

Different types of research

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- **To distinguish between inductive and deductive research, and to understand their nature and characteristics.**
- **To acknowledge the purposes of basic, applied and contracted research.**

Recap: What is “research”?

- Systematic means of **problem solving**: obtaining, analyzing and confirming new **and reliable knowledge** (Bruce W. Tuckman, B. W. 1978 Conducting Educational Research).
- Research includes “search”, it asks for the analysis of yet unstructured material. It is *not* a write-up of selected sources or a summary of what we already know.
- **Key features:**
 - **Novelty** of both, the problem and the knowledge that will be generated
 - Reliable inquiry
 - Systematic approach – So there is an important element of justification why, how and what you inquire



Recap: Towards a research proposal

Item of research project	Element	Purpose
Topic	Topic title	Can an expert sense what questions you might approach?
Topic	Research questions (and objectives)	What are you trying to find out and which concepts does this relate to?
Justification	Significance (background and relevance)	Why important?
Justification, Instrument	Object of study: Selection criteria, Sampling design	What data will be collected, how and why? Is the method robust?
Instrument	Research approach (in detail)	Credible approach? Established and accepted within discipline?
	Variables, Guiding questions or Hypotheses	What measurements and operationalisation will be made?
	Analytic approach, Complimentary secondary information and its context, Software	How will the findings be derived systematically and be used for rigour analysis?
Project management	Time frame, Milestones	To judge whether the project is on track and making progress

