Module 3: Model Diagnostics and Remedial Measures in Simple Linear Regression

Live Sessions
July 13: 9:00 - 9:50 am EDT (Blue), 10:00 - 10:50 am EDT (Orange)

Office Hours
Tue & Thu: 9:00 - 9:50 am EDT (Blue), 10:00 - 10:50 am EDT (Orange).

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MODULE WELCOME

In module 2, you learned how to account for random variation associated with the estimated regression model and interpret results from the estimated regression model in the face of random variation.

The simple linear regression model involves several assumptions that need to be met in order for our analyses to be valid. In this module, you will explore ways to assess the various assumptions in regression models. The goal is for you to be able to assess the appropriateness of a simple linear regression (SLR) for the data, diagnose which assumptions are not met, apply remedial measures when assumptions are not met, and then continue to build your regression model for your data.

ESSENTIAL QUESTIONS

- *How do we assess whether the regression assumptions are met in our linear regression model?*
- *What remedies can we perform when the constant variance assumption is not met?*
- *What remedies can we perform when the linearity assumption is not met?*

LEARNING OBJECTIVES

1. Assess the appropriateness of your simple linear regression model for data analysis and apply remedial measures to address common problems in building regression models.

ASSIGNED RESOURCES

- *Introduction to Linear Regression Analysis*, Sections 4.1 (page 129 only), 4.2.3, 5.1 to 5.4.1.
- Module 3 R tutorial, data set: windmill.txt, and R-code: tutorial_module 3.R
- Module 3 guided question set and data set: defects.txt

OPTIONAL

Visit the Module 3 Discussion Forum to communicate with one another about the assigned readings and resources or to discuss any other topics of interest with your instructor or fellow students.

Module 3 General Discussion

MODULE OVERVIEW