Drawing and testing assumptions – Lesson overview

Hypothesis testing serves as the framework through which we can draw and examine assumptions about our population data or the relationships between variables in a dataset. These assumptions help us **understand the characteristics** of our data and provide insights into the **reliability and generalisability** of the results.

In this lesson, we will explore the **fundamental concepts of hypothesis testing** and its importance in statistical analysis. By the end of this lesson, you will be able to **formulate hypotheses** and **test their validity** using various statistical tests.

- Slide deck
- Walk-through
- Video
- Reference card
- Knowledge questions

Learning objectives

- Know how to formulate the null and alternative hypotheses.
- Understand how statistical significance and level of significance can influence the results of a hypothesis test.
- Know what a test statistic, the critical value, and the p-value are, and how we can calculate them in Google Sheets.
- Know how to calculate the test statistic and critical value for a t-test, z-test, and Kolmogorov-Smirnov test in Google Sheets, and how to use these metrics to reject or fail to reject a null hypothesis.
- Understand the difference between parametric and non-parametric tests in hypothesis testing, and know how to choose between them.
- Know the different types of errors in hypothesis testing.