

Descriptive Statistics 2

STAT-UB.0103 – Statistics for Business Control and Regression Models

Standard Deviation and The Empirical Rule

1. Fifty-seven respondents to the class survey reported their SAT scores. The mean score was 2160, and the standard deviation was 140. What can you say about the range of scores reported? Assume that the distribution of reported scores is symmetric and mound-shaped.
2. Of those students who reported high school GPAs measured on a 4-point scale, the mean value was 3.9 and the standard deviation was 0.2.
 - (a) Complete the following statement with appropriate values for X and Y : “For those students whose high school GPAs were measured on a 4-point scale, approximately 95% of the survey respondents reported values between X and Y .”
 - (b) What assumptions do you need to make for the statement in (a) to be correct? Do you think these assumptions are plausible? How could you check this?
3. Your company has an annual profit of \$60MM with a standard deviation of \$5MM. Assume that the distribution of your annual profits is symmetric and mound-shaped.
 - (a) Would it be unusual for your company to have an annual profit of \$52MM?
 - (b) Would it be unusual for your company to have an annual profit of \$83MM?

***z*-scores**

4. Fifty-one respondents from the class survey reported an expected annual salary below \$150K. The mean and standard deviation of these values (in \$1K) was $\bar{x} = 68$ and $s = 13$. How many standard deviations above or below the mean are the following values?

(a) An expected starting salary of \$80K per year.

(b) An expected starting salary of \$60K per year.

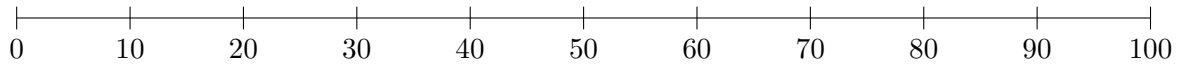
(c) An expected starting salary of \$250K per year.

5. In the previous problem, which of the values are unusual?

Boxplots

6. Here are the 35 reported expected starting salaries for the male survey respondents (in \$1K per year). Make a boxplot of the data.

50, 50, 50, 50, 60, 60, 60, 60, 60, 60, 60, 60, 60, 60, 60, 62.4, 65, 65, 65, 70, 70, 70, 75, 76, 80, 80, 80, 80, 80, 80, 80, 80, 85, 90, 90, 100, 250, 300



7. Here are the 18 reported expected starting salaries for the female survey respondents. Make a boxplot of the data.

40, 45, 54, 60, 60, 60, 60, 60, 65, 67, 70, 70, 70, 70, 80, 80, 85, 100

