

SRS LEARNING RESOURCES / METHODOLOGY

Research Design Decision Tree

A guided decision map for choosing and defending an approach to research.

Core principle

The research question drives the design—not familiarity with a statistical test, a software package, or a preferred label. This tool is a reasoning aid, not an automatic methodology selector.

How to use this workbook

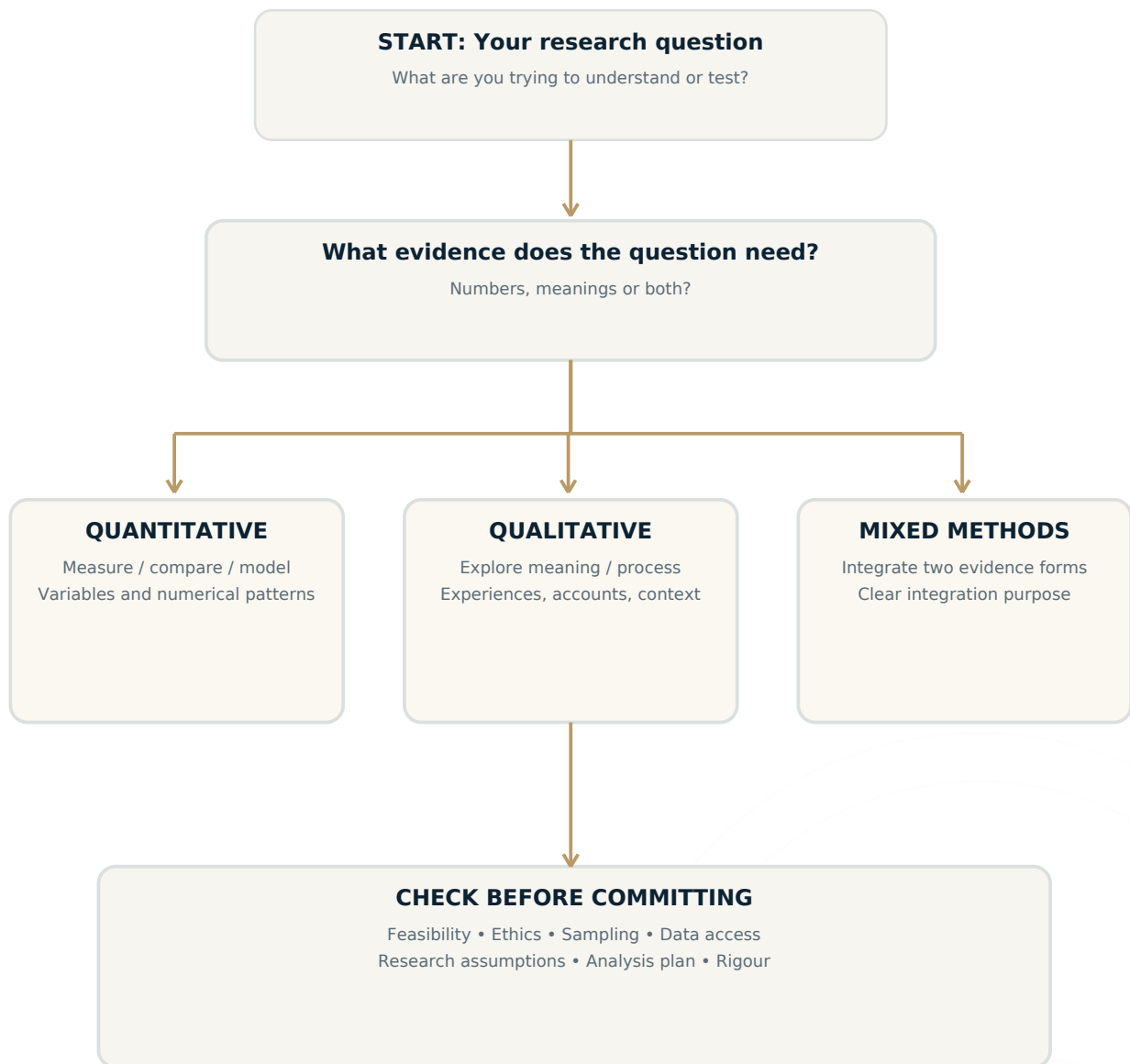
- Follow the map to identify the kind of evidence your question calls for.
- Read the corresponding design pathway and its cautions.
- Compare your choice with the worked examples.
- Complete the decision record and discuss it with your supervisor or team.

Scope: Introductory guidance for students and researchers. It does not replace disciplinary standards, methodological literature, ethical review or specialist advice.

01 / START WITH THE QUESTION

The decision map

Follow the arrows as prompts for discussion. Some projects need iterations or alternatives that this simplified visual cannot display.



02 / CLARIFY THE TASK

First define what you need to know

Question stem	Likely evidence emphasis	Reminder
How much? How often? Is X associated with Y?	Measurements and comparable observations	Quantitative does not automatically imply causal inference.
How do people experience or interpret X?	Narratives, observations, documents, interaction	Qualitative work also requires a rigorous design.
How common is X, and why does it happen?	Both numerical patterns and contextual explanation	Integrate evidence deliberately, not just in parallel.

