Lecture 5:
Understanding research philosophy and approaches to theory development

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Course Marks Breakdown

Method of Assessment	Percentage Weighting	Learning Outcome Being Assessed	Date of Submission
CA1	80%	All 5	9th Week
CA2	20%	All of 5	12th Week

CA1:

Assessment Title & Description:	Assignment 1
Task:	Research Proposal
MIMLOs being assessed:	1,2,3,4,5
Individual/Group:	Individual
Assessment Weighting:	80%
Issue Date:	2nd week
Submission Date: (All assignments must be submitted through Moodle)	9th week
Feedback Date:	11th week

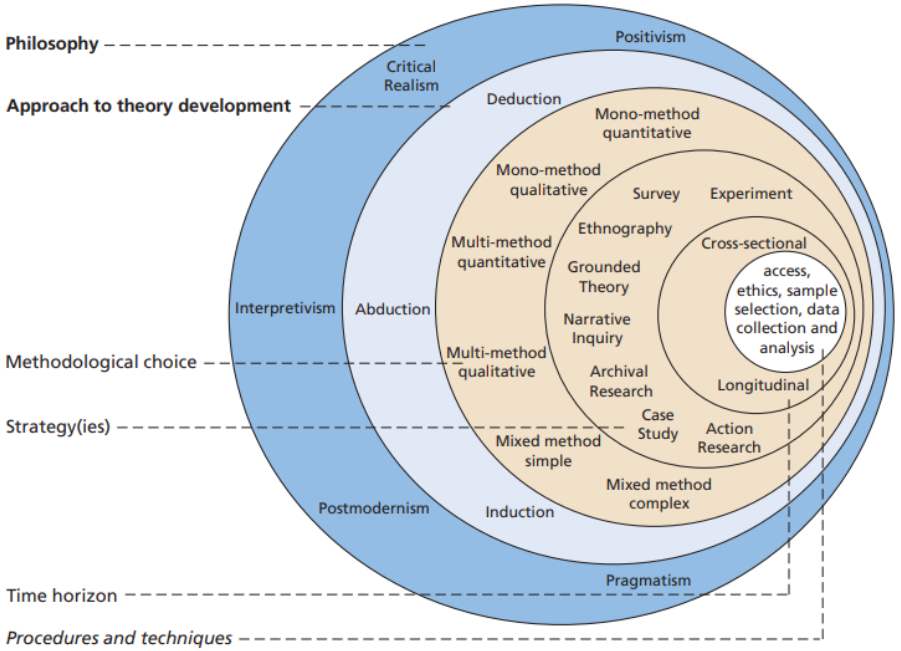
Assessment Title & Description:	Assignment 2
Task:	Research Presentation (based on proposal)
MIMLOs being assessed:	1,2,3,4,5
Individual/Group:	Individual
Assessment Weighting:	20%
Issue Date:	6th week
Submission Date: (All assignments must be submitted through Moodle)	12th week

Agenda

- explain the relevance of **ontology, epistemology, and axiology** to business research;
- describe the main research paradigms that are significant for business research;
- explain the relevance for business research of philosophical positions such as **positivism, critical realism, interpretivism, postmodernism, and pragmatism**;
- reflect on your own **epistemological, ontological, and axiological stance**;
- reflect on and articulate your own philosophical position and approach to theory development in relation to your research;
- distinguish between **deductive, inductive, abductive and retroductive approaches** to theory development.
- recognise the importance of your decisions when designing research and the need to achieve **methodological coherence** throughout your research design;
- identify the differences between **exploratory, descriptive, explanatory and evaluative research**, and recognise the purpose(s) of your research design;
- distinguish and choose between **quantitative, qualitative and mixed methods** research designs;
- develop an appropriate **research strategy or strategies** and achieve **coherence throughout** your research design;

Research onion

- This chapter explores research paradigms, philosophies, and theory development approaches, providing a reflexive tool for researchers to articulate their values and align them with major philosophies in business and management research.
- It introduces a conceptual model, the "research onion," encompassing factors such as data access, ethics, sample selection, and analysis. The chapter focuses on the outer layers of the onion, discussing philosophy and theory development approaches.
- The **research onion** is a conceptual model used in research methodology, particularly in social sciences and **business research**. It represents **various layers of research considerations** that researchers need to address when designing and conducting a study. These layers typically include aspects such as **research philosophy, approach to theory development, methodological choices, strategy, time horizon, procedures, and techniques**. The metaphorical onion illustrates that these layers are interconnected and that decisions made at one layer influence the choices at other layers.



