test hypotheses, but their evidence comes from their own hypotheses. They believe in their evidence as it fits their assumptions. Scientists, on the other hand, test their assumptions and hypotheses systematically and tend to be more careful in their selection.
3. Laypersons do not bother to control their explanations of observed phenomena. They do not try to control external influences, and they accept those assumptions that are consistent with their preconceived biases. They do not try to relate different phenomena. Scientists, on the other hand, are constantly looking for relations among different phenomena. They systematically try to study and control these relations.
4. Finally, laypersons often believe in 'metaphysical explanations', such as 'some people are poor because God wants them to be poor'. Scientists, on the other hand, do not accept metaphysical explanations. They are concerned with things that can be observed and studied. In other words, research is concerned with studying things that can be observed and tested. If things can be tested, they can be falsified. For example, a person may believe that drinking coffee in the night keeps one awake. This assumption (assertion) can be tested.

Assuming that people tend to be equally awake whether they drink coffee during the night or not, the stated belief is wrong (cf. section 11.1).

Different research orientations

The research process and the research method used are influenced by the researcher's background when it comes to research orientation. A particular research orientation prescribes the relationship between methods, data, theories and values of the researcher. Social knowledge builds one upon another. Scientific observations provide new theories, correcting, modifying, extending, clarifying the older and existing ones. Most methodology books describe 'originality' or 'original contribution to knowledge' as a basic condition for a scientific study. Although the demand for originality is perhaps the most controversial, its importance and meaning should not be misunderstood. Students normally believe that topics used by others in their theses should not be studied, because by doing so they would lose originality. We believe 'originality' describes studies that create a new dimension to already existing knowledge. It implies that there is some novel twist, fresh perspective, new hypothesis or assumption or new and innovative methods of handling an already existing topic/knowledge that makes the study a distinctive contribution. In business studies, it is equally possible or perhaps more useful to direct research projects towards more sharply delineated tasks.

The researchers do not preach or ask whether the social activity observed is good or bad; they just analyse, present and explain it. In fact, that is the starting point of research: that we have a number of assumptions/speculations, but we should not accept or reject them unless we study these assumptions critically and unless we find logical and reliable explanations to accept or reject them. The researcher thus tries to be as objective as possible. It is however, not always possible to be objective, as put forward by Burrell and Morgan (1979: 225): 'What passes for scientific knowledge can be shown to be founded upon a set of unstated conventions, beliefs and assumptions, just as every day common-sense knowledge is. The difference between them lies largely in the nature of rules and community which recognises and subscribes to them. The knowledge in both cases is not so much "objective" as shared.'

In our opinion, thus, researchers in business studies may have different orientations, from objective generalizable problem solving to specific practical problem solving for a particular company (Burrell and Morgan, 1979; Gill and Johnson, 2002).

Induction and deduction

A researcher observes and faithfully records what is seen without any prejudice. Some of these statements of observation are established as true and serve as the basis for theories and laws. There are two ways of establishing what is true or false

and to draw conclusions: induction and deduction. Induction is based on empirical evidence, while deduction is based on logic.

Through *induction* we draw general conclusions from our empirical observations. In this type of research the process goes from observations → findings → theory building, as findings are incorporated back into existing knowledge (literature/theories) to improve theories. In this research, thus, theory is the outcome of research (Bryman and Bell, 2003). This type of research is often associated with the qualitative type of research. This process goes from assumption to conclusions and is illustrated as follows:

Assumption: Psychiatrists have found that psychological problems in patients depend upon their experiences in childhood.
Conclusions: All psychological problems are based on experiences in childhood.

It is, however, important to note that we can never be 100 per cent sure about the above inductive conclusions, as these conclusions are based on some empirical observations. Sometimes conclusions based on hundreds of observations can also be wrong.

This can be explained by the prognosis of election results in a general election. Although the prognosis concludes that the Labour Party is going to win the election, we cannot be sure until we have seen the final results. In other words, we can arrive at more or less probable results, but not with 100 per cent certainty.

By *deduction* we mean that we draw conclusions through logical reasoning. In this case, it need not be true in reality, but it is logical. The researcher in this type of research builds/deduces hypotheses from the existing knowledge (literature), which can be subject to empirical scrutiny (testing) and thus can be accepted or rejected. The researcher's main job is not only to build hypotheses from existing knowledge but also to present them in operational terms (operationalization), to show how information can be collected to test these hypotheses and the concepts being used (Merton, 1967; Chalmers, 1982; Bryman and Bell, 2003). In this type of research, theory, and hypotheses built on it, come first and influence the rest of the research process. This type of research is often associated with the quantitative type of research. The process of deduction goes as follows:

Assumption: All metals expand when heated.
Assumption: Rail tracks are built of metal.
Conclusion: Rail tracks will expand when heated.

The above examples explain the difference between induction and deduction. The difference is that facts acquired through observations lead us to theories and hypotheses, while with deduction (logical reasoning) we accept or reject these theories and hypotheses. This acceptance and rejection then helps us to explain or predict.

In the process of research, methods begin with ideas and facts that lead us to propositions, theories and predictions. New theories and predictions lead us to

new ideas and facts, and a new cycle begins, leading us to new theories. When we utilize observed facts in generating a theory that is consistent with these facts, we are doing induction. In other words, induction is the process of observing facts to generate a theory and is perhaps the first step in scientific methods. While doing research we formulate propositions after observing the relationship between different variables of our study. Most researchers in business studies go through this method, observing facts that lead them to propositions and later to theories.

On the other hand, in deduction we look at the consequences of a theory. There is an established school of thought which believes that the entire research process is initiated by theories. Deduction involves the gathering of facts to confirm or disprove hypothesized relationships among variables that have been deduced from existing knowledge.

As we can see, discussion on induction and deduction presents us with two alternative ways or stages of building theories. Most researchers and scientists believe that they have been using both of these in their research. The processes of induction and deduction are not totally exclusive of each other and induction includes elements of deduction and vice versa. In both cases researchers need to know the nature of the existing knowledge. In both cases, however, a great deal of creativity and imagination is demanded from the researcher or investigator. Both induction and deduction demand that we go beyond statistical significance to systematic data collection, and that we are aware of the sensitive question of the relevance of data to theory or study. Moreover, both demand that the investigator keep up to date with theories and ideas and with scientific methods.

Deductive and inductive reasoning

Deductive reasoning – the logical process of deriving a conclusion from a known premise or something known as true.

Inductive reasoning – the systematic process of establishing a general proposition on the basis of observation or particular facts.

What comes first: theory or data?

It is often assumed that theory should precede data, that is, observations. This impression is easily supported by the way the 'research process' is illustrated (see Chapter 3), and research often takes place this way. For example, this is the case when a researcher carefully reviews relevant literature and 'sees' a research opportunity, that is a gap, a weakness or unanswered question in present insights. In

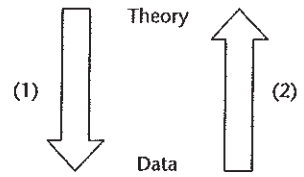


Figure 2.1 Theory or data as starting point

this case the researcher often (but not always) has a clear research problem: for example, do variations in X explain variations in Y? Often, however, this is not the case. The researcher may observe something s/he does not understand, typically resulting in questions such as: 'Why?', or 'Why does this happen?' For example, the researcher may observe a specific practice, a way of doing things that is counterintuitive or in conflict with that which s/he has been exposed to previously. This is often the case in 'qualitative' research with a prime emphasis on gaining understanding. A key purpose in this latter case is to 'construct theory', that is to come up with an adequate explanation (see Figure 2.1).

It should be emphasized that when doing research, interactions between theory and data take place. For example, a researcher conducting a structural survey to test a specific hypothesis gets an unexpected finding, triggering off speculations as to why this might be so: that is, the researcher tries to theorize to come up with an adequate explanation. The unexpected finding shows that the hypothesis (theory) can be wrong, and thus forces the researcher to rethink prior belief.

Knowledge skills and research

Basically we do research because we want to know more about ourselves and the world around us. A number of scholars have explained different ways of knowing (Cohen and Nagel, 1934; Buchler, 1955; Kerlinger, 1964: 6–9):

1. *Method of tenacity*, where we hold firmly to the truth or the truth we know to be true, as we have always known it to be true. We may find ways to strengthen our belief even if the proposition or new developments may show otherwise. For example, the world is flat.
2. *Method of authority*, where it has been established that this is the case. For example, the Bible states that there is a God. In fact, even if such knowledge seems unsound in certain situations, we live our lives according to this authoritative knowledge.
3. *A priori method* or *method of intuition*, where knowing is based on propositions that are self-evident or 'agreeable to reason'. However, something that is self-evident to one person might not be self-evident to another. For example, is it self-evident that US education is inferior to European education – is this 'agreeable to reason' (Kerlinger, 1964)?

4. *Method of science*, where we find a way of knowing, where everybody's final conclusion is the same. In other words, there are things whose characters are entirely independent of our opinions about them (Buchler, 1955). Scientific approach to attaining knowledge has self-correction as one of the characteristics. We must, however, point out that this is a rather deterministic view of science. In our opinion, there can be several methods of acquiring knowledge that can be called scientific . . . but this is the most widely accepted view. Some scholars call it objectivity (Kerlinger, 1964). As Polanyi (1958: 4) states, scientists systematically and consciously use the self-corrective aspect of the scientific approach. Considering the above, as expressed by Braithwaite (1955: 1):

> The function of science . . . is to establish general laws covering the behaviours of the empirical events or objects with which the science in question is concerned, and thereby to enable us to connect together our knowledge of separately known events and to make reliable predictions of events as yet unknown.

Why research never stops

As mentioned in section 2.1, while solving problems we need to look at what is already known about this type of situation/problem. In some cases, for example in exploratory research, we make some observations to get better clarification of our research topic or field. What is known in the field and/or these observations help us understand our problems better. They also help us to ask the right questions. Once we have better knowledge of our problem area we try to look at our field in a rather systematic manner. With the help of this clarified picture we then build hypotheses or assumptions. Hypothesis building or deriving assumptions leads us to the concepts and/or constructs we should study to get answers to our questions. These concepts, when put together, in relation to each other, lead us to our model.

Having a clear understanding of problems, assumptions and concepts, we start thinking how to go about finding answers to our questions. At this stage we have to come up with a research design. Also, how are we going to collect the information needed and what are we going to do with it? In other words, how are we going to analyse that information? Once we have the design we can proceed to actually collect and analyse data. The analysis will lead us to our interpretation, what we understand from the information we have collected and analysed.

Example

A PhD student, based on extensive reading, advances the hypothesis that degree of market orientation covaries positively with firms' performance in competitive markets. S/he develops measures for the key constructs market orientation and business performance. Furthermore, s/he selects a sample of firms operating in

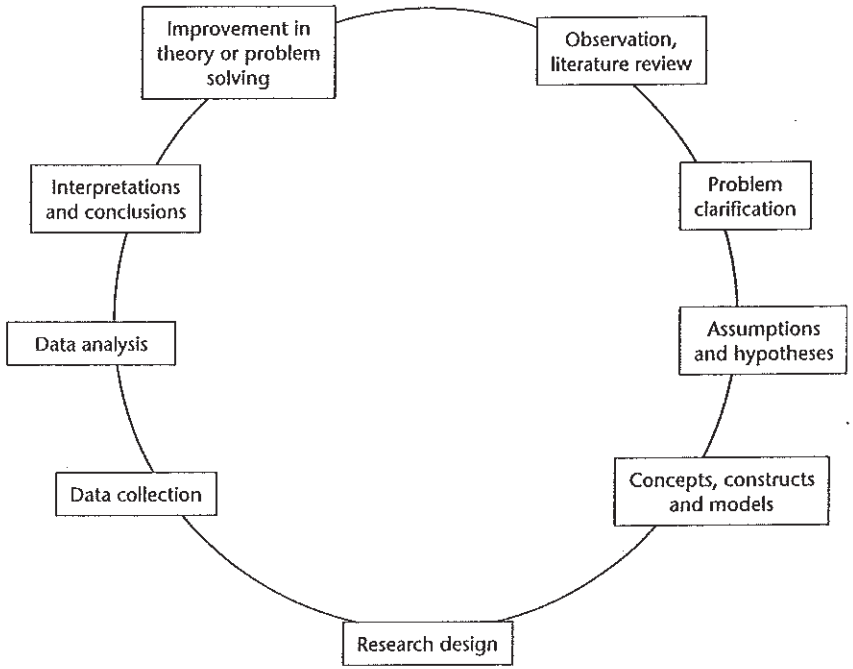


Figure 2.2 **The wheel of research**

competitive markets varying in degree of market orientation. Assume s/he finds a correlation coefficient between degree of market orientation and performance $r = 0.45$. This finding is in the direction of the hypothesized. If the sample size is $n = 30$ this finding is statistically significant ($p < 0.05$).

