Lisbon School of Economics & Management
Universidade de Lisboa

# Research Methods and Master's Project

# CHOOSING A RESEARCH DESIGN

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FRANCESINHAS 2, Room 2.03

# Research Methods and Master's Project

## Choosing a Research Design

## In the previous class…

- Circumscribe the Goal / Aim of the study;
- Formulate the Research Question;
- Specify (eventual) Research Hypothesis.

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# Research Methods and Master's Project

## Choosing a Research Design

## Today…

**We aim to introduce students to the key issues in choosing defining the Research Design of their Dissertation/Project.**

# Research Methods and Master's Project

## Choosing a Research Design

## At the end of this class, you should be able to:

- Understand what Research Design is and its place in the research process;
- Understand the different ways in which Research Design is conceptualized in quantitative and qualitative approaches.
- Know how to identify the main Research Designs in the quantitative tradition of Social Sciences.

# Research Methods and Master's Project

## Choosing a Research Design

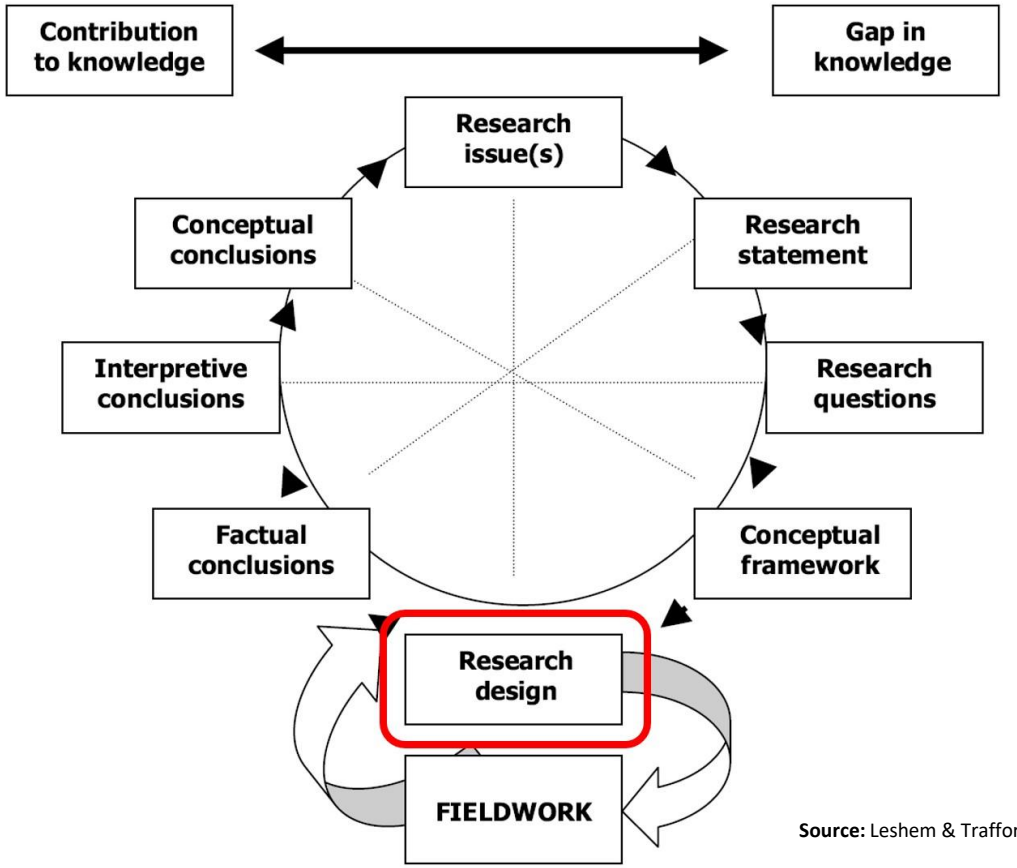
## WHAT DO WE MEAN BY ‘RESEARCH DESIGN?

# Research Methods and Master's Project

## Choosing a Research Design

## WHAT DO WE MEAN BY 'RESEARCH DESIGN?

- **Despite being a central moment in the research process, there is no consensus on what research design is and what it involves...**