Overview

- Research philosophy involves developing knowledge and is crucial in addressing **specific problems** or questions in a particular field.
- It sets the worldview for research, influencing the interpretation of data based on assumptions within that worldview.

- Researchers make various assumptions throughout their research, including **ontological** (about realities encountered), **epistemological** (about human knowledge), and **axiological** (about the influence of values on the research process).

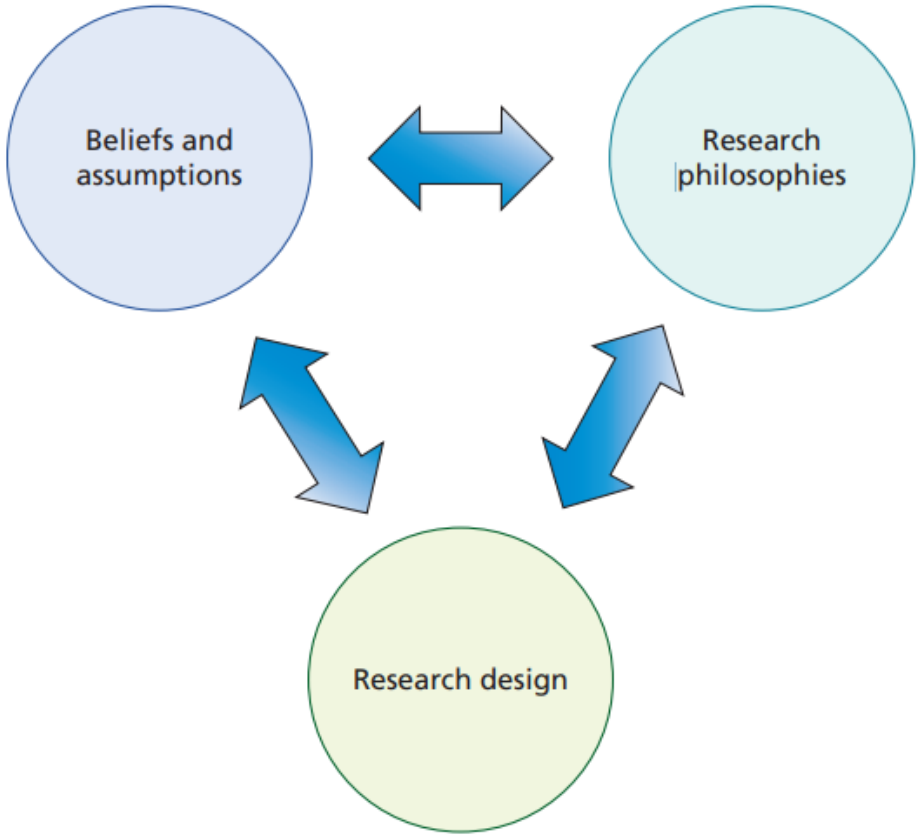
- These assumptions shape the understanding of research questions, methods used, and interpretation of findings.

- **A well-thought-out** and consistent set of assumptions form a **credible research philosophy**, influencing **research questions**, methodological choices, **strategy, data collection procedures, analysis techniques, and reporting.**

- Epistemological and ontological assumptions must align with the research design and methods to ensure trustworthy and useful research findings.

