Introduction to Business Research Methods

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March 2024

Learning Objectives

- To understand the fundamental concepts of business research methods
- To appreciate the several terminologies in business research
- To be able to identify one's own philosophical position in business research
- To be able to identify one's own practical position in business research

Agenda

- What is Business Research?
- What is Theory?
- Deduction & Induction
- Research Paradigms
- Ontology
- Epistemology
- Axiology
- Methodology
- Methods
  - Quantitative Research
  - Qualitative Research
  - Mixed Methods
- Q&A

Business Research

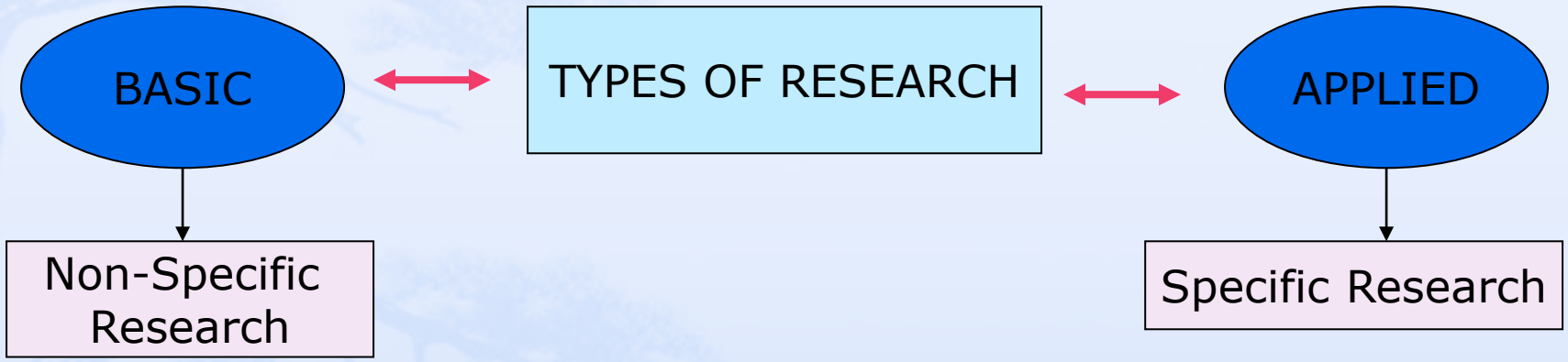
- What is Business Research?

"The application of the scientific method in searching for the truth about business phenomena. These activities include defining business opportunities and problems, generating and evaluating ideas, monitoring performance, and understanding the business process."

(Zikmund, 2010, p5)

Business Research

- Scope of Research



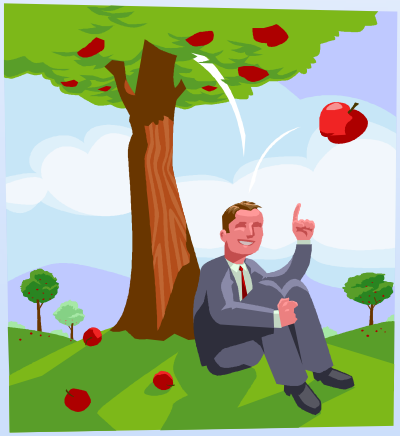
- Type of Research
  - ❑ Natural Sciences
  - ❑ Social Sciences
  - ❑ Management Sciences (Business Research)

Theory

- What is Theory?

"A formal, logical explanation of some events that includes predictions of how things relate to one another."

(Zikmund, 2010, p39)



Theory

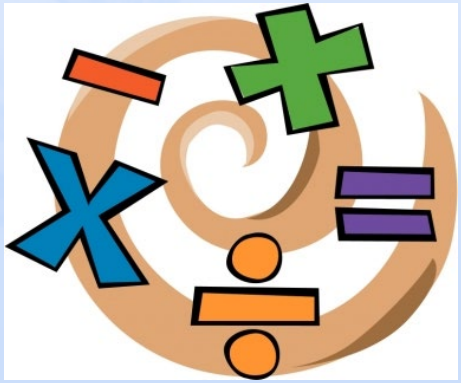
- What is a Good Theory?

"A theory is a good theory if it satisfies two requirements. It must accurately describe a large class of observations on the basis of a model that contains only a few arbitrary elements. And it must make definite predictions about the result of future observations"

(Source: Stephen Hawking, A Brief History of Time, 1988)

Hypothesis & Theory

- A prediction about the relationship between two or more variables.
- Prediction is about what researcher expects to find in his/her research.
- Hypotheses are more specific than theories.
- A theory could have many different hypotheses.
- If the hypotheses offered by the theory are confirmed, the theory is supported.
- If the hypotheses offered by the theory are rejected, the theory is not supported and should be re-evaluated through further research.



Hypothesis

Null Hypothesis (H_0)

- *There is no relationship between two measured phenomena.*
  Eg. H_0 *: There is no link between smoking and cancer.*
- Null Hypothesis can never be proven. It can either be rejected or fail to reject.

Alternative Hypothesis (H_1)

- *A hypothesis to be adopted if the Null hypothesis implied to be highly implausible. ie. The hypothesis to be accepted if the Null hypothesis is rejected.*

  eg. H_1 *: There is significant link between smoking and cancer.*

"Most confusing phrase in research: Fail to reject Null Hypothesis"

Hypothesis

		Reject H_0	Don't Reject H_1
Truth	H_0	Type I Error (False Positive)	Right Decision
	H_1	Right Decision	Type II Error (False Negative)

Type I Error Example - H_0: The patient is not sick.
Reject H_0. Implies patient is sick.
Actual fact is the patient is healthy.

Type II Error Example - H_0: The patient is not sick.
Don't Reject H_0. Implies patient is healthy.
Actual fact is the patient is sick.