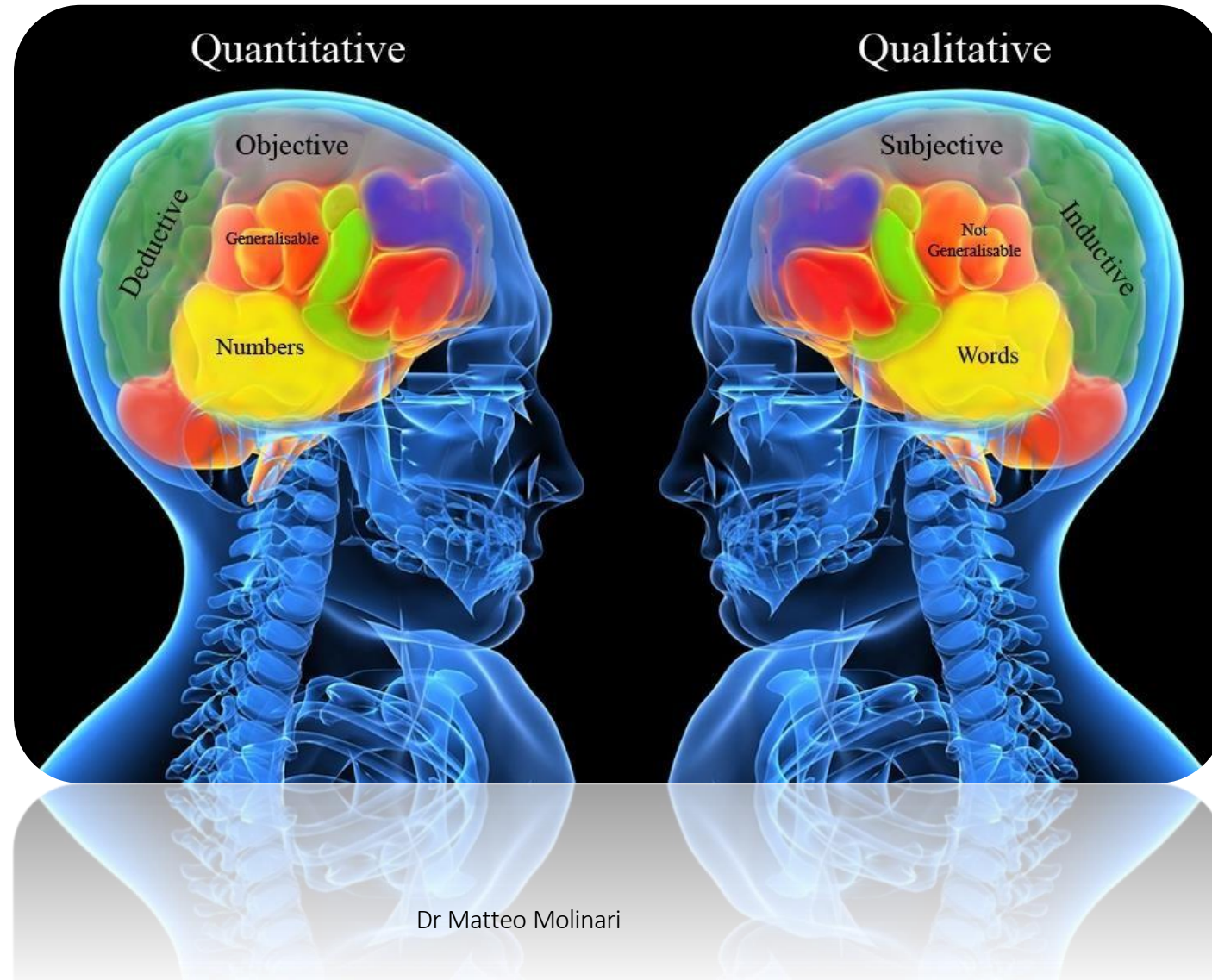
Basic research

- To expand current basis of theoretical, scientific knowledge
- Developing “true statements” in terms of generalisation and logics / pushing the research frontier

Applied research

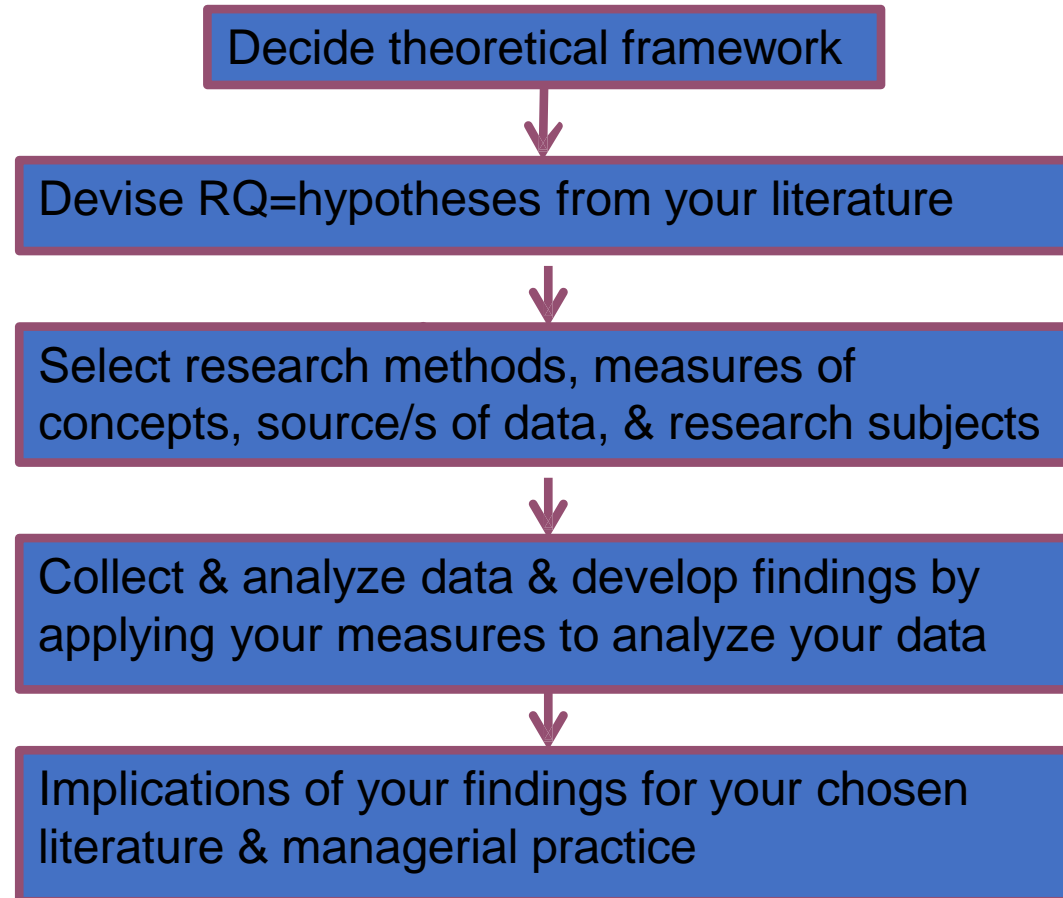
- Solve practical problems
 - Providing not necessarily radically new knowledge but new techniques or practices
- ➔ Consultancy Project module pursues applied research agenda

What is deductive vs inductive research?