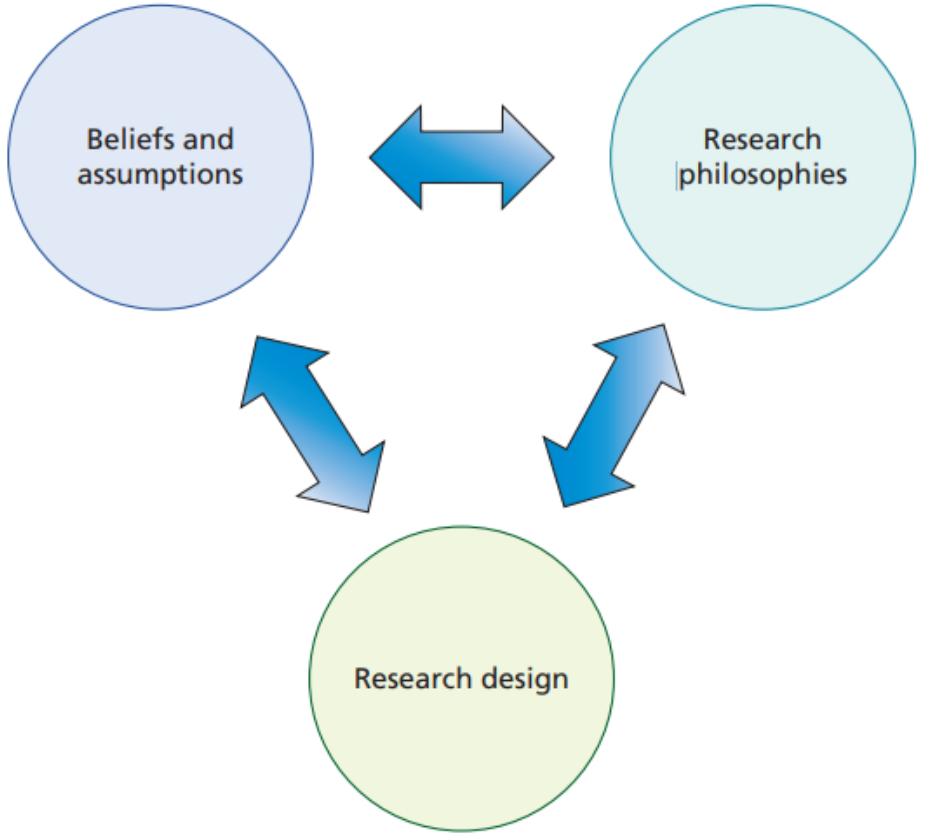
- Exploring and understanding one's research philosophy involves developing reflexivity, questioning one's thinking, and actively **shaping the relationship between personal beliefs and research design**.
- The development of research philosophy is expressed through the research design, involving active and informed philosophical choices.

Research Philosophy



Research Philosophy

- Business and management researchers do not universally agree on the best philosophy, reflecting the diverse nature of the field drawing from various disciplines.
- **Pluralism and unificationism** are two opposing perspectives: **pluralists** find diversity enriching, while **unificationists** advocate for a single strong research philosophy for cohesion.
- This chapter adopts a **pluralist approach**, recognizing that each research philosophy contributes uniquely to business and management research.



Assumptions must be said outright!

Ontological Assumptions

Ontology involves assumptions about the nature of reality.
Example: Different ontological assumptions can shape how researchers perceive and study organizational phenomena, influencing choices of research objects and topics.

Epistemological Assumptions

Epistemology relates to assumptions about knowledge, what is considered valid and acceptable, and how knowledge is communicated.
Example: Various epistemologies, such as positivism or interpretivism, impact the choice of research methods, affecting the type of evidence considered valid and the depth of understanding gained.

Axiological Assumptions

Axiology deals with the role of values and **ethics** in the research process.
Example: Researchers face choices about whether to view the impact of their values positively and must decide how to handle their own values and those of the subjects being researched. This influences the choice of data collection procedures and the overall research philosophy.

