QSO 510 Milestone Two Guidelines and Rubric

The final project for this course is the creation of a **statistical analysis report**. Operations management professionals are often relied upon to make decisions regarding operational processes. Those who utilize a data-driven, structured approach have a clear advantage over those offering decisions based solely on intuition. You will be provided with a scenario often encountered by an operations manager. Your task is to review the "A-Cat Corp.: Forecasting" scenario, the addendum, and the accompanying data in the case scenario and addendum.

In **Module Seven,** you will submit your **selection of statistical tools and data analysis,** which are critical elements III and IV. You will submit a 3- to 4-page paper and a spreadsheet that provides justification for the appropriate statistical tools needed to analyze the company's data, a hypothesis, the results of your analysis, any inferences from your hypothesis test, and a forecasting model that addresses the company's problem.

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

III. Identify **statistical tools and methods** to collect data:
   A. Identify the appropriate **family of statistical tools** that you will use to perform your analysis. What are your statistical assumptions concerning the data that led you to selecting this family of tools? In other words, why did you select this family of tools for statistical analysis?
   B. Determine the **category of** the **provided data** in the given case study. Be sure to justify why the data fits into this category type. What is the relationship between the type of data and the tools?
   C. From the identified family of statistical tools, select the **most appropriate tool(s)** for analyzing the data provided in the given case study.
   D. **Justify** why you chose this **tool** to analyze the data. Be sure to include how this tool will help predict the use of the data in driving decisions.
   E. Describe the **quantitative method** that will best inform data-driven decisions. Be sure to include how this method will point out the relationships between the data. How will this method allow for the most reliable data?

IV. **Analyze data** to determine the appropriate decision for the identified problem**:**
   A. Outline the **process** needed to utilize your statistical analysis to reach a decision regarding the given problem.
   B. Explain how following this process leads **to valid**, **data-driven decisions**. In other words, why is following your outlined process important?
   C. After analyzing the data sets in the case study, describe the **reliability of** the **results.** Be sure to include how you know whether the results are reliable.
   D. Illustrate a **data-driven decision** that addresses the given problem. How does your decision address the given problem? How will it result in operational improvement?

Guidelines for Submission: Your paper must be submitted as a 3- to 4-page Microsoft Word document and attached spreadsheet with double spacing, 12-point Times New Roman font, one-inch margins, and at least six sources cited in APA format.

Rubric

Critical Elements	Exemplary	Proficient	Needs Improvement	Not Evident	Value

Southern New Hampshire University

Criteria	Exemplary	Proficient	Needs Improvement	Not Evident	Value
Statistical Tools and Methods: Family of Statistical Tools	Meets "Proficient" criteria and identification demonstrates nuanced understanding of statistical tools (100%)	Identifies the appropriate family of statistical tools used to perform statistical analysis, including statistical assumptions (90%)	Identifies a statistical family of tools used to perform statistical analysis but either the tools are not the most appropriate to use or discussion lacks statistical assumptions (70%)	Does not determine a family of statistical tools (0%)	7
Statistical Tools and Methods: Category of Provided Data	Meets "Proficient" criteria and demonstrates insight into the relationship of the category of data and statistical tools (100%)	Determines the category of the provided data, including justification to support claims (90%)	Determines the category of the provided data but category is either inaccurate or discussion lacks justification to support claims (70%)	Does not determine a category for the data (0%)	7
Statistical Tools and Methods: Most Appropriate Tool		Selects the most appropriate statistical tool used to analyze the data (100%)	Selects a statistical tool but selection is not the most appropriate given the data (70%)	Does not select a tool to be used for analysis (0%)	7
Statistical Tools and Methods: Justify Tool	Meets "Proficient" criteria and justification demonstrates insight into the relationship between statistical tools and type of data (100%)	Justifies why the tool chosen is the most appropriate for analysis of this data (90%)	Justifies why the tool chosen is the most appropriate for the analysis but justification is either illogical or cursory (70%)	Does not justify why a particular tool was chosen (0%)	7
Statistical Tools and Methods: Quantitative Method	Meets "Proficient" criteria and description demonstrates insight into the relationship between the quantitative method and data relationships (100%)	Describes the quantitative method that will best inform the decision, including how this method will point out the relationships between the data (90%)	Describes the quantitative method but either the method selected will not result in the most reliable data or discussion lacks how the method will point out the relationships between the data (70%)	Does not describe the quantitative method (0%)	7
Analyze Data: Process	Meets "Proficient" criteria and offers great detail for each identified step (100%)	Outlines the process needed to utilize the statistical analysis (90%)	Outlines the process needed to utilize the statistical analysis but steps are either inappropriate or overgeneralized (70%)	Does not outline the process needed to utilize the statistical analysis (0%)	15

Criteria	Exemplary	Proficient	Needs Improvement	Not Evident	Value
Analyze Data: Valid, Data-Driven Decisions	Meets "Proficient" criteria and explanation demonstrates a nuanced understanding of how following a process will lead to a valid decision (100%)	Explains how following the outlined process leads to a valid data-driven decision (90%)	Explains how following the outlined process leads to a valid decision but explanation is inappropriate or cursory (70%)	Does not offer an explanation why following the outlined process leads to a valid decision (0%)	15
Analyze Data: Reliability of Results	Meets "Proficient" criteria and description demonstrates keen insight into identifying reliable data (100%)	Describes the reliability of the results based on data sets, including a justification to support claims (90%)	Describes the reliability of the results but description is either cursory or lacks justification to support claims (70%)	Does not describe the reliability of the results (0%)	15
Analyze Data: Data-Driven Decision	Meets "Proficient" criteria and illustration demonstrates a deep understanding of the interplay between a problem, the operation, and operational improvement (100%)	Illustrates a data-driven decision that addresses the problem and operational improvement (90%)	Illustrates a data-driven decision that addresses the problem but illustration is either inappropriate or overgeneralized (70%)	Does not illustrate a decision that addresses the problem (0%)	15
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 (100%)	Submission has no major errors related to citations, grammar, spelling, syntax, or organization (90%)	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas (70%)	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas (0%)	5
				Earned Total	100%