

An Introduction to SPSS

Overview

- The SPSS helps you to store and analyse data
- This lecture will introduce the key concepts of variables and cases
- The two basic approaches to research design are also outlined
- These key concepts will help you to take the first fundamental steps to understanding statistics

Variables

- A variable is any concept that can be measured and which varies
- There are a few fairly standard variables, such as age and gender, that are very commonly measured
- A variable, generally, cannot perfectly measure a concept and so is an approximation to the concept
- For this reason, it is important to understand that data and theory do not always map closely one on the other

Cases

- A **case** is simply **a member of the sample**
- In psychology, a case is usually a person (i.e. an individual participant in the research)
- Cases are very much SPSS Statistics jargon and are a wider and more embracing term than just participants
- A case could be an industry (e.g. car manufacturing), an organisation (e.g. car company) or an object (e.g. car engine)

SPSS

- In SPSS, each variable is normally represented as a column
- Each case is normally represented as a row
- Therefore, if you have collected data on 10 variables from 100 cases, your SPSS file will contain 10 columns and 100 rows
- In this instance, your data file would comprise of 1000 cells or pieces of data

Comparative Designs

- The basic comparative design compares the scores of a group of participants with that of another group. This might involve comparing a group of men with a group of women or comparing an experimental group with a control group
- Usually, in this sort of design, the comparison is between the average score for one group and the average score of the other group
- The design can be used to assess whether, say, the average time taken by males to study for a statistics exam is different from the average study time of females

An Example of a Comparative Design

Participant (Case)	Group A (Males)	Participant (Case)	Group B (Females)
1	10	5	21
2	12	6	14
3	4	7	21
4	14	8	8
Mean	$40/4 = 10$	Mean	$64/4 = 16$

Correlational Designs

- The basic correlational design is one in which the researcher measures two or more different variables at the same time using a single group of cases
- These variables might be age, IQ and self-esteem
- It investigates whether or not there is a correlation (i.e. a statistical relationship) between the chosen variables

An Example of a Correlational Design

Case	Gender	Age	IQ	Self-Esteem
1	F	18	135	8
2	M	19	120	4
3	M	25	100	8
4	F	21	105	3