Research Assumptions

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	⇔	**Subjectivism**
Ontology	• What is the nature of reality?	Real	⇔	Nominal/decided by convention
	• What is the world like?	External	⇔	Socially constructed
		One true reality (universalism)	⇔	Multiple realities (relativism)
		Granular (things)	⇔	Flowing (processes)
		Order	⇔	Chaos
Epistemology	• How can we know what we know?	Adopt assumptions of the natural scientist	⇔	Adopt the assumptions of the arts and humanities
	• What is considered acceptable knowledge?	Facts	⇔	Opinions
	• What constitutes good-quality data?	Numbers	⇔	Written, spoken and visual accounts
		Observable phenomena	⇔	Attributed meanings
	• What kinds of contribution to knowledge can be made?	Law-like generalisations	⇔	Individuals and contexts, specifics
Axiology	• What is the role of values in research?	Value-free	⇔	Value-bound
	• Should we try to be morally-neutral when we do research, or should we let our values shape research? How should we deal with the values of research participants?	Detachment	⇔	Integral and reflexive

Research Assumptions- House market prediction machine learning model

Ontological Assumptions

•**Example:** The training dataset is representative of the broader population and its distribution remains consistent over time.
•**Rationale:** Assumes a certain **nature of reality** about the distribution of data and its stability over time.

Axiological Assumptions

•**Example:** Assumes that the impact of your own values and beliefs on your research is viewed as a positive thing.
•**Rationale:** Involves a value-based decision about how one perceives the influence of personal values on the research process.

Variety of Epistemologies

•**Example:** Assumes different types of knowledge (numerical data, textual and visual data, narratives) can all be considered legitimate.
•**Rationale:** Involves an epistemological stance regarding the legitimacy of various forms of knowledge in business and management research.

Research Assumptions- House market prediction machine learning model

Feature Assumptions

Assumption: The selected features (e.g., square footage, number of bedrooms, location) adequately capture the factors influencing house prices.
Rationale: Assumes that the chosen features are relevant and sufficient predictors of house market trends.

Data Distribution Assumptions

Assumption: The training dataset is representative of the broader population and its distribution remains consistent over time.
Rationale: Assumes that patterns learned from historical data generalize well to predict future house prices.

Temporal Assumptions

Assumption: The historical trends observed in the training data will continue in the future.
Rationale: Assumes that the factors influencing house prices do not undergo significant changes over time.
Linear Relationship Assumptions:

Assumption: Assumes a linear relationship between the chosen features and the target variable (house prices).
Rationale: Assumes that the influence of each feature on house prices is proportional and can be adequately captured by linear models.

Independence of Observations Assumptions

Assumption: Assumes that observations in the dataset are independent of each other.
Rationale: Assumes that the value of one observation does not influence the value of another, which is important for the validity of statistical analyses.

Stationarity Assumptions

Assumption: Assumes that the statistical properties of the data (e.g., mean, variance) do not change over time.
Rationale: Assumes that the relationships between features and target variable remain constant over the prediction period.

Assumption about Target Variable Distribution

Assumption: Assumes that the distribution of house prices is consistent with the chosen model's assumptions (e.g., normal distribution).
Rationale: Some models assume a specific distribution of the target variable for accurate predictions.

