Chapter 4: Regression Analysis: Exploring the associations between Variables

Reading Assignment: Sections 4.1- 4.2

- Read the chapter opener on page 133 to capture the underlying theme of this chapter.

Section 4.1 Visualizing Variability with a Scatterplot

Learning Objectives:
- Look at the associated scatterplot of the variables and learn as much as you can about the association.
- Examine the trend, strength, and shape. Identity any possible outliers
- Be able to write a clear description of the association between the two variables

Read pages 134-138 as you read;

- Watch both Active Stats (AS) videos on page 134, Visualizing variability with a scatterplot and Recognize Trends.
- Do the “Try This” exercise 4.7 on page 138

Section 4.2 Measuring Strength of association with Correlation

Learning Objectives:
- Be able to approximate with reasonable accuracy the numerical value of the correlation coefficient by a visual inspection of the scatterplot
- Be able to calculate the exact value of the correlation coefficient using appropriate technology

Key Point
- The correlation coefficient does not tell whether and association is linear. However if you already know the association is linear, then the correlation coefficient tells you how strong the association is.

Read pages 138-146 as you read;

- Watch the AS video on page 139, Construct a Scatterplot with a given coefficient and try the applet on this page as well.
- Do example 2 on page 142 using Stat Crunch to create the scatterplot shown on this page and find the associated correlation coefficient
- Do the “Try This” on page 143 exercise 4.19a, this will open for you in Stat Crunch
- At the conclusion of this section you should be able to answer the following question about the correlation coefficient “r”
  - What is it?
  - What does it do?
  - How does it do it?
  - How is it used?