**Source:** Leshem & Trafford (2007)

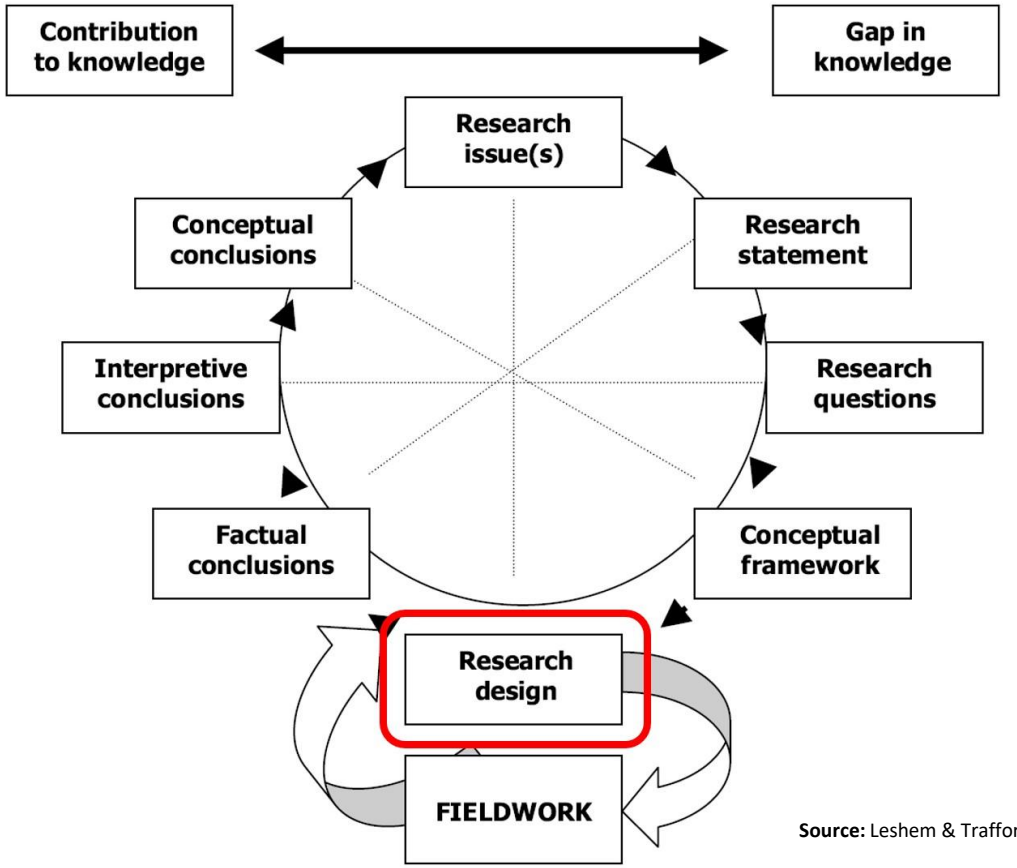
# Research Methods and Master's Project

## Choosing a Research Design

# WHAT DO WE MEAN BY 'RESEARCH DESIGN?

**"A Research Design is a plan that determines when and from whom measurements will be collected during an assessment." (Fitz-Gibbon e Morris, 1978: 10)**

**"Research design starts with an initial interest, idea, or theoretical expectation and proceeds through a series of interrelated steps to narrow the focus of the study so that concepts, methods, and procedures are well defined. A good research plan accounts for all these steps in advance" (Baddie, 2016: 121).**




**Source:** Leshem & Trafford (2007)

# Research Design: Qualitative vs. Quantitative Approaches

## Quantitative Approach

- The main focus is on producing results that can be generalizable and replicable;
- This requires the research design to be more structured, rigid, fixed and predetermined in its use to ensure accuracy in measurement and classification.

## Qualitative Approach

- The main focus is on exploring, understanding and explaining perceptions, attitudes, values, beliefs and experiences of a group of people;
- In this sense, research designs are:
  - (Often) Based on deductive rather than inductive logic;
  - Flexible by nature;
  - (Often) Non-Linear and non-sequential in their operationalization.

**Source:** Kumar (2012: 103-5;126-30)

# Research Design: Qualitative vs. Quantitative Approaches

## Quantitative Approach

- Highly formalized, and reflect choices regarding:
  - The size of the population under study;
  - The unit and level of analysis;
  - Consideration of the time factor;
  - The way in which the relationship between variables is established (covariation x causality);
  - The methods used in data analysis.