Through this interpretation we draw our conclusions, thus improving existing knowledge or helping in practical problem solving. This also means that researchers coming after us, working on the same topic, will start where we left off. In other words, while classifying their problem they will review earlier knowledge, including our study. The never-ending research activity is illustrated in Figure 2.2.

Research and ethics

Ethics are moral principles and values that influence the way a researcher or a group of reseachers conducts their research activities. In fact, ethics apply to all

situations and activities in which there can be actual or potential harm of any kind to anybody (Churchill, 1999).

Researchers have a moral responsibility to explain and find answers to their questions honestly and accurately. They have to point out the strengths of their methods and models but also have to inform us about the weaknesses and reliability of their results. The readers and users of our research reports are often less analytical and believe what we say. They might not understand underlying uncertainties and complexities. The reader should, therefore, be informed that the results or conclusions might be misleading. Also, if not properly clarified, our results and reports might be misunderstood in a way that creates more problems than solutions to existing problems (Ross and Harris, 1994).

Ethical responsibility of a researcher starts with problem formulation. For example, if we want to study the role of subsidies in the export performance of companies, it might not be a difficult issue to find data sources, do an analysis and come up with some conclusions. On the other hand, if we want to study the role of bribes or other illegal methods in the export performance of companies, we might face difficulty in finding data sources and doing analysis. Moreover, we might find ourselves in a moral dilemma if our study shows unexpected or drastic results. We would then have to ensure that the research did not cause embarrassment or any other disadvantage to people who have provided us with data (information). This leads to another important matter: the extent to which you should collect data from a research population that is unaware they are the subject of your research and have not given their consent (Saunders et al., 2000). This is a ticklish issue. One way of coping – in particular use in experimental research – is debriefing, that is the subjects are told about the study and purpose afterwards.

Many researchers have problems in deciding whether it is morally appropriate for them to continue doing research while ignoring ethical issues, mainly because it is difficult, time consuming or does not fit into their research plans. They believe, quite often, that if they are not doing anything illegal, it is morally acceptable. There are differences between whether or not something is legal and whether or not it is ethical. Many researchers do not even consider evaluating ethical dimensions of their research. In business studies, the importance of ethical issues and the responsibilities of researchers are growing, with increasing debate on social responsibility and consumer well-being, so that there is a danger that business research, if not aware of ethical issues, might lose respect or credibility. Companies are also becoming more aware of the impact of our research and can sue researchers for misleading results. For example, Beecham Products sued Yankelovich Clancy Shulman, a research company, for more than $24 million for negligent misrepresentation of research findings, because its market share forecasts were not upheld during the launch of Delicare, a detergent for fine fabrics (Churchill, 1999: 42). The usage of the Internet for data collection has also raised several ethical questions regarding invasion of privacy and using information on people without their consent.

2.8.1 The researcher and the respondent

The researcher–participant (subject) relationship is the most sensitive one in the process of research in business studies. Quite often a researcher struggles with the decision of whether to inform the participant about the real purpose of the research. They believe that telling the whole truth might result in the participant refusing or being reluctant to give full cooperation. Often our students, while doing internship in a company and working on their theses on a particular company's problem, want to do a competition analysis. Where information on competition is not available, they want to interview one or more of the competitors. In this case, they believe that if they expose the fact that they are doing internship in one of the competing companies, the others will not give them access. In our opinion, you have to be honest and open with the participants and convince them that their position will not be endangered. The violation of ethics is often associated with disguised observations and the use of deception while collecting data. One way is to consider whether the participant has a right to know the whole truth or not. Churchill (1999: 50) presents ethical concerns on eight areas of the researcher–participant relationship (see Table 2.1).

Table 2.1 **Ethical issues in the researcher–participant relationship**

1. Preserving participant's anonymity
2. Exposing participant to mental stress
3. Asking participants questions detrimental to their self-interest
4. Use of special equipment and techniques, e.g. tape recorder, video or health-hazardous equipment
5. Involving participants in research without their consent
6. Use of deception
7. Use of coercion to get information
8. Depriving participants of their rights, e.g. of self-determination

Ethical issues thus require attention at an early stage of the research process. Otherwise a researcher might waste a lot of time and resources, if he or she realizes halfway through or sometimes even at the final stage of the process that the project cannot be completed due to ethical problems. It is the responsibility of the researcher to assess carefully each and every point mentioned in Table 2.1, and in case of doubt a researcher must take all reasonable/possible precautions to inform and safeguard the respondents. The issue of confidentiality is particularly important. If the researcher has promised anonymity and confidentiality, s/he has to take extra care that in no way can the identity of the participant/organization be detected. This may involve legal repercussions for the researcher. Deception is another difficult issue: this is when researchers intentionally present their research or its objectives as other than what they are. This is common in business studies, where a researcher is doing research for one company but, while studying competing firms, does not reveal that. Instead he or she pretends to

be an objective researcher or student. The best way to improve the researcher–participant relationship in this respect is to consider the following:

1. Plan and evaluate ethical issues right from the beginning of the research project, from the problem formulation stage.
2. If you suspect some problems, discuss these with your supervisor, fellow researchers and potential participants.
3. Provide a complete picture of your research project, its purpose, objectives, and the type of information and access needed for the project to the participants.
4. Assure the participants of anonymity, confidentiality (if required) and that they will not suffer any harm.
5. Use appropriate and simple language while interacting with participants. They might not be aware of the terminology or detail of the topic of research, and they might be reluctant to ask.
6. You must facilitate the understanding and answering of questions.
7. You must establish a trustworthy and credible relationship with the participants.
8. Where there are any costs involved in answering your questions or providing you with information, you should be responsible for meeting these costs.
9. Assure the participants that they will be able to comment on the report before it is made public.
10. Assure the participants that they will get a copy of the final report when it is ready.

Ethical issues arise particularly at the data collection stage, where a participant cannot be forced or coerced to answer questions. Depending upon the method of data collection, a researcher has to convince the participant to answer. In surveys, researchers are happy if they get a 30–40 per cent response rate. In interviews, they may have to call/contact tens of potential participants before they get an interview.

Reporting your results objectively and honestly is the most important aspect of ethics. The results should be presented in such a way that they do not cause embarrassment, disadvantage or harm to any of the participants (Zikmund, 1997; Saunders et al., 2000). Moreover, they must not be distorted to fit your purpose, favour a particular participant/target group or be presented so that they do not reflect reality. Any misinterpretation of data will lead to misleading results and is ethically wrong.

2.8.2 The researcher's moral responsibility

The moral responsibility of the researcher deals with social guidelines and constraints upon research techniques and measurements. The researcher has to make a moral judgement about the appropriateness of research procedures. Although value judgement of the research depends on the researcher's own perception and interpretation of the findings, this evaluation is also influenced by the

researcher's environment and time period. It has to do with whether or not to accept and reveal certain findings that conflict with one's beliefs, customs or religion. As no research findings are final, the researcher has to make a decision on whether the evidence is strong enough to draw certain conclusions out of these findings. Exactly how strong is strong enough can be an ethical issue, as results based on trivial information could be misleading (Forcese and Richer, 1973).

Research findings might lead to action that is against the principles of the researcher or the funding organization. They may suggest a certain treatment of a labour force or a certain method of decision making to achieve optimal efficiency which is against today's management ethics. The results might influence an important decision to be made by policy makers, for example regarding mergers and acquisitions, anti-trust measures or standards setting for a particular industry. Or, they might discourage subsequent research on the topic. In these cases the researcher has to be ethically correct in reporting his or her results and also the methods, techniques and instruments used, so that the readers can make a judgement about the reliability of the findings.

Figure 2.3 summarizes the factors that may influence conducting research and the acceptance, rejection, concealing or revealing of its results.

As we can see, public interest in a particular issue might encourage or discourage a researcher to reveal or conceal results. For example, a study on racial discrimination in recruitment or promotion policies of companies or public organizations might be a sensitive issue at a particular time, close to elections or at a time when there is a risk of riots. Studies on the labour/management relationship, where the results might be in favour or against the interest of the management might influence a researcher's conduct. A study might lead to findings that are against government rules and regulations, but are ethically and morally

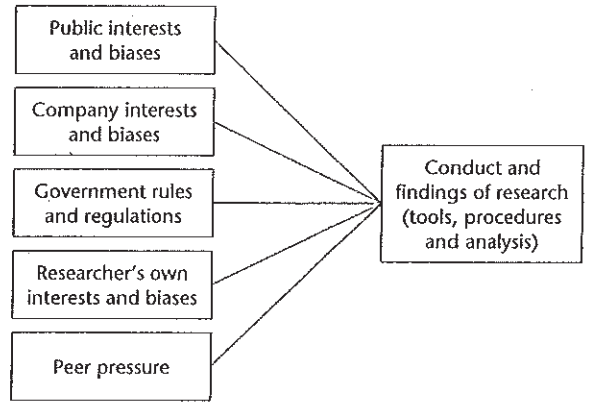


Figure 2.3 **Factors influencing research**

Source: Based on Forcese and Richer (1973: 22). © 1973. Reprinted by permission of Pearson Education, Inc., Upper Saddle River, NJ.

correct. In a similar way, most researchers have their own interests and biases. Some research is funded by industrial sectors, government institutions or companies. Researchers in many cases are dependent on continuous support from these organizations. If case findings are against the interest of these organizations, the researcher may be reluctant to reveal them for fear of losing funding. In some cases, the researcher is under peer pressure to use a certain method (e.g. quantitative methods) even if it is not suitable or reliable for a particular research problem. Peer pressure can also induce a researcher not to reveal the findings of his/her research, especially at a particular time. All these factors carry ethical implications for researchers and may influence procedures, methods and analysis. Researchers need to be aware of these and should take an ethical stand. A number of academic associations have drafted codes of ethical conduct in research. Some of these are listed below:

Academy of Management (AoM)
http://www.aomonline.org/aom.asp?ID=&page_ID=54

Market Research Society (MRS) http://www.mrs.org.uk/code.htm

Social Research Association (SRA) http://www.the-sra.org.uk/Ethicals.htm

American Sociological Association (ASA)
http://www.asanet.org/members/ecoderev.html

Further reading

Alvesson, M. (1995) 'The meaning and meaninglessness of postmodernism: some ironic remarks', *Organization Studies*, 16(6), pp. 1047–75.

Maanen, J. van (1995) 'Style as a theory', *Organizational Science*, 7(4), pp. 641–52.

Pettigrew, A. (1985) 'Contextual research: a natural way to link theory and practice', in Lawler, E.E., Mohrman, A.M., Mohrman, S.A., Ledford, G.E., Cummings, T.G. and Associates (eds), *Doing Research that is useful for Theory and Practice*, San Francisco, CA: Jossey-Bass.

Questions

1. A researcher is interested in sensitive information from a group of people. The individuals are unwilling to give this information. This information can, however, be obtained through others and/or by the use of specific techniques (projective techniques – i.e. individuals tend to project to others what are symptomatic for themselves). Do you think this raises ethical dilemmas?
2. How does research differ from practical problem solving?
3. What are the main differences between inductive and deductive type of research?
4. 'Research never stops . . .' Comment on this statement.

Exercises

1. As a marketing manager, you are asked to launch a product (pick a product) in China. Make a plan of how you would collect and analyse information that can help you make a decision for this launch.
2. You have been asked by a company to do a competition analysis for their product in a particular market. As there is no secondary information available you have to also collect information from competitors of your company. How would you handle ethical issues in this case? Draft a letter to send to competing companies asking for their assistance.

The research process

Part II (Chapters 3 to 10) covers important activities from identifying a research topic, to framing and structuring the research problem, determining the research design, the strategy on collecting information in the most adequate way, development of adequate measurements and collecting and analysing data.

