Week Six

Help Center

Dummy Variables, Interaction & Methods to Compare Straight Line Regressions

This week we will be learning how to code nominal scaled data through dummy variables. We will also review the statistical interaction, and how to interpret the coefficients for these interaction terms in a regression model. Finally, we will apply these concepts into two different methods of comparing straight-line regressions. The first method will involve fitting separate models and hand calculating a t-statistic, and the second, more elegant method will involve a single regression model and partial F-tests.

This week's homework will involve analyzing the equality of 2 straight-line regressions using a t-test. In this exercise, we'll be testing to see if mean grip strength is the same between 2 groups of people. Our homework will also involve regression analysis using a dummy coded independent variable.

We recommend that you do not watch the final *Week Six Homework Highlights* video until you have finished the homework for week 6, because we will be discussing the answers to the homework in that video.

Lectures

Please click on the links below to access the video lectures for this first week

- **Dummy Variables**
- **Statistical Interaction I: Introduction**
- **Statistical Interaction II: Graphing**
- **Comparing Straight Line Regressions: Method One**
- **Comparing Straight Line Regressions: Method One**
- **Comparing Straight Line Regressions: Method Two and Homework**

Lecture Material

Please click on the link below to download the slides of the sixth week

Week Six "Dummy Variables, Interaction and Methods to Compare Straight Line Regressions"

Conversations

Please join in the conversations around regression analysis in our **community forums** area. You can ask and answer questions and discover insights and help for yourself and others as we come together to encourage each other in our exploration.

Key Terms

Below are definitions of some important terms covered this week:

- **Dummy Variable**: Any variable in a regression equation that takes on a finite number of values; it is used to indicate categories of a nominal scaled variable.
- **Nominal Scaled Data**: Discrete classification of data, in which data are neither measured nor ordered but subjects are merely allocated to distinct categories.
- **Reference Cell Coding**: Method of coding in which the reference cell is coding as 0 (i.e. In the dummy coding of a nominal variable with k categories, the different categories will be coded as follows: 0, 1,… (k-1)).
- **Statistical Interaction**: The effect of one predictor variable is dependent on the levels of another predictor variable.
- **Parallel Lines (in Regression)**: Regression lines with the same slope.
- **Coincident Lines (in Regression)**: Regression lines with the same slope and intercept.

Homework

Please watch the following video, **Homework Highlights from Week Five**, to review the homework from last week.

Navigate to the **Week Six Homework** page to view and download the homework for this week.

After you complete the Week Six Homework, please watch the **Homework Highlights from Week Six** video to review the homework.

Quiz

After you've gone through the materials for this week please be sure to visit the **quizzes area** to complete this week's quiz.

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