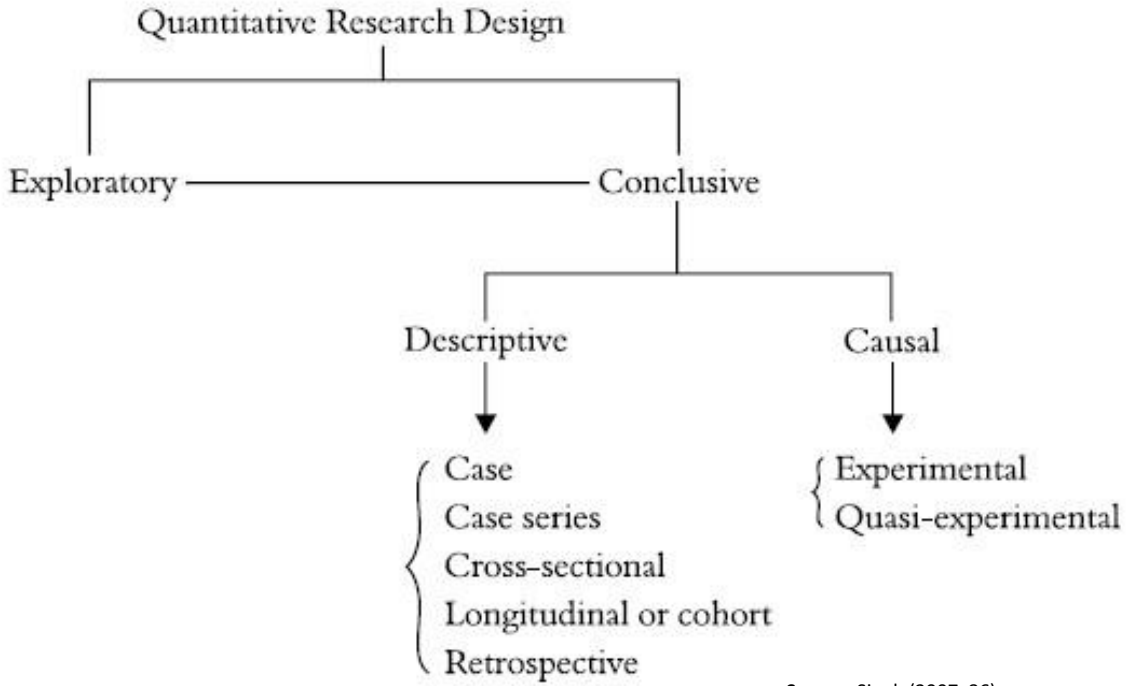
## Qualitative Approach

- Study design and data collection method are treated as functional equivalents:
  - Case Study;
  - Oral History;
  - Focus Groups;
  - Participant Observation;
  - Field Diary.

**Source:** Kumar (2012: 103-5;126-30)

## Quantitative Research Designs

- **Reflecting, in part, the lack of consensus on what constitutes a 'Research Design', we also found some diversity in the way in which the different designs can be grouped/classified.**




**Source:** Singh (2007: 86)

**Source:** Kumar (2012: 103-5); Singh (2007: 86-7)

## Quantitative Research Designs

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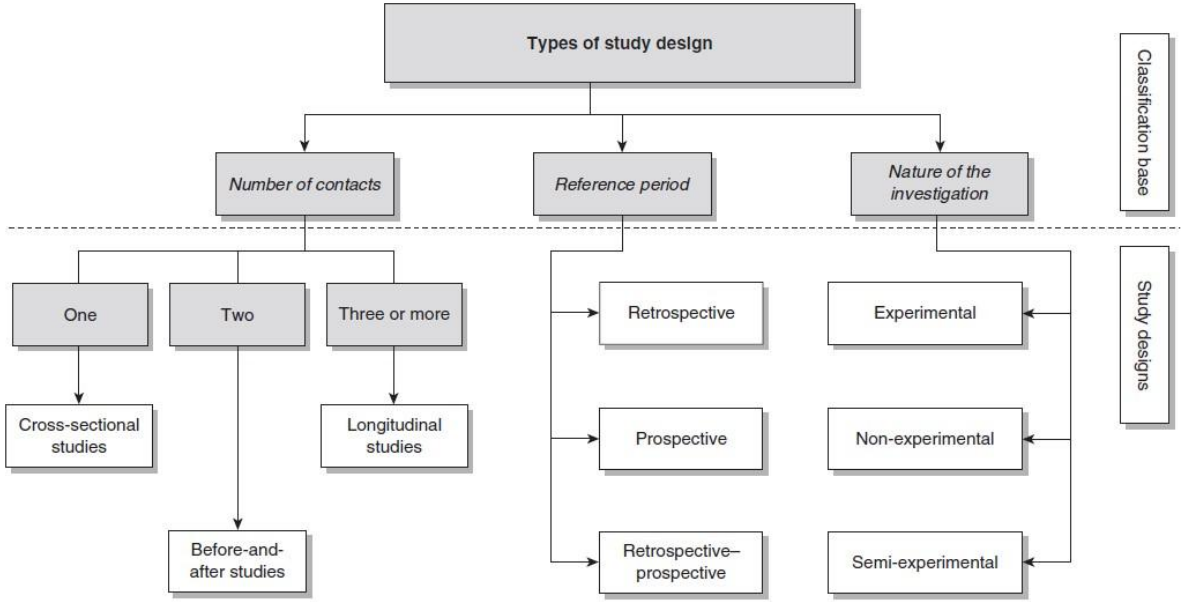



**Source:** Kumar (2012: 103)

**Source:** Kumar (2012: 103-5); Singh (2007: 86-7)

# Quantitative Research Designs: A Tentative Typology

- We can try to group Quantitative Research Designs by reference to the following criteria:
  - The size of the population under study (N), measured by the number of observations;
  - The way in which the time factor (T) determines the moments of data collection;
  - The purpose of the study in question;
  - The way in which the relationship between variables (covariation vs. causality) is understood.

# Research Methods and Master's Project

## Choosing a Research Design

# Quantitative Research Designs: A Tentative Typology

| | N = 1 | N >= 2 & < 30 | N >= 30 |
|---|---|---|---|
| T = 1 | CASE STUDY | DESCRIPTIVE (COMPARATIVE) | DESCRIPTIVE (CROSS-SECTIONAL) |
| T = 2 | | EXPERIMENTAL | |
| T > 2 | | LONGITUDINAL | |

# Quantitative Research Designs: Case Study

## What is a 'Case'?

- A 'case' is an entity/reality that can be easily circumscribed, and that can vary in terms of work/complexity:
  - A person (e.g. biography);
  - A family;
  - An organization (school, company, etc.), or a division within an organization;
  - A community;
  - An event.