The research process

This chapter deals with some conceptual (theoretical) foundations of research. Practical business research is often thought of as collecting data from various statistical publications, constructing questionnaires and analysing data by using computers. Research, however, also comprises a variety of important, non-empirical tasks, such as finding/'constructing' a precise problem, and developing perspectives or models to represent the problem under scrutiny. In fact, such aspects of research are often the most crucial and skill demanding. The quality of the work done at the conceptual (theoretical) level largely determines the quality of the final empirical research. This is also the case in practical business research. Important topics focused on in this chapter are the research process and the role of concepts and theory.

The process perspective

Research is often thought of as a *process*, that is a set of activities unfolding over time. A main reason for considering it so is that research takes time and consideration. Insights may be gained gradually, and may also be modified and/or changed over time. It is also useful to look at it as a process with distinct stages, as different stages entail different tasks. This can help researchers to perform these tasks systematically and to understand what is to be done at a particular stage. For example, we have to first clearly define our research problem and objectives before starting to collect information/data. Also, we first have to think and state which type of data is needed and how best it can be collected before actually doing it.

Figure 3.1 illustrates a prototypical research process or cycle. The illustrated process is a simplified one. In reality, however, the process is not so orderly and sequential and is rather messy (see e.g. Morgan, 1983; Pettigrew, 1985; Bryman, 1988; Watson, 1994). Researchers should therefore not be surprised/worried if their research process is not as systematic as presented in Figure 3.1, and if in practice they have to go back and forth in the process all the time. For example, at one stage, such as when doing observations, something unexpected may be discovered resulting in a return to an earlier stage, such as modifying the research problem. Thus feedback loops between the various stages are more common. It

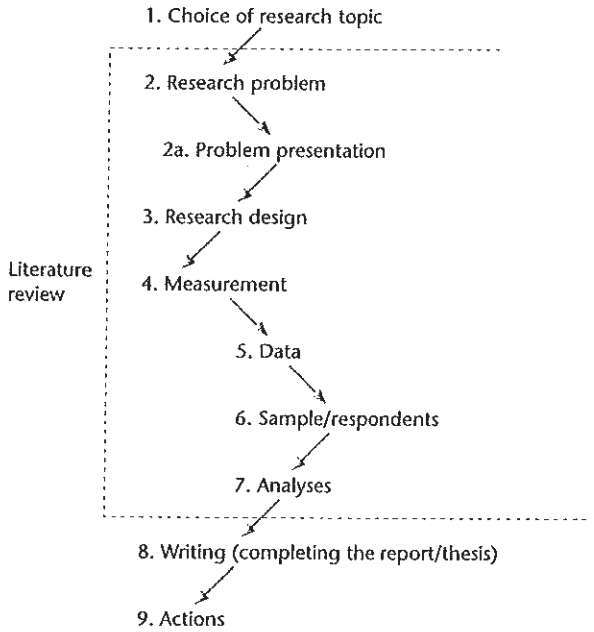


Figure 3.1 **The research process**

should also be noted that the starting point could be some observation triggering off theorizing about the actual problem (see section 2.6). Research may also lead to new questions, which is why research seemingly never stops (see section 2.7).

The starting point in Figure 3.1 is the *research topic*, that is the phenomenon or theme to be studied (1). For example, you may be interested in how firms organize their activities, how business firms conduct R&D, or how firms enter foreign markets. Choice of research topic is important for several reasons. For example, is the topic worth pursuing, and is it practicable? A research topic is not a research problem. It is usually broader and more general than a (good) research problem, such as, what organization structure is most efficient.

When moving from the more general research topic to a research *problem* (2) a more specific question is addressed. For example, you may ask (after having reviewed the literature): Are firms organized in a bureaucratic way less innovative than firms organized in an 'organic' way?[1] The relationship between research topic and a research problem is illustrated in Figure 3.2.

From the above discussion we see that a research problem is a question. When we have really established what we want to know, and how this relates to present insights, we have a clear research problem. This is the point of departure for further research activities.

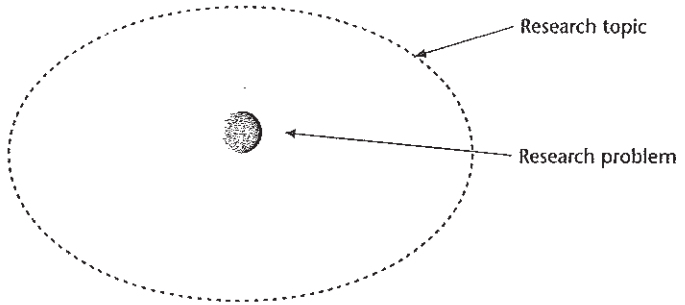


Figure 3.2 **From research topic to research problem**

Any problem must be captured or *represented*. This is done by a set of interrelated concepts, or a 'model', implicitly or explicitly (2a in Figure 3.1). The way the problem is captured influences how the problem is framed and understood. How the research problem is captured influences:

- choice of research design
- measurements
- data collection
- sample
- data analysis, and
- recommendations.

In Chapter 4 we discuss more fully how to define and capture research problems.

Research design relates to the choice of strategy to collect the data needed to 'answer' the stated research problem. As will be discussed later, research problems are multiple, and they come in many forms. In some cases the purpose is to understand a specific phenomenon. This will often be the case in 'qualitative' research. In other cases the purpose can be to determine the most adequate action, best mode of market entry and so on. Research designs are dealt with in Chapter 5.

Inspection of Figure 3.1 shows that after the choice of the overall strategy to cope with the research problem empirically, the choice of research design follows a series of activities.

Data are carriers of information. A variety of data sources will often be available (Chapter 7). The various sources have both advantages and disadvantages. One can also use multiple data sources, that is 'triangulation'. More recently modern information technology, for example the Internet, has become an important source for gathering the data needed (wanted).

Choice of data and how to collect them, from whom, and in what way, is important. Such choices are dependent on type of problem, information needed and, not least, data possibilities.

Empirical measurements relate to theoretical, unobservable constructs (concepts). For example, 'power-game' is a concept. How can/should this be captured? Another example is the concept of 'friend'. How do we recognize that a person is/has become a friend? Good measurements are a prerequisite for high-quality empirical research. It is a demanding task to develop good measures. Measurement problems will be dealt with more fully in Chapter 6.

Data must be handled, analysed and interpreted to become meaningful information (7 in Figure 3.1) that can influence subsequent actions. Various aspects and methods of analysing data are dealt with in Chapters 9 and 10. Also in qualitative research, data must be analysed and interpreted (see Chapter 12 for further discussion). Most research efforts are reported in written form (8), for example as research reports, but also as theses. Craftsmanship is needed to write a good research report (thesis). This is dealt with in Chapter 13. In business the outcome of research efforts often results in or influences actions (9). This, however, is beyond the scope of this book, and thus is not dealt with here.

3.1.1 The international dimension

In cases of international or cross-cultural research we need to take extra care in each and every stage of the process. The research involving unfamiliar environment and cultural differences may complicate the understanding of the research problem. The researchers often fail to anticipate the impact of local cultures on the question asked. This also has to do with deciding the scope and limits of the problem. In some cultures a broader scope is necessary to cover the necessary variables. For example, concepts such as 'supermarket' have different meanings in different markets. In Japan a supermarket usually occupies two or three stories and sells groceries, daily necessities and clothing on respective floors. Some even sell furniture and electronics, stationery and sporting goods (Cateora and Ghauri, 2000). The availability of data/statistical information on exports or imports of a particular product may also be different. Even if it is available, in some countries it might not be up to date or reliable. Many countries do not have government agencies that collect and maintain up-to-date data. In some countries private firms collect and sell data. Or the researchers have to collect primary data themselves. It is not possible to use data gathered in one market in another market. This is important for researchers as well as managers doing research in different markets, as illustrated by Box 3.1.

Comparability of data is, however, the main issue in international/cross-cultural research. It is not just due to the availability but also due to the manner in which data are collected and analysed. The researchers have to be extra careful in categorization and measurement of cross-cultural data. The international dimension of the research process, explained earlier, is added in Figure 3.3.

As illustrated in the figure, the researcher has to be careful and adjust her/his approach at each and every stage of the research process, while doing international/cross-cultural research. It is most appropriate to eliminate items/concepts that are

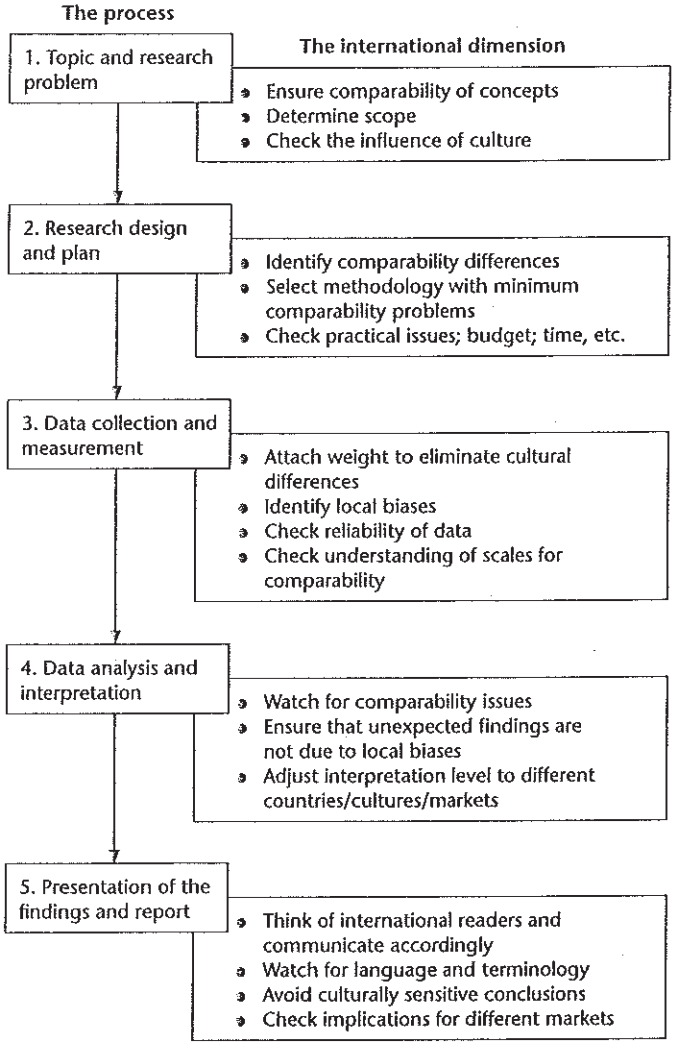


Figure 3.3 Managing the international dimension in the research process

Source: Based on Cateora and Ghauri (2000: 149)

found to be biased in one or more countries involved in the research. However, we have to be careful so that a meaningful comparison between the countries can be made. This will increase the probability that the results obtained are comparable and equivalent (Craig and Douglas, 2000).

Marketing research in Egypt

The 'Habits and Practices' study by Procter & Gamble, consisted of home visits and discussion groups (qualitative research) to understand how the Egyptian housewife did her laundry. They wanted to know her likes, dislikes and habits (the company's knowledge of laundry practices in Egypt had been limited to automatic washing machines). From this study, it was determined that the Egyptian consumer goes through a very laborious washing process to achieve the desired results. Among the 95 per cent of homes that washed in a non-automatic washing machine or by hand, the process consisted of soaking, boiling, bleaching and washing each load several times. Several products were used in the process; bar soaps or flakes were added to the main wash, along with liquid bleach and bluing to enhance the cleaning performance of the poor quality of locally produced powders. These findings highlighted the potential for a high-performing detergent that would accomplish everything that currently required several products. The decision was made to proceed with the development and introduction of a superior-performing, high-suds granular detergent.

Once the basic product concept (i.e. one product instead of several to do laundry) was decided on, the company needed to determine the best components for a marketing mix to introduce the new product. The company went back to focus groups to assess reactions to different brand names, to get ideas about the appeal and relevant wording for promotions and to test various price ranges, package design and size. Information derived from focus group encounters helped the company eliminate ideas with low consumer appeal and to focus on those that triggered the most interest. Further, the groups helped refine advertising and promotion wording to ensure clarity of communication through the use of everyday consumer language.