Variables

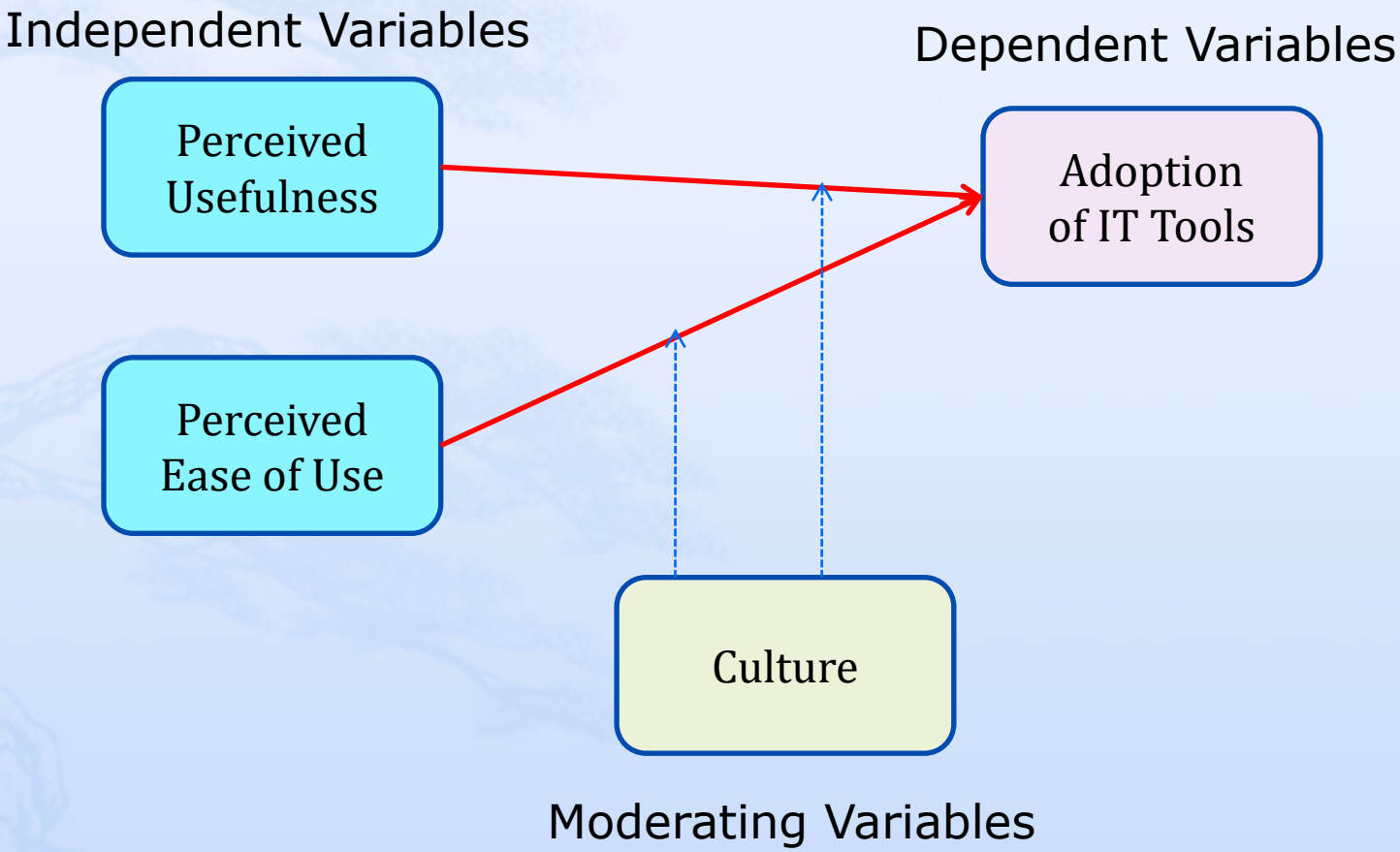
- Independent Variable: The presumed "cause" in the theoretical model.

- Dependent Variable: The presumed "effect" in the theoretical model.

- Moderating Variable: Suspected or known to impact or influence the Dependent Variable.