## Case Selection (Criteria):

- '*Critical*' - Offers the best conditions to validate a hypothesis;
- '*Extreme*' - Offers a theoretical counterfactual;
- '*Typical*' - Exemplifies a broader category of which it is a member;
- '*Revealing*' - Allows you to analyze a previously inaccessible phenomenon;
- '*Longitudinal*' - Allows you to collect data at 2 or more points in time.

**Source:** Bryman (2012: 66-72)

# Descriptive Designs

## Objective

- Identify the characteristics of the population/ phenomenon under study and do not attempt to establish relationships between variables or events.

## Relevant Features

- Applicable regardless of the number of observations;
- It may also involve typifying groups/profiles within the population or ordering relative to a property.

## Methods:

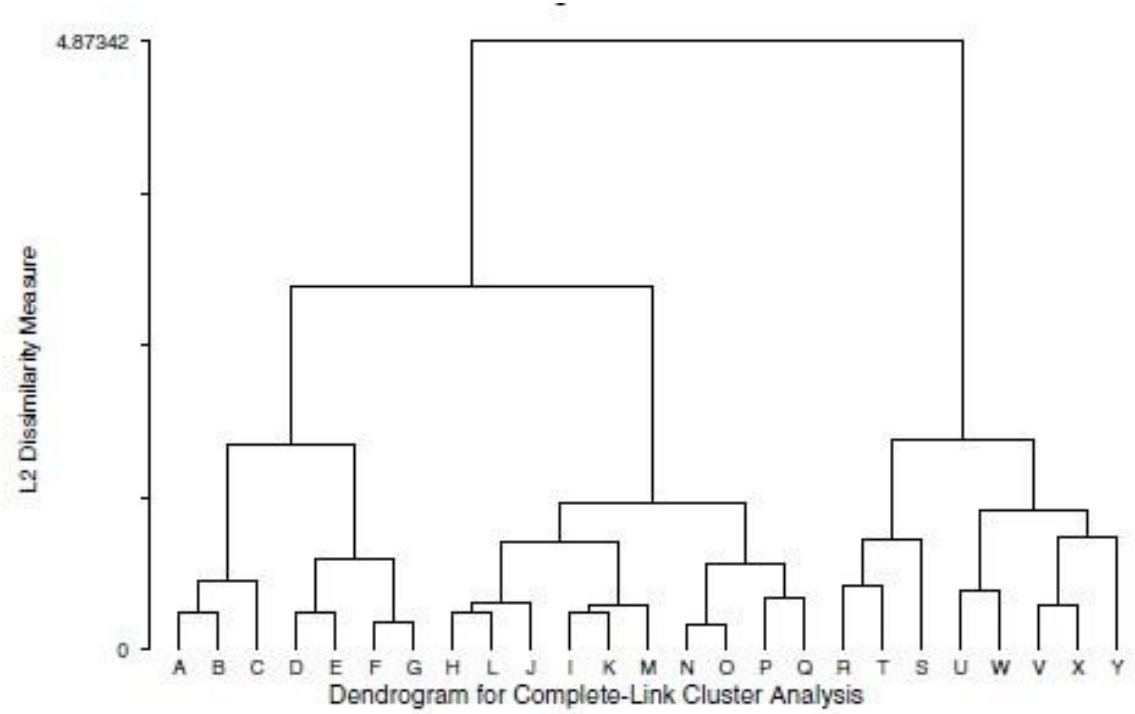
- Descriptive Statistics (Univariate and Bivariate Analysis);
- Creation of Composite Indexes;
- Cluster Analysis;
- Principal Component Analysis.

**Source:** Singh (2007: 64-5); Adu & Miles (2024: 50-1, 53-4)

# Descriptive Designs: Cluster Analysis

## Goal/Aims

- **Identify a typology (as parsimonious as possible) of the set of subgroups in a population, based on the information contained in some variables.**