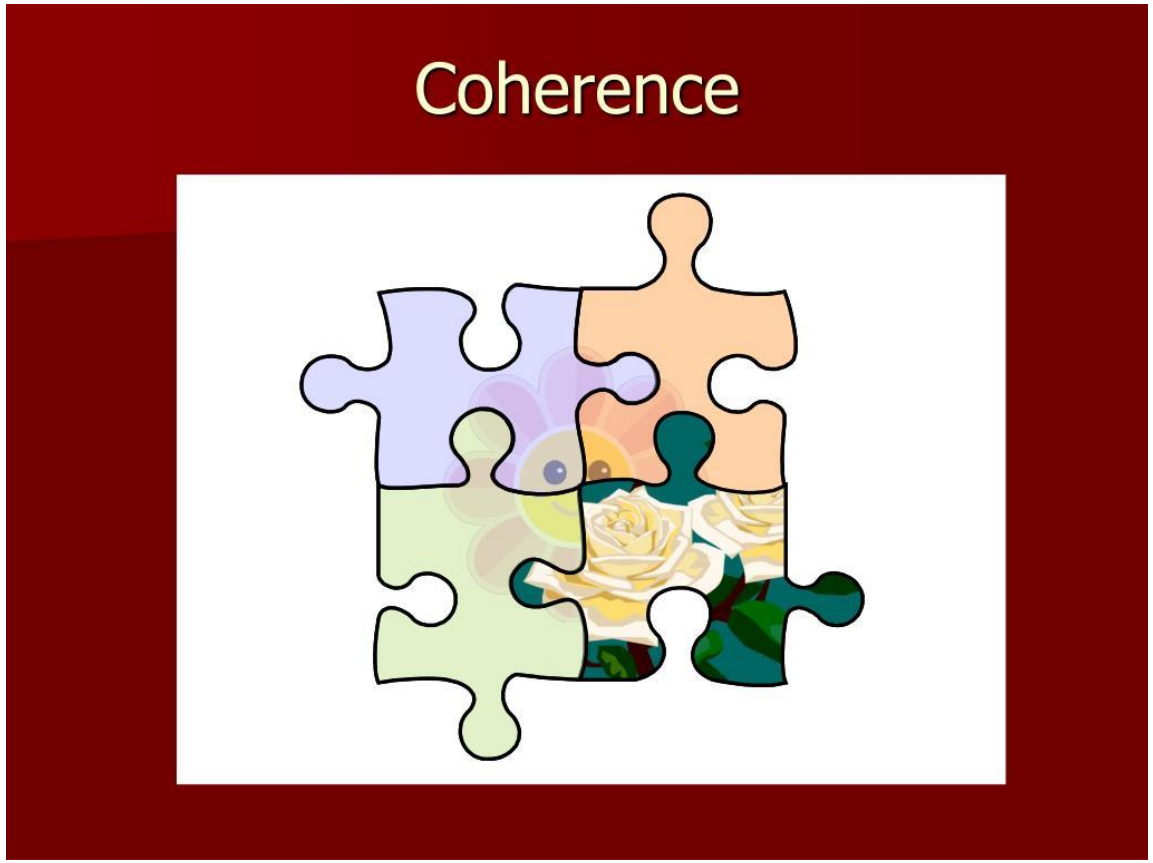
Take 5 minutes to list all the assumptions that might be relevant in your research project

The regulation perspective . . .	⇔	The radical change perspective . . .
. . . *advocates the* status quo	⇔	. . . *advocates* radical change
. . . *looks for* order	⇔	. . . *looks for* conflict
. . . *looks for* consensus	⇔	. . . *questions* domination
. . . *looks for* integration and cohesion	⇔	. . . *looks for* contradiction
. . . *seeks* solidarity	⇔	. . . *seeks* emancipation
. . . *sees the* satisfaction of needs	⇔	. . . *sees* deprivation
. . . *sees the* actual	⇔	. . . *sees the* potential

Achieving a coherent research design

•The research design outlines the plan for answering the research question, achieving the research aim, and meeting objectives, including specifying data sources, collection methods, analysis techniques, ethical considerations, and potential constraints.

•It should demonstrate thoughtful consideration of various elements, driven by the overarching research question, and aligned with the chosen research philosophy and methodological approach.



Types of studies

Exploratory study

- An exploratory study explores or clarifies understanding of an issue, problem or phenomenon . The **overarching research question** is likely to start 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' .
- 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.

Descriptive study

- A **descriptive study** is designed to gain an accurate profile of events, persons or situations.
- Research questions that are descriptive are likely to begin with, or include, 'Who', 'What', 'Where', 'When' or 'How'.
- Questions that you ask during data collection are also likely to start with, or include, 'Who', 'What', 'Where', 'When' or 'How'
- **A descriptive study can extend an exploratory study** or **contextualise** an explanatory study. However, 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.
- **Project tutors** are often 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 synthesising ideas**. These are **higher-order skills** than those of accurate description.
- Description in business and management 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 utilises description it is likely to be a precursor to explanation, a descripto-explanatory study.