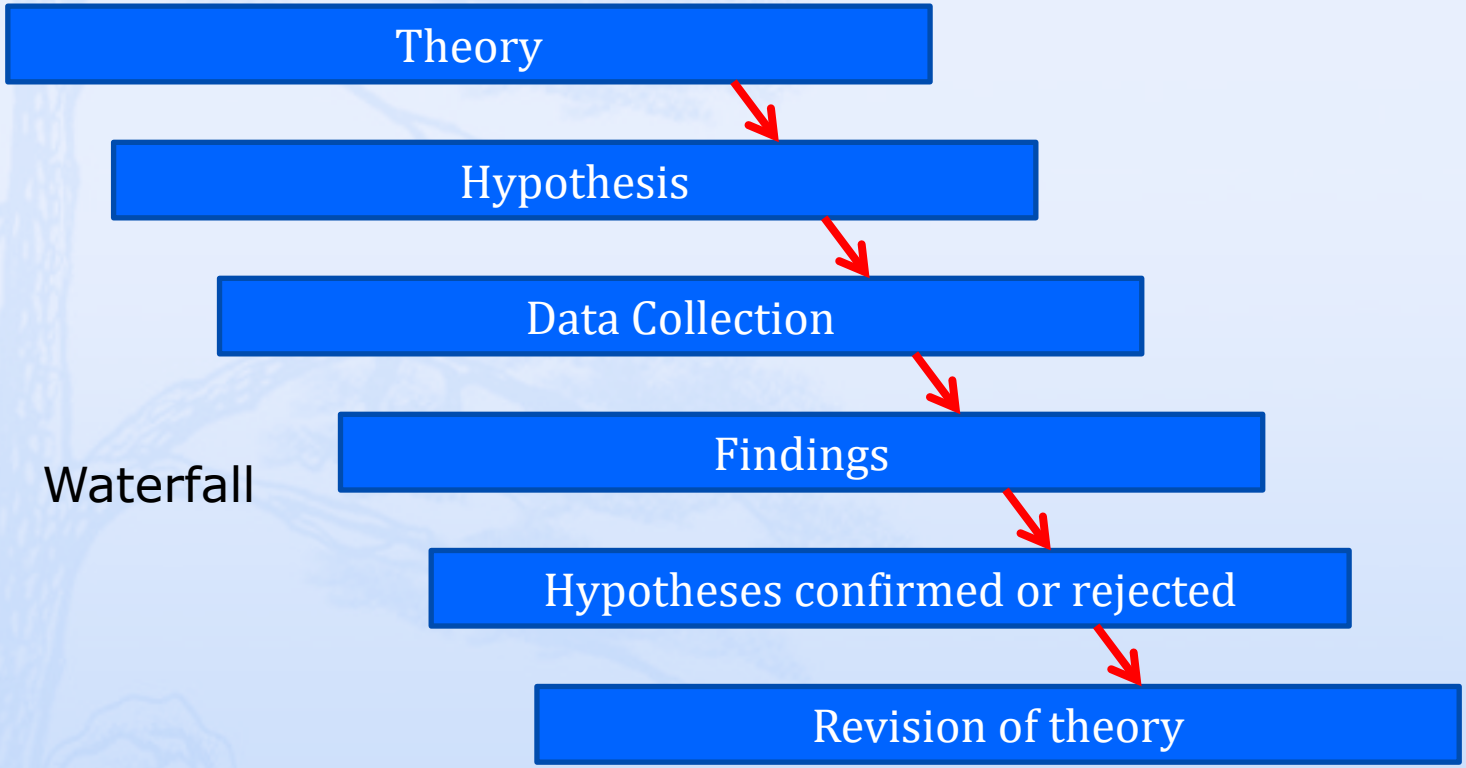
Variables

Example of Theoretical Model



Deduction & Induction

- The Process of Deduction

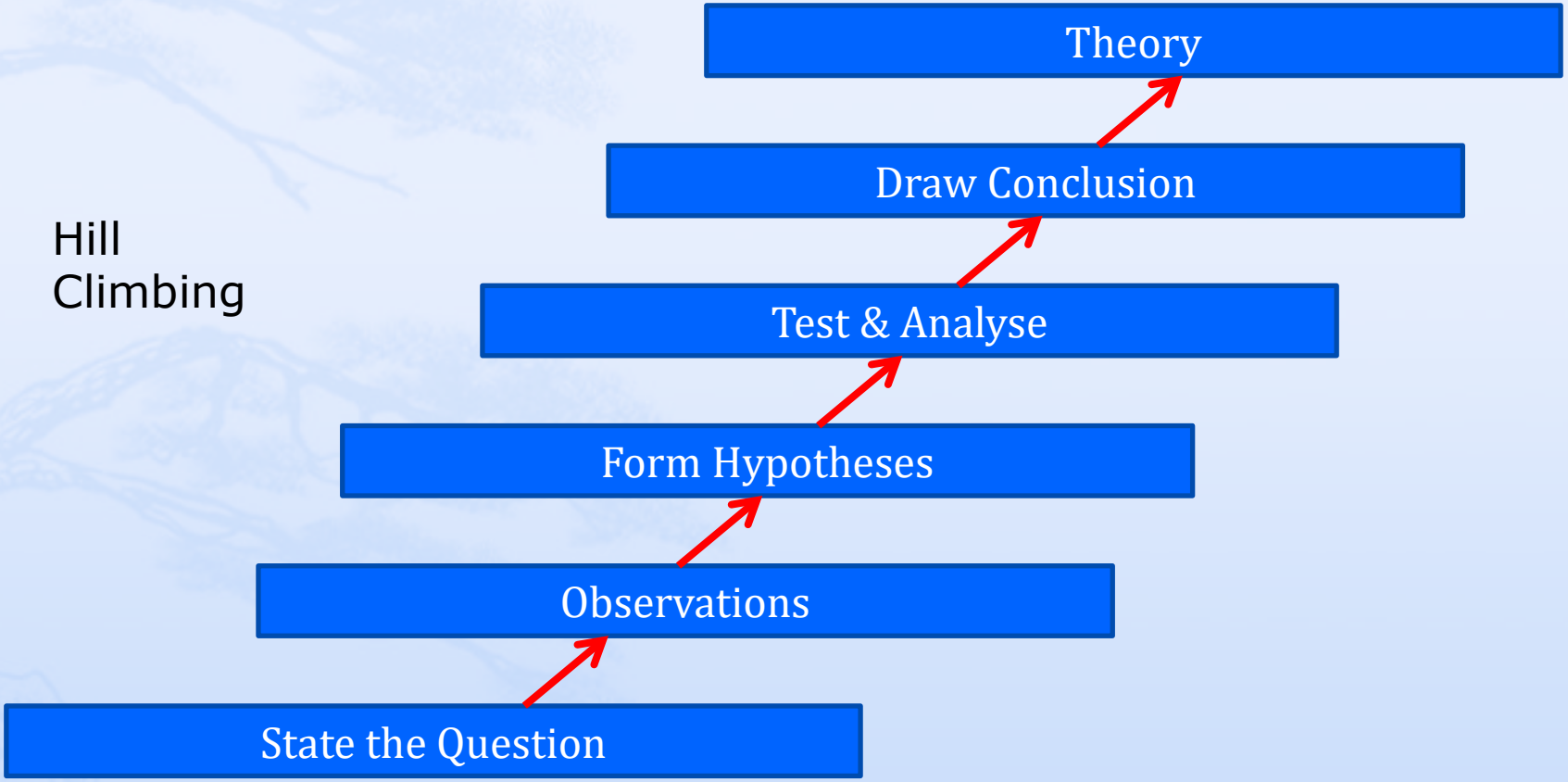


Waterfall

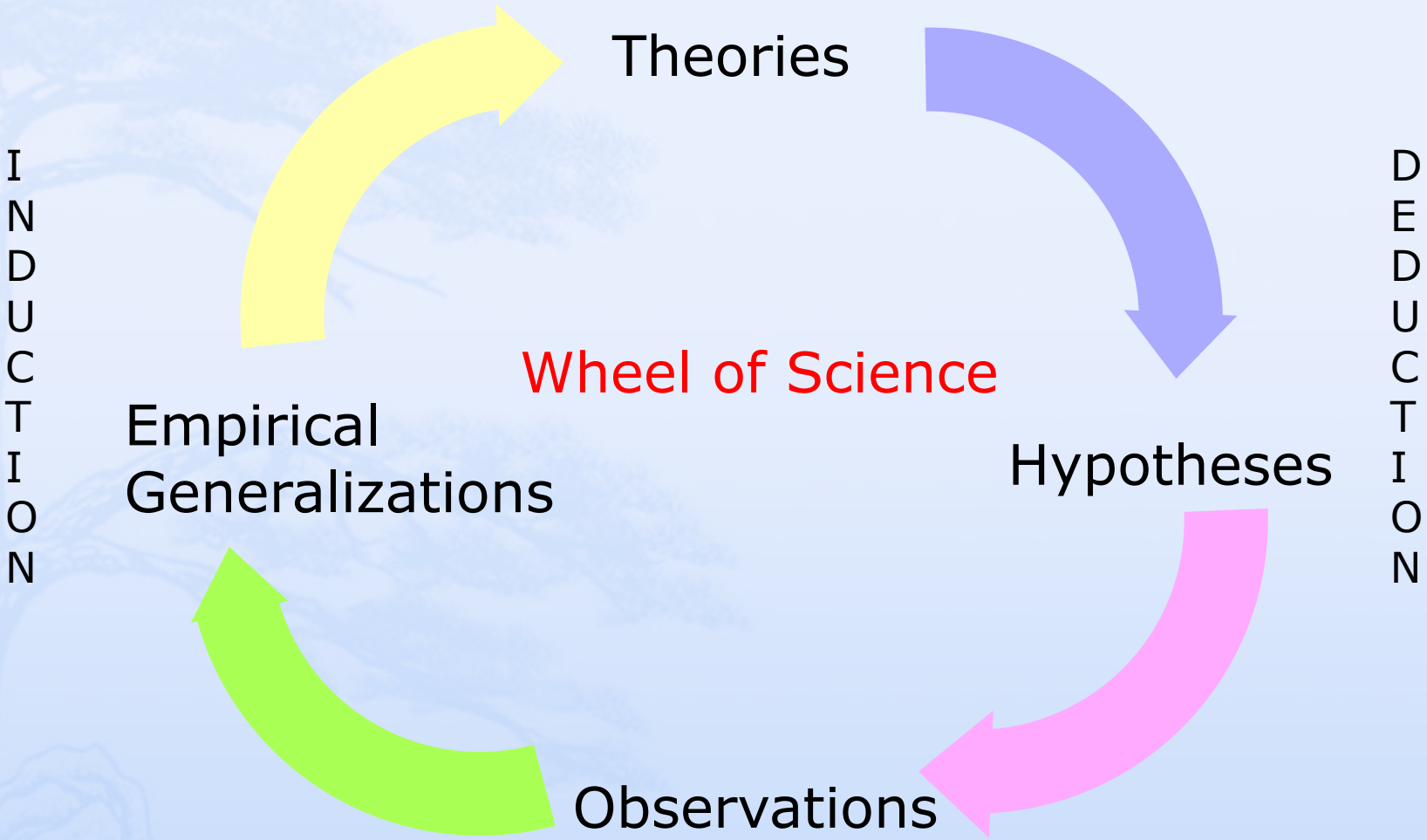
(Bryman, 2006, p11)

Deduction & Induction

- The Process of Induction



Deduction & Induction



(Source: Adapted from Walter Wallace, The Logic of Science in Sociology, 1971)

Deduction & Induction

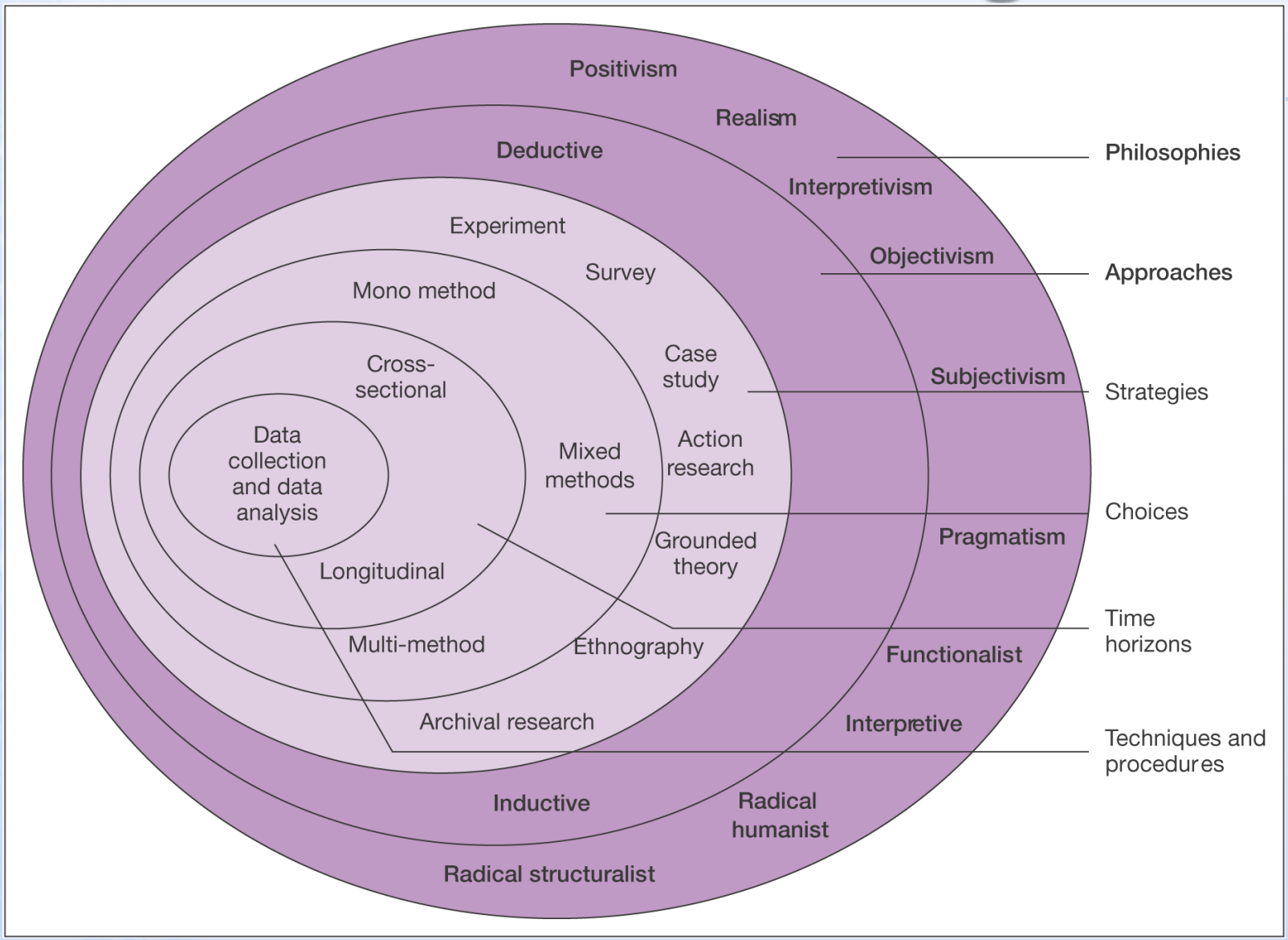
Deduction emphasises	Induction emphasises
• scientific principles • moving from theory to data • the need to explain causal relationships between variables • the collection of quantitative data • the application of controls to ensure validity of data • the operationalisation of concepts to ensure clarity of definition • a highly structured approach • researcher independence of what is being researched • the necessity to select samples of sufficient size in order to generalise conclusions	• gaining an understanding of the meanings humans attach to events • a close understanding of the research context • the collection of qualitative data • a more flexible structure to permit changes of research emphasis as the research progresses • a realisation that the researcher is part of the research process • less concern with the need to generalise