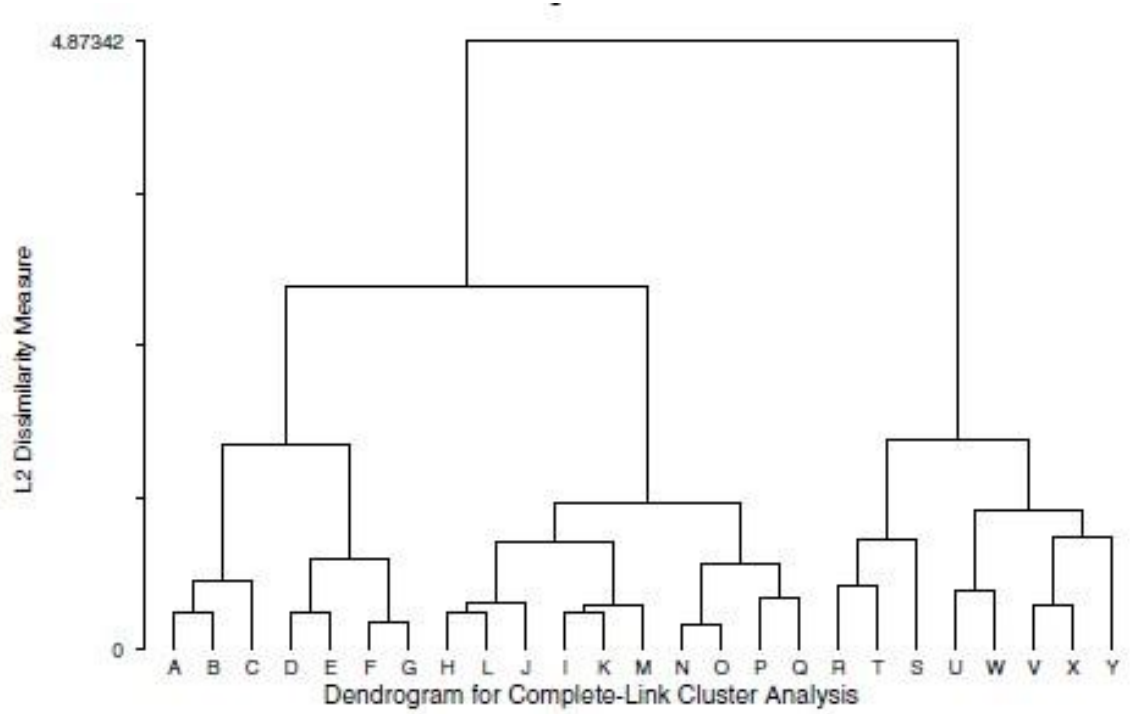

**Source:** Lewis-Beck etal (2004: 129)

**Source:** Lewis-Beck etal (2004: 128-30)

# Descriptive Designs: Cluster Analysis

## Relevant Features

- It is a family of algorithms, organized into two fundamental types:
  - Hierarchical;
  - Non-Hierarchical.
- It offers visual solutions (dendrograms) that facilitate the interpretation of results;
- Results very sensitive to researchers' choices.




**Source:** Lewis-Beck etal (2004: 129)

**Source:** Lewis-Beck etal (2004: 128-30)

# Cross-Sectional Designs

## Relevant Features

- Identify the effect of an independent variable on a dependent variable, based on information taken at one point in time.
- They do not allow the identification of causal relationships, but they do allow the identification of covariation relationships.

## Data:

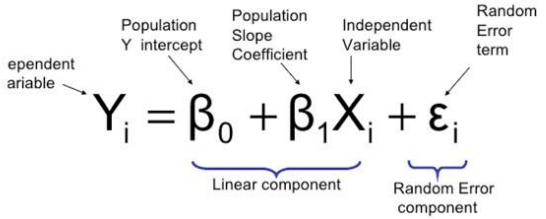
- Typically associated with data collected through a Questionnaire Survey.

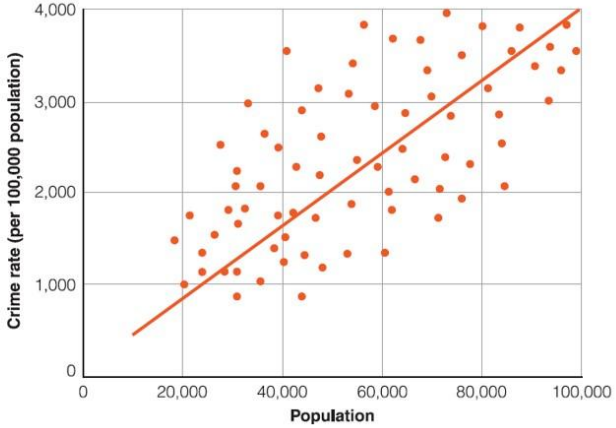
**Source:** Baddie (2016: 456-60)

# Cross-Sectional Designs: Linear Regression

## Objectives

- **Identify the effect of an independent variable on a dependent variable, controlling for other factors;**
- **It does not allow the identification of causal relationships, but it does allow the identification of covariation relationships.**



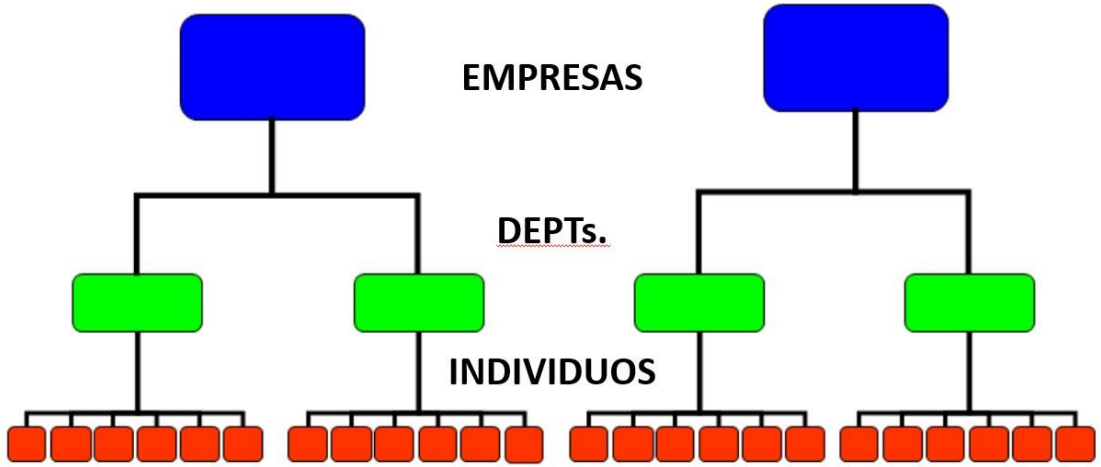

**Source:** Lewis-Beck etal (2004: 129)

**Source:** Lewis-Beck etal (2004: 128-30)

# Cross-Sectional Designs: Multilevel Models

## Objectives

- Identify the effect of an independent variable on a dependent variable, in contexts where:
  - There are units of analysis at different hierarchical levels;
  - What happens at the lower levels is dependent on the dynamics at the higher levels (nested hierarchies).
- Ex: Schools, firms and other organizations.




