CHAPTER 3: **Descriptive Statistics: Numerical Measures**

Learning Objectives

After studying this chapter and doing the exercises, you should be able to calculate and interpret the following statistical measures that help to describe the central location, variability and shape of data sets.

1. The mean, median and mode (measures of central location).

2. Percentiles (including quartiles), the range, the interquartile range, the variance, the standard deviation and the coefficient of variation (measures of variability)

3. You should understand the concept of skewness of distribution. You should be able to calculate *z*-scores and understand their role in identifying data outliers.

4. You should understand the role of Chebyshev's theorem and the empirical rule in estimating the spread of data sets.

5. 5-number summaries and box plots.

6. Scatter diagrams, covariance and Pearson's correlation coefficient (measures of association between two variables).

7. Weighted means.

8. Estimates of mean and standard deviation for grouped data.