

PSY 223 Final Project Guidelines and Rubric

Overview

The final project for this course is the creation of a **statistical analysis report**.

The two research courses (PSY 223 and PSY 224) will demystify statistics and research methods in order to show that they are based on simple principles that apply to situations in the social sciences. In psychology, we need to distinguish what is “real” from what is “not real but looks real.” Is this patient really depressed? Does this form of group treatment of adolescents work better than a different form of treatment?

In this summative assessment, you will choose a scenario from a given set to be the basis for your statistical analysis report. Within the scenario, you will be given a data set based on two groups. You will apply the statistical analysis skills you have learned in this course to interpret the data and write up a report of the results. You will be evaluated not only on your computations but also on your explanation of the interpretation of the data.

The project is divided into **three milestones** and a final product. The milestones will be submitted at various points throughout the course to scaffold learning and to ensure quality final submissions. These milestones will be submitted in **Modules Two, Four, and Five**. The final project will be submitted in **Module Seven**.

In this assignment, you will demonstrate your mastery of the following course outcomes:

- Analyze descriptive and inferential statistics for preparing statistically accurate psychological research
- Utilize appropriate statistical techniques for computing descriptive statistics and generating graphs regarding statistical analyses of psychological research
- Select appropriate statistical procedures for use in statistical analyses regarding psychological research
- Interpret the results of statistical analyses of psychological research data for drawing informed conclusions regarding the implications of psychological research
- Assess scenarios involving statistical procedures for ensuring alignment with the expectations of the APA Ethical Principles of Psychologists

Prompt

Select a scenario from the [Scenarios and Data Sets document](#) to be the basis of your statistical analysis report. When deciding on which scenario to choose, determine which one is the most beneficial for your area of concentration in psychology. This statistical analysis report will inform stakeholders about the analysis and interpretation of the data presented in the scenario. Microsoft Excel is the recommended statistical software for this course, and the data sets are already placed into [Excel files](#). You will first summarize your chosen scenario and discuss ethical issues. You will then begin your data analysis, determining the appropriate procedures in testing your hypothesis. Finally, you will summarize and interpret your results, making appropriate conclusions based on those results.

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

I. Introduction

- A. Summarize the **scenario** you have chosen, including participants, the data set presented, and the question that can be answered by the data.
- B. Discuss why the **scenario** exemplifies a study that **agrees** with APA's Ethical Principles of Psychologists.
- C. Discuss **ethical issues** that may potentially arise when analyzing and reporting statistical data.
- D. Explain what you will do in your data analysis and reporting to **ensure alignment** with the expectations of APA's Ethical Principles of Psychologists.

II. Data Analysis

- A. Identify the **sample size** and explain how it will inform your analysis. In other words, what is the sample size? How will the size of the sample inform your analysis?
- B. Select what **statistical procedures** should be implemented in your analysis, and justify why you feel these are appropriate.
- C. Explain how statistical procedures can help you determine whether the data is attributable to **chance factors**.
- D. Compute the **mean and the standard deviation** for each set of data using appropriate abbreviations and terminology.
- E. Prepare an appropriately labeled **histogram** for each set of data.
- F. Evaluate the **shape** of each distribution using your created histograms. In other words, what does the shape of each distribution tell us about the data?

III. Hypothesis

- A. Determine **whether one mean is higher**, showing how you made the determination.
- B. Identify the **null hypothesis and alternative hypothesis** using appropriate statistical symbols and language based on what you are comparing.

IV. Results

- A. Based on your results, determine whether the data provide evidence for a **valid** effect.
- B. Explain whether or not the results are **statistically significant**. Support your response with results from the data analysis.
- C. Present properly labeled **graphs** representing the data analysis results detailed clearly for ease of stakeholder interpretation.

V. Conclusion

- A. Explain your **interpretation** of the data. In other words, based on your results, what do you think the data mean? What are the potential implications of this data for the stakeholders? What do these results mean for future research into the topic area?
- B. Justify the **data analysis procedures** you used to reach your interpretation.
- C. Discuss whether it would be appropriate to conduct **more statistical procedures** to further interpret the data.

Milestones

Milestone One: Are Things Okay Ethically?