**Source:** Lewis-Beck etal (2004: 129)

**Source:** Lewis-Beck et al (2004: 673-77)

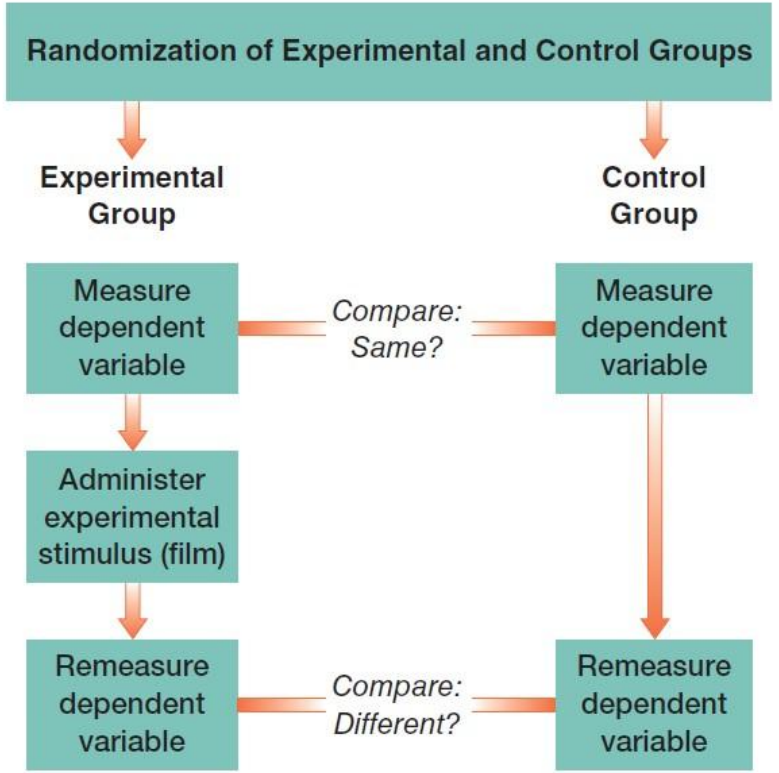
# Experimental Designs

## Objectives

- Identify causal relations (Cause-Effect).

## Types of Experimental Designs

- Experiments;
- Quasi-Experiments.



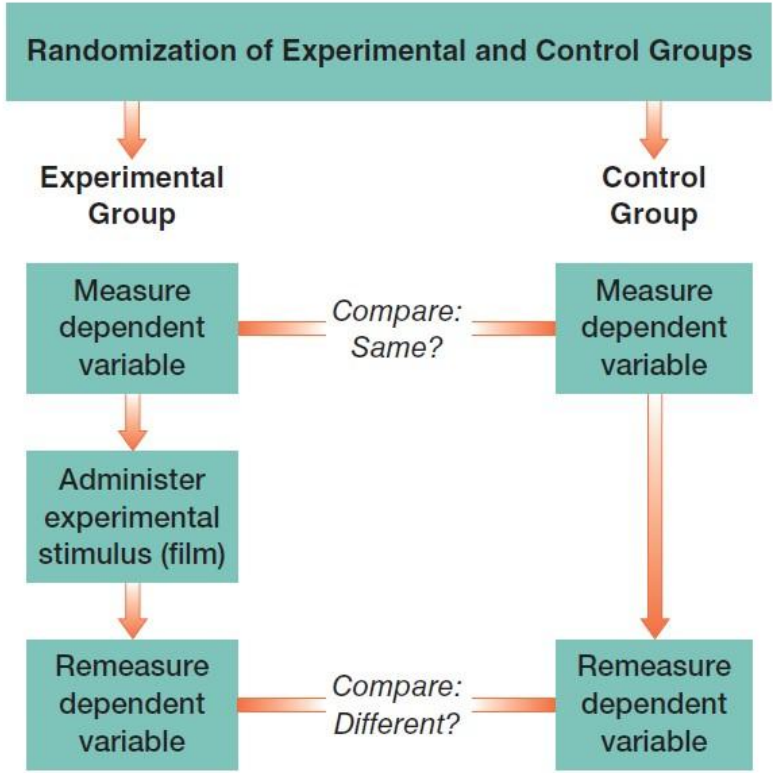

**Source:** Baddie (2016: 226)

**Source:** Baddie (2016: 226-9)

# Experimental Designs

## Experiments

- They involve a Treatment Group and a Control Group;
- Participants randomly allocated into groups;
- (Planned) Manipulation of the independent variable:
  - Cognitive (*Instructional Manipulation*);
  - Situational (*Experience Manipulation*).