Source: Saunders *et al*, (2009)

Research Paradigms

"A paradigm may be viewed as a set of basic beliefs … that deals with ultimates or first principles. It represents a worldview that defines for its holder, the nature of the "world", the individual"s place in it, and the range of possible relationships to that world and its parts … The beliefs are basic in the sense that they must be accepted simply on faith (however well argued); there is no way to establish their ultimate truthfulness. If there were, the philosophical debates … would have been resolved millennia ago." (Guba and Lincoln, 1994 p. 107-108)

Research Paradigms



Source: Saunders *et al*, (2009)

Research Paradigms

Three fundamental questions:

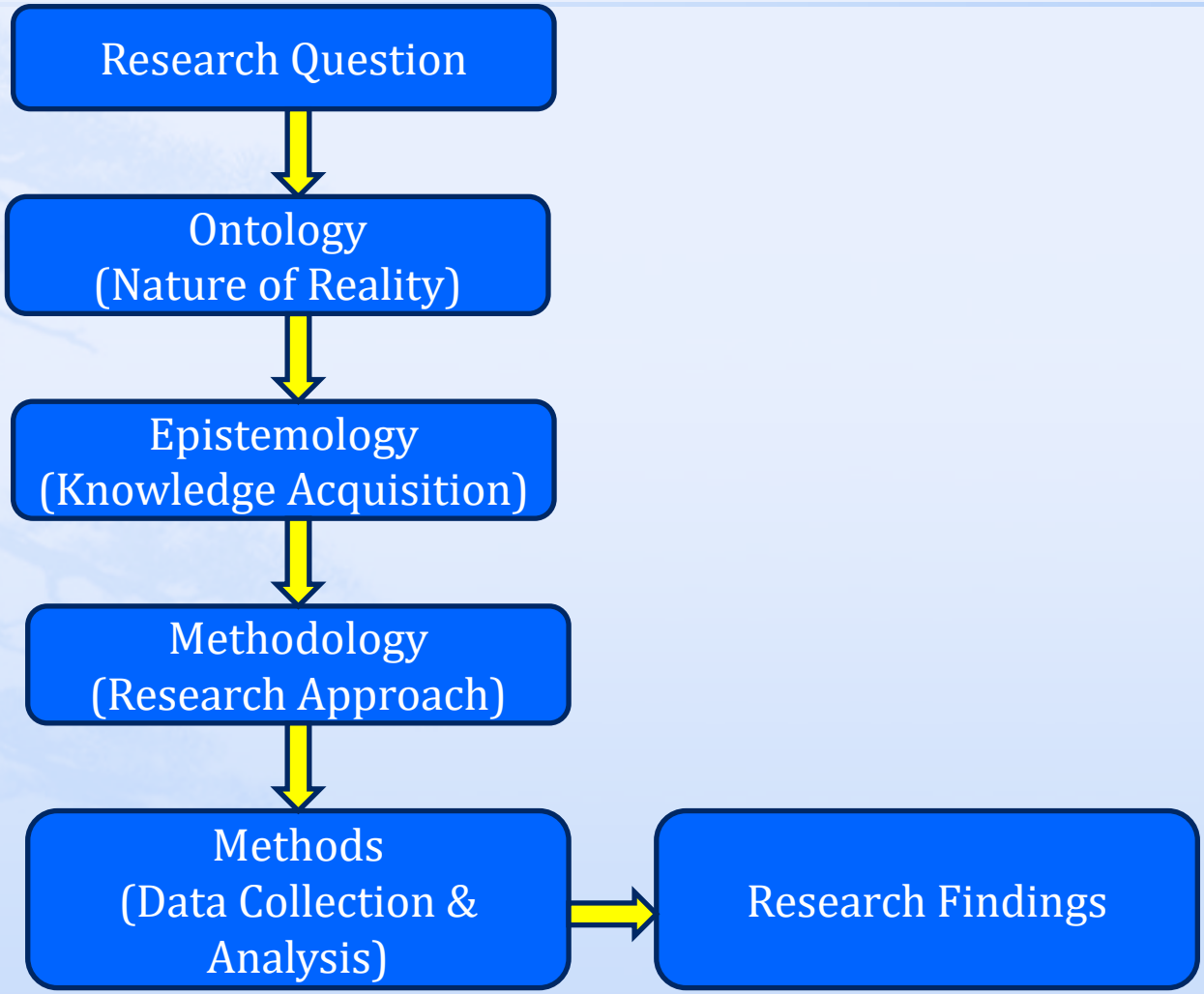
- *The ontological question i.e. what is the form and nature of reality*

- *The epistemological question i.e. what is the basic belief about knowledge (i.e. what can be known)*

- *The methodological question i.e. how can the researcher go about finding out whatever s/he believes can be known.*

(Guba and Lincoln, 1994)

Research Paradigms - continued



Ontology

- A Researcher's **Ontology** refers to:

His/Her Philosophical Assumptions about the Nature of Reality.

The Main Ontological Positions in Management Research

- Objectivism – asserts that social phenomena and their meanings have an existence that is independent of social actors. Business research is similar to Science.

  (Reality exists independent of researcher)

- Constructionism – asserts that social phenomena and their meanings are continually being accomplished by social actors. It implies that social phenomena and categories are not only produced through social interaction but that they are in a constant state of revision.

  (Reality constructed by researcher)

Epistemology

- A Researcher's **Epistemology** is a result of researcher's **Ontological** Position and refers to:

  His/Her Assumptions about the Best Ways of Inquiring into the Nature of the World and Establishing 'Truth'.