The design also depends on the aim of your study: description, exploration, explanation, evaluation, prediction, intervention or theory development.

Write your research question and purpose

03 / NUMBERS AND MEASUREMENT

When quantitative design fits

- Specify variables, units, populations and time frames.
- Decide whether your goal is description, comparison, association, prediction or causal inference.
- Plan sampling, measurement quality, missing-data handling and analysis before collecting data.
- Match conclusions to the design: association is not automatically causation.

Worked example

Question: Among postgraduate students at one university, is weekly study time associated with examination scores?

Possible design: Observational cross-sectional quantitative study with specified measures.

What it can address: An association in the sampled context, subject to measurement quality and confounding.

What it cannot prove: That extra study hours caused higher marks.

Decision checkpoint

Check	Your notes
What will be measured and how?	_____
What population and sampling approach?	_____
What analysis can answer this question?	_____

04 / MEANING AND CONTEXT

When qualitative design fits

- Clarify whether the goal is to explore experiences, meanings, processes, interactions or contextual factors.
- Choose an appropriate tradition or approach, for example qualitative description, case study, ethnography or phenomenology where justified.
- Plan purposeful sampling, data generation, reflexivity, ethics and transparent analytic procedures.
- Explain how credibility, depth, variation and context will be evaluated.

Worked example

Question: How do first-generation postgraduate students describe the challenges of seeking academic supervision?

Possible design: Qualitative interviews with purposive sampling and a clearly explained analytic strategy.

What it can address: Participants' accounts and interpreted patterns within context.

What it cannot establish alone: The prevalence of these experiences across all postgraduate students.

Decision checkpoint

Check	Your notes
Whose perspectives matter?	_____
What forms of data are appropriate?	_____
What analysis and reflexivity plan?	_____

05 / INTEGRATION IS THE REASON

When mixed methods fits

A mixed-methods design needs a substantive reason to use and integrate qualitative and quantitative evidence. Simply including a survey and some interviews is not sufficient justification.

Common purpose	Example
Explanatory sequential	A survey identifies a pattern; follow-up interviews investigate possible explanations.
Exploratory sequential	Interviews help develop concepts or an instrument later examined quantitatively.
Convergent	Different forms of evidence are collected and then compared or integrated.

Worked example

Question: What proportion of students use academic support services, and how do users explain barriers to access?

Possible design: Survey for utilisation patterns plus interviews exploring contextual barriers, with explicit integration at interpretation.

Integration point: Compare whether interview themes help explain or complicate survey patterns.

Key feasibility question

Can you adequately resource, analyse and integrate both strands? If not, a well-designed single-method study may be stronger.

06 / WORKED DECISION RECORD

Compare the alternatives

Dimension	Example A	Example B
Question	Is study time associated with marks?	How do students experience supervision?
Main evidence	Measured study time and scores	Interview accounts and context
Likely approach	Quantitative observational	Qualitative interview study
Principal limitation	Confounding; no causal proof	No population prevalence estimate
Needed justification	Measurement, sampling, model	Sampling, interpretation, reflexivity

A common mistake: "I will use mixed methods because it is more comprehensive."

A stronger justification: "The study requires a prevalence estimate and an explanation of differing experiences, and the two forms of evidence will be integrated to address the same overarching question."

Three tests for your chosen design

- Fit: does it address the question and intended claims?
- Rigour: does it include appropriate evidence quality and analytic safeguards?
- Feasibility: are recruitment, access, skills, ethics, time and resources realistic?

Your research design decision record

1. What is the exact research question?

2. What kind of evidence would answer it?

3. What design and methodological approach are you considering?

4. Why is this design a better fit than plausible alternatives?

5. What are the main limitations, ethical issues and feasibility constraints?

08 / FINAL QUALITY CHECKLIST

Before you finalise your design

- ☐ The research question, objectives and proposed evidence agree.
- ☐ The selected approach is justified rather than merely named.
- ☐ The population, setting and sampling logic are explained.
- ☐ Data collection tools fit the concepts or experiences being studied.
- ☐ The analysis strategy can support the intended conclusions.
- ☐ Researcher reflexivity or measurement quality is addressed as appropriate.
- ☐ Ethics, privacy, consent and access have been considered.
- ☐ Time, skills and resources make the plan realistic.
- ☐ Expected limitations are stated without exaggerating what the design proves.
- ☐ For mixed methods, the purpose and point of integration are explicit.

Final prompt: “We chose [design] because our question asks [purpose]; we need [evidence]; we will examine it through [sampling / collection / analysis]. The main limitations are [limitations], so our claims will be restricted to [scope].”

Further reading (starting points)

Creswell, J. W. & Creswell, J. D. Research Design; Maxwell, J. A. Qualitative Research Design; and relevant field-specific methods guidance. Use the editions prescribed by your programme.