At the end of this stage, the company had well-defined ideas garnered from several focus groups, but did not have a 'feel' for the rest of those in the target market. Would they respond the same way the focus groups had? To answer this question, the company proceeded to the next step, a research programme to validate the relative appeal of the concepts generated from focus groups with a survey (quantitative research) of a large sample from the target market. Additionally, brand name, price, size and the product's intended benefits were tested in large sample surveys. Information gathered in the final surveys provided the company with the specific information used to develop a marketing programme that led to a successful product introduction and brand recognition for Ariel throughout Egypt.

Source: Cateora and Ghauri (2000: 151)

Levels of research

Going back to Figure 3.1, a distinction can be drawn between activities at the theoretical (conceptual) level (2, 2a) and the measurement (empirical) level (4, 5, 6 and 7). Choice of research design may be seen as the 'bridge' between activities at the conceptual and empirical levels.

The following should be noted: *all* research – irrespective of discipline – requires activities at the conceptual level. So-called 'theoretical studies' deal only with this level. For example, studies in mathematics and pure (theoretical) economics primarily relate to specific problems without seeking empirical evidence. Also, in business studies important contributions have been made that are primarily 'theoretical' (even though inspired by empirical observations) such as the influential contributions by J.D. Thompson (1967) and J.G. March and H.A. Simon (1958), which have shaped very much the thinking of and research in business administration disciplines. Theoretical studies correspond to Circle 1 in Figure 3.4.

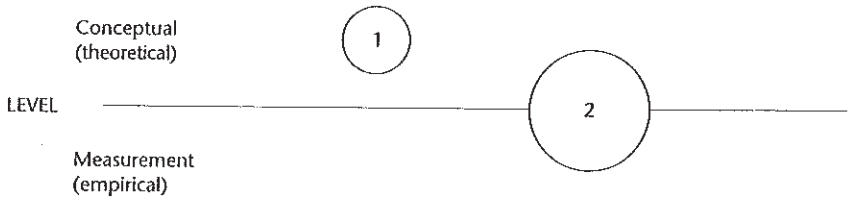


Figure 3.4 **Two levels of research**

However, an empirical study – even a study for practical business purposes – requires efforts at the conceptual level. See Circle 2 in Figure 3.4. Surpassing such activities and jumping to the 'raw empirical data' is seldom or ever very successful. The fact that this is often done in business does not mean that such research is good; rather it reflects lack of insight.

Research and knowledge

Even if it is not the prime purpose of doing particular research, the main purpose of research is to produce insights or knowledge. Knowledge implies that we 'know' something, and that what we know 'holds true', that is the produced knowledge is valid. Doing research also implies that we *add* to present knowledge that exists: that is, research is done to create new insights. For example, if a business firm conducts a study to examine what buyers emphasize, while buying a particular product, this is done to create new insights believed to be important to

the firm, so that it can improve its marketing efforts. Knowledge can be classified in various ways (Naegel, 1961):

- theories/models
- concepts
- methods/techniques
- facts.

New insights can be acquired in any of the above categories. For example, the researcher may develop a new theory to describe and explain how buyers behave. New methods or techniques can be developed to assist business managers in their decision making, and new facts may be uncovered. For example, before entering a new market, the firm needs knowledge to assess the size of the market and the competitive situation in it; these are prerequisites to develop a marketing plan for the new market.

New insights may be acquired by demonstrating new practical implications of a theory as well: by testing hypotheses derived from theory, and by applying a method to a new problem. The important point is that any research should have an *intended contribution*, that is to bring or add something new.

What comes first: theory or research?

In the research literature, a distinction is often made between the following two strategies:

- theory before research, and
- research before theory.

In the first case, present knowledge allows for structuring the research problem so that the researcher knows what to look for, what factors are relevant and what hypotheses should be tested empirically. From the above discussion it follows that, when wrestling with problems, the researcher also makes (or at least *should* make) use of available knowledge (earlier studies on the topic and its related areas).

Figure 3.5 illustrates the two research strategies. In the first case (1), important tasks are to identify relevant concepts, theories and so on, and to adjust the concepts (theory) to the problem under scrutiny (which also requires a clear understanding of the research problem). In the second case (2), the prime task is to identify relevant factors and construct explanations (theory). This relates to different contexts of research, that is the 'context of justification' (1) and the 'context of discovery' (2) (see Popper, 1961 for a lucid discussion). An interesting observation is that route 1 also corresponds to the use of 'theoretical' knowledge for practical problems. The user must select adequate theories and methods and adjust them to the actual problem, which is a demanding task.

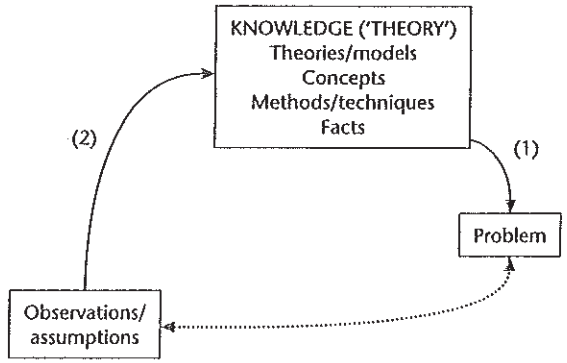


Figure 3.5 Production and use of theory

Figure 3.5 shows a broken line between the two strategies, indicating that when applying present insights to specific problems, new observations and new questions may give rise to a search for new explanations, methods or techniques.

Some important concepts

3.5.1 Concepts

Concepts are the building blocks of any theory or model (see also Chapter 4). A concept is an abstraction representing an object, a property of an object, or a certain phenomenon. 'Cost', 'income', 'market share' and 'business strategy' are all examples of common concepts in business administration disciplines.

Concepts are crucial in the researcher's tool bag. They serve a number of important functions:

- Concepts are the foundation of *communication*. Without a set of agreed concepts, meaningful communication is impossible.
- Concepts introduce a *perspective* – a way of looking at the empirical world.
- Concepts are means of *classification* and generalization.
- Concepts serve as *components* of theories (models) and thus of explanations and predictions.

Concepts are the most critical element in any theory, because they *direct what is captured*. For example the concepts 'cognitive' and 'dissonance' direct the theory of cognitive dissonance, and 'supply' and 'demand' are key concepts in economic theory. Even though many concepts used in everyday life are ambiguous (e.g. 'democracy' and 'influence'), they must be clear and agreed upon to be useful in research.

3.5.2 Definitions

Clarification and precision of concepts are achieved through *definitions*. Here we will distinguish between two types of definitions, *conceptual* and *operational*.

1. Definitions that describe concepts by using other concepts are conceptual definitions.

Examples

The concept of 'market' as defined in marketing literature, that is:

> all the potential customers sharing a need or want who might be willing and able to engage in exchange to satisfy that need or want.

In this definition 'customers' and 'need/want' are among the concepts used to define the concept of market (Kotler, 1997).

Another example is the concept of 'industry' defined in strategy literature as:

> the group of firms producing products that are close substitutes for each other.

Here 'firms', 'products' and 'substitutes' are key concepts to explain industry (Porter, 1980).

A useful definition is that concepts should:

- point out *unique* attributes or qualities of whatever is defined;
- *not be circular*, i.e. must not contain any part of the thing being defined; defining 'market exchange' as 'exchange taking place in the market' does not enhance communication;
- be stated *positively*, i.e. contain the properties of the concept defined;
- use *clear* terms.

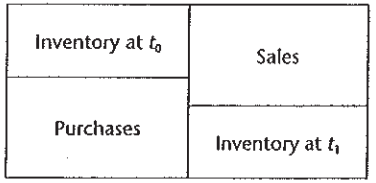
2. An operational definition is a set of procedures that describe the activities to be performed to establish empirically the existence or degree of existence of what is described by a concept. Operational definitions are crucial in measurement. They tell what to do and what to observe in order to bring the phenomenon defined within the range of the researcher's experience.

Examples

'Market share' may be defined operationally as:

> A company's sales of products in category X in area A during time *t*/Total sales of product category X in area A during time *t*, which also requires specifications of 'sales', product category X, area and time period.

In accounting, 'sales' during a specific time interval is often defined operationally as:



Or:

> Sales = Inventory at t_0 + Purchases during the period ($t_0 - t_1$) – Inventory at t_1.

This definition gives sales as measured in cost (purchase) prices or in terms of volume (quantity). If measured in sales prices, profit will hopefully be present.

Note that the value defined differs depending on whether it is measured in volume or value and, if it is based on value, whether the cost or sales value is used for 'sales'. Operational definitions will be dealt with in more detail when discussing measurements (see Chapter 6).

When we move from the conceptual to the empirical level in research, concepts are converted into *variables* by mapping them into a set of values. For example, assigning numbers to objects involves the mapping of a set of objects into a set of numbers. A variable is a property that takes two or more values and is subject to change, while a constant has only one value.

Example

Construct (concept)	*Variable*
height	. . . 150, . . . , 180, . . . cm
gender	1 (= women), 0 (= men)

3.5.3 Theory

Theory may be viewed as a system for ordering concepts in a way that produces understanding or insights (Zaltman et al., 1977). A theory includes more than one concept and how these concepts are linked together.

Example

A theory is:

> a set of interrelated concepts, definitions and propositions that present a systematic view of specifying relations among variables with the purpose of explaining and predicting phenomena.

It is important to note the purposes of theory, that is to explain whether it is related to understanding or prediction. For example, a researcher holds a theory of how 'advertising works', and uses this theory to allocate the firm's advertising budget based on a prediction of an outcome resulting from the spending of the advertising money. Also note the notion of 'proposition', that is an assumed relationship between two concepts, such as between 'performance' and 'satisfaction'.

The above definition of theory also claims it should present a systematic view, to enhance explanation and prediction, meaning that the concepts and relationships involved should represent a coherent 'whole'.

It is important to notice that theories focus on specific aspects of the phenomena or problems studied. This is done to capture the actual problem, and (hopefully) understand (solve) it better. On the other hand, some aspects are left out. This is done because human beings have limited cognitive capacity, making it almost impossible to take everything into account at the same time.

3.5.4 Methods

Research methods are rules and procedures, and can be seen as 'tools or ways of proceeding to solve problems'. Research methods play several roles, such as:

- 'logic' or ways of reasoning to arrive at solutions;
- rules for communication, i.e. to explain how the findings have been achieved;
- rules of intersubjectivity, i.e. outsiders should be able to examine and evaluate research findings.

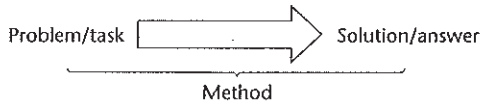


Figure 3.6 **Use of methods**

Figure 3.6 illustrates the role of methods for arriving at solutions. An important aspect is that there must be a valid reason (or 'theory') underlying the actual method so that it will result in the 'correct' solution.

Moreover, choice of methods requires understanding of the actual research problem. In addition, command over the methods and the ability to adequately choose among (and combine) methods are needed.

Concluding remarks

Research is often associated with constructing and designing questionnaires, measurements, statistical procedures and so on, which can be subsumed under the umbrella concept 'research methodology'. Research methodology can be conceived as a system of rules and procedures. Such rules and procedures are important in research for several purposes:

1. Research methodology can be conceived as rules for *reasoning*, i.e. a specific logic to acquire insights.
2. Research methodology is important for *intersubjectivity*, i.e. by reporting (in detail) how the researcher has obtained his or her finding, the researcher enables others to evaluate it.
3. Research methodology can also be considered as rules for *communication*. By reporting on the rules and procedures used, others may try to replicate, or they can criticize the approach chosen and the reported findings.

Qualifying research requires competence in logical reasoning and analysis. The researcher thus needs to have command over the research methodology to be used. Research methodology is thus an important tool in the researcher's toolbox. Research, however, is also closely related to finding, selecting, structuring and solving problems. In order to grasp, represent and understand problems, concepts, theories and models are crucial. Theoretical knowledge, and the ability to think conceptually are important and a prerequisite for doing qualified research. Problems represent the point of departure in research. Perception and the structuring of problems influence subsequent research activities. Qualifying empirical research requires both conceptual and methodological insights. Skills related to topics dealt with in this chapter are crucial to making relevant use of other tools in research.

Notes

1. Inspired by Burns and Stalker (1961).

Further reading

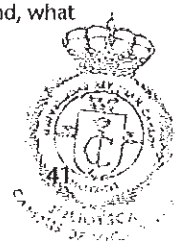
Douglas, S.P. and Craig, C.S. (1997) 'The changing dynamic of consumer behavior: implications for cross-cultural research, *International Journal of Research in Marketing*, 14(4), pp. 379–95.

