

MS Module 21: Multiple regression analysis (overview)

(The attached PDF file has better formatting.)

Reading §12.7: Multiple regression analysis, subsections on

- σ^2 and the Coefficient of Multiple Determination
- A Model Utility Test

Know the format of a multiple regression equation. You will not be asked to estimate the parameters.

Read the subsection on σ^2 and the Coefficient of Multiple Determination. Know how the degrees of freedom differs between simple linear regression and multiple regression. Given the total sum of squares and the error sum of squares, know how to derive the R^2 .

- Given the R^2 and the number of β parameters, know how to derive the adjusted R^2 .
- Given the adjusted R^2 and the number of β parameters, know how to derive the R^2 .

Read the subsection on “A Model Utility Test.”

Know the F test for the null hypothesis $H_0: \beta_1 = \beta_2 = \dots = \beta_k = 0$.

The F test for multiple regression is similar to the F test for analysis of variance.

The other sub-sections in this chapter are not on the syllabus for this course. These excluded sections are

- Inferences in Multiple Regression
- Assessing Model Adequacy
- Multiple Regression Models