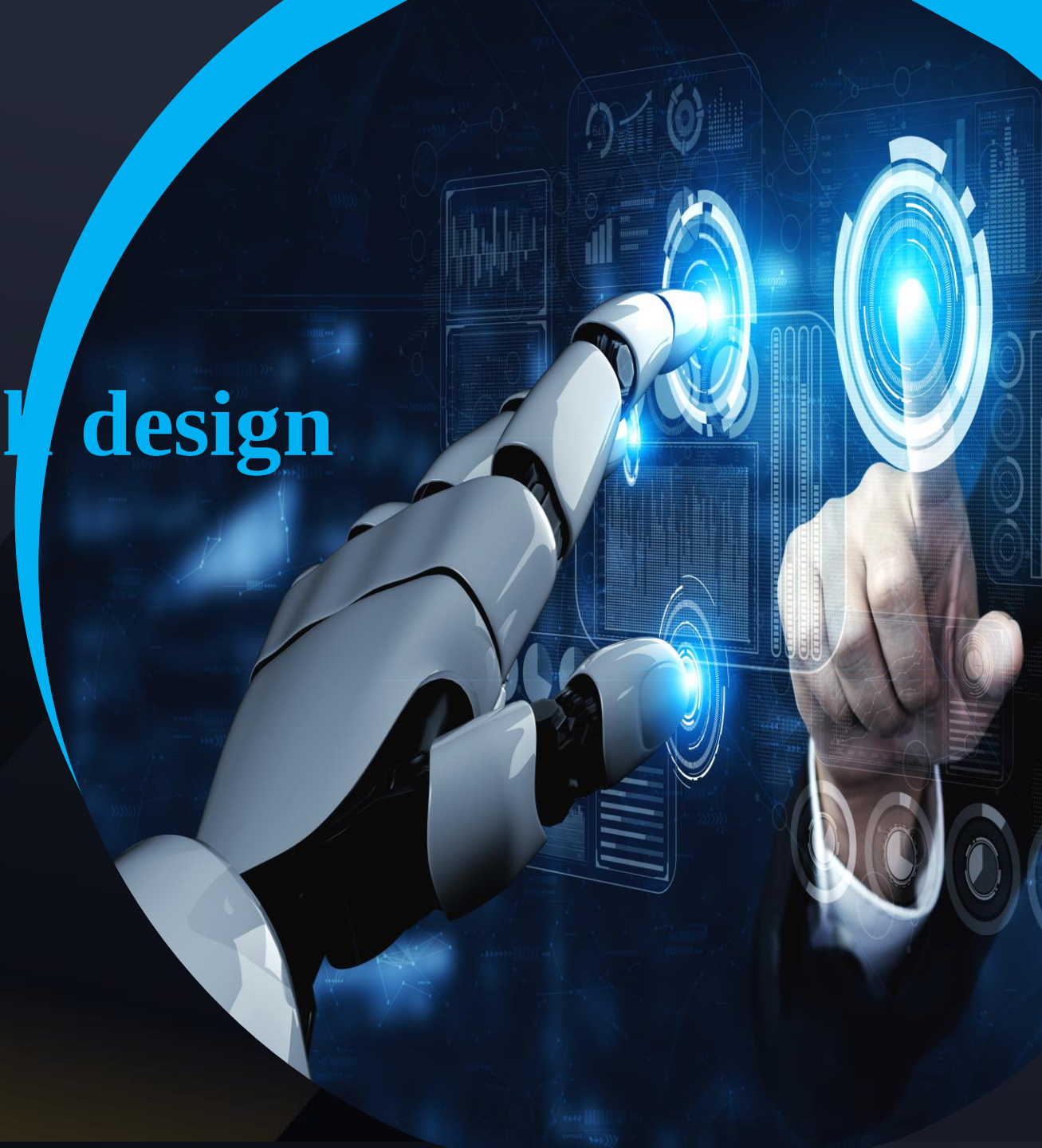


Formulating the research design

Prepared by Associate Professor:
Ahmed Rageh Ismail

ENT 636
Research Project

Lecture 4



Chapter

04

Learning outcomes

By the end of this chapter you should be able to:

- understand the differences between quantitative, qualitative and mixed methods research designs and choose between these;
- understand the differences between exploratory, descriptive, explanatory and evaluative research and recognize the purpose(s) of your research design;
- identify the main research strategies and choose from among these to achieve coherence throughout your research design;
- understand criteria to evaluate research quality and consider these when designing your research;
- take into account the constraints of your role as researcher when designing your research.

Choice and coherence in research design

Your **research design** is the general plan of how you will go about answering your research question(s) (the importance of clearly defining the research question cannot be overemphasized). It will contain clear objectives derived from your research question(s), specify the source or sources from which you intend to collect data, how you propose to collect and analyze these, and discuss ethical issues and the constraints you will inevitably encounter (e.g. access to data, time, location and money). Crucially, it should demonstrate that you have thought through the elements of your particular research design.

Methodological choice: the use of a quantitative, qualitative or mixed methods

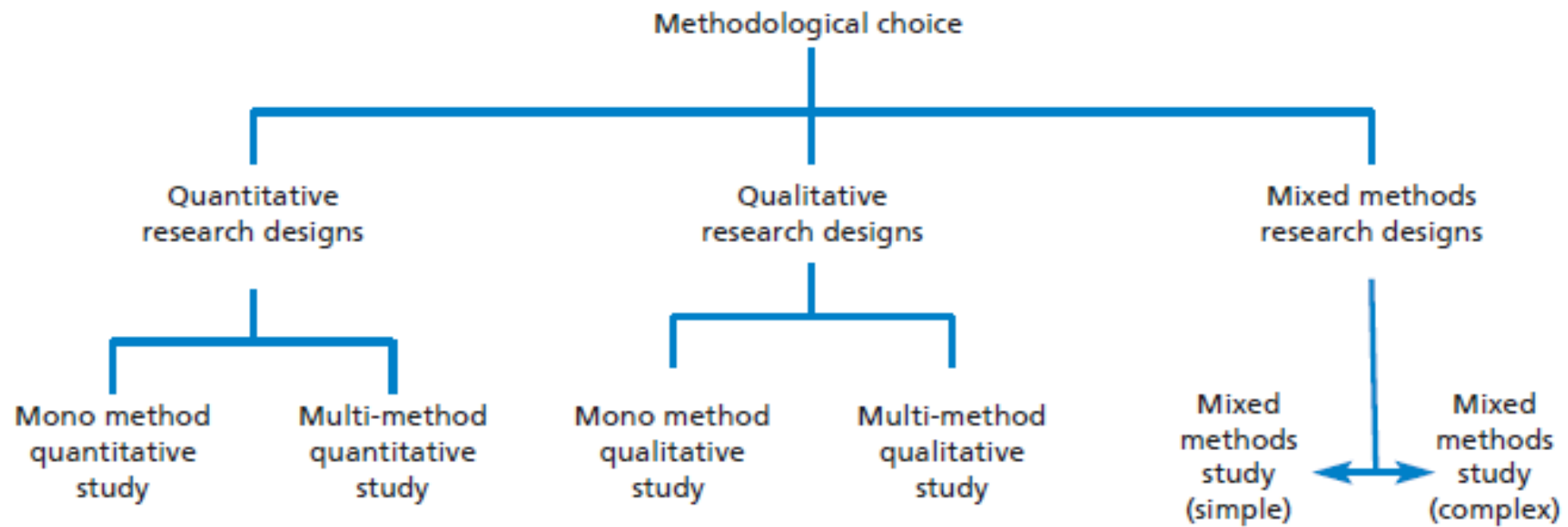
One way of differentiating **quantitative research** from **qualitative research** is to distinguish between numeric data (numbers) and non-numeric data (words, images, audio recordings, video clips and other similar material).

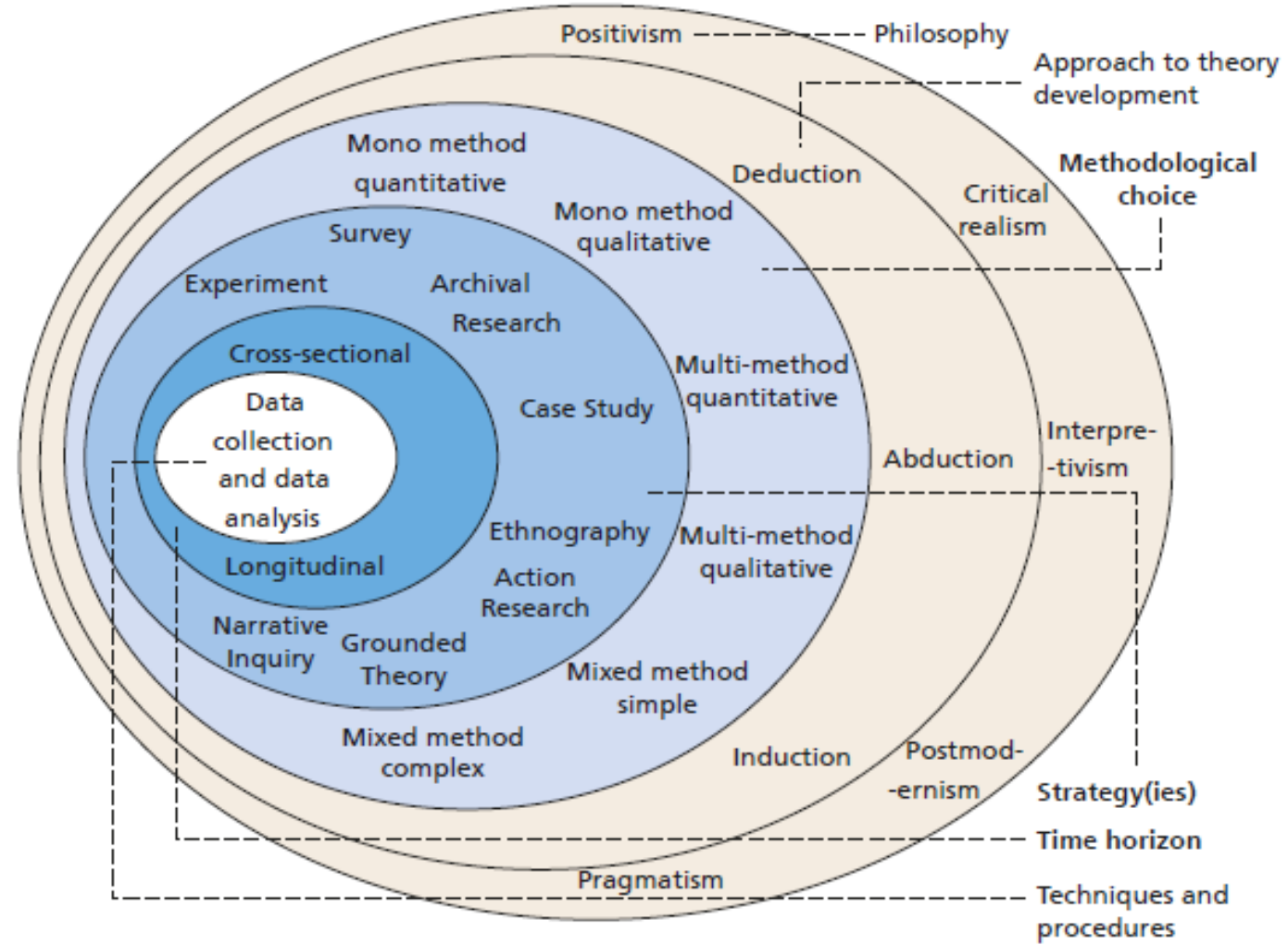
In this way, ‘quantitative’ is often used as a synonym for any data collection technique (such as a questionnaire) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data. In contrast, ‘qualitative’ is often used as a synonym for any data collection technique (such as an interview) or data analysis procedure (such as categorizing data) that generates or uses non-numerical data. This is an important way to differentiate this methodological choice; however, this distinction is both problematic and narrow.