Doing quantitative research

Five Key Stages:



Checklist: Key elements of a deductive/quantitative project

Introduction

- Positioning
- Purpose
- Argument
- Organizing

Literature Review

- Conceptual scope
- Definitions
- Existing explanations
- Critique
- Your focus

Hypotheses

- Summary of argument
- Overview of model
- List of hypotheses

Method

- Logic of research design
- Description of data – context, units of analysis, site, sample, appropriateness
- Description of measurement &/or observation procedures
- Validity & reliability tests
- Analytical procedures

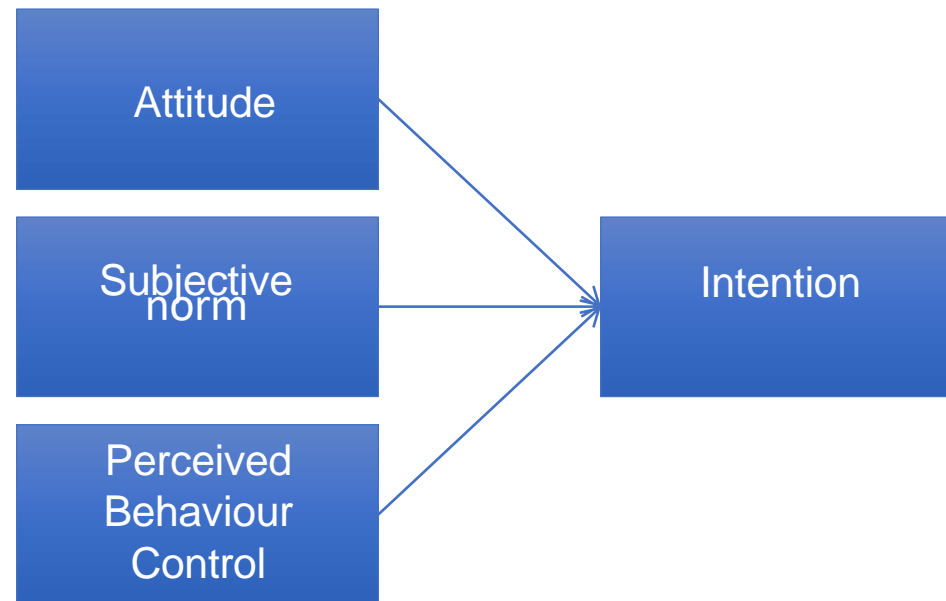
Results

- Descriptive
- Statistical or qualitative patterns
- Inferences & implications

Discussion

- Summary & interpretation of results
- Implications for your literature
- Implications for your practice
- Limitations of your project
- Future research
- Conclusion

Example of “cause-effect” model



- Measurement

- How do we measure a concept (broken down into variables, indicators, and/or factors)? How valid and reliable is/are our measurement/s? Devise and use indicators to measure a concept - say, if you want to measure job satisfaction - where you cannot identify direct measures.

