

CHAPTER OVERVIEW

5: Comparing Associations Between Multiple Variables

Hello everyone, and welcome to the fifth chapter of the University of Southern Queensland's online, open access textbook on statistics for research students. The aim of this chapter is to discuss associations between three or more variables.

As we have discussed in previous chapters, associations are mathematical relationships between variables. Generally, relationships are framed around a key pair of variables that explain a central effect of interest. For example, we have discussed that reading ability and test performance may be associated. However, there are other variables that could be associated with *either* reading ability, or test performance, or there may be other variables that are associated with *both* reading ability and test performance. Such associated variables are often termed covariates. Covariates are often used as additional variables of interest in Multiple Regression and Hierarchical Regression.

There are three main methods of regression analysis that correspond to three different types of models:

- **Simple or Basic Regression:** a regression model with one independent variable and one dependent variable.
- **Multiple Regression:** a regression model with two or more independent variables and one dependent variable.
- **Hierarchical Regression:** a regression model with two or more independent variables entered within two or more blocks of sequential predictors, and one dependent variable.

There are some slides that appear via links within Chapter Five. Please look for these as you review the current chapter.

[5.1: The Linear Model](#)

[5.2: Simple Regression Assumptions, Interpretation, and Write Up](#)

[5.3: Multiple Regression Explanation, Assumptions, Interpretation, and Write Up](#)

[5.4: Hierarchical Regression Explanation, Assumptions, Interpretation, and Write Up](#)

[5.5: Chapter Five Self-Test](#)

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