Methodological choice: the use of a quantitative, qualitative or mixed methods

It is problematic because, in reality, many entrepreneurship research designs are likely to combine quantitative and qualitative elements. This may be for a number of reasons. For example, a research design may use a questionnaire but it may be necessary to ask respondents to answer some 'open' questions in their own words rather than ticking the appropriate box, or it may be necessary to conduct follow-up interviews to seek to explain findings from the questionnaire.

Equally, some qualitative research data may be analyzed quantitatively, or be used to inform the design of a subsequent questionnaire. In this way, quantitative and qualitative research may be viewed as two ends of a continuum, which in practice are often mixed. A research design may therefore mix methods in a number of ways,





Quantitative research designs

Philosophical assumptions

Quantitative research designs are generally associated with **positivism**, especially when used with predetermined and highly structured data collection techniques. However, it is increasingly seen as a philosophical caricature to suggest that there is an exclusive link between positivism, deduction and a quantitative research design. Rather, a distinction needs to be drawn between data about the attributes of people, organizations or other things and data based on opinions. In this way, some survey research, whilst conducted quantitatively, may be seen to fit partly within an **interpretivist philosophy**. Quantitative research designs may also be undertaken within the **realist and pragmatist philosophies**.

Quantitative research designs

Approach to theory development

Quantitative research is usually associated with a **deductive approach**, where data are collected and analyzed to test theory. However, it may also incorporate an inductive approach, where data are used to develop theory.

For example, a researcher may analyze quantitative data to determine hypotheses to test in a subsequent round of data collection and analysis. It may also be that original hypotheses are poorly framed, or even absent, and initial analysis of quantitative data is needed to clarify these inductively prior to further analysis.

Quantitative research designs

It is referred to this generally undeclared approach as “**Harking**” – hypothesizing after the results are known.

It is suggested you do not use this approach without first discussing it with your project supervisor.

However, you may find it necessary to refine original hypotheses.

Quantitative research designs

Characteristics

Quantitative research examines relationships between variables, which are measured numerically and analyzed using a range of statistical and graphical techniques. It often incorporates controls to ensure the validity of data, as in an experimental design.

Because data are collected in a standardized manner, it is important to ensure that questions are expressed clearly so they are understood in the same way by each participant.

Quantitative research designs

This methodology generally uses probability sampling techniques to ensure **generalizability**. The researcher is seen as independent from those being researched, who are usually called respondents. The characteristics of quantitative research are summarized in the table below.

-
- Researcher is generally seen as independent from those being researched.
 - Those taking part are usually referred to as respondents.
 - Designed to examine relationships between variables.
 - Often uses probability sampling techniques to ensure generalisability.
 - Method(s) used to collect data are rigorously defined and highly structured.
 - Collection results in numerical and standardised data.
 - Analysis conducted through the use of statistics and diagrams.
 - Resulting meanings derived from numbers.
-

Quantitative research designs

A quantitative research design may use a single data collection technique, such as a questionnaire, and corresponding quantitative analytical procedure. This is known as **a mono method quantitative study**. A quantitative research design may also use more than one quantitative data collection technique and corresponding analytical procedure. This is known as **a multi-method quantitative study**.

You might, for example, decide to collect quantitative data using both questionnaires and structured observation, analyzing these data statistically.

Quantitative research designs

Multi-method is the branch of multiple methods research that uses more than one quantitative or qualitative method but does not mix them.

Use of multiple methods has been advocated within entrepreneurship research because it is likely to overcome weaknesses associated with using only a single or mono method, as well as providing scope for a richer approach to data collection, analysis and interpretation.

Quantitative research designs

Research strategies

Quantitative research is principally associated with **experimental and survey research strategies**, which will be discussed later. In quantitative research, a survey strategy is normally conducted through the use of questionnaires or structured interviews or, possibly, structured observation.

However, it is important to note that quantitative data and analysis techniques can be and are used in research strategies that are often thought of as being qualitative, such as action research, case study research and grounded theory.

Quantitative research designs

Techniques

Techniques associated with the use of these particular methods are considered in the coming chapters. Structured observation, the use of questionnaires including structured interviewing; and analyzing data quantitatively will be discussed in more details later .

Qualitative research designs

Philosophical assumptions

Qualitative research is often associated with an **interpretive philosophy**. It is interpretive because researchers need to make sense of the subjective and socially constructed meanings expressed about the phenomenon being studied. Such research is sometimes referred to as naturalistic since researchers need to operate within a natural setting, or research context, in order to establish trust, participation, access to meanings and in-depth understanding. Like quantitative research, qualitative research may also be undertaken within realist and pragmatist philosophies (see 'Mixed methods research design' later).

Qualitative research designs

Approach to theory development

Many varieties of qualitative research commence with an **inductive approach** to theory development, where a naturalistic and emergent research design is used to build theory or to develop a richer theoretical perspective than already exists in the literature.

However, some qualitative research strategies start with a deductive approach, to test an existing theory using qualitative procedures. In practice, much qualitative research also uses an abductive approach to theory development where inductive inferences are developed and deductive ones are tested iteratively throughout the research.

Qualitative research designs

Characteristics

Qualitative research studies participants' meanings and the relationships between them, using a variety of data collection techniques and analytical procedures, to develop a conceptual framework and theoretical contribution.

The success of the qualitative researcher's role is dependent not only on gaining physical access to those who take part, but also building rapport and demonstrating sensitivity to gain cognitive access to their data.

Qualitative research designs

Those who consent to take part in qualitative research are therefore not seen as mere respondents but as participants in the collection of data. In qualitative research, meanings are derived from words and images, not numbers. Since words and images may have multiple meanings as well as unclear meanings, it is often necessary to explore and clarify these with participants.

Methods used are unstructured or semi-structured, so that questions, procedures and focus may alter or emerge during a research process that is both naturalistic and interactive. Qualitative research is likely to use non-probability sampling techniques. The qualitative data that are collected will be non-standardized and generally require being classified into categories for analysis.

Qualitative research designs

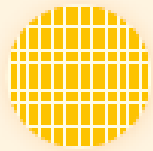
The characteristics of qualitative research are summarized in the table below.

-
- Researcher is generally recognised as not being independent from those researched.
 - Those taking part are referred to as participants or informants.
 - Designed to study participants' attributed meanings and associated relationships.
 - Generally uses non-probability sampling techniques.
 - Based on meanings expressed through words (spoken and textual) and images.
 - Method(s) used to collect data are unstructured or semi-structured.
 - Collection results in non-standardised data generally requiring classification into categories.
 - Analysis conducted through the use of conceptualisation.
 - Resulting meaning derived from words (spoken or text) and images.
-

Qualitative research designs

A qualitative research design may use a single data collection technique, such as semi structured interviews, and corresponding qualitative analytical procedure. This is known as a mono method qualitative study. A qualitative research design may also use more than one qualitative data collection technique and corresponding analytical procedure. This is known as a **multi-method qualitative study**.

You might, for example, decide to collect qualitative data using in-depth interviews and diary accounts, analyzing these data using qualitative procedures. Example of a multimethod qualitative study is provided in the next slide .



Box 5.2 Focus on student research

Multi-method qualitative study

Harry wanted to establish how new supervisors learned to do their job. In order to do this he thought it essential that he should have the clearest possible grasp of what the supervisor's job entailed.

This involved him in:

- shadowing a new supervisor for a week (qualitative data);

- interviewing a day and a night shift supervisor to establish any differences in approach (qualitative data);
- interviewing the managers to whom these two supervisors reported (qualitative data).

This gave Harry a much better grasp of the content of the supervisor's job. It also did much to enhance his credibility in the eyes of the supervisors. He was then able to draw on the valuable data he had collected to complete his main research task: interviewing new supervisors to discover how they learned to do the job. This provided further qualitative data.

Mixed methods research designs

Philosophical assumptions

Mixed methods research is the branch of multiple methods research that integrates the use of quantitative and qualitative data collection techniques and analytical procedures in the same research project. It is therefore based on philosophical assumptions that guide the collection and analysis of data and the mixing of quantitative and qualitative collection techniques and analysis procedures. Two philosophical positions to be considered that are often associated with mixed methods designs: **pragmatism and critical realism.**

Mixed methods research designs

As noted earlier, **pragmatists** assert that there are many different ways of interpreting the world and that different methods are often appropriate within one research study. This does not mean pragmatists will always use mixed methods, rather that the methods pragmatists use are chosen because they will enable credible reliable and relevant data to be collected to address the research problem.

For pragmatists, the nature of the research question, the research context and likely research consequences are driving forces determining the most appropriate methodological choice. Both quantitative and qualitative research are valued by pragmatists and their choice will be contingent on the particular nature of the research. Pragmatism can therefore be seen as informing qualitative and quantitative, as well as mixed methods, research.

Mixed methods research designs

Critical realism, like pragmatism, has implications for research design that may support the use of mixed methods research. To accommodate this realist ontology and subjectivist epistemology, researchers may, for example, use initially qualitative research methods to explore perceptions.