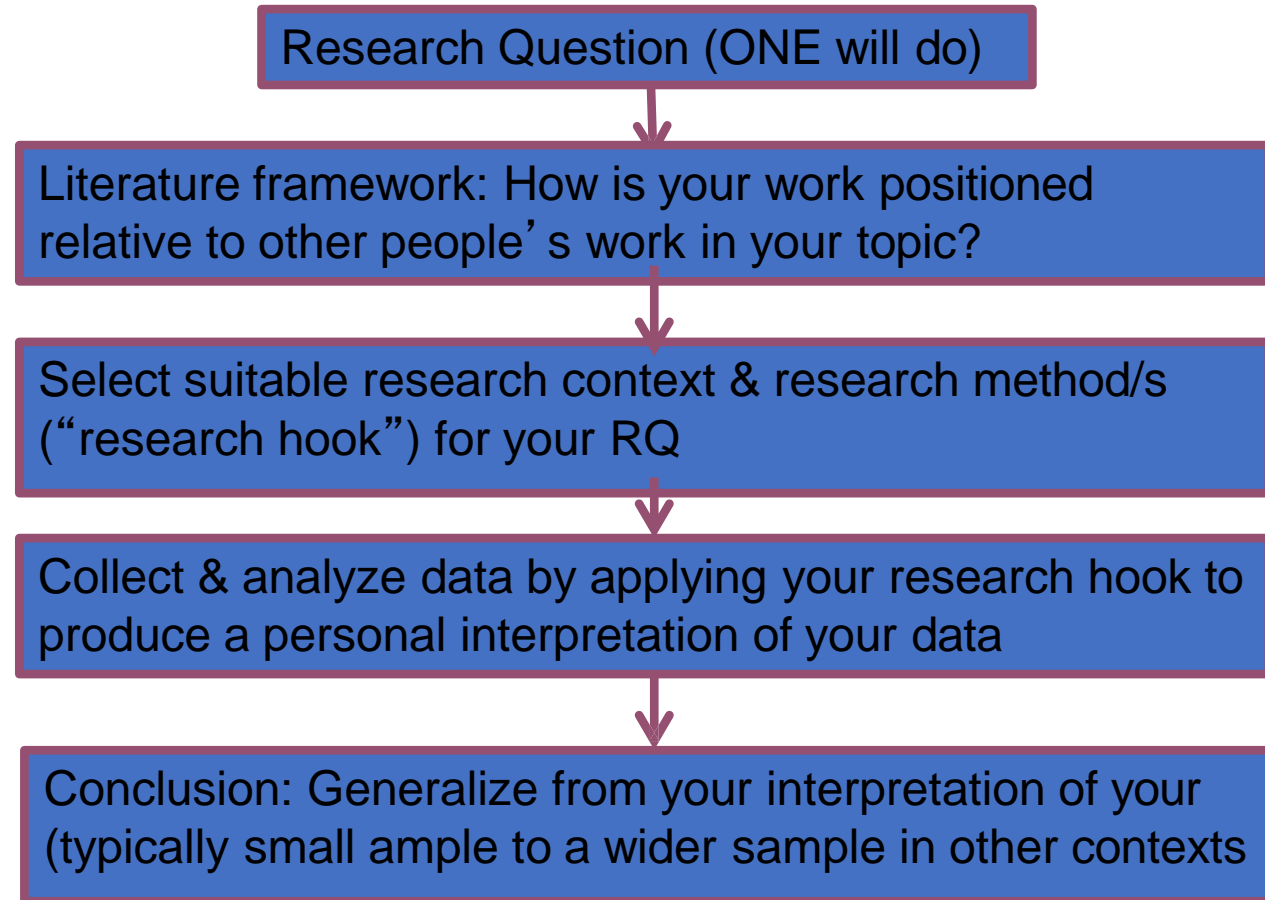
- Causality

- How may we explain the phenomenon? Which is the cause and which is the effect? Again, how reliable is/are our causal inferences? The greater the reliability of the research design, the less the potential variability (“subjectivity”) in interpreting the research findings and therefore the higher the quality of the research, as perceived by quantitative researchers.

- Generalizability
 - How may the research findings be generalized beyond a particular research context? Results can be inferred to a wider sample depending on the representativeness of the researched sample (“probability [random] sampling”).
- Replicability
 - How may research biases be reduced? How may research methods be replicated and similar results obtained by other independent researchers?

