Southern New Hampshire University

QSO 510 Data Set Homework Guidelines and Rubric

Two data sets are used during this course for three homework assignments:

Module Two, **Descriptive Statistics:** Data set 1 presents a sample of annual salaries for recently hired plant operators at a chemical manufacturing company. Use Excel's ToolPak (or any statistical package that you are comfortable with) to compute descriptive statistics for the data. Submit your statistical output from Excel, which should include values for the mean, median, mode, sample variance, and sample standard deviation.

Module Four, **Correlation and Regression**: Data set 2 presents a sample of the number of defective flash drives produced by a small manufacturing company over the last 30 weeks. Use Excel's Analysis ToolPak (or any statistical package that you are comfortable with) to compute the regression equation for predicting the number of defective flash drives over time (in weeks), the correlation coefficient r, and the coefficient of determination R^2. Submit your statistical output from Excel, which should include values for the slope, y-intercept, regression equation, r, and R^2.

Module Six, Hypothesis Testing: Data set 2 presents a sample of the number of defective flash drives produced by a small manufacturing company over the last 30 weeks. The company's operations manager believes that the number of defects produced by the process is less than seven defective flash drives per week. Use this online calculator (or any statistical package that you are comfortable with) to construct a hypothesis test to verify the operations manager's claim. Your hypothesis test should include null and alternative hypotheses, a t test statistic value, a p-value, a decision, and a conclusion. Submit a Word file that includes the hypothesis test.

Specifically, the following **critical elements** must be addressed:

  I.   **Methodology**
  II. **Analysis**

Guidelines for Submission: For the Modules Two and Four assignments, submit both a 1-page Word document and an Excel spreadsheet. For the Module 6 assignment, submit only a 1-page Word document.

Rubric

Critical Elements	Exemplary (100%)	Proficient (90%)	Needs Improvement (70%)	Not Evident (0%)	Value
Methodology	Meets "Proficient" criteria, and articulation is comprehensive and astute methodology	Clearly and accurately articulates methodology	Articulation of methodology is unclear and/or inaccurate	Does not articulate methodology	40
Analysis	Meets "Proficient" and the quality of the statistical analysis is above minimum quality standards for competent	Represents competency with respect to the statistical analysis	Statistical analysis is evident, but does not meet standards	Statistical analysis is not evident	50
Articulation of Response	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy to read format	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	10
				Earned Total	**100%**