The Main Epistemological Positions in Management Research

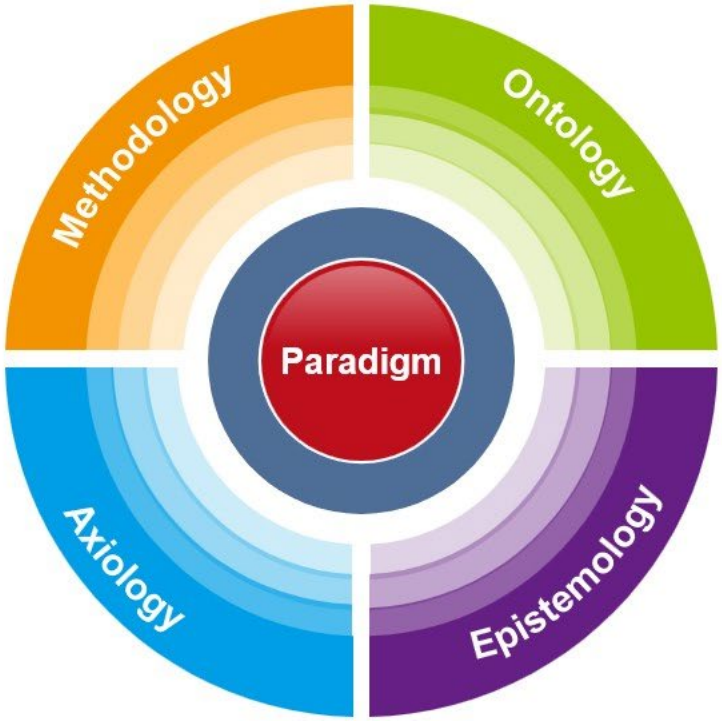
- *Positivism –argues that the methods of the natural sciences are applicable to the study of societies. It involves the search for causal relationships between observable phenomena and theories are tested against observations*
- *Interpretivism – argues that there are fundamental differences between the natural sciences and the societies. The logic and methods of the natural sciences are not applicable to the study of societies. Investigating and understanding the meanings that people give to their actions*
- *Realism – a belief that the natural and the social sciences and should apply the same kinds of approach to the collection of data and to explanation, and a commitment to the view that there is an external reality to which scientists direct their attention*

Axiology

The Research paradigm

Methodology

The strategy and justifications in constructing a specific type of knowledge



Ontology

The nature of reality and of what really exists

Axiology

What we value: the ultimate worth of research

Epistemology

The relationship between the inquirer and what is known

The Research Paradigm by Bunmi Malau-Aduli and Faith Alele

Axiology

Axiology is a branch of philosophy that delves into value judgments. The term itself is derived from Greek and signifies “value” or “worth.” In the context of research, axiology is concerned with assessing the role of a researcher’s own values throughout all stages of the research process

Axiology

Research Philosophies and Axiology:

Different research philosophies exhibit varying degrees of axiological influence:

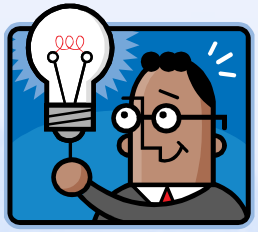
- **Positivism**: Research is undertaken in a **value-free** manner, maintaining an objective stance.
- **Realism**: Research is **value-driven**, influenced by worldviews, cultural experiences, and upbringing.
- **Interpretivism**: Research is **value-bound**, and the researcher is an integral part of what the researcher being studied.
- **Pragmatism**: Values play a significant role in how researcher interpreting the research results, with both objective and subjective viewpoints considered.

Methodology

- *Methodology is the overall approach of a researcher take to conduct the research. It sits within the broader framework of research paradigms, informed by the ontological assumptions about the nature of reality and the epistemological beliefs about how knowledge is acquired*
- *The specific methodology that the researcher choose depend on the research question, research discipline, and theoretical framework*
- *Key aspects of methodology include:*
  - *Research design*
  - *Data collection methods*
  - *Data analysis techniques*
  - *Research justification*

Methodology

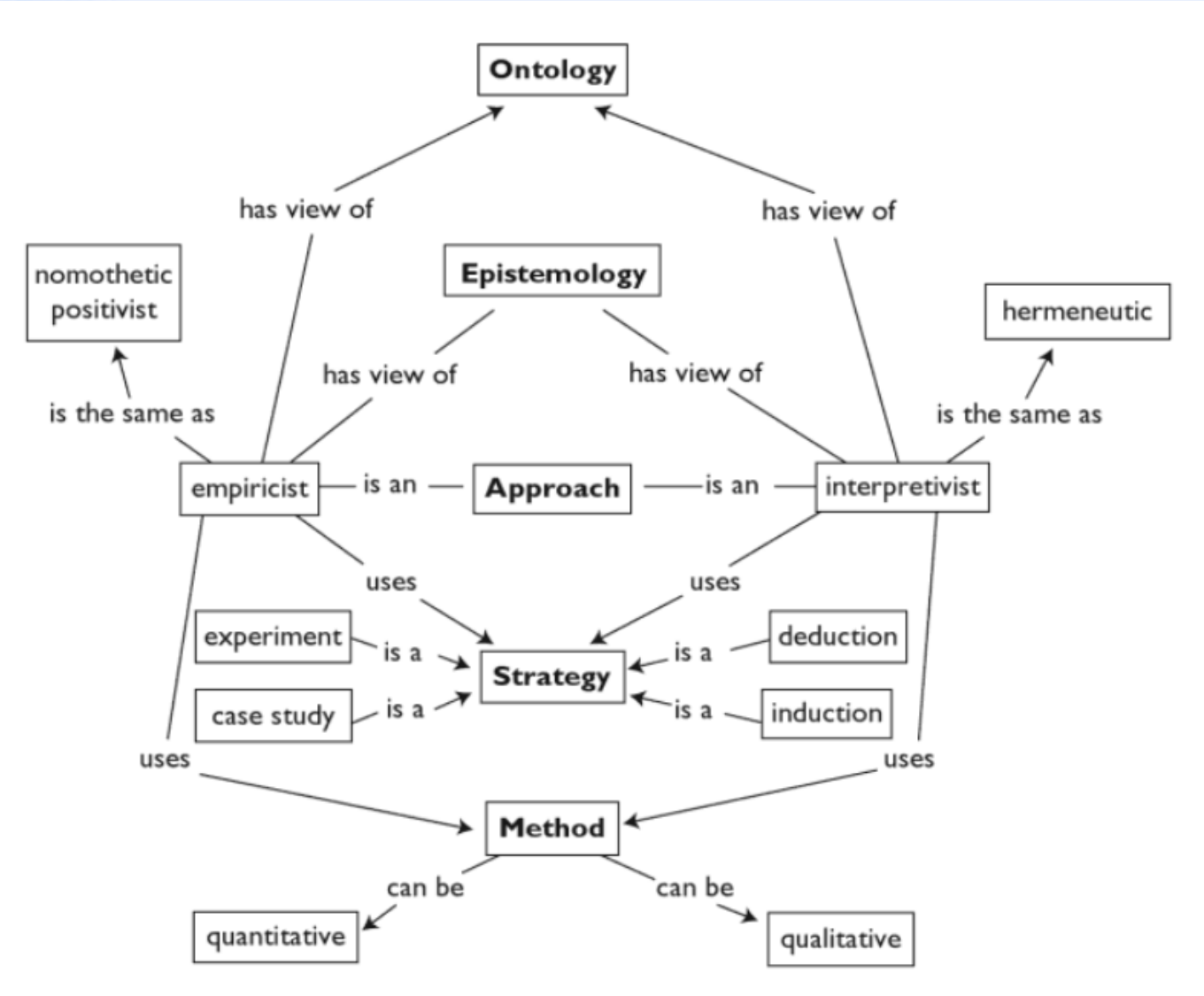
- *Experimental methodology focuses on studying causal relationships by manipulating independent variables and observing their effects on dependent variables.*
- *Phenomenological methodology explores lived or experiential meaning. It aims to describe and interpret these meanings as they emerge from consciousness, language, and preunderstandings.*