Doing qualitative research

Also Five Key Stages:



Checklist B: Key elements of an inductive/qualitative project

Introduction

- Positioning
- Purpose
- Argument
- Organizing

Literature Review

- Conceptual scope
- Definitions
- Existing explanations
- Critique
- Open questions = current focus

Method

- Logic of research design
- Description of data: Context, units of analysis, site, sample & suitability
- Description of observation procedures
- Analytical procedures

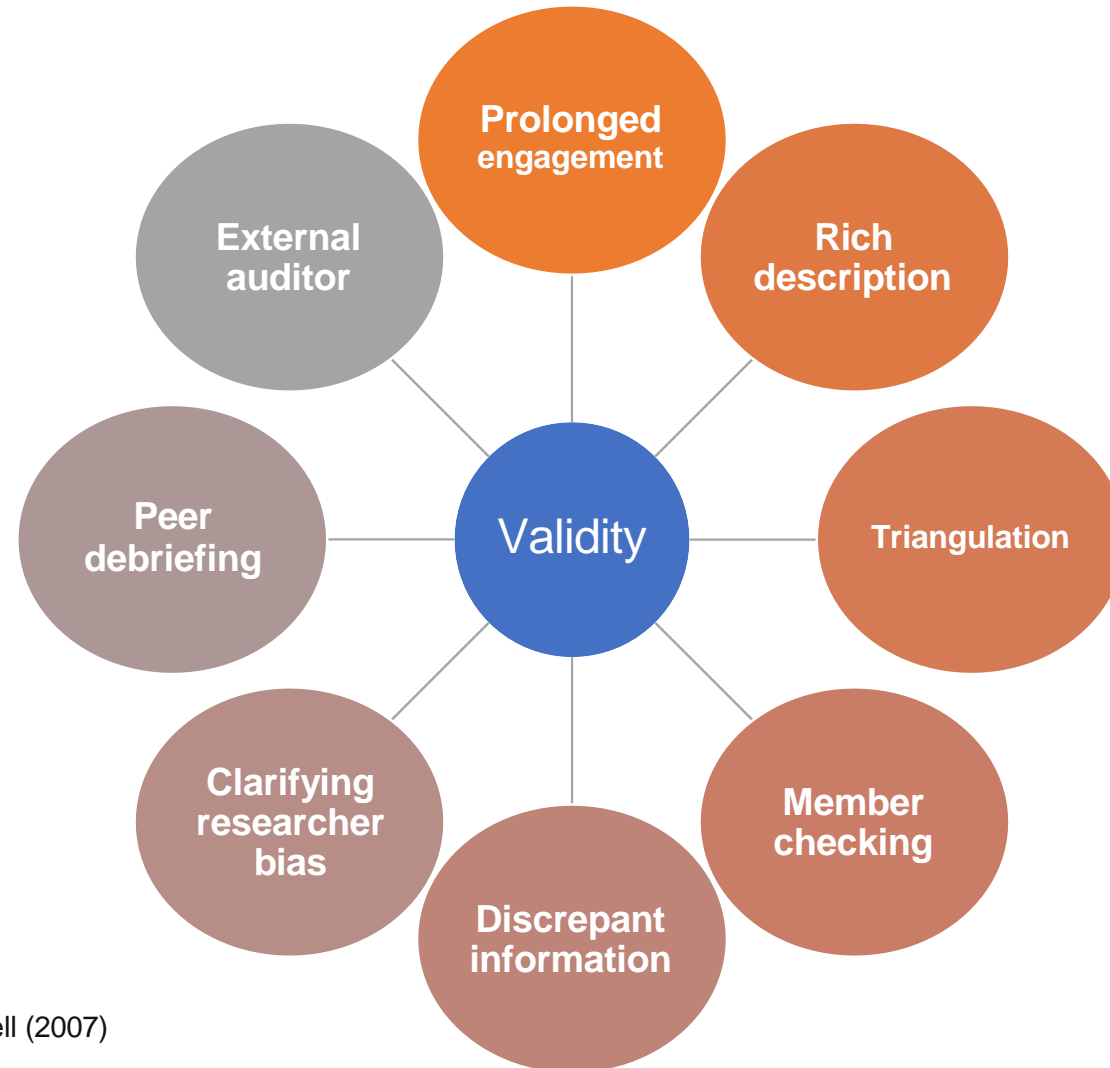
Results

- Descriptive
- Qualitative patterns
- Inferences and implications

Discussion

- Summary of results & relation to literature
- Propositions
- Implications for your literature
- Implications for your practice
- Limitations of the project
- Future research
- Conclusions