This could be followed by quantitative analysis of officially published data or documentary sources to conduct a retroductive analysis to seek to understand the relationship between socially constructed knowledge and possible underlying casual structures, processes and forces. It is also possible to undertake qualitative research within a critical realist philosophy.

Mixed methods research designs

Researchers using mixed methods approaches have a **pluralist** view of research methodology. This means they believe that flexibility in the selection and use of methods (both quantitative and qualitative) is legitimate and that researchers should be tolerant of others' preferred methods even when they differ from their own.

These views can be contrasted with those who believe there is, or should be, one legitimate method that should be followed. Researchers with this unitarist methodological view are unlikely to be tolerant of others' preferred methods if they differ from their own.

Mixed methods research designs

Approach to theory development

A mixed methods research design may use a deductive, inductive or abductive approach to theory development. For example, quantitative or qualitative research may be used to test a theoretical proposition or propositions, followed by further quantitative or qualitative research to develop a richer theoretical understanding.

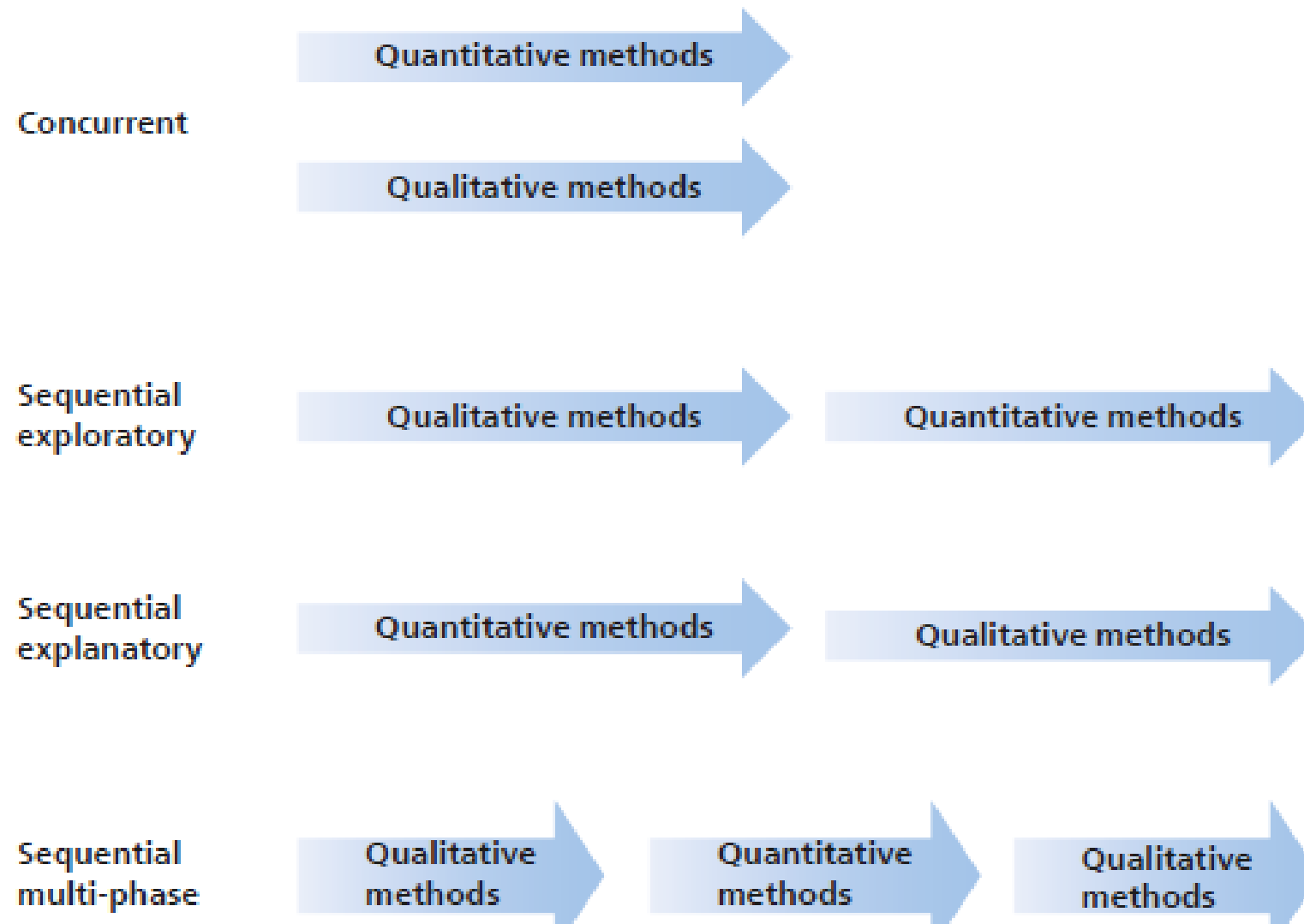
Theory may also be used to provide direction for the research. In this way a particular theory may be used to provide a focus for the research and to provide boundaries to its scope.

Mixed methods research designs

Characteristics

Mixed methods research draws from the characteristics of both quantitative research and qualitative research. In mixed methods research, quantitative and qualitative techniques are combined in a variety of ways that range from simple, concurrent forms to more complex and sequential forms.

The ways in which quantitative and qualitative research may be combined, as well as the extent to which this may occur, have led to the identification of a number of variations of mixed methods research.



Mixed methods research designs

Concurrent mixed methods research involves the separate use of quantitative and qualitative methods within a single phase of data collection and analysis (a single-phase research design). This allows both sets of results to be interpreted together to provide a richer and more comprehensive response to the research question in comparison to the use of a mono method design. Where you collect qualitative and quantitative data in the same phase of research in order to compare how these data sets support one another, you will be using a concurrent triangulation design. Using a concurrent mixed methods design should provide richer data than a mono method design and be shorter in timescale, as well as more practical to undertake, than a sequential mixed methods design.

Mixed methods research designs

Sequential mixed methods research involves more than one phase of data collection and analysis. In this design, the researcher will follow the use of one method with another in order to expand or elaborate on the initial set of findings. In a doublephase research design this leads to two alternative mixed methods research strategies, either a sequential exploratory research design (qualitative followed by quantitative) or a sequential explanatory research design (quantitative followed by qualitative). In a more complex, sequential, multi-phase design, mixed methods research will involve multiple phases of data collection and analysis (e.g. qualitative followed by quantitative, then by a further phase of qualitative).



Box 5.3

Focus on student research

Mixed methods research

Andreas conducted research into organisational change in an IT company, using a mixed methods research design. This was designed as a sequential mixed methods research project and consisted of four stages:

- 1 *Initial exploratory discussions* were held with key senior managers, which combined the purpose of helping to negotiate access, agree the scope of the project and gain essential contextual data. These data were analysed qualitatively in order to get a picture of important internal and external organisational issues.
- 2 *Individual in-depth interviews* were held with 28 directly employed staff (excluding contractor staff), who formed a sample representing the organisation across its departments and throughout its grade structure. These data were also analysed qualitatively. This was to establish the issues that were important to staff, to help to inform the content of the questionnaire.
- 3 *A questionnaire* was designed, pilot-tested, amended and then administered to a representative sample of directly employed staff, producing a 42 per cent response rate. The quantitative data produced were analysed statistically to allow the views of employee groups to be compared for differences by age, gender, length of service, occupation and grade. The subsequent production of summary data based on these findings was particularly important to the IT company.
- 4 *A fourth stage consisted of presentations to groups of employees.* This allowed employees' questions to be answered with care, while continuing to ensure anonymity. It also allowed discussion to occur to clarify the content of some of the questionnaire results. Notes from these presentations were analysed qualitatively.

Mixed methods research designs

Using a double-phase or multi-phase research design suggests a dynamic approach to the research process which recognizes that mixed methods research is both interactive and iterative, where one phase subsequently informs and directs the next phase of data collection and analysis.

The exact nature of this interaction and iteration in a particular research project may shape the way in which qualitative and quantitative methods are chosen and integrated at each phase of the research.

Mixed methods research designs

Where you mix quantitative and qualitative methods at every stage of your research (design, data collection and analysis, interpretation and presentation of the research), you will be using a **fully integrated mixed methods research design**.

Where you use quantitative and qualitative methods at only one stage or particular stages of your research, you will be using a **partially integrated mixed methods research approach**.

Mixed methods research designs

Mixed methods research may use quantitative research and qualitative research equally or unequally. In this way, the priority or weight given to either quantitative or qualitative research may vary, so that one methodology has a dominant role, while the other plays a supporting role, depending on the purpose of the research project. This prioritization may also reflect the preferences of the researcher.

Mixed methods research designs

The purpose of the research may emphasize the initial use and prioritization of qualitative research (as in an exploratory study, where qualitative precedes quantitative) or the initial use and prioritization of quantitative research (as in a descriptive study, before the possible use of supporting qualitative research to explain particular findings further).

The overall purpose of the research may also emphasize the dominance of either quantitative or qualitative research (e.g. as in a sequential project which commences with a qualitative, exploratory phase, followed by a quantitative, descriptive phase and which is completed by a further qualitative, explanatory phase).

Mixed methods research designs

The purpose of other research projects may lead to the more equal use of quantitative and qualitative research methods. The research approach may also lead to the relative prioritization of either quantitative or qualitative methods. In this way, an inductive approach designed to generate theoretical concepts and to build theory may lead to a greater emphasis on the use of qualitative methods.

Mixed methods research designs

Embedded mixed methods research is the term given to the situation where one methodology supports the other. During data collection, this may occur in a number of ways. One methodology may be embedded within the other during a single means to collect data (e.g. some quantitative questions are included in an interview schedule, or some questions within a questionnaire require a qualitative response). This is known as a **concurrent embedded design**.

Mixed methods research designs

The characteristics that help to define mixed methods research highlight how quantitative and qualitative methods may be combined in a number of ways to provide you with better opportunities to answer your research question.

The table below outlines a number of reasons for and advantages of using a mixed methods design. The specific nature of your mixed methods design will be related to particular reasons and advantages.