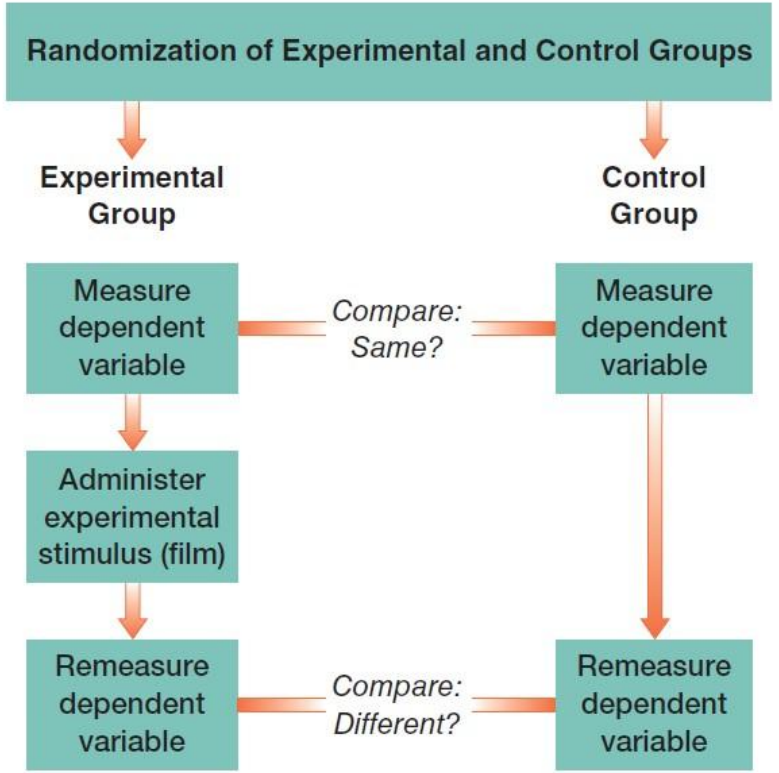

**Source:** Baddie (2016: 226)

**Source:** Baddie (2016: 226-9)

# Experimental Designs

## Experiments

- Variety of designs:
  - Before-and-After Design;
  - Control Group Design;
  - Double-Control Design;
  - Comparative Design;
  - 'Matched Control' Design;
  - Placebo Design.



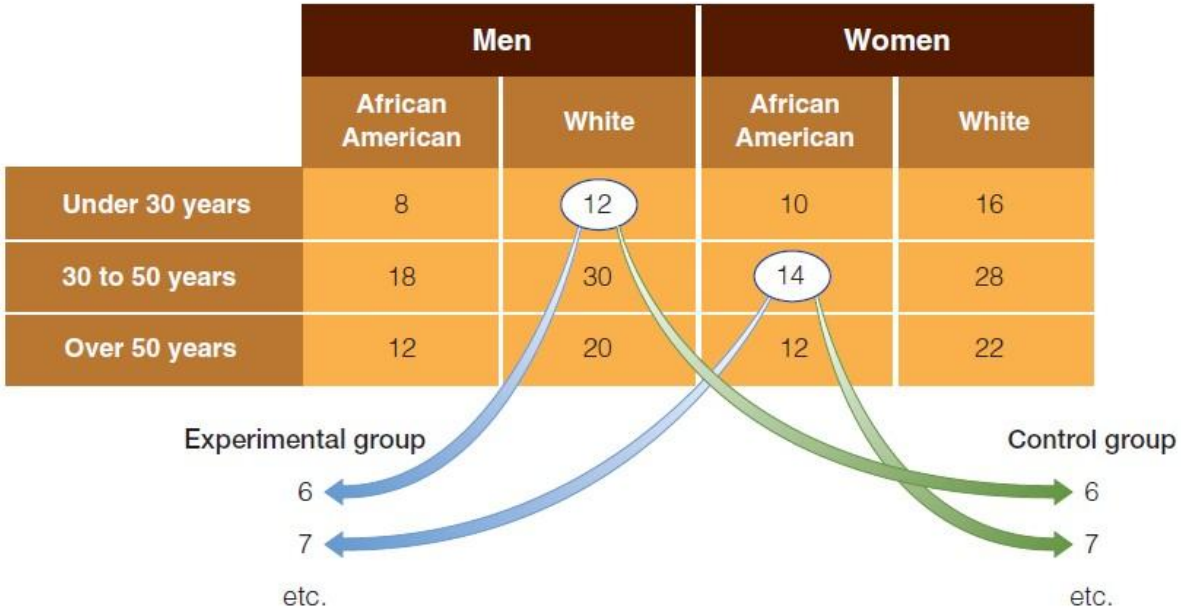

**Source:** Baddie (2016: 226)

**Source:** Baddie (2016: 226-9)

# Experimental Designs

## Quasi-Experiments

- They do not meet some of the requirements of traditional experiments:
  - The intervention/treatment is not planned (natural experiments) - e.g. the effect of COVID19 on public policy preferences;
  - It is not possible to randomly allocate participants. Alternatively, matching techniques are used - e.g. Evaluation of public policy interventions.