Explanatory study

- An explanatory study establishes causal relationships between variables, the overarching research question being 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 understand it or explain relationships between variables.

- You could analyse these data quantitatively in order to get a clearer view of the statistical significance of the relationship. Alternatively, you might collect further qualitative data by asking machine operators why some scrap rates are higher than others?

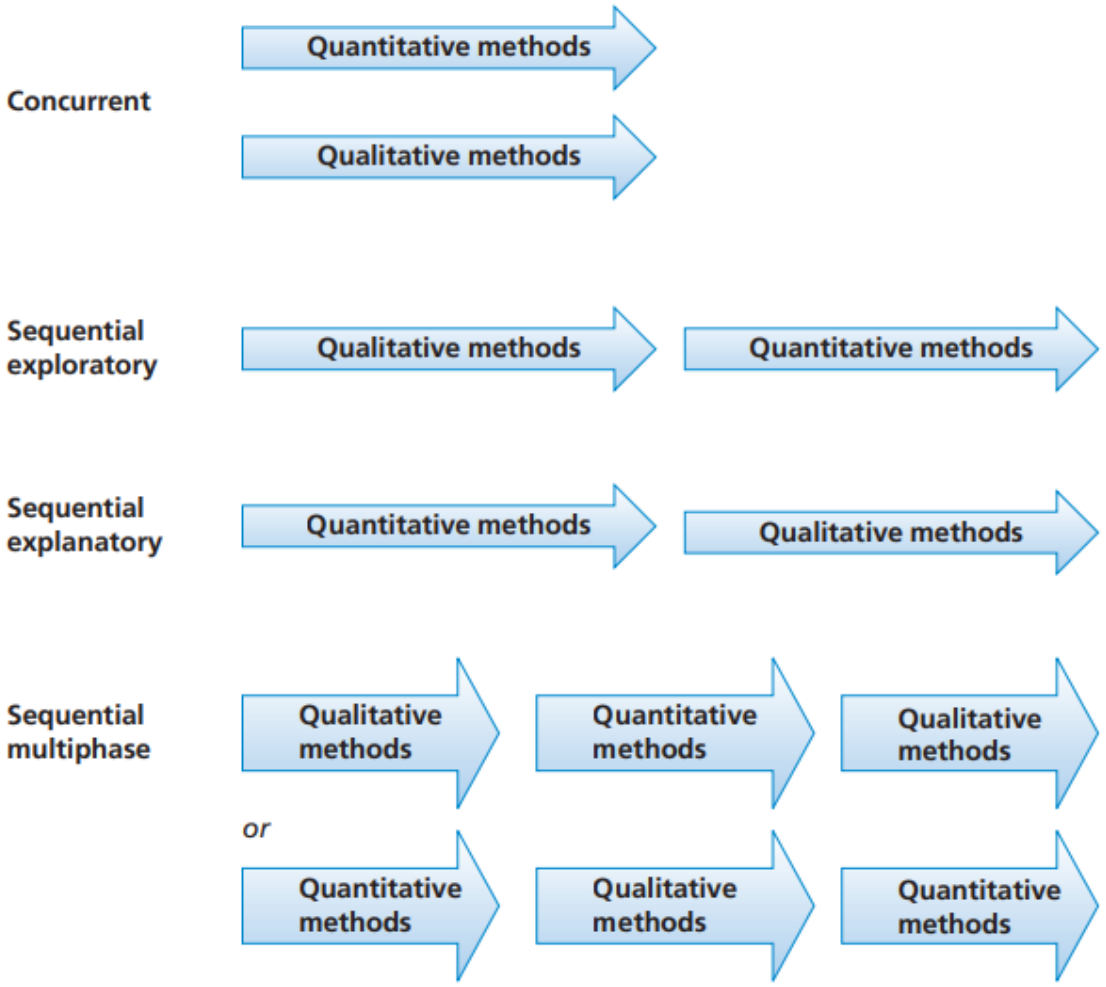
Evaluative studies

- **An evaluative study** finds out **how well** something works. Investigative research questions that seek to evaluate answers are likely to begin with ‘How’, or include ‘What’, in the form of ‘To what extent’.
- Evaluative studies in business and management are likely to be concerned with assessing the effectiveness of an organisational or business strategy, policy, programme, initiative or process; for example, evaluating a marketing campaign, a personnel policy, a costing strategy, or the delivery of a support service.
- Questions that you ask during data collection will be likely to start with, or include, ‘What’, ‘How’ or ‘Why’.
- It can produce a theoretical contribution where emphasis is placed on understanding not only ‘how effective’ something
- is, but also ‘why’, comparing this explanation to existing theory

Mixed studies

- Mixed methods research designs integrate the use of quantitative and qualitative data collection procedures and analysis techniques in the same research project.
- Researchers using mixed methods have a **pluralist view** of research methodology. They believe **that flexibility in selection and use of methods** (both quantitative and qualitative) is legitimate and that researchers should be tolerant of each other's preferred methods even when they differ from their own.

Mixed studies



Experiments and experimental design

- An experiment studies the probability of a change in an independent variable causing a change in another, dependent variable.
- This strategy owes much to natural science, although it features strongly in psychological and social science research, and, with its roots in natural science, laboratory-based research, is often seen as the ‘gold standard’ against which the rigor of other strategies is assessed

Hypothesis

- In an experiment you hypothesise **whether or not a relationship will exist between the variables**, formulating two opposing hypotheses that could explain the relationship and testing these statistically.
- In a standard experiment two types of **(opposing) hypotheses** are formulated and tested: **the null hypothesis** and the **alternative hypothesis**.
- The null hypothesis is the explanation **that there is no relationship or difference between the variables**, for example:

User satisfaction of online customer support is not related to the amount of training support staff have received. The hypothesis (also referred to as the alternative hypothesis) is the explanation that there is a relationship or difference between the variables, for example: User satisfaction with online customer support is related to the amount of training support staff have received.

- The survey strategy is usually associated with a deductive research approach and is most frequently used to answer ‘what’, ‘who’, ‘where’, ‘how much’ and ‘how many’ questions.
- It therefore tends to be **used for descriptive, exploratory, and explanatory research**, suggesting possible reasons for relationships between variables and producing models of these relationships.
- **Survey strategies using questionnaires** are popular as they enable the collection of standardised data from a large number of respondents economically, allowing easy comparison.
- 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 target population at a lower cost than collecting the data from them all

Experiments- Take 5 minutes to list the possible experiments you can conduct in your research

Anticipating potential ethical issues

Harm

Your choice of topic and how you collect your data will be governed by the need to minimise the risk of harm, embarrassment, pain, or any other material disadvantage to those involved in the research

Covert research

You may also need to consider whether you should collect data covertly, in other words where those you are researching are unaware they are the subject of research, and so have not consented.

Anticipating potential ethical issues

Take 5 minutes to write down at least 5 potential ethical issues that may arise in your research

How to validate your overall research

You need some measures to measure success but →

1. **Do the measures being used in the research to assess the 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 signify? Can the assertion regarding their generalizability withstand scrutiny?**

Write up a reflection 100-200 words based on this class

Box 1.4 Checklist of questions to ask yourself when making reflective diary entries

In relation to each experience. . .

- ✔ What has gone well?
  - Why has it gone well?
  - So what does this mean in relation to my research?
- ✔ What has not gone so well?
  - Why has it not gone so well?
  - So what does this mean in relation to my research?
- ✔ What adjustments will/did I make to my research following my reflection?

Looking back. . .

- ✔ How could I have improved on the adjustments made?
  - Why?
- ✔ What key themes have emerged over several entries?
- ✔ How will I apply what I have learnt from each experience to new situations?