Reason	Explanation
Initiation	Initial use of a qualitative or quantitative methodology may be used to define the nature and scope of sequential quantitative or qualitative research. May also be used to provide contextual background and to better understand the research problem (e.g. Box 5.3). May also help in the formulation or redrafting of research questions, interview questions and questionnaire items and the selection of samples, cases and participants
Facilitation	During the course of the research, one method may lead to the discovery of new insights which inform and are followed up through the use of the other method
Complementarity	Use of mixed methods may allow meanings and findings to be elaborated, enhanced, clarified, confirmed, illustrated or linked
Interpretation	One method (e.g. qualitative) may be used to help to explain relationships between variables emerging from the other (e.g. quantitative)
Generalisability	Use of mixed methods may help to establish the generalisability of a study or its relative importance. In a similar way the use of mixed methods may help to establish the credibility of a study or to produce more complete knowledge (Section 5.11)

Diversity	Use of mixed methods may allow for a greater diversity of views to inform and be reflected in the study
Problem solving	Use of an alternative method may help when the initial method reveals unexplainable results or insufficient data
Focus	One method may be used to focus on one attribute (e.g. quantitative on macro aspects), while the other method may be used to focus on another attribute (e.g. qualitative on micro aspects)
Triangulation	Mixed methods may be used in order to combine data to ascertain if the findings from one method mutually corroborate the findings from the other method (Section 5.11)
Confidence	Findings may be affected by the method used. Use of a single method will make it impossible to ascertain the nature of that effect. To seek to cancel out this 'method effect', it is advisable to use mixed methods. This should lead to greater confidence in your conclusions



Box 5.4 Focus on management research

Recognition and use of mixed methods in organisational research

Molina-Azorin et al. (2017) note in an article published in *Organizational Research Methods* that while mixed methods research has been recognised and developed as a distinct methodological approach over recent decades in many social sciences fields such as education and health, this does not appear to be the case in organisational research to the same degree. They point out, however, that some caution is required in relation to this apparent difference.

They argue that organisational and management researchers have used quantitative and qualitative

methods in an integrated way for a long time without referring to this as mixed methods research. This they consider is understandable before the identification of the term 'mixed methods research' in the latter part of the twentieth century and its subsequent development as a distinct methodological approach. However, Molina-Azorin et al. (2017: 181) also state that, "in the past few years, organizational researchers are also integrating quantitative and qualitative methods without using the 'mixed methods' approach to refer to their studies."

They comment that although the term 'mixed methods research' is not always used, many journals welcome research that integrates quantitative and qualitative approaches. Consequently, searching for such research using the search term 'mixed methods' is likely to reveal only a relatively small number of articles in business and management journals. For greater success, a wider variety of search terms incorporating both qualitative and quantitative research methods is likely to be required.

Mixed methods research designs

Research designs

As we have just discussed, different combinations of mixed methods research characteristics lead to various research designs. The principal mixed methods research designs summarized earlier in this section are: concurrent triangulation design, concurrent embedded design, sequential exploratory design, sequential explanatory design and sequential, multi-phase design.

Mixed methods research designs

Techniques

Quantitative data collection techniques and analytical procedures that may be used as part of mixed methods research will be discussed later. Structured observation .the use of questionnaires, including structured interviewing; and the analysis of quantitative data will be discussed later. Qualitative data collection techniques and analytical procedures that may be used as part of mixed methods research will be discussed later. Collecting qualitative data through observation, Internet-mediated observation and observation using videography, collecting qualitative data using semi-structured and in-depth interviews, group interviews, telephone interviews and Internet-mediated interviews. Techniques to analyze qualitative data are discussed later .

Recognizing the purpose of your research design

Exploratory studies

An exploratory study is a valuable means to ask open questions to discover what is happening and gain insights about a topic of interest. Research questions that are exploratory are likely to begin with 'What' or 'How'. Questions that you ask during data collection to explore an issue, problem or phenomenon will also be likely to start with 'What' or 'How'.

An exploratory study is particularly useful if you wish to clarify your understanding of an issue, problem or phenomenon, such as if you are unsure of its precise nature. It may be that time is well spent on exploratory research, as it might show that the research is not worth pursuing!

Recognizing the purpose of your research design

There are a number of ways to conduct exploratory research. These include a search of the literature; interviewing ‘experts’ in the subject; conducting in-depth individual interviews or conducting focus group interviews. Because of their exploratory nature, these interviews are likely to be relatively unstructured and to rely on the quality of the contributions from those who participate to help guide the subsequent stage of your research.

Exploratory research has the advantage that it is flexible and adaptable to change. If you are conducting exploratory research, you must be willing to change your direction as a result of new data that appear and new insights that occur to you.

Recognizing the purpose of your research design

Descriptive studies

The purpose of descriptive research is to gain an accurate profile of events, persons or situations. Research questions that are descriptive are likely to begin with, or include, either 'Who', 'What', 'Where', 'When' or 'How'. Questions that you ask during data collection to gain a description of events, persons or situations will also be likely to start with, or include, 'Who', 'What', 'Where', 'When' or 'How'.

Descriptive research may be an extension of a piece of exploratory research or a forerunner to a piece of explanatory research. It is necessary to have a clear picture of the phenomenon on which you wish to collect data prior to the collection of the data.

Recognizing the purpose of your research design

Often project supervisors are rather wary of work that is too descriptive. There is a danger of their saying ‘That’s very interesting . . . but so what?’ They will want you to go further and draw conclusions from the data you are describing. They will encourage you to develop the skills of evaluating data and synthesizing ideas. These are higher-order skills than those of accurate description.

Description in entrepreneurship research has a very clear place. However, it should be thought of as a means to an end rather than an end in itself. This means that if your research project utilizes description it is likely to be a precursor to explanation. Such studies are known as descriptoexplanatory studies.

Recognizing the purpose of your research design

Explanatory studies

Studies that establish causal relationships between variables may be termed explanatory research. Research questions that seek explanatory answers are likely to begin with, or include, 'Why' or 'How'. Questions that you ask during data collection to gain an explanatory response will also be likely to start with, or include, 'Why' or 'How'. The emphasis in explanatory research is to study a situation or a problem in order to explain the relationships between variables. You could analyse the data using a statistical test such as correlation and regression (discussed later) in order to get a clearer view of the relationship.

Recognizing the purpose of your research design

Evaluative studies

The purpose of evaluative research is to find out how well something works. Research questions that seek to evaluate answers are likely to begin with 'How', or include 'What', in the form of 'To what extent'. Evaluative research in entrepreneurship is likely to be concerned with assessing the effectiveness of strategies, policies, programmes, initiatives or process. For example, evaluating a marketing campaign, a personnel policy, a costing strategy, the delivery of a support service.

Questions that you ask during data collection to seek an evaluative understanding will be likely to start with, or include, 'What', 'How' or 'Why'.

Chapter

04

Recognizing the purpose of your research design

As part of your evaluative study you may also make comparisons between events, situations, groups, places or periods, so that you ask questions that include ‘Which’, ‘When’, ‘Who’ or ‘Where’.

Asking such questions would help you to compare the effectiveness of, say, an advertising campaign in different locations or between different groups of consumers. In this way, evaluative research allows you to assess performance and to compare this.

An evaluative study may produce a theoretical contribution where emphasis is placed on understanding not only ‘how effective’ something is, but also ‘why’, and then comparing this explanation to existing theory.

Recognizing the purpose of your research design

Combined studies

A research study may combine more than one purpose in its design. This may be achieved by the use of multiple methods in the research design, to facilitate some combination of exploratory, descriptive, explanatory or evaluative research.

Alternatively, a single method research design may be used in a way that provides scope to facilitate more than one purpose. Two examples of multiple methods studies that combine research purposes are provided in the next slide.



Box 5.5 Focus on management research

Multiple methods studies that combine research purposes

It is useful to look at business and management research published in journals to see whether they are based on a single method or multiple methods, and to recognise the research purpose(s) of each method. While these articles outline the research method(s) their authors used, the purpose of each method is often implied rather than being explicitly categorised as exploratory, descriptive, explanatory or evaluative. Some journals tend to publish articles based on multiple methods studies and it is helpful to examine this type of article to work out how the methods used are related to research purpose. The *Journal of Marketing* publishes many articles based on multiple methods studies, which help to show the relationship between research method and research purpose. Here are two examples.

Dion and Borraz (2017) undertook research whose aim was to examine how stores dedicated to selling luxury brands manage status during service encounters. Their qualitative multi-method study involved the collection of four sets of data based on three

research methods: (i) interviews conducted with a sample of luxury brand customers; (ii) interviews conducted with a range of luxury store employees; (iii) a series of semi-structured observations of service encounters in luxury stores in the city of Paris; and (iv) Internet-mediated observation of websites, online stores and blogs to access consumer and employee accounts of their experiences of shopping or working in luxury stores. The exploratory, descriptive and explanatory nature of this research emerges through the description of its design and especially through the presentation of the results of this research project.

Böttger et al. (2017) undertook research whose aim was to conceive of, develop and validate a scale to measure customer inspiration. Some 93 initial possible scale items were generated by the authors using existing literature and the results of interviews with 918 customers, which were then evaluated by an expert panel of marketing academics and organisational managers to form a list of 37 potential items. Subsequently, five distinct studies were undertaken to develop and validate the scale. These studies included the use of laboratory and field experiments and the administration of questionnaires. This research collected both qualitative and quantitative data, which were primarily analysed quantitatively. The various stages of this mixed-methods study illustrate the exploratory, descriptive, explanatory and evaluative nature of this research.

Choosing a research strategy or strategies

The different research strategies

In general terms, a strategy is a plan of action to achieve a goal. A research strategy may therefore be defined as a plan of how a researcher will go about answering her or his research question. It is the methodological link between your philosophy and subsequent choice of methods to collect and analyze data.

Different research traditions have led to the development of a range of research strategies, research strategies are principally linked with quantitative, qualitative and mixed methods research designs, respectively. Particular research strategies may be associated with a particular research philosophy and also a deductive, inductive or abductive approach;

Choosing a research strategy or strategies

In a similar way, a particular research strategy should not be seen as inherently superior or inferior to any other. The key to your choice of research strategy or strategies is that you achieve a reasonable level of coherence throughout your research design which will enable you to answer your particular research question(s) and meet your objectives.

Your choice of research strategy will therefore be guided by your research question(s) and objectives, the coherence with which these link to your philosophy, research approach and purpose, and also to more pragmatic concerns including the extent of existing knowledge, the amount of time and other resources you have available and access to potential participants and to other sources of data.

Choosing a research strategy or strategies

Finally, it must be remembered that these strategies should not be thought of as being mutually exclusive. For example, it is quite possible to use the survey strategy within a case study or combine a number of different strategies within mixed methods.

