

STAT225 Introduction to Statistical Methods in Behavioral Sciences
Final Applied Project
Margo Coleman-Seiffert, Ph.D.

Completed Report Due:
Sunday May 11th at midnight Eastern Time

Purpose:

Students will conduct one brief research exercise that will be written up as a research report using APA style. Please note: It needs to be written in paper format, not answers to questions. This paper will give the student practical experience in defining explanatory/independent and response/dependent variables, selecting the appropriate statistical technique, conducting data analysis, and writing up research results in APA format. As noted in the syllabus, the final applied project will be worth 26% of the final grade.

One important note: This assignment will **NOT** include collecting data from people or animals. Use the data provided by the instructor in the attached spreadsheet. The data was collected from selected foods in a US commissary in Germany.

Content of the Paper:

Following APA guidelines for laboratory reports, your paper **must** contain the following:

1. Title Page
2. Abstract
3. Introduction – one to two paragraph introduction based on information from one source provided by the instructor. Must include the research question, statement of the research hypothesis, and identification of the explanatory/independent and response/dependent variables.
4. Method – including procedures and information collected.
5. Results – this section describes the statistical analysis used and presents the results in text, statistical, and graphic formats
6. Discussion – including the strengths and limitations of the design and ethical concerns, if any.
7. References

Content of the Paper:

Your paper **must** contain the following:

Title Page

1. Abstract – Brief (200 words) summary of the study. This should describe:
 - a. The problem under investigation, in one sentence, if possible
 - b. The participants (in this case, it would describe the Frozen entrees)
 - c. Essential features of the study method
 - d. The basic findings
 - e. Conclusions and implications or applications

2. Introduction – one to two paragraph introduction. Read the "Limit Fat and Sugar" article available at: <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/eat-right/limit-fat-sugar.htm>. Based on this information contained in this article, develop a research question and hypotheses regarding the data collected from the commissary. Be sure to **answer** the following questions:
- ✓ What is the research question? Specifically, what is the researcher interested in determining from this study? Please be sure to use the information from the article in your report as background information to justify the research question.
 - ✓ What are the hypotheses being tested? Describe both the null and alternative hypothesis for each of the four nutrients.
 - ✓ What are the explanatory/independent and response/dependent variables?
3. Method – brief description including procedures and information collected.
- ✓ Are the samples independent or dependent? Please explain.
 - ✓ How was the data collected? (ex. How was the data obtained for the samples?) Note: the data was collected from nutrition fact labels from selected frozen entrees. For more information on Nutritional Food Fact labels, please go to: <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/eat-right/nutrition-facts.htm>. This information in this article may also be helpful, when explaining the implications of the study in the discussion section.
 - ✓ What type of variable is the explanatory/independent variable? Categorical or Quantitative?
 - ✓ What type of variable are the response/dependent variables? Categorical or Quantitative?
4. Results –describe, in words, the statistical analysis used and present the results in both statistical/text and graphic formats. Specifically, answer each of the following questions:
- a. What are the results of the exploratory data analysis? Please calculate and provide the results of the means, standard deviations, and sample sizes for the groups for each of the four nutrients. Present information in a table.
 - b. Describe the statistical technique(s) was/were selected to assess the hypotheses. Why was it/they the appropriate one(s) to use?
 - c. What are the conditions for the specific statistical technique selected? Does the data meet these conditions? If not, why not?
 - d. Interpret the results of the statistical techniques for each of the four nutrients. What conclusions can be drawn about the null and alternative hypotheses for each of the four nutrients?

5. Discussion

- a. What do the results of the statistical analysis tell us about the differences in regular versus healthy alternative frozen entrees? Please be sure to describe the results for all four nutrients.
- b. What are some implications or applications of these results to real life?
- c. What is a strength of the study?
- d. What is a weakness of the study?
- e. If you were to do this study again, what is one recommendation you would implement to make the study stronger?

The total paper should be between 3 and 5 pages not including title page, abstract, and tables/graphs.

Grading Criteria (26 TOTAL POINTS):

Students will receive points for the paper (format and content).