In **Module Two**, you will submit the Milestone One Worksheet. In this milestone, you will address the following: (1) Indicate what data set you have chosen and why. If you chose a particular data set to align with your concentration in psychology, describe in a sentence or two why you have chosen this concentration. (2) Describe the involved parties in the data set presented and the question that you can answer by the data. (3) Discuss why the data set exemplifies a study that agrees with the APA's Ethical Principles of Psychologists. (4) Discuss ethical issues that may arise when analyzing and reporting statistical data. (5) Describe one way in which you will ensure your reporting of results will align with the APA's Ethical Principles. **This milestone is graded with the Milestone One Rubric.**

Milestone Two: What Method Will You Use?

In **Module Four**, you will submit the Milestone Two Worksheet. In this milestone, you will address the following: (1) Indicate sample size ($n = ?$) and describe what consequence(s) this sample size will have in terms of analyses and reporting. (2) Using the Choose Your Test document, select a statistical procedure appropriate to your scenario/data. Explain why you selected that test, linking features of the scenario/data to information from the Choose Your Test document. This milestone addresses critical elements Section II, parts A and B only. You will do the calculations for Section II parts C, D, E, and F as you complete your final project. **This milestone is graded with the Milestone Two Rubric.**

Milestone Three: Hypothesizing

In **Module Five**, you will submit the Milestone Three Worksheet. In this milestone, you will indicate the null hypothesis and the alternative hypothesis and state your understanding of what the hypotheses mean. **This milestone is graded with the Milestone Three Rubric.**

Final Submission:

In **Module Seven**, you will submit the **statistical analysis report**. You will complete the remaining critical elements, Section II C–F (Data Analysis), Section IV (Results), and Section V (Conclusion). Combine these elements with your revised milestones to develop a complete, polished artifact containing **all** of the critical elements of the final project. It should reflect the incorporation of feedback gained throughout the course. **This submission will be graded using the Final Project Rubric.**

Deliverables

Milestone	Deliverable	Module Due	Grading
One	Are Things All Right Ethically?	Two	Graded separately; Milestone One Rubric
Two	What Method Will You Use?	Four	Graded separately; Milestone Two Rubric
Three	Hypothesizing	Five	Graded separately; Milestone Three Rubric
	Final Submission: Statistical Analysis Report	Seven	Graded separately; Final Project Rubric

Final Project Rubric

Guidelines for Submission: Your report should be approximately 4 to 5 pages (not including cover page, references, graphs, and/or visuals) and must be written in APA format. Use double spacing, one-inch margins, and 12-point Times New Roman font. Include a cover page for your report. Include at least three references, cited in APA format.

Critical Elements	Exemplary (100%)	Proficient (85%)	Needs Improvement (55%)	Not Evident (0%)	Value
Introduction: Scenario	Meets “Proficient” criteria and summary is exceptionally clear and contextualized around the problem or question being addressed	Provides a summary of the scenario chosen	Provides a summary of the scenario chosen, but summary is cursory or illogical	Does not summarize the scenario chosen	3
Introduction: Scenario Agrees	Meets “Proficient” criteria and uses industry-specific language to establish expertise	Discusses why the scenario exemplifies a study that agrees with the APA’s Ethical Principles of Psychologists	Discusses why the scenario exemplifies a study that agrees with the APA’s Ethical Principles of Psychologists, but discussion is cursory or illogical	Does not discuss why the scenario exemplifies a study that agrees with the APA’s Ethical Principles of Psychologists	3
Introduction: Ethical Issues	Meets “Proficient” criteria and draws insightful connections between ethical issues and data analysis and reporting	Discusses ethical issues that may potentially arise when analyzing and reporting statistical data	Discusses ethical issues that may potentially arise when analyzing and reporting statistical data, but discussion is cursory or illogical	Does not discuss ethical issues that may potentially arise when analyzing and reporting statistical data	6.26