The first two research strategies in the list below are principally or exclusively linked to a quantitative research design. The next two may involve quantitative or qualitative research, or a mixed design combining both. The final four strategies are principally or exclusively linked to a qualitative research design.

Choosing a research strategy or strategies

- Experiment;
- Survey;
- Archival and documentary research;
- Case study;
- Ethnography;
- Action Research;
- Grounded Theory;
- Narrative Inquiry.

Choosing a research strategy or strategies

Experiment

The roots of experiment strategy are in natural science, laboratory-based research and the precision required to conduct it mean that the ‘experiment’ is often seen as the ‘gold standard’ against which the rigour of other strategies is assessed.

Experiment is a form of research that owes much to the natural sciences, although it features strongly in psychological and social science research. The purpose of an experiment is to study the probability of a change in an independent variable causing a change in another, dependent variable. The table below provides a description of types of variable.

Variable	Meaning
Independent (IV)	Variable that is being manipulated or changed to measure its impact on a dependent variable
Dependent (DV)	Variable that may change in response to changes in other variables; observed outcome or result from manipulation of another variable
Mediating (MV)	A variable located between the independent and dependent variables, which transmits the effect between them (IV → MV → DV)
Moderator	A new variable that is introduced which will affect the nature of the relationship between the IV and DV
Control	Additional observable and measurable variables that need to be kept constant to avoid them influencing the effect of the IV on the DV
Confounding	Extraneous but difficult to observe or measure variables that can potentially undermine the inferences drawn between the IV and DV. Need to be considered when discussing results, to avoid spurious conclusions

Choosing a research strategy or strategies

An experiment uses hypothetical explanations, known as hypotheses, rather than research questions. This is because the researcher hypothesizes whether or not a relationship will exist between the variables. Two types of (opposing) hypotheses are formulated in a standard experiment: the **null hypothesis** and the hypothesis (also referred to as the **alternative hypothesis**). The null hypothesis is the explanation that there is no difference or relationship between the variables. An example of a null hypothesis is: User satisfaction of online customer support is not related to the amount of training support staff have received.

The hypothesis is the explanation that there is a difference or relationship between the variables. An example of a (directional) hypothesis is:

User satisfaction of online customer support is related to the amount of training support staff have received.

Choosing a research strategy or strategies

In an experiment, the compatibility of the data with the null hypothesis is tested statistically. The statistical test is based on the probability of these data occurring by chance and in effect measures the probability that the data are compatible with the null hypothesis.

The smaller the probability (termed the p-value), the greater the statistical incompatibility of the data with the null hypothesis. This ‘incompatibility’ is interpreted as casting doubt on or providing evidence against the null hypothesis and its associated underlying assumptions.

Where this probability is greater than a prescribed value (usually $p = 0.05$), the null hypothesis is usually accepted and the hypothesis is rejected.

Choosing a research strategy or strategies

Where the probability is less than or equal to the prescribed value (usually $p = 0.05$), this indicates that the hypothesis can be accepted.

The simplest experiments are concerned with whether there is a link between two variables.

More complex experiments also consider the size of the change and the relative importance of two or more independent variables.

Experiments therefore tend to be used in exploratory and explanatory research to answer 'what', 'how' and 'why' questions.

Choosing a research strategy or strategies

Experimental designs include classical experiments, quasi-experiments and within-subject designs.

In a classical experiment, a sample of participants is selected and then randomly assigned to either an experimental group or to the control group. In the experimental group, some form of planned intervention or manipulation will be tested. In the control group, no such intervention is made.

Random assignment means each group should be similar in all aspects relevant to the research other than whether or not they are exposed to the planned intervention or manipulation.

Choosing a research strategy or strategies

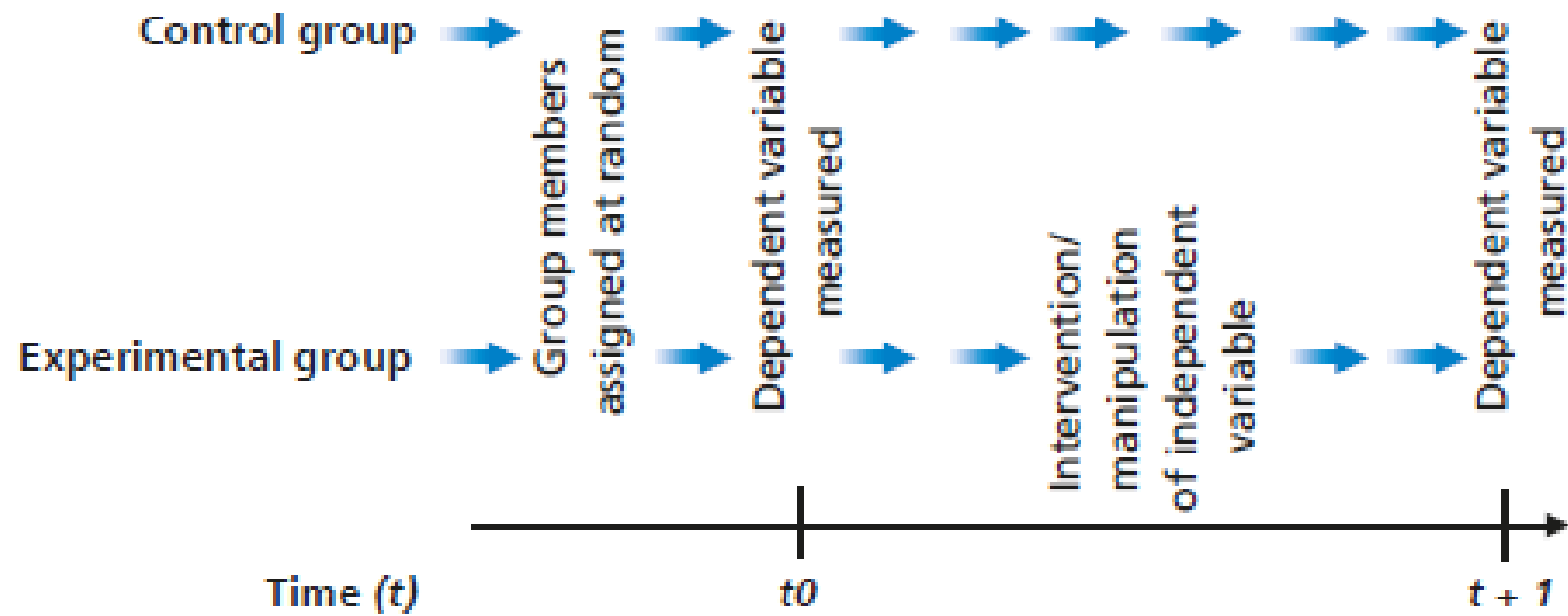
In assigning the members to the control and experimental groups at random and using a control group, you try to control (that is, remove) the possible effects of an alternative explanation to the planned intervention (manipulation) and eliminate threats to internal validity.

This is because the control group is subject to exactly the same external influences as the experimental group other than the planned intervention and, consequently, this intervention is the only explanation for any changes to the dependent variable.

Choosing a research strategy or strategies

A **quasi-experiment** will still use an experimental group(s) and a control group, but the researcher will not randomly assign participants to each group, perhaps because participants are only available in pre-formed groups (e.g. existing work groups).

Differences in participants between groups may be minimized by the use of matched pairs. Matched pair analysis leads to a participant in an experimental group being paired with a participant in the control group based on matching factors such as age, gender, occupation, length of service, grade etc., to try to minimize the effect of extraneous variables on the experiment's outcomes. Those factors relevant to the nature of the experiment will need to be matched.



Choosing a research strategy or strategies

Let's illustrate this procedure with an example related to the introduction of a sales promotion.

The dependent variable in this example, purchasing behavior, is measured for members of both the experimental group and control group before any intervention occurs.

This provides a pre-test measure of purchasing behavior. A planned intervention is then made to members of the experimental group in the form of a 'buy two, get one free' promotion.

In the control group, no such intervention is made.

Choosing a research strategy or strategies

The dependent variable, purchasing behavior, is measured after the manipulation of the independent variable (the use of the 'buy two, get one free' promotion) for both the experimental group and the control group, so that a pre-test and post-test comparison can be made.

On the basis of this comparison, any difference between the experimental and control groups for the dependent variable (purchasing behavior) is attributed to the intervention of the 'buy two, get one free' promotion.

This experimental approach is known as a between-subjects design, where participants belong to either the experimental group or control group but not both

Choosing a research strategy or strategies

In a **between-subjects design**, if more than one intervention or manipulation is to be tested, a separate experimental group will be required for each test (known as independent measures). For example, if the experiment was designed to compare two separate interventions, such as a 'buy one, get one free' as well as the 'buy two, get one free' manipulation, two experimental groups would be required alongside the control group.

In a **within-subjects design**, or within-group design, there will be only a single group, rather than a separation into an experimental group and a control group. In this approach every participant is exposed to the planned intervention or series of interventions. For this reason, this approach is known as repeated measures. The procedure involves a pre-intervention observation or measurement, to establish a baseline (or control for the dependent variable).

Choosing a research strategy or strategies

This is followed by a planned intervention (manipulation of the independent variable) and subsequent observation and measurement (related to the dependent variable).

Following the withdrawal of the intervention and a period of 'reversal', to allow a return to the baseline, a further planned intervention may be attempted followed by subsequent observation and measurement.

A within-subject design may be more practical than a between-subjects design because it requires fewer participants, but it may lead to carryover effects where familiarity or fatigue with the process distorts the validity of the findings. This may lead to a counterbalanced design, where some of the participants undertake tasks in a different order to see if familiarity or fatigue affects the outcomes.

Choosing a research strategy or strategies

Often experiments, including those in disciplines closely associated with entrepreneurship such as organizational psychology, are conducted in laboratories rather than in the field (for example in an organization). This means that you have greater control over aspects of the research process such as sample selection and the context within which the experiment occurs.

However, while this improves the **internal validity** of the experiment, that is, the extent to which the findings can be attributed to the interventions rather than any flaws in your research design, **external validity** is likely to be more difficult to establish (we discuss issues of validity later). Laboratory settings, by their very nature, are unlikely to be related to the real world of organizations. As a consequence, the extent to which the findings from a laboratory experiment are able to be generalized to all organizations is likely to be lower than for a field-based experiment.

Choosing a research strategy or strategies

The feasibility of using an experimental strategy will depend on the nature of your research question. As we noted, an experiment uses predictive hypotheses rather than open research questions.

