

Kumar: Research Methodology

Chapter 7

The Research Design

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Topics covered

- What is a research design?
- Functions of research design
- Issues to consider when designing research
- The theory of causality and the research design



What is a research design

- Detailed plan of how the research study will be completed:
 - Operationalising variables
 - Selecting a sample
 - Selecting data collection methods
 - Selection analysis methods
- Valid and reliable
- Justified and supported by literature



Function of a research design

- Conceptualise an operational plan to undertake the various procedures and tasks required to complete a study
- Ensure that these procedures are adequate to obtain valid, objective and accurate answers to the research questions. Kerlinger calls this function the **control of variance** (1986: 280).



Research design

Specifying procedures clearly so that another researcher would be able to follow them exactly the same way. This should include:

- Name of the study design (e.g. experiment, cross-sectional design, etc.)
- Provide detailed information on study population, method of data collection, analysis methods and



The theory of causality and the research design

- When examining a cause-effect relationship:
 - Study the impact on the independent variable
 - Study the cause of change on the dependent variable
 - Consider other affecting variables (extraneous variables) by using a control group to quantify the impact
 - Consider random or change variables (changes in the dependent variable) due to mood of respondents or ambiguity of research instrument



Changes in the dependent variable may be attributed to three types of variables

- Insert image of updated boxes (p97, third edition): Changes in the dependent variable = changes attributable to independent variable \pm change attributable to extraneous variables \pm change attributable to chance and random variables



Building into the design

- Ensure that extraneous variables have a similar impact on control and experimental groups:
 - Randomisation
 - Matching
- Two methods for extraneous variables:
 - Build the affecting variable into the design of the study
 - Eliminate the variable



Figure 7.3 The proportion attributable to the three components may vary markedly

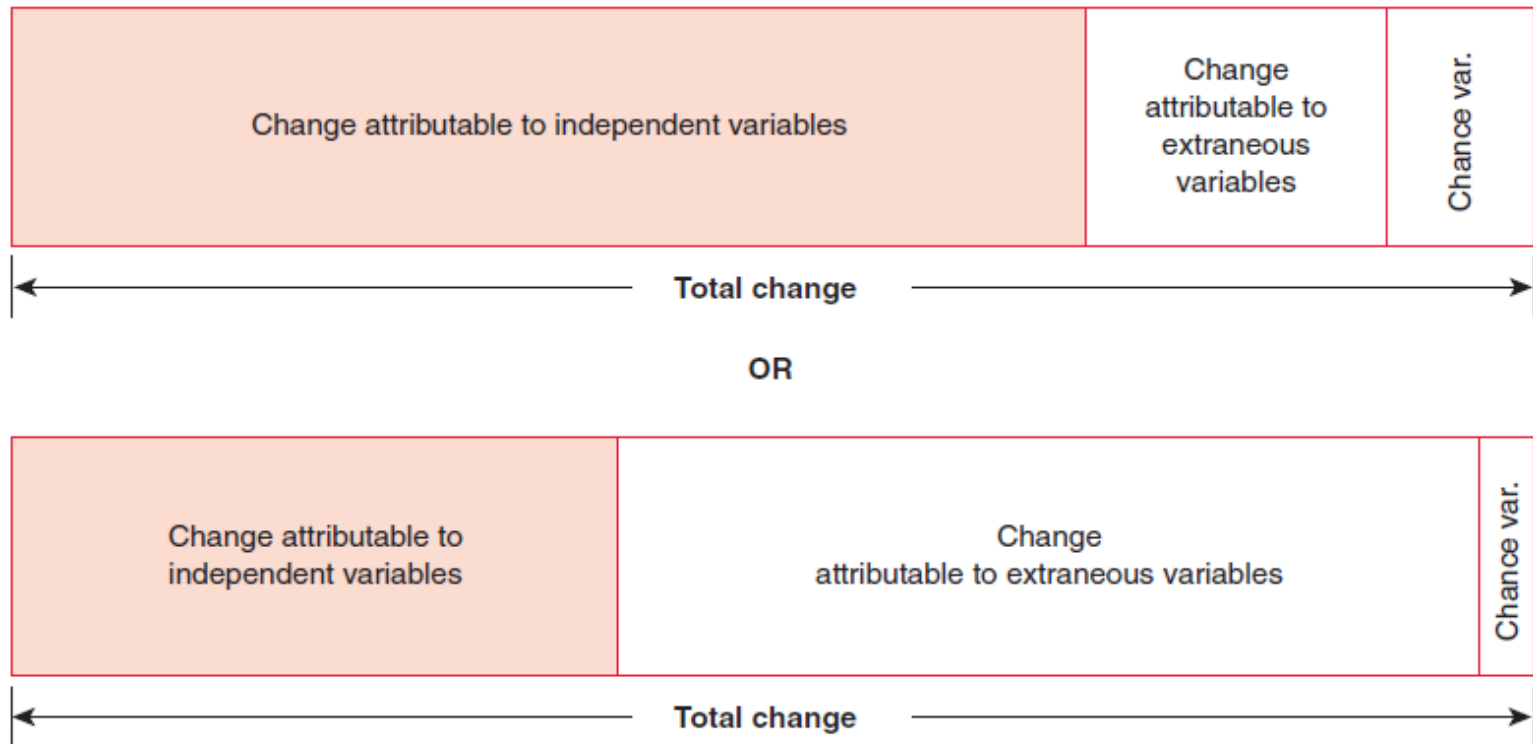


Figure 7.3 The components of total change: independent, extraneous and chance



Summary: Function of research design

- Stating the procedures for undertaking the study in detail
- Ensuring that the independent variable has the maximum opportunity to have its effect on the dependent variable while the effect of extraneous and change variables is minimised in a cause-effect relationship