Introduction: Ensure Alignment	Meets “Proficient” criteria and demonstrates a nuanced understanding of ethical data analysis and reporting	Explains what will be done in personal data analysis and reporting to ensure alignment with the expectations of the APA Ethical Principles of Psychologists	Explains what will be done in personal data analysis and reporting to ensure alignment with the expectations of the APA Ethical Principles of Psychologists, but explanation is illogical or irrelevant	Does not explain what will be done in personal data analysis and reporting to ensure alignment with the expectations of the APA Ethical Principles of Psychologists	6.26
Data Analysis: Sample Size	Meets “Proficient” criteria and explanation demonstrates a sophisticated awareness of how the sample size can inform statistical analysis	Identifies the sample size and explains how the sample size will inform the statistical analysis	Identifies the sample size and explains how the sample size will inform the statistical analysis but explanation is cursory or contains inaccuracies	Does not identify the sample size or explain how the sample size will inform the statistical analysis	6.26
Data Analysis: Statistical Procedures	Meets “Proficient” criteria and demonstrates a nuanced understanding of appropriate application of statistical procedures	Selects what procedures should be implemented in the analysis and justifies why these statistical procedures are appropriate	Selects what procedures should be implemented in the analysis and justifies why these statistical procedures are appropriate, but some procedures selected are not appropriate or the justification is not logical	Does not select what procedures should be implemented in the analysis and justify why these statistical procedures are appropriate	6.26
Data Analysis: Chance Factors	Meets “Proficient” criteria and explanation is exceptionally clear and contextualized	Explains how statistical procedures can help determine whether the data is attributable to chance factors	Explains how statistical procedures can help determine whether the data is attributable to chance factors, but explanation is illogical	Does not explain how statistical procedures can help determine whether the data is attributable to chance factors	6.26
Data Analysis: Mean and Standard Deviation		Computes the mean and standard deviation accurately for each set of scores using appropriate abbreviations and terminology	Computes the mean and standard deviation for each set of scores, but computations are not accurate or do not use appropriate abbreviations and terminology	Does not compute the mean and standard deviation for each set of scores	6.26
Data Analysis: Histogram		Prepares an accurate, appropriately labeled histogram graph for each set of scores or score distribution	Prepares a histogram graph for each set of scores or score distribution, but the graphs are not accurate or are not appropriately labeled	Does not prepare a histogram graph for each set of scores or score distribution	6.26
Data Analysis: Shape	Meets “Proficient” criteria and evaluation demonstrates keen insight into what the shape of a distribution says about the data	Evaluates the shape of each distribution using created histograms	Evaluates the shape of each distribution using created histograms, but evaluation is cursory or contains inaccuracies	Does not evaluate the shape of each distribution using created histograms	6.26

Hypothesis: Whether One Mean is Higher		Accurately determines whether one mean is higher, showing how the determination was made	Determines whether one mean is higher, but result is inaccurate or does not show how the determination was made	Does not determine whether one mean is higher	6.26
Hypothesis: Null Hypothesis and Alternative Hypothesis		Accurately identifies the null hypothesis and alternative hypothesis in language based on what is being compared and using appropriate statistical symbols	Identifies the null hypothesis and alternative hypothesis in language based on what is being compared, but identification is not accurate or does not use appropriate statistical symbols	Does not identify the null hypothesis and alternative hypothesis	6.26
Results: Valid		Accurately determines if the data provides evidence for a valid effect	Determines if the data provides evidence for a valid effect, but the determination is illogical or inaccurate	Does not determine if the data provides evidence for a valid effect	3.76
Results: Statistically Significant	Meets "Proficient" criteria and explanation is exceptionally clear and contextualized	Explains whether or not the results are statistically significant	Explains whether or not the results are statistically significant, but explanation is cursory or illogical	Does not explain whether or not the results are statistically significant	3.76
Results: Graphs	Meets "Proficient" criteria and graphs are exceptionally well developed and readable	Presents accurate, properly labeled graphs representing the data analysis results detailed clearly for ease of stakeholder interpretation	Presents graphs representing the data analysis results, but the graphs are inaccurate, improperly labeled, or are lacking in detail	Does not present graphs representing the data analysis results	6.26
Conclusion: Interpretation	Meets "Proficient" criteria and uses discipline-specific terminology to establish expertise without overwhelming stakeholders	Explains the interpretation of the data	Explains the interpretation of the data, but explanation is cursory or illogical	Does not explain the interpretation of the data	3.76
Conclusion: Data Analysis Procedures	Meets "Proficient" criteria and demonstrates a deep understanding of ethical data analysis procedures	Justifies the data analysis procedures used to reach the interpretation	Justifies the data analysis procedures used to reach the interpretation, but justification is illogical	Does not justify the data analysis procedures used to reach the interpretation	3.76
Conclusion: More Statistical Procedures	Meets "Proficient" criteria and discussion is exceptionally clear and contextualized	Discusses whether it would be appropriate to conduct more statistical procedures to further interpret the data	Discusses whether it would be appropriate to conduct more statistical procedures to further interpret the data, but discussion is cursory or contains issues of clarity	Does not discuss whether it would be appropriate to conduct more statistical procedures to further interpret the data	3.76

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	6.34
Total					100%