Fox, D.J. (1969) *The Research Process in Education*, New York: Holt, Rinehart & Winston (Chapter 2).

Frankfort-Nachmias, F. and Nachmias, D. (1996) *Research Methods in the Social Sciences*, 5th edn, London: Edward Arnold.

Questions

1. Why is research often considered as a process – and not only as an outcome? And, what is a research process?
2. What do you think are major sources of research problems?
3. Explain and point out the differences between 'concepts' and 'definitions'.



Exercises

1. A firm wonders whether to increase advertising expenditure for its core products. What do you consider the research problem that should be identified and answered before it does so?
2. A firm has designed a market test to assess the effect on sales of a particular discount scheme. What do you consider to be the decision problem?

Research problems

Problems, that is 'questions', drive research. Without research questions there would hardly be any research at all. Research problems are not 'given'. They are detected and constructed. How research problems are captured and framed drives subsequent research activities. In normal research situations, we first select a topic and then construct a research problem within that topic. The process of constructing a research problem is not quite straightforward and often involves a lot of back and forth adjustment. In this chapter we particularly focus on how to cope with and adequately capture research problems.

Research ideas

The starting point of any research effort is some idea or observation that attracts attention and initiates speculation. The researcher might have a particular interest in a certain topic, such as consumer behaviour towards imported products, or understanding mergers and acquisitions. However, to make the topic researchable it must be turned into a research question. Because a key purpose of research is to create new insights, there must be something 'new', that is, something we do not already know. Even when replicating a previous study there is an aspect of novelty. Example: in a study conducted among large firms a specific budgeting procedure has been observed to be very effective. Is this procedure also effective in middle-sized and smaller firms? Or do companies perform better after merging with a competing firm?

An important source for research ideas is the past literature. Reading the past literature is often also necessary to determine whether the intended research will contain an element of novelty. Returning to Figure 3.1, it is seen that the literature is consulted throughout the whole research process. For example, the literature is consulted to identify a research problem, to plan sampling, formulate questions and choose statistical tests. In section 4.4 we will return to literature review to be included in the research report (thesis).

Example

A researcher is interested in a particular type of decision, captured by the so-called 'garbage-can models or decisions', characterized by situations where

'solutions are searching for problems'. This is similar to the situation where the researcher has a tool, for example linear programming, and is searching for a problem to apply the tool to. Review of the literature reveals that such decisions primarily have been studied and found in public organizations. The researcher raises the question: Do such decisions also take place in private firms (organizations)?

Once the researcher knows the topic it is a good idea to look at earlier theses and journal articles on that topic. Many of these present ideas for future research in the particular research topic.

Reading the literature is not the only way to get good research ideas. Probably reading is not even the most important way in a very early stage. The newsletter for ACR (Association of Consumer Research) had an interesting piece (*ACR News*, 1995) suggesting, first, that good research ideas relate to creativity. To foster creativity one may brainstorm with other people interested in the topic. A common observation is also that one idea may generate new ones. So let ideas flow. The best ideas are not always the first ones.

Important sources for good research ideas are:

- The real world. Look at how people and organizations are working (or not working) to generate questions as to why things happen the way they do (e.g. go to a shopping mall and actively observe everything as if it was for the first time).
- Look for 'missing holes' in the literature: what has really been addressed, and what has been neglected (e.g. Do the studies on mergers and acquisitions deal with performance? Do they deal with mergers between two competing firms?)

To improve your research idea as input to your research problem, get *feedback*. Discuss your research idea with friends, colleagues, your supervisor – and other people who are interested.

Wrestling with research problems

The first step in (practical) research is wrestling with problems. To answer (solve) a research problem, the researcher must be able to answer the following *two* questions:

1. What is the actual problem?
2. What is the best way to solve the problem?

Although some questions *seem* trivial in the beginning, the more we read and brainstorm, the more we realize that this is not, in fact, the case. Answering the first question implies that the researcher really *knows what s/he wants to know*. A common mistake is to go ahead with data collection and other 'practical' activities before knowing the specific research problem. Such an approach often ends up in a situation where 'a bunch of data is searching for a problem'; time runs out and money is wasted. To avoid misunderstanding, this does not mean that

no observations should be done prior to the research. Very often during some preliminary observation (a pilot study) it is very useful to explore, get acquainted with the phenomenon (problem) and arrive at the actual research question.

A useful strategy to get hold of the research problem is to ask *questions*. Good questions have the following characteristics:

1. They express relationship(s) between two (or more) variables (e.g. Would an increase in marketing budget increase our profits?).
2. They are clear, i.e. what is asked is understood (e.g. Is culture the main problem in the post-merger integration of two competing firms?).

The advantage of expressing relationships between variables is that they can be tested. For example, a marketing manager wonders whether the marketing effort should be directed towards large or small households, depending upon where the propensity to purchase the firm's product is the highest. A possible question is thus:

> Is there a relationship between household size and propensity to purchase the particular product?

Or more specifically:

> Are large households more likely to buy the particular product than smaller households?

Note that in the above case the following two concepts are included: household size and propensity to purchase. The relationship between the two concepts is a *hypothesis*. As discussed in Chapter 3 we use operational definitions to measure concepts (constructs). The actual measures, for example scores on scales, become *variables*.

Given available data, for example data gathered through test marketing in a specific area of household size and whether bought or not, the hypothesis can be tested. Assume that a test marketing programme followed up by a survey study based on a random sample of the households shows the following:[1]

Household size	*No. of households*	*Purchase*
Large	200	50
Small	300	30
Total	500	80

Here it is evident that the propensity to purchase, meaning purchase/number of households, is higher for large households, that is 50/200 = 0.25 and 30/300 = 0.10, respectively. This also allows for statistical testing.[2]

An important point is that by expressing relationships as in the above question (hypothesis) *falsification* is allowed (which is at the heart of hypothesis testing).[3]

The initial research problem is often rather vague and general. For example, a small business manager has difficulty in understanding what influences the

firm's performance in 'good' and 'bad' times. How can this ambiguous problem be approached? From cost accounting we know the following:

$$\text{Profit} = (\text{Price} - \text{Variable costs}) \times \text{Quantity} - \text{Fixed costs}$$

Based on this simple equation (model), we may ask several questions, such as:

- Do the prices for the firm's product fluctuate?
- Does the firm use a specific raw material, which fluctuates highly in price?
- Does the demand for the firm's product fluctuate?

By asking such questions the problem can be narrowed down, and the effort concentrated on solving the real problem. But there is more to this, such as what initiates the questions? In the above examples the questions are all *theory driven*, that is, existing theory (cf. the above model) is used as the basis for the questions raised. In fact, a prime value of theory is to identify factors (variables) and relate them to each other and examine such relationships to provide explanations.

In the above examples questions were used to 'structure' the problems. By using existing knowledge the researcher will often be able to structure the problem, for example so that hypotheses may be derived and tested.

Problems may be more or less understood. A distinction is often made between 'structured' and 'unstructured' problems. It should be noted that it is not the problems per se, but the understanding of the problems that is more or less structured. The structuredness of the research problem has implications for choice of research design and research methods. Research practice is also influenced by the researcher's philosophy of science perspective (see Chapter 2), training and so on. In most cases a multi-method strategy is used while formulating a research problem, which varies from literature review, managerial practices and researcher's orientation (Brewer and Hunter, 1989). How understanding of the problem influences choice of research design is dealt with in Chapter 5. The notions of 'quantitative' and 'qualitative' methods relate partly to differences in problem structure, but also to differences in the philosophy of science perspective held by the researcher (Figure 4.1).

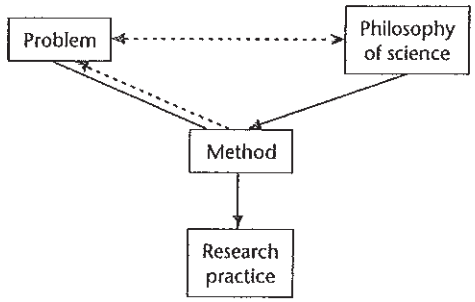


Figure 4.1 **Problem, methods and research practice**

For example, the research problem, that is what the researcher wants to know intuitively, will have an impact on the choice of research approach. For example, the researcher may be interested in how managers think about strategic issues, initiating the question: How can such insights be obtained? The researcher may have some 'favourite' methods (e.g. use of surveys) that may also influence their choice of approach. The researcher's beliefs about what constitute relevant insights and how such insights may be obtained will also influence the choice of research approach. Strauss and Corbin (1990: 34–6) suggest that there are several sources of researchable problems, such as: *assigned research problem*, as perhaps suggested by the supervisor/professor. This is often useful for students, as it will provide them with 'a do-able' and 'relevant' problem. Another source is *the technical literature*, which can point out a relatively unexplored area or a topic that needs further development. It may also suggest a new approach to solve an old problem. The reading of technical literature would also stimulate the researcher and enhance his/her curiosity. Finally, *personal and professional experience* are often the source of a research problem. Professional experience often leads to the judgement that existing practice is not efficient, fair or equitable. Research into the issue would then correct this situation.

Models in research

In our discussion above the research problems were – through questions – mapped by a limited set of factors (variables). When dealing with a research problem some *representation* of the problem is needed. This is also the case 'in real life'. For example, when the business manager instructs employees to smile, the following representation or *model* may be in his mind: 'When my employees smile, the customers feel comfortable and are more willing to buy.' The manager's model can be illustrated as follows:

Smiling employees → Customers feel well → Willingness to buy

We all hold such representations/models. Often, however, they are implicit and ambiguous.

Another example is the following. When firms (organizations) advertise for employees, they usually indicate the qualifications required, such as educational background, age, experience and so on. Firms seek employees to perform. The implicit assumptions or model underlying such ads are thus:

Criteria (qualifications) ⟶ Performance
e.g. education, experience

Models play a dominant role in research. They are closely related to the notion of theory, implying a systematic organization of, and relationships between, concepts. Key characteristics of a model are:

1. *Representation*, i.e. the object or phenomenon is represented by the model. The model is not the object or phenomenon itself.
2. *Simplification*: a model simplifies by reducing the number of factors included. This is done to make it manageable because taking everything into account often becomes impossible.
3. *Relationship(s)* exist(s) between the factors included. In research one is very often interested in relationships between factors (constructs), and, as will be discussed later, in *causal* relationships in particular, because when knowing cause–effect relationships, one may influence the outcome.

Example

Above we used the following model known to business students:

$$\text{Profit} = (\text{Price} - \text{Variable cost}) \times \text{Quantity} - \text{Fixed cost}$$

First, this model is a general representation to capture economic aspects important to firms (and is definitely not the firm itself). Secondly, it is definitely a simplification, as a variety of other factors that may influence the firm and its performance are left out. Note how *few* concepts (variables) are used, that is 'costs' (variable and fixed), 'quantity', 'price' and 'profit'. Thirdly, it is easily seen that the various factors are related. By changing, say, price, and keeping the other factors to the right of the equal sign constant, profit will change.

In research (and this is also the case in practical research), a prime task is to 'structure' the problem. This to a substantial degree relates to identifying relevant factors and relating them to each other to *map* and *frame* the problem under scrutiny.

As noted above, research problems may be more or less structured. This has implications for choice of research strategy. In the research literature, a distinction is often made between the following two strategies:

1. theory before research
2. research before theory.

In the first case, important tasks are to identify relevant concepts, theories and so on, and to adjust the concepts (theory) to the problem under scrutiny, which also requires a clear understanding of the research problem. When this is the case the researcher knows what to look for, what factors are relevant, and what hypotheses to test empirically.

The second strategy (research before theory) starts with observations/gathering of data. A couple of things before choosing such a strategy should, however, be noted:

1. There should be a *reason* for choosing such an approach. If relevant knowledge already exists, this easily ends up as 'reinventing the wheel' (see the above discussion of understanding the research problem).
2. This approach implies 'theory construction', which is different from 'theory testing'. The knowledge/skill requirements for doing such research are different

but equally demanding, as doing structured theory testing includes use of statistical methods. Most students in business administration have almost *no* training in such research. If for some reason the student dislikes, say, statistics, this in *no* way guarantees that s/he can do a good 'theory-constructing' study, rather the opposite will be the case.