It may be appropriate to turn your question into hypotheses where you wish to test for expected relationships between variables. However, most entrepreneurship research questions will be designed to inquire into the relationships between variables, rather than to test a predicted relationship.

This indicates the difference between experiments and other research strategies. Within quantitative research designs, it highlights a key difference between an experimental strategy and a survey strategy.

Choosing a research strategy or strategies

Survey

The survey strategy is usually associated with a deductive research approach. It is a popular strategy in entrepreneurship research and is most frequently used to answer ‘what’, ‘who’, ‘where’, ‘how much’ and ‘how many’ questions.

It therefore tends to be used for exploratory and descriptive research. Survey strategies using questionnaires are popular as they allow the collection of standardized data from a large number of respondents economically, allowing easy comparison. In addition, the survey strategy is perceived as authoritative by people in general and is comparatively easy both to explain and to understand.

Choosing a research strategy or strategies

The survey strategy allows you to collect data which you can analyze quantitatively using descriptive and inferential statistics. In addition, data collected using a survey strategy can be used to suggest possible reasons for particular relationships between variables and to produce models of these relationships. Using a survey strategy should give you more control over the research process and, when probability sampling is used, it is possible to generate findings that are statistically representative of the whole population at a lower cost than collecting the data for the whole population.

You will need to spend time ensuring that your sample is representative, designing and piloting your data collection instrument and trying to ensure a good response rate. Preparing and analyzing the data will also be time consuming, even with readily available cloud-based data collection and analysis software.

Choosing a research strategy or strategies

Archival and documentary research

The digitalization of data and the creation of online archives, along with open data initiatives by governments and businesses, have increased the scope for you to use an archival or documentary research strategy. This means it is now possible to access such sources online from around the world. These potentially provide you with considerable scope to design a research project that capitalizes on the wide range of secondary data sources.

A document is a durable repository for textual, visual and audio representations. This illustrates the wide range of materials encompassed by this definition. Categories of textual documents include:

Choosing a research strategy or strategies

Categories of textual documents include:

- communications between individuals or within groups such as email, letters, social media and blog postings;
- individual records such as diaries, electronic calendars and notes;
- organisational documents such as administrative records, agendas and minutes of meetings, agreements, contracts, memos, personnel records, plans, policy statements, press releases, reports and strategy statements;
- government documents such as publications, reports and national statistics data sets;
- media documents including printed and online articles and other data.

Choosing a research strategy or strategies

Visual and audio documents include advertising posters, artefacts, audio recordings, audio-visual corporate communications, digital recordings, DVDs, films, photographs, products, promotional advertisements and recordings, television and radio programmes and web images.

Documents used for research are considered secondary sources because they were originally created for a different purpose. Researchers using an archival or documentary research strategy therefore need to be sensitive to the fact that the documents they use were not originally created for a research purpose.

Choosing a research strategy or strategies

While great care needs to be taken when using documents for research purposes, they potentially offer a rich source of data for you to analyze. The data they provide may be analyzed quantitatively, qualitatively or both.

Analyzing qualitative documents quantitatively may allow you to generate a rich or ‘thick’ description of key events, the context within which these events occurred, the roles of the actors involved, the influence of external influences such as economic or commercial pressures, as well as outcomes. Your scope to achieve such an outcome will of course depend on the nature of your research question and whether you find suitable documents.

Choosing a research strategy or strategies

Documents may, for example, allow you to analyze critical incidents or decision-making processes, or evaluate different policy positions or strategies. Using quantitative data in documents such as annual or financial reports will provide you with access to actual data that may, for example, facilitate comparisons between organizations or across reporting periods.

Documents can also be analyzed to reveal:

- not only what they contain but what is omitted;
- which facts are used and why these might be emphasized while others are not used;
- how they are used in an organization and how they are circulated and to whom.

Choosing a research strategy or strategies

Case study

A case study is an in-depth inquiry into a topic or phenomenon within its real-life setting. The 'case' in case study research may refer to a person (e.g. a entrepreneur), a group (e.g. a work team), an organization (e.g. a business), an association (e.g. a joint venture), a change process (e.g. restructuring a company), an event (e.g. an annual general meeting) as well as many other types of case subject.

Choosing the case to be studied and determining the boundaries of the study is a key factor in defining a case study. Once defined, case study research sets out to understand the dynamics of the topic being studied within its setting or context. 'Understanding the dynamics of the topic' refers to the interactions between the subject of the case and its context.

Choosing a research strategy or strategies

Understanding context is fundamental to case study research. A case study strategy has the capacity to generate insights from intensive and in-depth research into the study of a phenomenon in its real-life context, leading to rich, empirical descriptions and the development of theory, ‘the interaction between a phenomenon and its context is best understood through in-depth case studies’.

These can be designed to identify what is happening and why, and perhaps to understand the effects of the situation and implications for action. To achieve such insights, case study research draws on data, often both qualitative and quantitative, from a range of sources to understand fully the dynamics of the case.

Choosing a research strategy or strategies

Case studies have been widely used over a long period, but have been criticized by some as a research strategy because of ‘misunderstandings’ about their ability to produce generalizable, reliable and theoretical contributions to knowledge.

This is largely based on positivist criticisms of using small samples and more generally about using interpretive, qualitative research. This type of criticism has been countered in many works and is generally losing favor as the value of qualitative and mixed methods research is recognized more widely

Choosing a research strategy or strategies

The long and widespread use of case studies has resulted in them being designed in different ways and for different purposes. They have been used by ‘positivist’ as well as ‘interpretivist’ researchers; deductively as well as inductively; and for descriptive, exploratory or explanatory purposes.

Some positivist researchers have also advocated using case studies inductively to build theory and to develop theoretical hypotheses, which can be tested subsequently. In this way, the use of the case study is advocated in the early, exploratory stage of research as a complement to deductive research. This approach has been called ‘**indicative case study research**’, designed to reveal ‘specific attributes’ rather than rich description.

Choosing a research strategy or strategies

Two different research designs:

An orthodox case study strategy involves an approach that is rigorously defined and highly structured before the research commences, with the intention that it will proceed in a linear way. This reflects the rational approach to conducting research where literature is reviewed first, the research question is defined, the research project is designed, preparation for the conduct of the research undertaken, and data are collected, analyzed, interpreted and then reported. This approach to case study strategy is likely to be underpinned by realist philosophical assumptions.

Choosing a research strategy or strategies

An emergent case study strategy involves a researcher strategically choosing a case study environment within which research will be conducted but allowing the focus of the research to emerge through his or her engagement in this setting (involving different stages of data collection and analysis) and with relevant literature. This approach allows the core focus to emerge and is likely to be underpinned by interpretivist-constructivist philosophical assumptions. In this way it is similar to the constructivist grounded theory strategy that will be discussed later.

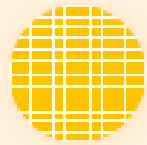
Choosing a research strategy or strategies

Ways in which case study research may be structured is based upon two discrete dimensions:

- single case versus multiple cases;
- holistic case versus embedded case.

A single case is often used where it represents a critical case or, alternatively, an extreme or unique case. Conversely, a single case may be selected purposively because it is typical or because it provides you an opportunity to observe and analyze a phenomenon that few have considered before.

Inevitably, an important aspect of using a single case is defining the actual case. For many students this is the organization for which they work. The key here will be to ensure that this approach is suitable for the nature of research question and objectives.



Box 5.7

Focus on student research

Using a single organisation as a case study

Simon was interested in discovering how colleagues within his organisation were using a recently introduced financial costing model in their day-to-day work. In discussion with his project tutor, he highlighted that he was interested in finding out how it

was actually being used in his organisation as a whole, as well as seeing if the use of the financial costing model differed between senior managers, departmental managers and front-line operatives. Simon's project tutor suggested that he adopt a case study strategy, using his organisation as a single case within which the senior managers', departmental managers' and front-line operatives' groups were embedded cases. He also highlighted that, given the different numbers of people in each of the embedded cases, Simon would be likely to need to use different data collection techniques with each.

Choosing a research strategy or strategies

A case study strategy can also incorporate **multiple cases**, that is, more than one case. The rationale for using multiple cases focuses on whether findings can be replicated across cases. Cases will be carefully chosen on the basis that similar results are predicted to be produced from each one. Where this is realized, it is termed **literal replication**.

Another set of cases may be chosen where a contextual factor is deliberately different. The impact of this difference on the anticipated findings is predicted by the researcher. Where this predicted variation is realized, it is termed **theoretical replication**.

Choosing a research strategy or strategies

The second dimension, **holistic versus embedded**, refers to the unit of analysis. For example, you may have chosen to use an organization in which you have been employed or are currently employed as your case. If your research is concerned only with the organization as a whole, then you are treating the organization as a **holistic case study**.

Conversely, even if you are only researching within a single organization, you may wish to examine a number of logical sub-units within the organization, such as departments or work groups. Your case will inevitably involve more than one unit of analysis and, whichever way you select these units, would be called an **embedded case study**.

Choosing a research strategy or strategies

Ethnography

Ethnography is used to study the culture or social world of a group. Ethnography literally means a written account of a people or ethnic group. It is the earliest qualitative research strategy, with its origins in colonial anthropology. From the 1700s to the early 1900s, ethnography was developed to study cultures in so-called 'primitive' societies that had been brought under the rule of a colonial power, to facilitate imperialist control and administration.

Early anthropologists treated those among whom they lived and conducted their fieldwork as subjects and approached their ethnography in a detached way, believing that they were using a scientific approach, positivism, to produce monographs that were meant to be accurate and timeless accounts of different cultures.

Choosing a research strategy or strategies

From the 1920s the use of ethnography changed through the work of the Chicago School (University of Chicago), which used ethnographic methods to study social and urban problems within cultural groups in the USA.

A seminal example of this work is Whyte's (1993) 'Street Corner Society' originally published in 1943, which examined the lives of street gangs in Boston. This approach to ethnography involved researchers living among those whom they studied, to observe and talk to them in order to produce detailed cultural accounts of their shared beliefs, behaviors, interactions, language, rituals and the events that shaped their lives. This use of ethnography adopted a more interpretive and naturalistic focus by using the language of those being studied in writing up cultural accounts. However, the researcher remained the arbiter of how to tell the story and what to include, leading many to question how the socialization and values of this person might affect the account being written.