Steps Towards a Basic Understanding

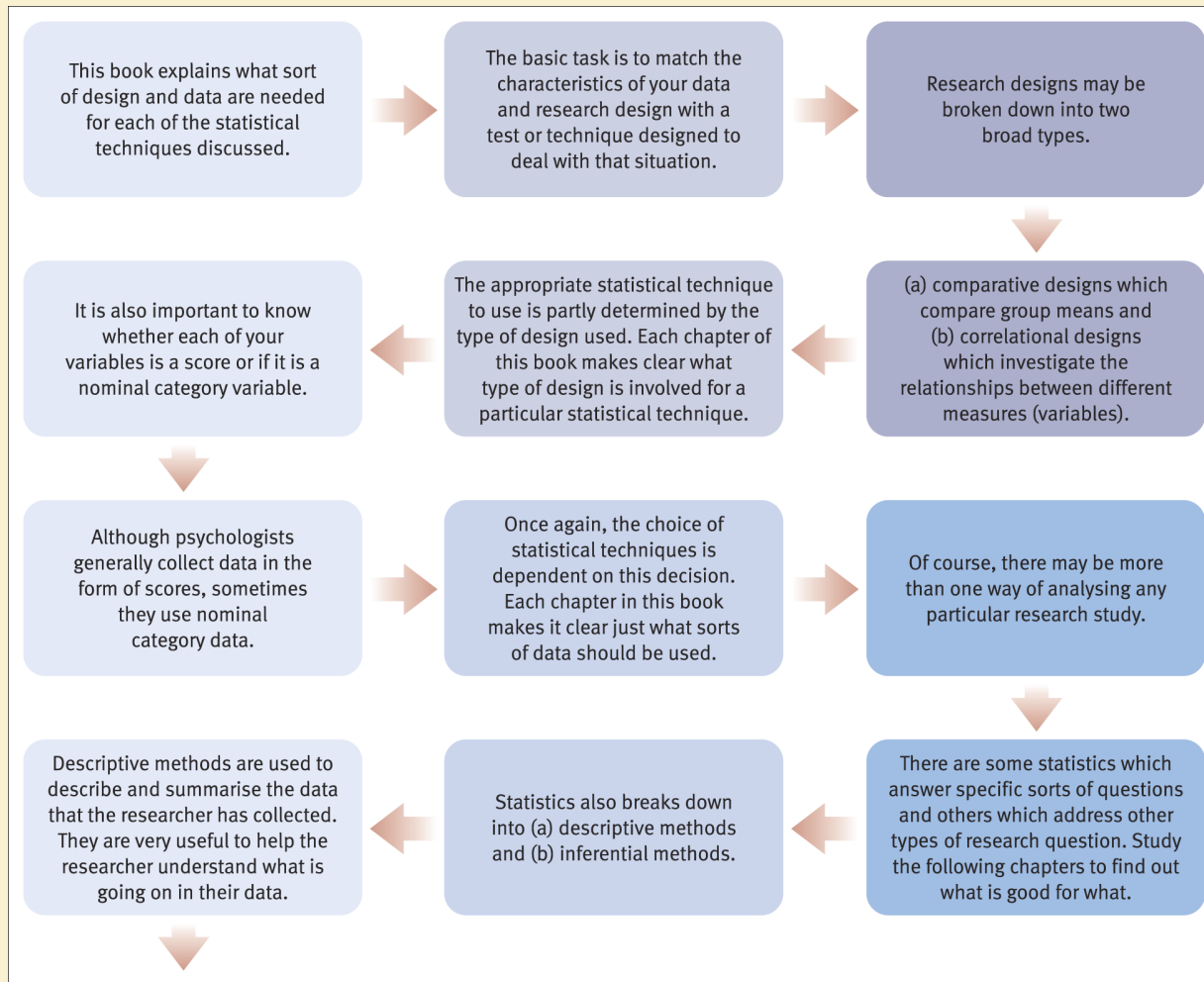


Figure 1.3 Steps towards a basic understanding of statistics

Steps Towards a Basic Understanding

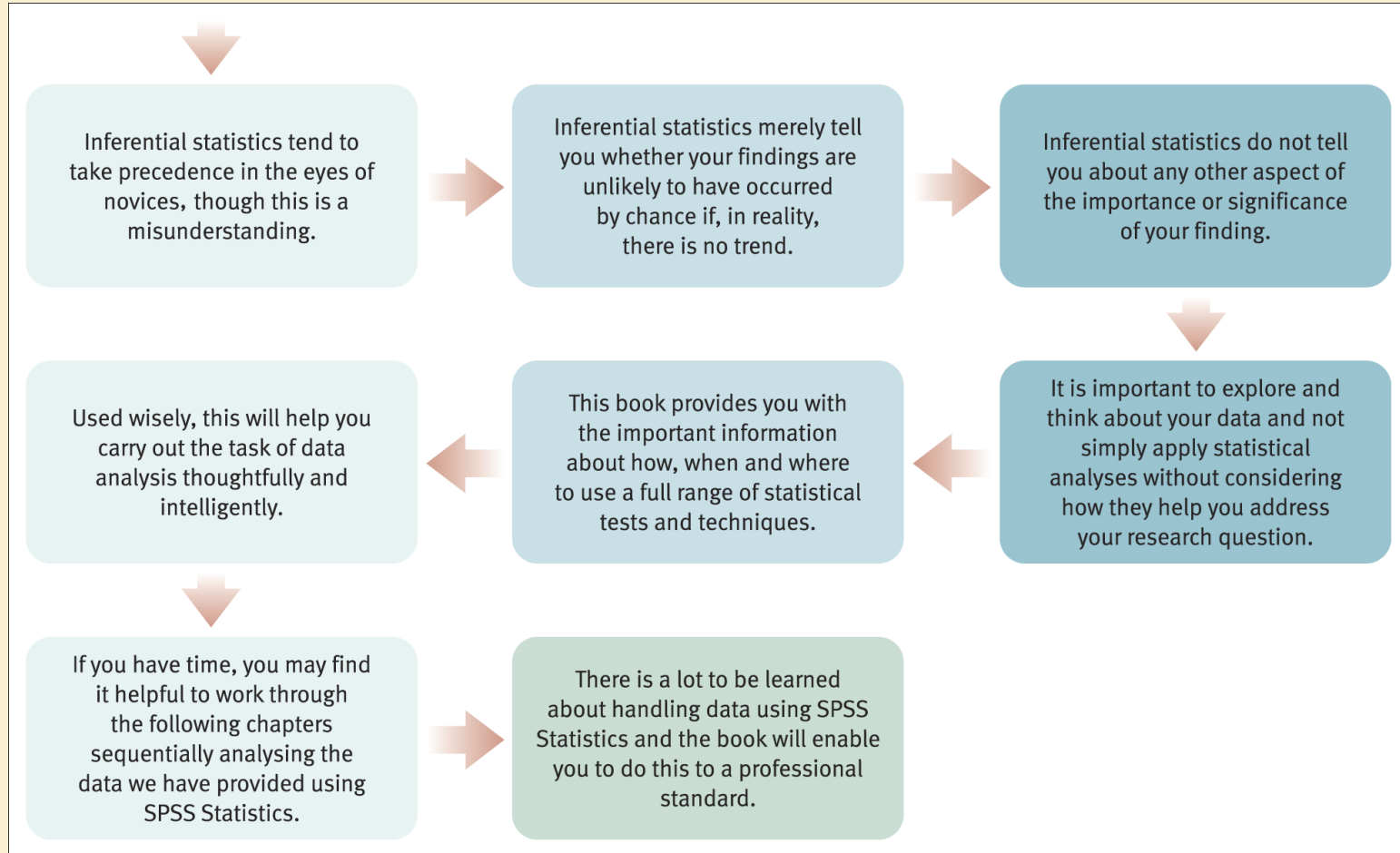


Figure 1.3 Steps towards a basic understanding of statistics (Continued)