In the latter case, the prime task is to identify relevant factors and construct explanations (theory).[4] This, however, does not mean that inspecting the literature is irrelevant. Past insights will often allow for ideas or 'hunches' on what to look for and how to understand the research problem.

4.3.1 General concepts and specific use

It is also important to be aware that theories/methods and concepts are *general*, meaning that they allow for subsuming a variety of specific research problems, which of course is useful. On the other hand, when general, the various theories, concepts or models possess almost no content about the actual problem. The researcher's task is thus to give the concepts/theories/models some content.

The notion of the 'value chain' is known to any students who have had a course in business strategy. To become of any use for the firm, this general term must be adjusted to the specific firm in question. This may include the identification and classification of the actual firm's activities as well as linkages between the activities. In order to make use of the general concepts (theories) the researcher must be able to *select, adjust and apply* such tools to her or his specific problem. This is a demanding task, which requires insight and training. Misuse and non-use of relevant knowledge – as frequently observed – reflect lack of such skills, and not, as is often believed, 'practicality'.

4.3.2 Model purposes

Models may be used for a variety of purposes. At the general level we may distinguish between:

1. description
2. explanation
3. prediction/forecasting
4. guidance of activities.

1. A *description* tells us how 'things are'. An example of a descriptive model is the organizational chart. Figure 4.2 represents a (naive) description of the *formal* organization. Note that this general model only contains *one* class of variables, that is positions (A, B and C). The direction of the lines indicates authority–responsibility relationships. A has formal authority over B, B is responsible to A, and B and C are at the same authority level.

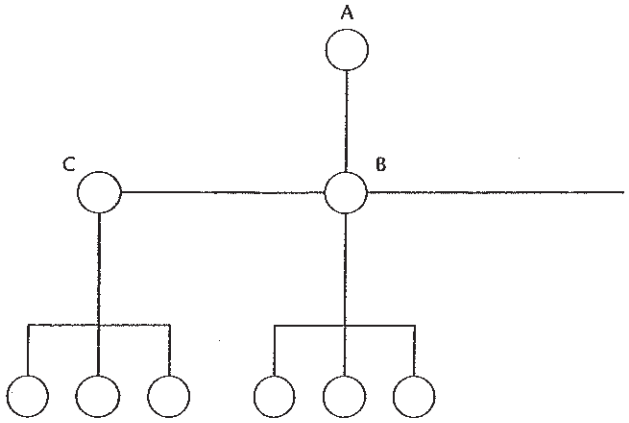


Figure 4.2 **Organizational chart (a model)**

Are such simple models useful in business research? Description of the formal authority in a firm may, for example, be combined with analysis and assessment of knowledge and skill requirements of the various positions, and can thus be used for identification of knowledge gaps to be filled; or description of the actual formal structure may be compared to some 'ideal' structure, which may be used for improving the organizational structure; or such descriptions conducted at different points in time may be used to study structural changes.[5]

Descriptions come in many forms. Assume that a researcher wants to describe the *informal* organization of a company. This requires a specified and detailed definition of the concept 'informal organization', including *what aspects* should be addressed. For example, the researcher may end up studying the communication flow in the company, that is who is interacting with whom; or s/he may study who influences decisions, to uncover potential deviations in communication flow or from power reflected in the formal organizational chart.

Another example is the researcher who wants to study the buying behaviour of a firm's business customers. Depending on the purpose of the study, it can be framed in several ways. For example, the study may focus on *what* the business firms are buying; or the study can focus on *how* the business firms buy. This may include mapping how buying processes are triggered off, events taking place and how they are related in the buying processes.

2. Many studies are conducted to *explain* phenomena. The well-known model of 'profit planning' shown on page 48 may be used for explanation purposes. In this model, profit is explained by the difference between unit price and variable cost per unit multiplied by quantity sold minus fixed costs.

A researcher wants to explain why some firms succeed while others fail in an industry. This requires a definition of what is meant by success. Moreover it

requires an identification of factors and processes that may produce success and failure.

Lave and March (1993) have proposed the following approach to map (model) problems:

- *Observe* some facts (e.g. success and/or failure of firms).
- Look at the facts as if they were the end results of some unknown *process* (model). Then speculate about processes that might have produced such a result.
- Then *deduce* other results (implications/consequences/predictions) from the model.
- Then ask yourself whether these other implications are true and produce new models if necessary.

The main advice from the recommended approach is:

- Think 'process'.
- Develop interesting implications.
- Look for generality.

When working with problems and models it is useful to keep them as *simple* as possible. More variables should only be included when it is useful, that is to improve the quality of the explanation. A good model – or, more correctly, its implications – should be *testable*. For example, a football team has just lost a game. The coach explains the loss as follows: 'I'm sorry. The problem was that our players didn't have enough fighting spirit, enough will to win.' The coach's (implicit) model can be depicted as follows:

$$\text{Outcome (win/loss)} = f(\text{fighting spirit})$$

This model is *circular* as it explains any outcome. The model can never be falsified as it cannot be tested.

3. Many business studies are preoccupied with *prediction/forecasting*, for example forecasting of sales, prices and so on. In its simplest form such predictions are based on extrapolation of past behaviour (development). For example, the following model has been developed to predict population size in a given area:

$$P_{t_i} = P_{t_0} \times 1.007^{(t_i - t_0)}$$

where:

P_{t_i} = population size at time t_i
P_{t_0} = population size at a specific point in time, e.g. 1 January 2005

Closer inspection of the model shows that it contains only *one* variable, i.e. time $(t_i - t_0)$. Both P_{t_0} and 1.007 are constants.

When calculating different values for $(t_i - t_0)$, 0, 1, 2, . . . , n, a smoothly growing curve emerges. Is this a good or bad model? It only maps a specific pattern (depending on the size of the constants), unable to catch the impact of sudden

changes, for example unemployment or people flocking to the area due to new business opportunities.

4. When models are used to *guide* business decisions, either a descriptive or an explanatory model must be complemented with a *rule of choice*. For example:

(a) Drop product if (price – variable cost) < amount *k*.
(b) Drop product if (price – variable cost) × quantity < contribution *c*.
(c) After describing market size – enter market if total sales greater than $*X*.

Example

A study shows that students' satisfaction with a programme is influenced by: (1) the attention given by the instructor, (2) whether they feel the grading is fair, and (3) exam score. The study also reveals that the students have difficulties in understanding how their performance is evaluated. Here the research findings indicate that an important task is to clarify – make explicit the evaluation criteria used, and explain how these criteria are applied.

The role of reviewing past literature

When a business student is conducting a research project as a part of their degree, he or she is supposed to use '*relevant* theory', that is they must demonstrate that they can apply *relevant* parts of the knowledge that they were exposed to in the actual programme. There is nothing 'unpractical' in this, as all qualified research builds on prior knowledge. To most business students, nagging questions are: What to include? and How should the literature be reviewed? In order to answer such questions, it should be noted that above we have emphasized the word 'relevant'. This means that what is included should be of *importance* for the study. For researchers using quantitative methods, existing literature has a more specific use as they can discover the gaps in understanding. It also helps them to develop theoretical and conceptual frameworks and models and to identify important variables and test the relationships between them. For qualitative studies, quite often the researcher wants to discover relevant variables and relationships between them and to put together these variables in a new way. In this case you need to develop the theoretical framework that evolves during the research itself. As your research evolves, you have to incorporate relevant elements from previous studies (Strauss and Corbin, 1990: 51). Moreover, the following should be taken into account:

1. The prime *purposes* of the literature review are to:

   (a) *frame* the problem under scrutiny;
   (b) *identify* relevant concepts, methods/techniques and facts; and
   (c) *position* the study. (Any study should add something 'new'.)

Wrestling with a research problem is the search for structure and identification of the 'real' problem; i.e. trying to answer questions such as: What do I want to know? and How do I want to map the problem? (cf. the above discussion of problems and models). As emphasized, such questions are important in research. A useful strategy at the initial stage of the project is to expose yourself to a variety of sources dealing with the topic, for example by reading journal articles, textbooks, having discussion with 'experts' (such as a supervisor or people from the industry). It should be noted that broad exposure to information and 'incubation' are considered important in most creative techniques.

Hint: To get quick insights, start with recent 'state-of-the-art reviews' or up-to-date reviews done by others, which are available in most disciplines.

Then, after this exposure to information, start active questioning to frame the problem. The more precise the problem statement, the better direction for the research activities to follow. This will also help clarify what the *intended contribution* of the study is supposed to be.

2. Based on the activities in (1) above the researcher should be able to state the *criteria* for inclusion in the written literature review.
3. Based on (2), a *systematic* search for relevant contributions, e.g. by using computerized library services, can be undertaken, and the various sources gathered to supplement the initial search (1).
4. In writing up the literature review, conscious considerations on what to emphasize should be made. If the focus is on mapping the problem, the emphasis may be on prior conceptualizations. If, however, the main focus is on how the variables should be measured, the emphasis should be mainly on measurement procedures used in prior studies. (This implies that literature inspected need *not* necessarily be included in the written literature review. What to include should be determined by the problem and the criteria used.)

   Example

   A researcher has observed that the propensity to invest in foreign markets varies across industries. Multiple theories and perspectives have been applied in the study of foreign direct investments. In this study s/he is particularly interested in whether conditions to perform transactions may vary across industries when they are operating internationally. This gives directions for reviewing theory of transaction cost economics, and empirical studies of transaction costs (and influencing factors) in various industries.
5. A literature review should also include *evaluation* and *critique* of the literature reviewed. To evaluate and critique, some criteria are needed. Such criteria can be thought of as 'ideals' with which to compare past research, and they must be found or constructed. For example, a researcher is interested in studying entry modes in foreign markets. The researcher observes that the great majority of past studies have been conducted in Western countries, thus identifying the criterion 'global' or 'all countries'. Based on such evaluation and critique

the researcher's own choice of conceptualization and later research design should be argued for.

NB: The search for and review of literature takes time, not least because it is demanding and time consuming to get hold of the research problem. Therefore, try to get a head start! Reading *and* thinking often produce fruitful results. Here are some good sources to help you find relevant literature:

1. state-of-the-art articles/reviews
2. databases (the Internet)
3. conference proceedings/journals
4. conference participation/network(ing)
5. 'experts'.

Notes

1. Survey studies are dealt with in Chapter 11.
2. For statistical testing of hypotheses see Chapter 10.
3. A key assumption is that researchers advance knowledge not by verifying, but by *falsifying*, i.e. by letting the assumed hypotheses be tested so that they can be rejected.
4. This relates to different contexts of research, i.e. the 'context of justification' and 'context of discovery' respectively. See Popper (1961) for a lucid discussion.
5. Comparisons of structural description(s) at different points in time (t), S_{t_1}, S_{t_2}, . . . , can be seen as a special case of comparative static analysis as frequently used in economics. Changes are inferred by comparing the static descriptions from different points in time.

Further reading

Churchill, G.A. and Lacobucci (2002) *Marketing Research: Methodological Foundations*, 8th edn, Mason, OH: Thomson Learning (Chapter 3).

McCaslin, M.L. and Scott, K.W. (2003) 'The five question method for framing qualitative research study', *The Qualitative Report*, 8(3), pp. 447–61.

Strauss, A. and Corbin, J. (1994) 'Grounded theory methodology: an overview', in Denzin, N.K. and Lincoln, Y.S. (eds), *Handbook of Qualitative Research*, Thousand Oaks, CA: Sage, pp. 273–85.

Questions

1. What are the roles of ideas and speculation in research?
2. What are the key characteristics of models?
3. Explain the differences between descriptive and explanatory models.
4. Are decisions in business based on models? Give an example.
5. Why do researchers review existing literature when conducting research?

Exercises

1. You are in charge of a financial institution offering credit. Naturally, you are interested in limiting losses for your institution. Develop a model that can guide your decisions as to whether or not applicants should be allowed credit.
2. You are employed by a firm selling your product directly to private households. It is costly to visit private homes. You have also observed that some households buy at the first visit, some at the second one, and that some households never buy in spite of multiple visits to their homes. Suggest a model to determine number of visits. Also, specify your assumptions.

Research design

Research designs are master techniques . . .