Choosing a research strategy or strategies

Realist ethnography is the closest to the ethnographic strategy described earlier. The realist ethnographer believes in objectivity, factual reporting and identifying ‘true’ meanings. She or he will report the situation observed through ‘facts’ or data about structures and processes, practices and customs, routines and norms, artefacts and symbols. Such reporting is likely to use standardized categories that produce quantitative data from observations.

The realist ethnographer will write up her or his account in the third person, portraying their role as the impersonal reporter of ‘facts’. This account will present a detailed contextual background and the nature of the cultural interactions observed, and identify patterns of behavior and social processes. The realist ethnographer’s final written account is his or her representation of what he or she has observed and heard.

Choosing a research strategy or strategies

In contrast, **interpretive ethnography** places much greater stress on subjective impressions than on perceived objectivity. The interpretive ethnographer believes in the likelihood of multiple meanings rather than being able to identify a single, true meaning. Multiple meanings will be located in the socially constructed interpretations of the different participants. This suggests a more pluralistic approach, in which the interpretive ethnographer focuses on understanding meanings, with those being observed treated as participants rather than subjects.

This requires an ethnographic researcher to engage in continuous reflexivity to try to ensure reliability/dependability and validity/credibility/transferability in this research process. The research report will reflect the participation of both the ethnographer (writing in the first person, editing herself into the text, rather than out of it) and those being observed.

Choosing a research strategy or strategies

Critical ethnography has a radical purpose, designed to explore and explain the impact of power, privilege and authority on those who are subject to these influences or marginalized by them. You may therefore ask if it can have any appeal to entrepreneurship research.

Critical ethnographers often adopt an advocacy role in their work to try to bring about change. You may be able to adopt a constrained or bounded version of critical ethnography to explore the impact of a problematic issue within an organization or work group, with a view to advocating internal or external change. Such an issue might be concerned with strategy, decision-making procedures, regulation, governance, organizational treatment, reward and promotion, communication and involvement and so forth.

Choosing a research strategy or strategies

Action Research

Lewin first used the term Action Research in 1946. It has been interpreted subsequently by management researchers in a variety of ways, but a number of common and related themes have been identified within the literature. In essence, Action Research is an emergent and iterative process of inquiry that is designed to develop solutions to real organisational problems through a participative and collaborative approach, which uses different forms of knowledge, and which will have implications for participants and the organisation beyond the research project.

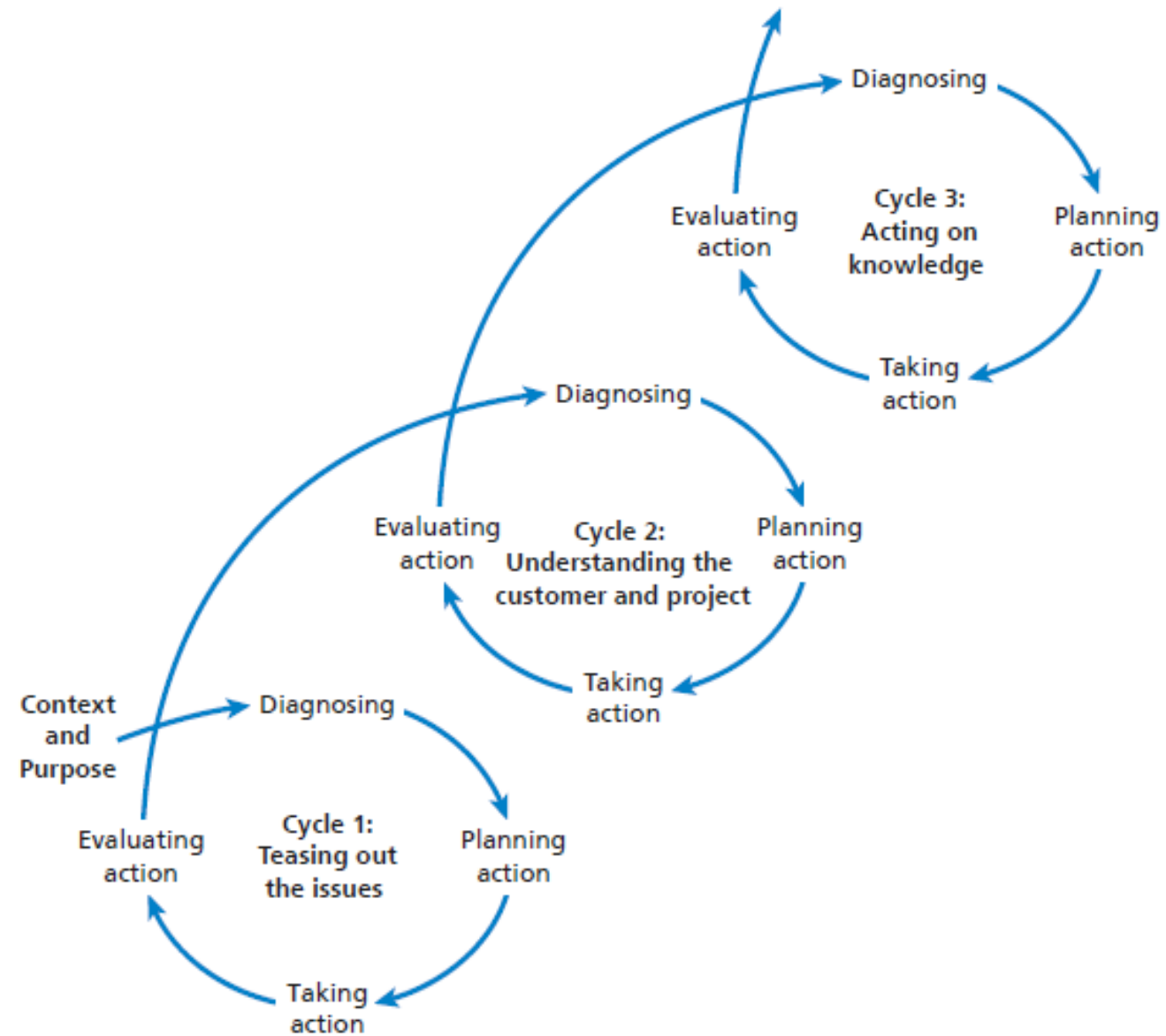
Choosing a research strategy or strategies

The definition identifies five themes, which we briefly consider in the following order: **purpose, process, participation, knowledge** and **implications**. The **purpose** of an Action Research strategy is to promote organizational learning to produce practical outcomes through identifying issues, planning action, taking action and evaluating action.

Action Research is about ‘research in action rather than research about action’. This is because Action Research focuses on ‘addressing worthwhile practical purposes’ and resolving real organizational issues.

Choosing a research strategy or strategies

The **process** of Action Research is both emergent and iterative. An Action Research strategy commences within a specific context and with a research question but because it works through several stages or iterations the focus of the question may change as the research develops. Each stage of the research involves a process of diagnosing or constructing issues, planning action, taking action and evaluating action (See the next figure).



Choosing a research strategy or strategies

Diagnosing or constructing issues, sometimes referred to as fact finding and analysis, is undertaken to enable action planning and a decision about the actions to be taken. These are then taken and the actions evaluated (cycle 1).

This evaluation provides a direction and focus for the next stage of diagnosing or constructing issues, planning action, taking action and evaluating action (cycle 2), demonstrating the iterative nature of the process.

Subsequent cycles (cycle 3 and possibly beyond) involve further diagnosing or constructing of issues, taking into account previous evaluations, planning further actions, taking these actions and evaluating them. In this way, Action Research differs from other research strategies because of its explicit focus on action related to multiple stages, to explore and evaluate solutions to organizational issues and to promote change within the organization.

Choosing a research strategy or strategies

Participation is a critical component of Action Research. Action Research is a social process in which an action researcher works with members in an organization, as a facilitator and teacher, to improve the situation for these participants and their organization. Participation by organizational members may take a number of forms.

Firstly, organizational members need to cooperate with the researcher to allow their existing work practices to be studied. The process of Action Research then requires participation in the form of collaboration through its iterative cycles (as described earlier) to facilitate the improvement of organizational practices. Collaboration means building a democratic approach to communication and decision making when constructing, planning, taking and evaluating each Action Research stage or cycle.

Choosing a research strategy or strategies

The researcher passes on her or his skills and capabilities to participants so that they effectively become co-researchers in the Action Research process. Without such participation, this approach simply would not be viable, although creating such participation is likely to be difficult in practice and to meet with resistance at various levels.

The nature of Action Research means that it will also be able to incorporate different forms of **knowledge**. Action Research will not only be informed by abstract theoretical knowledge, known as propositional knowledge, but also by participants' everyday lived experiences (their experiential knowledge) and knowing-in-action (knowledge that comes from practical application).

Choosing a research strategy or strategies

Action Research also has **implications** beyond the research project. Participants in an organization where action research takes place are likely to have their expectations about future treatment and involvement in decision making raised.

There are also likely to be consequences for organizational development and culture change. Implications from the process may be used to inform other contexts. Academics will use the results from undertaking Action Research to develop theory that can be applied more widely. Consultants will transfer knowledge gained to inform their work in other contexts. Such use of knowledge to inform, we believe, also applies to others undertaking Action Research, such as students undertaking research in their own organizations.

Choosing a research strategy or strategies

Action Research also has **implications** beyond the research project. Participants in an organization where action research takes place are likely to have their expectations about future treatment and involvement in decision making raised.

There are also likely to be consequences for organizational development and culture change. Implications from the process may be used to inform other contexts. Academics will use the results from undertaking Action Research to develop theory that can be applied more widely. Consultants will transfer knowledge gained to inform their work in other contexts. Such use of knowledge to inform, we believe, also applies to others undertaking Action Research, such as students undertaking research in their own organizations.

Choosing a research strategy or strategies

Grounded Theory

‘Grounded theory methodology’ refers to the researcher’s choice of this strategy as a way to conduct research. ‘Grounded theory method’ refers to the data collection techniques and analytic procedures that it uses. ‘Grounded theory’ may be used loosely to incorporate methodology and method but more specifically it refers to a theory that is grounded in or developed inductively from a set of data.

Grounded Theory was developed by Glaser and Strauss (1967) as a process to analyze, interpret and explain the meanings that social actors construct to make sense of their everyday experiences in specific situations.