Two of the 26 points will be given for:

1. Inclusion of all information for the paper (1 point)
2. Clear writing that is free of typographical and grammatical errors (1 point)

Twenty-four of the 26 points of the grade will be based on the content of each section as described in the above section:

1. Abstract (3 point)
2. Introduction (4 points)
3. Method (3 points)
4. Results (8 points)
5. Discussion (5 points)
6. Reference Section (1 point): Inclusion and correct citation of reference used for paper.

The total paper should be between 3 and 5 pages not including title page, abstract, tables/graphs, and references.

The Data:

Product	Product Type	Calories	Saturated Fat	Cholesterol	Sodium
HC Lasagna	Healthy Alternative	260	2.5	18	600
HC Rigatoni Chick & Broc	Healthy Alternative	290	2.5	35	600
HC Glazed Chicken	Healthy Alternative	230	2	45	600
HC French Bread Pizza	Healthy Alternative	360	1.5	15	600
HC Cheesy Chick & Rice	Healthy Alternative	220	2.5	30	600
HC Chick Baja	Healthy Alternative	270	2	45	600
HC Chick Broc Alfredo	Healthy Alternative	300	2	25	430
SO Sirloin Beef	Healthy Alternative	160	2	35	680
SO Beef Pot Roast	Healthy Alternative	170	2	50	740
SO Santa Fe Rice & Beans	Healthy Alternative	310	3	15	660
SO Ravioli Florentini	Healthy Alternative	250	2	30	720
SO Dijon Chick	Healthy Alternative	220	2	30	460
LC Spagetti	Healthy Alternative	280	1	15	550
LC Sirloin Tips Dijon	Healthy Alternative	320	3	35	890
LC Chicken in Peanut Sauce	Healthy Alternative	280	1.5	25	680
LC SW Chicken	Healthy Alternative	300	0.5	30	60
LC Chicken & Broc	Healthy Alternative	270	3	40	690
LC Rosemary Chicken	Healthy Alternative	220	2	35	610
LC Lemon Grass Chicken	Healthy Alternative	250	3.5	30	610
LC Chicken Enchilada	Healthy Alternative	270	2	20	510
LC Swedish Meatballs	Healthy Alternative	280	3	50	630
LC Steak Tips Portabello	Healthy Alternative	180	2	40	460
MC Lasagna	Regular	320	4	35	740
MC Stroganoff	Regular	400	7	35	730
MC Cheese Manacotti	Regular	300	5	40	860
MC Fettucini Alf w/Chick Broc	Regular	310	6	45	680
MC Fettucini	Regular	390	8	40	650
Zap'em Pizza Snacks	Regular	450	7	30	900
Zap'em Chili Mac	Regular	360	5	25	820
BQ Salisbury Steak	Regular	300	6	15	980

BQ Fried Chicken	Regular	450	5	70	900
BQ Chicken Nuggets	Regular	420	5	25	700
BQ Turkey	Regular	230	1.5	25	990
BQ Chicken Fingers	Regular	550	6	30	890
ST Fetucini Alfredo	Regular	610	9	85	1030
ST Mac & Cheese	Regular	350	7	25	920
ST Spaghetti & Meatballs	Regular	360	3.5	35	850
ST Stuffed Peppers	Regular	150	2	15	750
ST Lasagna	Regular	350	6	40	930
ST Creamed Chipped Beef	Regular	140	4	35	590
ST Rosemary Chicken	Regular	420	5	60	1060
ST Monterey Chicken	Regular	500	8	90	1030

Nutrient	<u>Healthy Alternative</u>			<u>Regular</u>		
	M	SD	n	M	SD	n
Calories						
Saturated Fat						
Cholesterol						
Sodium						

Statistical Results to Use for Your Applied Final Paper
by Margo ColemanApril 28, 2014 8:40 AM
Note # 2

Hi Class:

At this point, we have covered all the concepts needed to complete the Applied Final Paper. Since OLI focuses on the interpretation of data results, I am giving you all of the results of the statistical techniques needed to do the applied final paper. Thus, the only statistics that you need to calculate for it are the means, standard deviations, and sample sizes.

Here are the results:

Nutrient	Test statistic value	P Value
Calories	3.984	.000
Saturated Fat	7.613	.000
Cholesterol	1.677	.101
Sodium	5.701	.000

You have the two weeks to complete the Applied Final Project. It is due in your Assignment Folder on Sunday May 11th at midnight Eastern Time.

Please let me know if you have any questions.