(Kornhauser and Lazarsfeld, 1955)

The research design is the overall plan for relating the conceptual research problem to relevant and practicable empirical research. In other words, the research design provides a plan or a framework for data collection and its analysis. It reveals the type of research (e.g. exploratory, descriptive or causal) and the priorities of the researcher. The research methods, on the other hand, refer to the techniques used to collect data. The type and quality of empirical research are greatly influenced by the underlying research design, as emphasized in the above quote. This chapter focuses on important problems to be handled by the researcher in selecting an adequate research design for her or his empirical study.

The design problem

Empirical research is conducted to answer or elucidate research questions. Poorly formulated research questions will lead to misguided research design. Some advocate an open approach, with no research questions. This is however a very risky approach (Hammersley and Atkinson, 1995; Bryman and Bell, 2003). Strategic choice of *research design* should come up with an approach that allows for solving the research problem in the best possible way – within the given constraints. In other words, a research design should be *effective* in producing the wanted information within the *constraints* put on the researcher, for example time, budgetary and skill constraints. This last point is important, even though too frequently overlooked. In business, research results must often be produced within strict time constraints, limiting the number of possible research options. What is more, the business student usually has a limited amount of time to produce a research report for her or his degree. In most cases the amount of money available for doing the research is also limited, and the student's research competence and experience (usually) have their limitations as well.

Choice of research design can be conceived as the overall strategy to get the information wanted. This choice influences the subsequent research activities, for

example what data to collect and how they should be collected. The respected social scientists Kornhauser and Lazarsfeld once claimed that research designs played the role of 'master techniques', while statistical analysis of the data collected was termed 'servant techniques' (Kornhauser and Lazarsfeld, 1955).

Design errors occur too often. Such errors often occur through neglect of the design problem. The typical approach: 'Let's prepare a questionnaire and get some data' easily ends up with 'a bunch of data', which – after time has run out and the money has been used – leaves the researcher (student) with 'a bunch of data searching for a problem'.

Other common mistakes are making wrong and/or irrelevant design choices, for example by examining a badly understood problem with a very structured design or, as seems even more common, as 'qualitative methods' have become increasingly more popular, by examining structured, well-understood problems by 'unstructured' methods, making it difficult to solve the research problem adequately. The importance of the problem–research design relationship is discussed below.

Example

Firms are often interested to know what consumers think about their product/service offerings. The research challenge is to design a study allowing access to such information. One way to proceed is to ask consumers directly. However, the consumers may not hold explicit thoughts of a firm's products. Thus a study that gradually uncovers whether the consumers know the products at all, or whether they have even given the products a thought, will probably be preferable.

Problem structure and research design

Research problems are infinite, and they come in many forms. Consider the following examples:

1. A political party wants to conduct a poll to examine its share of voters. This is a structured problem. The political party knows what information is wanted, that is, the fraction (or percentage) of voters.
2. An advertising company has produced two sets of copy and wants to know which is the most effective in an advertising campaign. Again, the research problem is structured. The company wants to know which (if either) advertisement copy (A and B) is the better, that is whether $A > B$, $B > A$, or $A = B$. Moreover, in this case the advertisement is seen as a 'cause' that may produce some effect (e.g. awareness, interest or sales).
3. Company X's sales have dropped in the last three months. The management does not know why. In this case the management has made an observation, that the sales are dropping. The management does not know what has caused the decline in sales. This is a more unstructured problem.

The above examples show (among other things) that problems may vary in structure. Based on problem structure, we may distinguish between the three main classes of research design:

Research design	*Problem structure*
Exploratory	Unstructured
Descriptive	Structured
Causal	Structured

5.2.1 Exploratory research

When the research problem is badly understood, a (more or less) exploratory research design is adequate. An example will illustrate this. Consider your favourite Friday night detective TV series. Most such stories start with a phone call leading the detective to a dead person, apparently murdered. The problem the detective is confronted with is: Who did it, who is the guilty person (if any)? How does the detective proceed? He (or she) collects data and tries to find a lead. As new information comes up, the picture becomes clearer, and at the end the detective has found the answer.

A key characteristic of the detective's approach to solving the problem is its *flexibility*. As new pieces of information are available the search for the solution may change direction. But there is more to this:

- Research problems may be more or less understood. There is *no* reason not to use available a priori information. As the detective does, so too may the researcher have 'suspects'. This is often the case in medical research, where potential causes are examined in a laboratory experimental setting. (This indicates that even experiments can be used in exploratory research: see section 5.4.)
- As with other types of research, exploratory research should be conducted in the best possible way.
- Exploratory research requires skills, as do all types of research, but the skill requirements differ. Key skill requirements in exploratory research are often the ability to observe, get information, and construct explanation, that is theorizing.

5.2.2 Descriptive research

In descriptive research the problem is structured and well understood. Examine the case where a firm wants to look at the 'size of market M'. The problem as such, that is the task to solve, is clear. What is needed is first a classification of what is meant by 'market'. Is it the number of people – the actual and potential buyers of a specific product group within a specific area, within a specified time period? (Cf. the discussion of concepts and definitions in Chapter 3.) Assume agreement on the latter interpretation, that is actual and potential buyers of a specific product group (e.g. X) within a specified time period (say one year). The

researcher's task now is to produce this information. What would be the best research strategy?

Assume that relevant secondary data is not available. The researcher plans to collect the data by a survey using personal interviews. A detailed plan must be made with regard to how many and who to interview, that is a sampling plan. The researcher must also construct questions, that is measurements, to get information about purchase (or use) of the product. Good measurements are crucial in research (see Chapter 6 for detailed discussion). Then procedures must be made on how the interviews should be conducted, questions reported, and so on. All interviews should be conducted in the same way, meaning that the variation in the data collection should be as small as possible. Thus key characteristics of descriptive research are *structure, precise rules* and *procedures*. A good example is the procedure used by medical doctors when examining a person's height. The person has to take his shoes off, stretch his legs, and look straight ahead. The same procedure is used for *all* persons measured.

Table 5.1 **Cross-table**

		Social class				
		I	II	III	IV	Total
Smoke	Yes					
	No					
	Total	100%	100%	100%	100%	100%
	n =	( )	( )	( )	( )	( )

Descriptive studies may include more than one variable. For example, for some reason the researcher wants to describe smokers by social class. Again the researcher is confronted with conceptual and definitional problems. When solved, procedures on how to collect the data must be determined to produce the data needed to answer the research question. In this case the task can be conceived as completing the cross-table in Table 5.1. (Preparation and analysis of cross-tables are dealt with in Section 10.4.)

5.2.3 Causal research

In causal research the problems under scrutiny are structured as well. However, in contrast to descriptive research, the researcher is also confronted with 'cause-and-effect' problems, as illustrated in the advertising example earlier. The main tasks in such research are to isolate cause(s), and tell whether and to what extent 'cause(s)' result(s) in effect(s). Examples of questions in causal research are:

- Is the medical drug effective?
- What dose is the most effective?
- Does the advertising help in achieving greater market share?

Such problems are discussed more fully in the following sections.

Weight loss programme

A sample of middle-aged people is randomly assigned to three weight reducing programmes: (1) diet, (2) exercise, (3) education about nutrition, or to (4) control group. The people were weighed on 1 February 2004 and again five months later. The findings show:

	Groups			
	Diet	Exercise	Education	Control
Weight loss:	–5.2 kg	–4.1 kg	–6.1 kg	–1.5 kg
	(2.3)	(1.5)	(3.5)	(1.2)
n =	(30)	(30)	(30)	(30)

The data report average weight losses, standard deviations, and number of participants in each group.

The data show that all groups – on average – have lost weight, but the diet, exercise and education groups lost more than the control group. Here diet, exercise and education are seen as potential causes of weight loss.

The problem of 'cause'

The problem of 'cause' and 'effect' is an old one that has intrigued scientists for hundreds of years. It is beyond the scope of this chapter to review various perspectives on this problem.[1] The main objective is to focus on some key characteristics of the problem.

Cause

Examine the following examples:

- A dealer has reduced the price of TV sets by 10 per cent, and sales increased by 20 per cent. Is the price reduction a (the) cause of the increased sales?
- Managers are often preoccupied with 'success factors'. For example, in the well-known book *In Search of Excellence*, the authors Peters and Waterman (1982) claimed that 'being close to the customers' is an important factor in explaining success. Is closeness to customers a cause of success?

1. In order to be a cause *concomitant variation* is needed: that is, there should be a covariation between the cause and the effect. For example there should be covariation between price reduction and change in sales. Examples of such covariations are shown in Table 5.2.

Table 5.2 Covariation

		Price reduction				Close to customers	
		Yes (10%)	No			Yes	No
Sales increase	Yes	20%	–	Success	Yes	30%	–
	No	80%	100%		No	70%	100%
		100%	100%			100%	100%

In both the above examples 'effect' (i.e. sales increase and success respectively) is present only when 'cause' is present (i.e. price reduction and closeness to customers). A closer look at Table 5.2 also shows that 'effect' is not always present when cause is present. For example, in 80 per cent of cases with price reductions, no increase in sales occurs. This indicates that *if* price reduction can be considered a cause, the cause–effect relationship is – at best – *probabilistic*, that is it is more likely that sales will increase when price reductions are present compared with when this is not the case.

2. The cause should *precede* the effect. Did the price change take place before the sales increase? If closeness to customers is a cause it should be established that it occurred *before* the firm's success. Thus the *time order* of occurrence of variables is important.
3. Other possible causal factors should be eliminated. Did the sales increase occur immediately after an announcement of a price decrease of TV sets? Or were the sales increases observed the week before a big sporting event, such as the Olympics? Thus a key problem is to *rule out alternative causes*. For example, can a firm's success be explained by excellent products, superior cost control, market or power?

The problem of ruling out other factors is also present, even when not confronted with causal problems. Researchers often observe covariation, for example as measured by correlation coefficient.[2] An important question is often whether an observed correlation coefficient, such as between advertising spend and sales, is a 'true' one, or whether the covariation changes or disappears when controlling for other factors, for example size of market or type of product.

5.3.1 The importance of theory

The question of cause–effect also calls for a priori theory in research. The need for theory can be illustrated in the following way. Assume two variables, X and Y. For these two variables the following relationships are possible:

1. $X \rightarrow Y$ (X causes Y)
2. $Y \leftarrow X$ (Y causes X)
3. $X \rightleftarrows Y$ (mutual causation)
4. $X \neq Y$ (no relationship).

For two variables there are thus four possible relationships. Assume a study involving six variables. With six variables there are:

$$\binom{6}{2} = 15 \text{ two-variable combinations}$$

which amount to:

$$4^{15} > 1073 \text{ million potential relationships.}$$

Without a priori theory, that is knowledge of what to look for, it will be almost impossible to muddle through.

As mentioned earlier, the roles of theory are multiple in research, and include the following:

- identifying research problems
- raising questions
- identifying relevant factors (concepts/variables) and relationships
- interpreting (understanding) observations (data)
- advancing explanations.

Box 5.2 Uses of theory

The famous theory of search developed by March and Simon (1958) roughly states that when confronted with a problematic situation people tend to start their search in the immediate surroundings and stop their search when a satisfactory alternative is found.

This theory may help to:

1. identify that when firms have made successful moves they tend to make similar moves, e.g. continue to introduce similar products;
2. ask the question: Are firms experiencing success more likely to repeat past behaviours than firms not experiencing success?;
3. identify closeness to past problems/behaviours as an important explanatory factor;
4. explain why firms seldom introduce major innovations, but rather tend to introduce variations.

The classic experiment

Possible research designs are multiple. Reported below is the 'classic' experiment in its simplest form. Even though many (most) business studies are not experimental, as we cannot control organizational behaviour, the classic experimental research design is useful for understanding all other designs (see Figure 5.1).

	Experimental group	Control group
	R	R
Pre-test	O_1	O_3
	X	X
Post-test	O_2	O_4
Difference	$(O_2 - O_1)$	$(O_4 - O_3)$

Figure 5.1 The classic experiment

In Figure 5.1, $O_1, \ldots$ denote observations. X is the experimental stimulus. Observations are made both before (pre-test) and after manipulation of the experimental stimulus (post-test). Two groups are included, the experimental group, that is the group which the experimental stimulus is assigned to, and a control group not exposed to the experimental stimulus. R indicates randomization, meaning that the subjects are randomly assigned to the two groups.