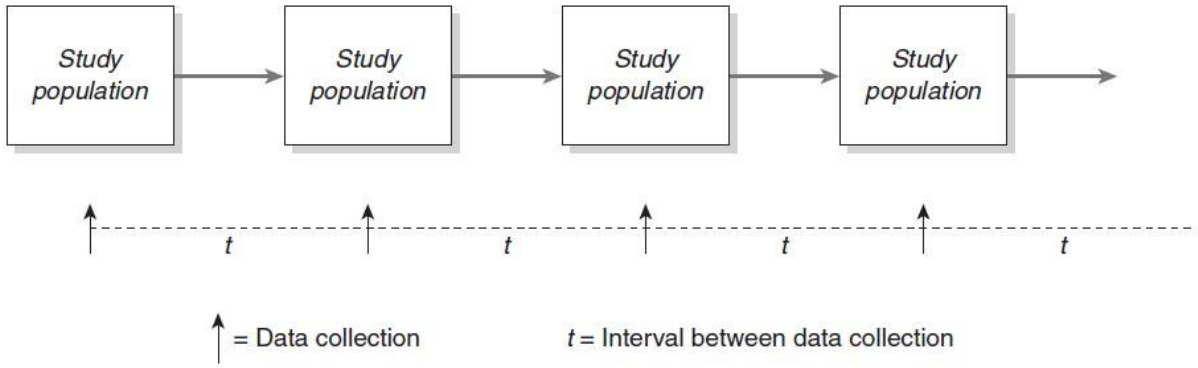

**Source:** Baddie (2016: 242)

**Source:** Baddie (2016: 229-32; 242-3)

# Longitudinal Designs

## Objectives

- **Study observations over an extended period of time (more than 2 moments);**
- **Identify patterns of covariation over time. In this sense, they are closer to the possibility of identifying causal relationships;**
- **Typically associated with a high number of observations (>30), but there are also experimental approaches for populations <30 (Time-series cross-section (TSCS) Regression).**




**Source:** Adu & Miles (2024: xx)

**Source:** Babbie (2016: 106-12): Singh (2007: 65)

# Longitudinal Designs: Trend Studies

## Objectives

- Evaluate how a certain characteristic of a population evolves over time.
- It involves applying the same measuring instrument to a representative sample of the target population at different times.

## Data

- Historical/Statistical Series;
- Repeated Cross-Section Surveys (Ex: Eurobarometer).

| | Cross-Sectional | Longitudinal | | |
|---|---|---|---|---|
| | | Trend | Cohort | Panel |
| Snapshot in time | X | | | |
| Measurements across time | | X | X | X |
| Follow age group across time | | | X | |
| Study same people over time | | | | X |

**Source:** Adu & Miles (2024: xx)

**Source:** Babbie (2016: 106-12): Singh (2007: 65)

# Longitudinal Designs: Cohort Studies

## Objectives

- **Evaluate how a given characteristic/property of a specific subpopulation, or cohort, evolves over time.**

## Cohort (definition)

- **People born in a specific period (year or decade);**
- **People born after a date/event;**
- **People who experienced an event.**

| | Cross-Sectional | Longitudinal | | |
|---|---|---|---|---|
| | | Trend | Cohort | Panel |
| Snapshot in time | X | | | |
| Measurements across time | | X | X | X |
| Follow age group across time | | | X | |
| Study same people over time | | | | X |

**Source:** Adu & Miles (2024: xx)

**Source:** Babbie (2016: 106-12): Singh (2007: 65)

# Longitudinal Designs: Cohort Studies

## Data

- **Pure Cohort Studies, in which the same cohort is the subject of research at regular periods (e.g. Millennium Cohort Study (UK));**
- **Reconstruction of age cohorts from statistical series/barometers (Note: They are not the same people!).**

| | Cross-Sectional | Longitudinal | | |
|---|---|---|---|---|
| | | Trend | Cohort | Panel |
| Snapshot in time | X | | | |
| Measurements across time | | X | X | X |
| Follow age group across time | | | X | |
| Study same people over time | | | | X |

**Source:** Adu & Miles (2024: xx)

**Source:** Babbie (2016: 106-12): Singh (2007: 65)

# Longitudinal Designs: Cohort Studies

## Objective

- **Assess how the characteristics of panel respondents vary over time.**

| | Cross-Sectional | Longitudinal | | |
|---|---|---|---|---|
| | | Trend | Cohort | Panel |
| Snapshot in time | X | | | |
| Measurements across time | | X | X | X |
| Follow age group across time | | | X | |
| Study same people over time | | | | X |

**Source:** Adu & Miles (2024: xx)

**Source:** Babbie (2016: 106-12): Singh (2007: 65)

# Longitudinal Designs: Cohort Studies

## Data

- The same measuring instrument is applied to the same group of people over a long period of time, in multiple instances;
- Particularly vulnerable to respondents dropping out over time (panel mortality or attrition);
- Ex: EU-SILC - Survey on Income and Living Conditions.

| | Cross-Sectional | Longitudinal | | |
|---|---|---|---|---|
| | | Trend | Cohort | Panel |
| Snapshot in time | X | | | |
| Measurements across time | | X | X | X |
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