Strategies for validity in qualitative research



Source: Creswell (2007)

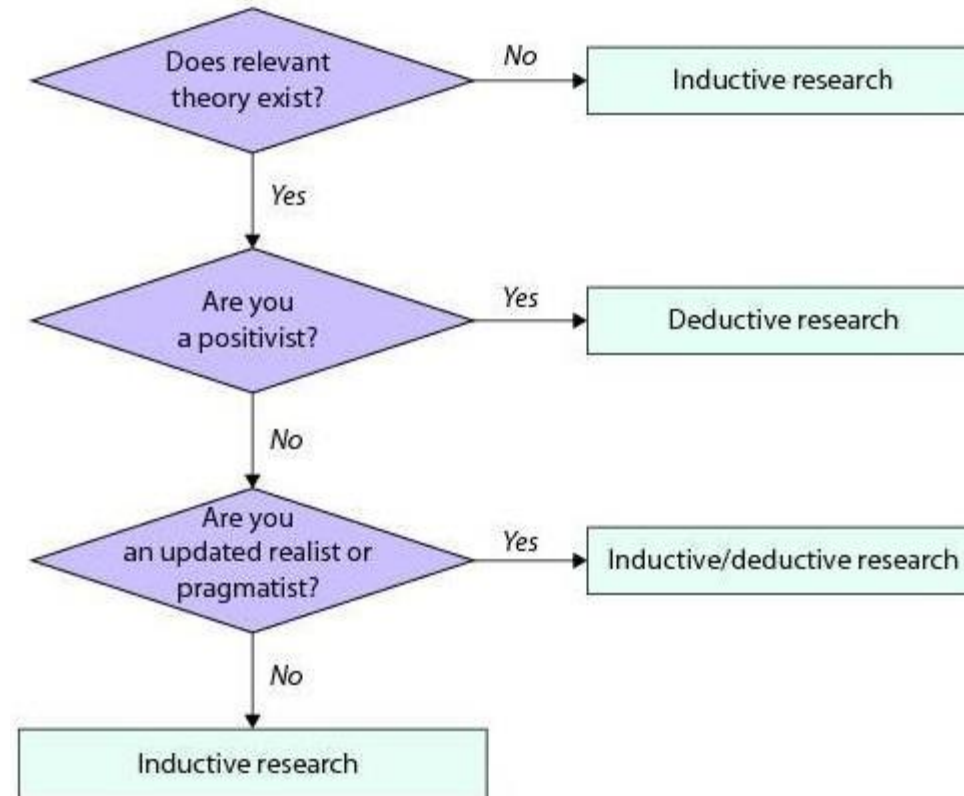
Summary: quantitative vs qualitative research

	Quantitative	Qualitative
Focus	<ul style="list-style-type: none"> Quantity, frequency and magnitude Researcher's point of view Researcher is distant 	<ul style="list-style-type: none"> Quality of meaning and experience Participants' points of view Researcher is close
Goals	<ul style="list-style-type: none"> Predict, control, confirm or test in an artificial setting/environment. Generalisation 	<ul style="list-style-type: none"> Describe and explore in a natural setting/environment Contextual understanding
Design characteristic	Structured, predetermined	Flexible, evolving and emergent
Sampling	Large, random	Small, purposive
Data collection	External instruments such as questionnaires	Researcher is the 'living' instrument
Type of data	Hard, reliable numeric data	Rich, deep data

- Combination of qualitative and quantitative research: rich explanations vs statistical/numerical evidence.
 - Example A: Before gathering data in a large survey, qualitative data is collected to develop a model.
 - Example B: After seeing the results of a large survey, a certain group of people (with particularly interesting answers) are chosen to be interviewed or to take part in a focus group discussion.
- Can be the best or worst of both worlds!

- What is your personal ontology? What are your skills and preferences?
- What is your research topic? What are your research objective(s) and research question(s)?

Deductive vs inductive choice (2)



Source: Cameron, S. and Price D. (2014) *Business Research Methods*, McGraw-Hill Education.