The *independent* variable is the experimental stimulus. In the present case the experimental variable (the 'treatment') takes two values only, that is the experimental stimulus can be present (1) or absent (0) respectively. The dependent variable is some effect measured. If the experimental stimulus has an effect, then $(O_2 - O_1) > (O_4 - O_3)$.

In the experiment, the researcher has control over the independent variable(s), meaning that the researcher can *manipulate* the various experimental conditions. As will be discussed below, outside factors may also influence the observed effect. The impact of outside influences is assumed to be 'levelled out' through randomization.

Why use control group(s)? If a group is given some treatment, for example a medical drug for a headache, it is impossible to evaluate whether the drug has any effect at all, as most people recover from headaches without using a medical drug.

Example

Assume that 100 people diagnosed with influenza were randomly assigned to two groups, a test group that was given an effective drug, and a control group which was given an ineffective one (a placebo).[3] The subjects were instructed to come back in one week, and then asked: Do you feel better?

Inspection of the results in Table 5.3 shows that a higher fraction of the test group reports 'better' than is the case for the control group. The difference in reported improvement is statistically significant ($p < 0.001$), i.e. the probability of wrongly rejecting the null-hypothesis (no effect is less than .001), meaning that it is very likely the drug has had an effect.

The treatment is considered a 'cause' in the present case. Because of control, that is the ability to manipulate the treatment and randomization, one may be

Table 5.3 Reported improvement in the test and control groups

		Group		
		Test	Control	Total
Feel better	Yes	80%	20%	50%
	No	20%	80%	50%
	Total	100%	100%	100%
	n =	(50)	(50)	(100)

fairly confident that the effective medical drug really can be seen as a cause of improvement.

Table 5.3 shows the experiment in its simplest form. Here the dependent variable is whether or not the person is feeling better (yes, no). The independent variable is whether or not the person received a treatment (test, control). Inspection of Table 5.3 shows that more people receiving the treatment feel better than those who did not.

The independent variable (the treatment) can definitely take more than two values. For example, assume a company is interested in knowing which one of the following selling strategies is the most effective: S_1 (phone call), S_2 (advertisement), S_3 (personal selling), S_4 (personal + advertisement).

More than one independent variable (treatment) may also be included. Assume one variable (treatment) is selling message using either (1) one-sided or (2) two-sided arguments, and another variable is gender, that is whether the salesperson is (1) a woman or (2) a man. In this case it is possible to capture the effects of:

1. type of message
2. gender and
3. interaction effect (if any).

Interaction: Assume that an experiment has been conducted. Table 5.4(a) shows the result. It can be seen that the effectiveness scores (e.g. sales) are the highest for two-sided messages both for women (60 – 50) = 10 and for men (50 – 40) = 10. It is also seen that the reported effects are larger for women for both one-sided (50 – 40) = 10 and two-sided (60 – 50) = 10 messages. It is also seen that the differences between one- and two-sided messages are the same for both women and men. This indicates that *no* interaction effect is present.

Table 5.4 The effects of message and gender

		(a) Message			(b) Message	
		One-sided	Two-sided		One-sided	Two-sided
Gender	Women	50	60	Women	50	70
	Men	40	50	Men	40	50

Moving on to part (b) of Table 5.4 it can be seen that the difference between two- and one-sided messages is higher for women (70 – 50) = 20 than is the difference for men (50 – 40) = 10. This indicates that an interaction effect between gender and message is present.

When going back to Tables 5.3 and 5.4 it is evident that the dependent variables are feeling better and effectiveness respectively. The independent variables are gender and message in Table 5.4 and treatment in Table 5.3. In both cases one wants to explain something, that is variations in the dependent variables. Also, in these situations experiments are appropriate.

Validity threats

A key purpose of the experimental design is to isolate and estimate the effect(s) of potential cause(s) (see section 5.3). The experiment is a 'strong' design as it allows for manipulation of treatment (cause) before and after measurements and thus for identification of covariation between treatment (cause) and effect, determines time order (cause precedes effect), and offers some confidence in ruling out the effect of other explanations (randomization). The idea of experimental design is useful in many studies. Some examples are pre-test of alternative advertisement copy, studying the effectiveness of various selling strategies, and field tests of marketing programmes.

The researcher wants to obtain *valid* knowledge (see section 4.2), that is, wants results that are 'true'. For example, if a study shows that advertisement A is more effective than advertisement B the researcher should be confident that this is the case. There are many types of validity.[4] In the above advertisement case, the question of validity refers to *internal* validity, that is the question of whether the results obtained *within* the study are true. In other words, for internal validity we have to be confident that causal variation among variables our study is suggesting is true, that *x* is really causing the variations in *y*, at least as one of the influencing factors (Bryman and Bell, 2003). *External* validity, on the other hand, refers to the question of whether the findings can be *generalized*, for example to other populations, settings or periods, beyond the study at hand. This becomes extremely important in quantitative research. The sampling procedures in this type of research thus become very important, so that the researcher has a representative sample (for a good sample see e.g. Scase and Goffee, 1989). As only in the case of a representative sample can one claim the generalizability of the results.

There are several *threats* to validity (for further discussions see Campbell, 1975 and Cook and Campbell, 1979).

1. *History*, that is specific events external to the study (experiment) that occur at the same time and which may affect the response (criterion variable).

Example

Consider a TV store that reduces prices by 10 per cent and observes a sales increase of 20 per cent. A potential external threat is the announcement of a price increase for TV sets next month. Note that the experiment (see Figure 5.1), by including one (or more) control group(s), allows for controlling the impact of such effects.

2. *Maturation*, that is processes which are operating within the test units in the study as a function of the passage of time per se, for example the patient has received a medical drug and recovers. Often patients recover without such treatment. Thus what is the cause of the patient's recovery, the medical drug or their immune system? Maturation is a serious threat to validity in many studies.

Example

A company recognizes the need for reorganization to enhance performance and survive, and succeeds in doing this. Is the success due to the reorganization per se, or might it be explained by the fact that the reorganization has made the employees aware of the serious situation and motivated them to perform better in order to keep their jobs?

3. *Test effect* indicates the experiment/test itself may affect the observed response.

Example

A group of employees is chosen for a specific programme, and obtains superior results after the programme period. Is their performance caused by the programme, or by the fact that they are the chosen ones and thus motivated to perform (see Box 5.3)?[5]

4. *Selection bias* (self-selection) is a serious threat to validity when the subjects are not (or cannot be) assigned randomly.

Example

In assessing advertisement effects, the following procedure has frequently been applied (Colley, 1961). Assume the producer of the cigarette 'Z' wants to know whether its advertisement campaign has been effective. A random sample of persons are asked the following questions:

Q1. 'Have you seen any advertisements for cigarettes during . . . ?'
'For what cigarettes?'
Q2. 'Have you bought cigarettes during . . . ?'
If yes, 'What brands?'

From the results shown in Table 5.5 it could be argued that 20 per cent of those who have seen the advertisement bought, while only 5 per cent of those

The experiment effect: the Hawthorne case

During the 1920s and 1930s a number of investigations were carried out in the Hawthorne factory of Western Electric Company in the USA. Some of the workers doing manual tasks were taken away and asked to work in a separate room. A number of changes were introduced (e.g. in heating, lighting, etc.) to see whether these would influence workers' productivity.

As the lighting was increased day by day the workers were asked whether they liked it or not. The workers said that they did. Then the investigators changed the lights, but put back the same size bulbs, thus in reality not changing the lighting. The workers perceived that the lighting had been improved and replied favourably. After some days the investigators started to decrease the light day by day, letting the workers know about the change and asking for their comments. After some days the investigators repeated the earlier experience of changing the bulbs but not changing the intensity of light/illumination. Again the workers complained that they did not like the lesser light.

As the experiment went on it was realized that productivity did increase, but irrespective of the changes introduced. It was eventually recognized that the workers were reacting positively to the attention and special treatment awarded to them. The Investigators thus concluded that the changes in productivity were not due to changing working condition (increase or decrease in light) but due to favourable circumstances/perceptions created by the experiment itself. These findings contributed to 'stimulating the human relation' approach and emphasized how important it is to provide 'psycho-socio' support at the workplace.

Source: Based on Roethlisberger and Dickson (1939: 17); Van Maanen and Kolb (1985: 6)

who did not see the advertisement bought. Thus the advertisement has 'contributed' (20 – 5) = 15 per cent.

Is the observed finding valid? It may be, but the result may equally well be explained by other factors, such as selective perception, that is persons who smoke and regularly buy brand 'Z' are more inclined to see the advertisement for 'Z'.

Table 5.5 **Reading of advertisement and purchase**

		Seen advertisement for 'Z'		
		Yes (%)	No (%)	Total (%)
Bought 'Z'	Yes	20	5	25
	No	80	95	175
	Total	100	100	200

Other research designs

In real life it is often difficult or impossible to conduct a true experiment. For example, randomization becomes impossible, and it may also be impossible to manipulate treatment. This is particularly true for research in business studies. Experiments are most appropriate when studying *stimulus–response* relationships, that is situations where the 'treatment' can be manipulated, or varies in a natural setting (natural experiments). Often the researcher is preoccupied with studying the relationships between *properties* and corresponding *dispositions*.

Example

The researcher wants to study relationships such as organizational size and innovativeness, or gender (sex) and career paths. Intuitively the researcher cannot manipulate size of organization or gender (sex). Moreover, when studying property–disposition relationships there can be several constraints:

1. The *time interval* can be rather long, often covering years or decades, making an experiment impractical. The relationship between gender (sex) and career is a good example.
2. The effects of properties are often *general*, lacking the specificity of the experimental stimulus, and thus make it difficult to establish the relationship between cause and effect. Organizational size and innovativeness is a good example here.
3. Establishment of identical groups to *compare* through randomization may also be difficult or impossible. For example, in gender research a number of factors have to be identical, such as qualification, age, commitment to a certain career, etc.
4. The *time order* of events is often difficult to determine when studying property–disposition relationships. For example, acquired properties such as education can both determine and be determined by other factors.

Thus the research designs applied often deviate from the 'true' experiment. This, however, does not mean that the logic underlying them is useless. In fact the ideas underlying the experiment to make (valid) causal inferences can be applied to evaluate – and improve – the research even when the experimental design cannot be directly applied.

5.6.1 Cross-sectional designs

The study reported in Table 5.5 deviates from the classical experiment in several ways. There is no control group, and there is no randomization. The 'cause' (advertisement reading) and effect (purchase) variables are also measured at the *same time*. This is what is termed a *cross-sectional* or *correlational* research design.

When looking closer at Table 5.5 the researcher is confronted with several tasks in order to 'prove' that advertising may 'cause' purchase. First, s/he must control for the potential effect of other factors. What is termed 'control-for-a-third-variable' (which in fact may also involve control for fourth, fifth or sixth and so on) exactly pinpoints this problem. This can be done in several ways. Table 5.6 shows a cross-table between organizational size and innovativeness. A closer look reveals that innovativeness is apparently substantially higher in large rather than smaller organizations. The researcher wonders whether 'industry' may be an explanatory factor. In the present case (Table 5.6), the sample of organizations (firms) is from two industries I(1) and I(2). By controlling for industry the picture in Table 5.7 emerges and now shows that organizational size has *no* effect. The variation in innovativeness is now explained by industry.

Table 5.6 **Innovativeness by organizational size**

		Organizational size		
		Small	Large	Total
Innovativeness	High	20%	80%	50%
	Low	80	20	50
	Total	100%	100%	100%
	n =	(50)	(50)	(100)

Note that Table 5.7 is a simple, illustrative example only. More than two categories of each variable can be included, as can control for more than one variable. The control for other variables can be done in several ways. In a correlation analysis, control can be done by using *partial* correlation analysis.[6]

To be a cause, the change in the causal factor should precede the effect. In cross-sectional research, data on independent and dependent variables are gathered at the same point in time (cf. Table 5.5). Often the researcher has some a priori knowledge to assume the time order of variables. For example, it may seem reasonable to assume that gender (sex) precedes choice of occupation. A

Table 5.7 **Control for 'third' variable**

		Industry				
		I(1) Org. size		I(2) Org. size		
		Small	Large	Small	Large	Total
Innovativeness	High	80%	80%	20%	20%	50%
	Low	20	20	80	80	50
	Total	100%	100%	100%	100%	100%
	n =	(25)	(25)	(25)	(25)	(100)