25 September 2020

From: Sydney Student

To: Professor

Subj: Enter a subject line (e.g., Analysis of pay by location for Widget Inc.)

* 1. Our organization, Widget Inc., is concerned that there is equity in how employees are getting paid. The question has come up that employees at one location make more money than employees at other locations and we have been asked to investigate to see if this is true. Our research question is: “Is there a significant difference in pay by location?” We will examine the data using an ANOVA with an α of .05 to identify if the mean pay for any location is significantly different from the other locations. Our statistical questions are as follows:
* Null hypothesis – HO: µ1 = µ2 = µ3 = µ4 = µ5 = µ6 = µ7 = µ8 = µ9 = µ10
* Alternative hypothesis – HA: Not all group means are equal

1. This paragraph(s) describes where the data came from (This is likely from an internal database), the steps that you took to explore the data and if the data is appropriate for conducting an ANOVA (You may break this into multiple paragraphs if needed). Where is the data from? How did you filter the data? Examine the assumptions in the instructions and determine the tables and plots that are needed and state if each appears to be met. Are the dependent and independent variables appropriate? Is the dependent variable normally distributed for each level of the categorical variable? Are there sufficient observations per level of the categorical variable? You should reference the appropriate figures and tables to support your statements. You should always provide a summary statistics table and discuss it (missing data and relevant statistics). The last sentence should be whether the data is appropriate for an ANOVA.
2. This paragraph discusses the results. Were the ANOVA results significant (Report the f value and the p value from SAS)? Clearly state whether your rejected or failed to reject the null hypothesis. Are the means of any levels (values) of the categorical variable significantly different from each other? Again, use the appropriate tables, charts, and figures to back up your statements.
3. What is your recommendation based on this analysis? Is further analysis needed? In plain language, clearly state what you found (answer the research question) and your recommendation on what to do next. What is the impact of your recommendation for the company?

After the body of the memo you should have several figures (Summary statistics, boxplot of $/hr by location, ANOVA results, Levene’s results) and any other tables you feel necessary to support your statements). Format the charts, tables, and figures for readability, title and number them appropriately and refer to each chart, figure, and table in the text. If you do not refer to it in the text, it should not be in your memo. Similarly, if you refer to a figure, chart, or table in your text, ensure it is included in the memo.