Choosing a research strategy or strategies

They developed a set of principles and guidelines to conduct Grounded Theory. The key elements of Grounded Theory are:

Grounded Theory provides you with a systematic and emergent approach to collect and analyze qualitative data. Whereas in quantitative research it is usual to collect a complete set of data and then analyze these, in qualitative data it is often useful to analyze data as you collect them (e.g. you conduct an interview or observation and analyze it before conducting the next one). Grounded Theory is designed to allow you to do this.

Choosing a research strategy or strategies

Grounded Theory is usually thought of as using an inductive approach, although it may be more appropriate to think of it as abductive, moving between induction and deduction. The researcher starts research by collecting data from an initial interview or observation and then analyzing this as close in time to the act of conducting it as is possible and before collecting more data. This is usually referred to as collecting and analyzing data simultaneously.

The researcher commences analysis by identifying analytical codes that emerge from the data in the interview or observation transcript. Each code will be used to label pieces of data with the same or similar meaning. **Coding** is therefore the process of labelling related bits of data (such as a line, sentence or paragraph in an interview transcript) using a code that symbolizes or summarizes the meaning of that data.

Choosing a research strategy or strategies

Coding allows related fragments of data from different interviews or observations to be linked together to facilitate the on-going process of analysis by identifying the properties of the data contained in such a data category.

There are three coding stages: the reorganization of data into categories is called **open coding**, the process of recognizing relationships between categories is referred to as **axial coding** and the integration of categories to produce a theory is labelled **selective coding**.

Choosing a research strategy or strategies

Key elements of Grounded Theory are (constant comparison, memo writing, theoretical sampling, theoretical sensitivity and theoretical saturation).

Underpinning coding is the process **of constant comparison**. Each item of data collected is compared with others, as well as against the codes being used to categorize data. This is to check for similarities and differences, to promote consistency when coding data and to aid the process of analysis. Where appropriate, new codes are created and existing codes reanalyzed as new data are collected. Constant comparison promotes the higher levels of analytical coding we referred to earlier because it involves moving between inductive and deductive thinking

Choosing a research strategy or strategies

Another key element that aids the development of grounded theory is **memo writing**. Memos are created throughout a research project to define or make notes about:

- the codes being used;
- how codes change through the research process;
- how codes might be related, leading to the identification of theoretical relationships and the emergence of higher-level codes and categories;
- any other ideas that occur to the researcher that help him or her to develop the research process and analyze the data.

Where you use a Grounded Theory strategy, your collection of self-memos will provide you with a chronological record of the development of your ideas and your project, and show how you arrived at your grounded theory.

Choosing a research strategy or strategies

When using Grounded Theory you will also need to decide how to select cases for your research. As you analyze data, the categories being developed will indicate the type of new cases (e.g. new participants) to select for further data collection. The purpose of sampling is therefore to pursue theoretical lines of enquiry rather than to achieve population representativeness.

As you identify a core theme, relationship or process around which to focus the research, a particular focus will be provided from which to select new cases to collect and analyze further data. This is a form of purposive sampling, known as **theoretical sampling**, which continues until **theoretical saturation** is reached. This occurs when data collection ceases to reveal any new properties that are relevant to a category, where categories have become well developed and understood and relationships between categories have been verified.

Choosing a research strategy or strategies

Grounded Theory is an emergent strategy and researchers wish to be guided by concepts emerging from the data they collect rather than being sensitized by concepts in existing theory. Using this strategy will mean you should avoid being overly sensitized to pre-existing theoretical concepts, to allow yourself to make sense of participants' meanings in the data to guide your research. This is known as **theoretical sensitivity**, where you focus on interpreting meanings by using in vivo and researcher-generated rather than a priori codes to analyze your data and construct a grounded theory.

Theoretical sensitivity means that you must be sensitive to meanings in your data and orientated towards generating a grounded theory from these data. You will, however, need to allow yourself sufficient time later on to link your grounded theory to published theories as you write your research report!

Choosing a research strategy or strategies

Narrative Inquiry

A narrative is a story; a personal account which interprets an event or sequence of events. Using the term 'narrative' requires a distinction to be drawn between its general meaning and the specific meaning used here. A qualitative research interview inevitably involves a participant in storytelling. In this way, the term 'narrative' can be applied generally to describe the nature or outcome of a qualitative interview.

As a research strategy, however, Narrative Inquiry has a more specific meaning and purpose. There will be research contexts where the researcher believes that the experiences of her or his participants can best be accessed by collecting and analyzing these as complete stories, rather than collecting them as bits of data that flow from specific interview questions and which are then fragmented during data analysis.

Choosing a research strategy or strategies

Narrative Inquiry

A narrative is a story; a personal account which interprets an event or sequence of events. Using the term 'narrative' requires a distinction to be drawn between its general meaning and the specific meaning used here. A qualitative research interview inevitably involves a participant in storytelling. In this way, the term 'narrative' can be applied generally to describe the nature or outcome of a qualitative interview.

As a research strategy, however, Narrative Inquiry has a more specific meaning and purpose. There will be research contexts where the researcher believes that the experiences of her or his participants can best be accessed by collecting and analyzing these as complete stories, rather than collecting them as bits of data that flow from specific interview questions and which are then fragmented during data analysis.

Choosing a research strategy or strategies

Narrative Inquiry seeks to preserve chronological connections and the sequencing of events as told by the narrator (participant) to enrich understanding and aid analysis.

This strategy provides the opportunity to connect events, actions and their consequences over time into a 'meaningful whole'. Through storytelling the narrator will also provide his or her interpretation of these events, allowing the narrative researcher to analyze the meanings which the narrator places on events.

Where there is more than one participant providing a personal account of a given context, the narrative researcher will also be able to compare and to triangulate or contrast these narratives.

Choosing a research strategy or strategies

This strategy is generally associated with small, purposive samples because of its intensive and time-consuming nature. It is likely to generate large amounts of data in the form of the narrative account, or of interview transcripts or observational notes. The narratives that emerge may not do so in an easy-to-use structural and coherent form.

The structural elements that are useful to facilitate analysis of narratives:

- What is the story about?
- What happened, to whom, whereabouts and why?
- What consequences arose from this?
- What is the significance of these events?
- What was the final outcome?

Scientific canons of inquiry: reliability and validity

Reliability and validity are central to judgements about the quality of research in the natural sciences and quantitative research in the social sciences. Their role in relation to qualitative research is contested, as we discuss later.

Reliability refers to replication and consistency. If a researcher is able to replicate an earlier research design and achieve the same findings, then that research would be seen as being reliable.

In essence, **validity** refers to the appropriateness of the measures used, accuracy of the analysis of the results and generalizability of the findings:

Scientific canons of inquiry: reliability and validity

- 1 Do the measures being used in the research to assess the phenomenon being studied actually measure what they are intended to – are they appropriate for their intended purpose?
- 2 Are the analysis of the results and the relationships being advanced accurate?
- 3 What do the research findings represent: does the claim about how generalizable they are stand up?

Table 5.5 Threats to reliability

Threat	Definition and explanation
Participant error	Any factor which adversely alters the way in which a participant performs. For example, asking a participant to complete a questionnaire just before a lunch break may affect the way they respond compared to choosing a less sensitive time (i.e. they may not take care and hurry to complete it)
Participant bias	Any factor which induces a false response. For example, conducting an interview in an open space may lead participants to provide falsely positive answers where they fear they are being overheard, rather than retaining their anonymity
Researcher error	Any factor which alters the researcher's interpretation. For example, a researcher may be tired or not sufficiently prepared and misunderstand some of the more subtle meanings of his or her interviewees
Researcher bias	Any factor which induces bias in the researcher's recording of responses. For example, a researcher may allow her or his own subjective view or disposition to get in the way of fairly and accurately recording and interpreting participants' responses

Scientific canons of inquiry: reliability and validity

Reliability is a key characteristic of research quality; however, while it is necessary, it is not sufficient by itself to ensure good-quality research. As indicated earlier, the quality of research depends not only on its reliability but also its validity.

Internal validity refers to the extent your findings can be attributed to the intervention you are researching rather than to flaws in your research design. For example, in an experiment, internal validity would be established where an intervention can be shown statistically to lead to an outcome rather than this having been caused by some other confounding variable acting at the same time. In a questionnaire-based survey, we usually talk about **criterion validity**, that is whether the questions are actually measuring what they are intended to measure, thereby allowing accurate statistical predictions to be made.

Scientific canons of inquiry: reliability and validity

These concepts are associated with positivist and quantitative research and can be applied to causal or explanatory studies, but not to exploratory or purely descriptive studies.

Your research findings would be seen as invalid when a finding has been arrived at falsely or when a reported relationship is inaccurate. There are a number of reasons that might threaten the internal validity of your research.

Table 5.6 Threats to internal validity

Threat	Definition and explanation
Past or recent events	An event which changes participants' perceptions. For example, a vehicle maker recalling its cars for safety modifications may affect its customers' views about product quality and have an unforeseen effect on a planned study (unless the objective of the research is to find out about post-product recall opinions)
Testing	The impact of testing on participants' views or actions. For example, informing participants about a research project may alter their work behaviour or responses during the research if they believe it might lead to future consequences for them
Instrumentation	The impact of a change in a research instrument between different stages of a research project affecting the comparability of results. For example, in structured observational research on call centre operations, the definitions of behaviours being observed may be changed between stages of the research, making comparison difficult
Mortality	The impact of participants withdrawing from studies. Often participants leave their job or gain a promotion during a study
Maturation	The impact of a change in participants outside of the influence of the study that affects their attitudes or behaviours etc. For example, management training may make participants revise their responses during a subsequent research stage
Ambiguity about causal direction	Lack of clarity about cause and effect. For example, during a study, it was difficult to say if poor performance ratings were caused by negative attitudes to appraisal or if negative attitudes to appraisal were caused by poor performance ratings

Scientific canons of inquiry: reliability and validity

External validity is concerned with the question: can a study's research findings be generalized to other relevant contexts? For example, an entrepreneur may ask, 'Can the findings from the research study in one organization also be used to inform policy and practice in my organizations?'

Another entrepreneur may ask, 'Are the findings from the survey in the Finance and Resources Department applicable to other departments in the organization?' Just as researchers take great care when selecting a sample from within a population to make sure that it represents that population, researchers and their clients are often concerned to establish the generalizability of their findings to other contexts. Even in such cases, however, it will be necessary to replicate the study in that other context, or contexts, to be able to establish such statistical generalizability.



مجموعة جامعة
الجميع الذكية
للتعليم القابضة

MIDOCEAN
UNIVERSITY
BY EVERYONE'S SMART UNIVERSITY



Thank You

