Introduction to Statistics

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Introduction to Statistics

Overview

This resource is intended to provide an introduction to the basics of statistics.

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Chapter 1

Introduction

1.1 What is Statistics?

Statistics is all about the collection, organization, analysis, interpretation and presentation of data. Statistics is used everywhere from opinion polling in politics to predicting the prices of assets. There are two main branches of statistics: descriptive statistics and inferential statistics.

1.2 Descriptive Statistics

Descriptive statistics describes or summarises data that have been collected. Measures of central tendency and measures of dispersion are the most important tools.

1.3 Inferential Statistics

Inferential statistical is used to make prediction about a population using information gathered about a sample. Inferential statistics involves hypothesis testing and regression analysis.

Chapter 2

Data Types and Levels of Measurement

Data can be broadly categorised as **qualitative** (data relating to qualities or characteristics) or quantitative (numerical data relating to sizes or quantities of things).

We can further categorise **quantitative** data as being continuous or discrete.

Discrete data involves whole numbers that can't be divided because of what they represent (number of people in a class, number of cars owned). The number of people in a class cannot be 10.5 or 3.14. It must be a whole number because people are not divisible.

Continuous data can be divided and measured to some number of decimal places (height, weight, speed in miles per hour). A person's height can be any number (provided it lies within the range of possible human heights) and can be reported to any number of decimal places (150cm or 150.1cm or 150.12cm) depending on how accurate the measurement tool is.

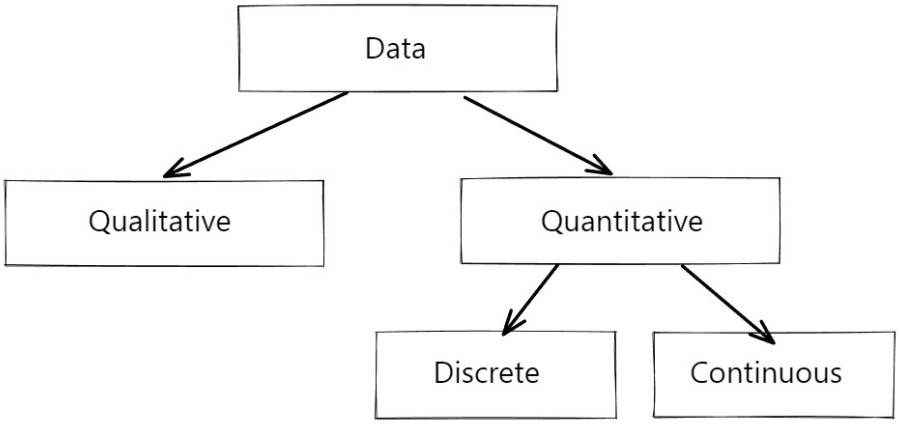

Figure 2.1: alt text

Chapter 3

Applications

Some *significant* applications are demonstrated in this chapter.

3.1 Example one

3.2 Example two

Chapter 4

Methods

We describe our methods in this chapter.

Chapter 5

Final Words

We have finished a nice book.