Research Strategy

What's out there to know?	How we know what we know?	How to acquire the knowledge?	What procedures to use?
Ontology	Epistemology	Methodology	Methods
Objectivism	Positivism	Deductive	Quantitative
Existence independent of researchers	Truth out there to be discovered	General to specific	Interpretation of phenomena
Constructivism	Interpretivism	Inductive	Qualitative
Phenomena continually accomplished by researchers	Develop truth based on social interaction	Observations to theory	Empirical assessment

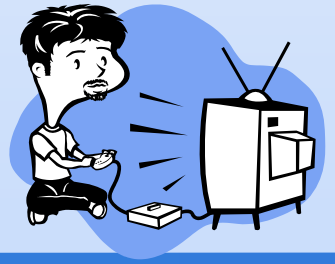
Relationship in Research



(Scott and Usher, 1999)

Researcher as Scientist

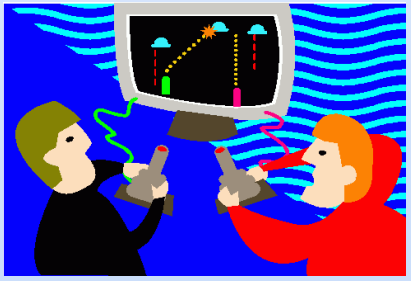
- Example Theory: Computer Games leads Juvenile Violent
- Example Hypothesis: Violent in Computer Games increases Juvenile Violent
- Ontology: Objectivism - Facts exist independent of researcher
- Epistemology: Positivism - Using Scientific principle to study the phenomena
- Methodology – Deductive approach (Theory – Hypothesis - Confirmation)
- Methods – Quantitative research (surveys, questionnaires, samplings)



Researcher as Social Worker

- Question: Why Computer Games leads Juvenile Violent?
- Theory Building: Violent in Computer Games increases Juvenile Violent
- Ontology: Constructivism – Phenomena exists through social interaction
- Epistemology: Interpretivism - Scientific principle not applicable. Investigate the people
- Methodology – Inductive approach (Observation – Hypothesis - Theory)
- Methods – Qualitative research

(observations, case studies, in-depth interviews)



Methods

- Research methods are the specific tools and techniques that researcher use to collect an anlayse data within the chosen methodology
- Methods are the “how” of the research while the methodology is the “what” and “why”
- Examples of Research Methods:
  - Quantitative Methods (Surveys, Experiments, Observations)
  - Qualitative Methods (Interviews, Focus groups, Case studies, Ethnography)
  - Mixed Methods (Triangulation, Embedded designs, Transformative designs)

Quantitative & Qualitative Research

- *Quantitative research – addresses research objectives through empirical assessments that involve numerical measurement and analysis.*
- *Qualitative research – addresses business objectives through techniques that allow the researcher to provide elaborate interpretations of phenomena without depending on numerical measurement; its focus is on discovering true inner meanings and new insights.*

(Zikmund, 2010)

Quantitative & Qualitative Research

Differences between Quantitative and Qualitative research strategies

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive Testing of theory	Inductive Generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

(Bryman, 2006)

Quantitative & Qualitative Research

Differences between Quantitative and Qualitative research strategies

Research Aspect	Quantitative	Qualitative
Common Purpose	Test Hypotheses or Specific Research Questions	Discover Ideas, used in Exploratory Research with General Research Objects
Approach	Measure and Test	Observe and Interpret
Data Collection Approach	Structured Response Categories Provided	Unstructure, Free-Form
Research Independence	Researcher Uninvolved Observer. Results Are Objective.	Researcher Is Intimately Involved. Results Are Subjective.
Samples	Large Samples to Produce Generalizable Results	Small Samples – Often in Natural Settings
Most Often Used	Descriptive and Causal Research Designs	Exploratory Research Designs

(Zikmund, 2010)

Quantitative & Qualitative Research

Strengths of Quantitative Research

- Easy to implement the research (surveys, questionnaire)
- Relatively quick to gather research data
- Provides precise and numerical research data
- Useful for large sampling size
- Relatively faster to analyse research data (SPSS)
- Easier to interpret research data

Weaknesses of Quantitative Research

- Researcher's theory and hypotheses might not reflect real phenomena
- Research data gathered could be too general
- Research results might not be in-depth
- Research results could be bias as researcher is verifying his/her pre-determined theory and hypotheses instead of building them from the research findings

