


Pre-experimental and Quasi-experimental designs


Please silence your phones, PDAs, watches, and other noise-making devices.

Terminology of experiments

- Independent variable
 - Manipulated (or active, or treatment) variable
 - Not manipulated (or selection, or classification, or individual difference) variable
- Dependent (or outcome) variable


Validity of experimental research: Internal

- Definition
- Threats to internal validity
 - History
 - Maturation
 - Testing
 - Instrumentation
 - Statistical regression 




Internal validity- threats (cont.)

- Selection
- Mortality
- Interactions with selection
- Diffusion of treatments
- Compensatory equalizations of treatments
- Compensatory rivalry (John Henry effect)
- Resentful demoralization



Experimental Validity: External validity


- Population validity
- Ecological validity
 - Definition




Examples of factors affecting ecological validity

- Multiple treatment interference
- Novelty and disruption effects
- Pretest sensitization
- Posttest sensitization
- Interaction of history and treatment effects
- Interaction of time of measurement and treatment effects






Pre-experimental designs



The one shot case study:
A design generally yielding meaningless results


X O




One group pretest-posttest design.

- Description
O X O
- Threats to internal validity
 - History
 - Maturation
 - Testing
 - Instrumentation






Quasi-experimental designs:
Non-random assignment



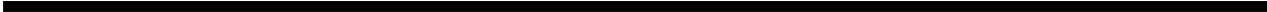
QE #1: Static group comparison design.


- 1. Description
X O
 O
- 2. Threats to internal validity
 - Selection
 - Interactions with selection
 - history by selection
 - maturation by selection
 - mortality by selection
 - statistical regression by selection



QE #1 (cont.)


- Threats
 - Diffusion of treatments
 - Compensatory equalizations of treatments
 - Compensatory rivalry (John Henry effect)
 - Resentful demoralization
- Statistical analysis: t test on posttest means





QE #2: Non-equivalent control group design

- Description
 - X ○
 - ○
- Threats to internal validity
 - Mortality
 - Interactions with selection
 - history by selection
 - maturation by selection



QE #2 (cont.)

- Threats to internal validity
 - mortality by selection
 - testing by selection
 - instrumentation by selection
 - statistical regression (if extreme group used)
 - Diffusion of treatments
 - Compensatory equalizations of treatments
 - Compensatory rivalry (John Henry effect)
 - Resentful demoralization