Using SPSS

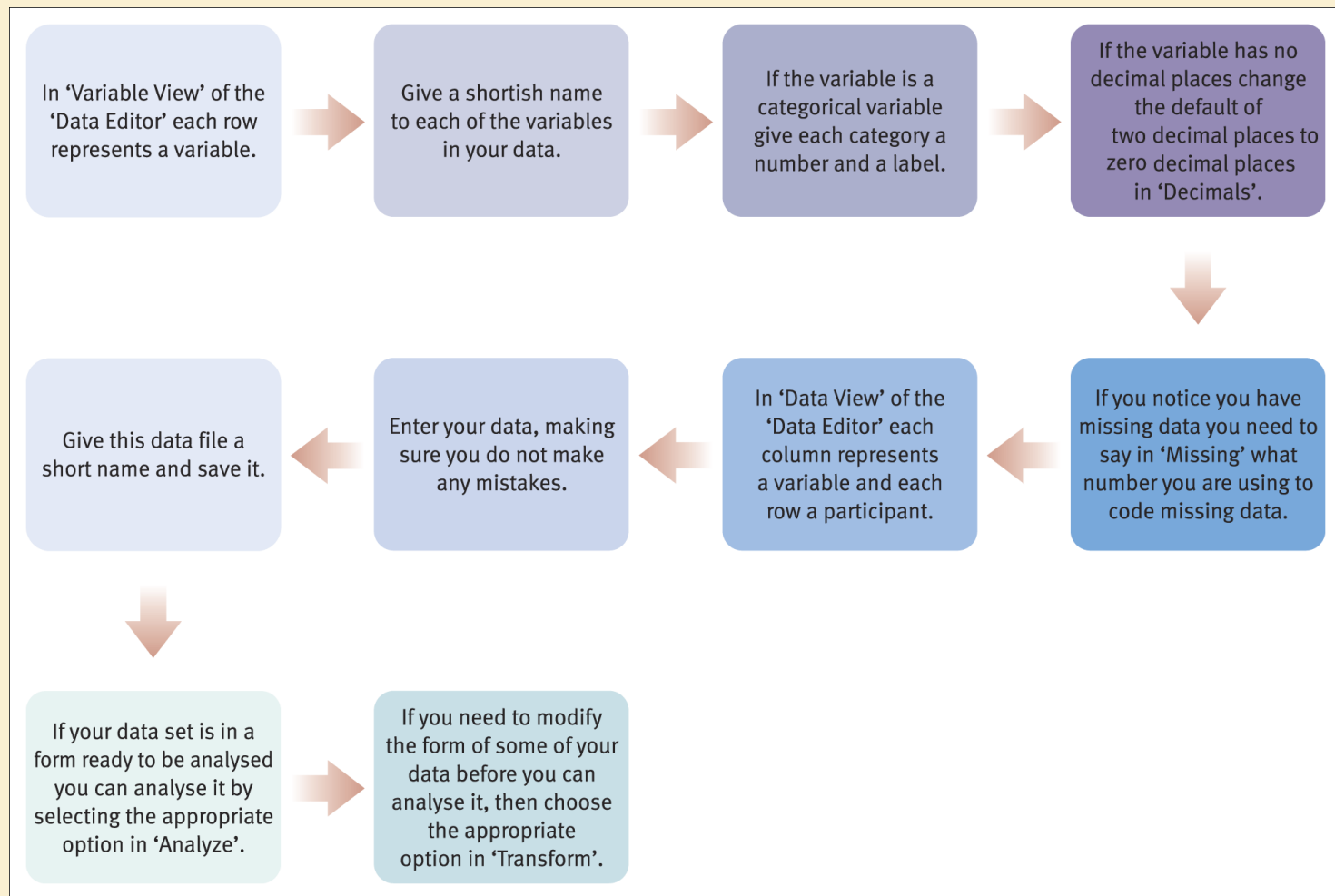


Figure 2.1 Key steps in conducting an SPSS analysis

Conclusion

- Anything that varies can be used as a variable in a research project
- A case is simply the source of the data; in psychology, this is usually an individual person
- Comparative designs look for differences between different groups
- Correlational designs look for relationships between variables in a single group of cases
- These ideas will underpin many of the concepts introduced in future lectures