Quantitative & Qualitative Research

Strengths of Qualitative Research

- Useful to conduct limited in-depth case studies or interviews
- Useful for describing complex phenomena
- Useful for specific environment, context and condition
- Include researcher and people's personal experiences of phenomena
- Research is more dynamic and flexible
- Research findings in words and narrative could explain the phenomena better and more in-depth

Weaknesses of Qualitative Research

- Research findings might not be general and it applies to specific context
- Insufficient research data to test hypotheses and build theory
- Data collection and analysis could be time consuming
- Data collection and analysis could be resource intensive
- Research results are easily influenced by the researcher's personal biases

Research Methods

- *Mono-method Research (Quan or Qual)*
- *Partially Mixed Research (Quan + % Qual or Qual + %Quan)*
- *Fully Mixed Research (Equal mixed of Quan + Qual)*

Researcher should choose either one of the methods for his/her research

Mixed Method

A mixed method approach is one in which the researcher collects, analyzes, and integrates both quantitative (quan) and qualitative (qual) data in a single study or in multiple studies in a sustained program of inquiry.

(Creswell, 2003)

Mixed Method

Purpose	Explanation
Triangulation	Seeks convergence, corroboration, correspondence of results from different methods
Complementarity	Seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from the other method
Development	Seeks to use the results from one method to help develop or inform the other method, where development is broadly construed to include sampling and implementation, as well as measurement decisions
Initiation	Seeks the discovery of paradox and contradiction, new perspectives of frameworks, the recasting of questions or results from one method with questions or results from the other method
Expansion	Seeks to extend the breadth and range of inquiry by using different methods for different inquiry components

Source: Based on Greene, Caracelli, and Graham (1989).

Mixed Method

Strengths:

- Mixture of words, pictures, narratives and numbers add more meaning to research findings
- Stronger evidence for research conclusion(triangulation)
- Complement the strengths and weaknesses in Quan and Qual
- More complete and generalization of research results.

Weaknesses:

- More complex to carry out research
- Time consuming
- Resource intensive
- Risk in conflicting research findings from Quan and Qual.

Mixed Method

Mixed Model

- Quan and Qual are mixed in research process
- Questionnaire with Quan questions (Closed-ended) and Qual questions (Open-ended)
- Open-ended interview (Qual) and results are quantified.

Mixed Method

- Quan research and Qual research are conducted in phases
- Time consuming
- Resource intensive
- Risk in conflicting research findings from Quan and Qual.

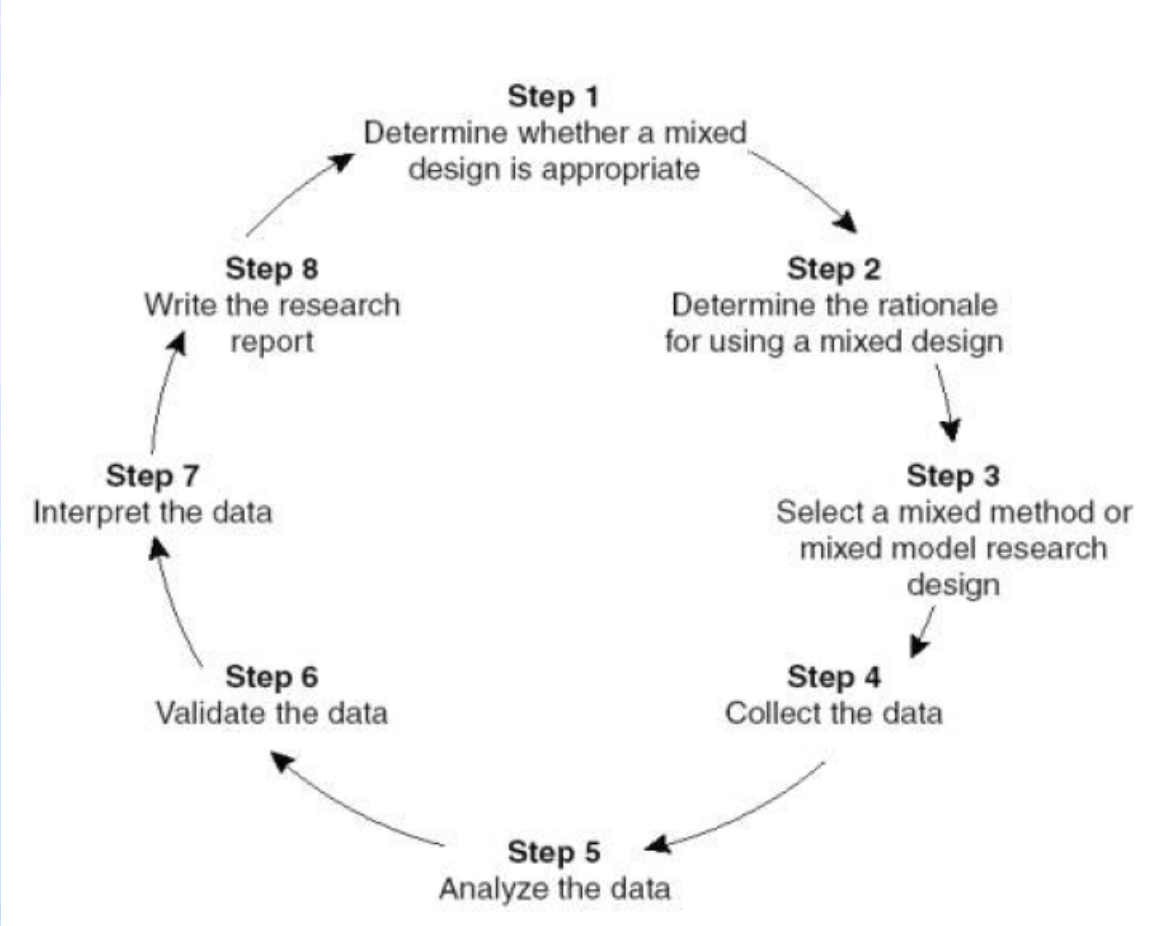
Mixed Method

Decision Matrix

	Concurrent	Sequential
Equal	QUAL + QUAN	QUAL → QUAN QUAN → QUAL
Dominant	QUAL + quan QUAN + qual	QUAL → quan qual → QUAN → QUAN → qual quan QUAL

Mixed Method

Steps in Mixed Method Research



Thank You

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