

*October 30th, 2022*

From: Neil Sweigard*,* Graduate Student Consultant

To: Howie Roseman,

**PROJECT TITLE:**

**EXECUTIVE SUMMARY**

*The executive summary should be able to stand alone from the rest of the report. It should include a very brief introduction to the problem, with a concise summary of the results and conclusions.*

*Perhaps this is what upper-level management would read, only.*

**1.0 - PROJECT DESCRIPTION**

*Should be in paragraph form (not bullets). Written in such a form so that even a 3rd party such as your client’s boss, or an external review board could follow your report. As part of your description, consider the following:*

* *Type of study [Designed experiment, Observational study, Sample survey] and brief description of design*
* *Stage of the experiment [Planning stage or Analysis stage]*
* *Objective of study and role of this analysis*
* *Scope of project*
* *Intended use for results*

**1.1 - RESEARCH QUESTIONS**

*What are the overarching research questions that the client is targeting?*

Question 1:

Question 2:

Etc.

**1.2 - STATISTICAL QUESTIONS *(optional)***

*May address an of the following*

* *What (if any) specific statistical questions did the client provide?*
* *Re-phrasing the overall research question into testable hypotheses.*
* *What statistical concerns will you be addressing to insure a comprehensive analysis?*

Question 1:

Question 2:

Etc.

**1.3 - VARIABLES**

*What is (are) possible explanatory and response variables? Relevant notes about how each is measured and the range of possible values (if known).*

*A table is often useful here.*

*If the design is complex, here is a good place to write a detailed description.*

**2.0 - EXPLORATORY DATA ANALYSIS (EDA)**

*Numerical summaries of important variables (e.g. mean, median, standard deviation, proportion, etc.).*

* *Every table must have a caption, appropriately labeled axes, and a reference number (e.g. “Figure 1”).*
* *Every table must be referenced and described in the report.*

*Graphical summaries of important variables.*

* *Include AT LEAST one figure (or more) per question.*
* *Every figure must have a caption, appropriately labeled axes, and a reference number (e.g. “Figure 1”).*
* *Every figure must be referenced and described in the report.*

*What did your EDA tell you?*

* *Missing data*
* *Unusual or concerning observations*

**3.0 –STATISTICAL ANALYSIS**

*Describe statistical analysis in terms that your client will be able to understand and perhaps use in presenting their own research. This section should summarize all relevant analyses that lead to your final conclusions/decisions/recommendations.*

* Model assumptions & how your verified them (details and residual plots can be placed in the Appendix)
* Interpretation of estimates/statistics/p-values IN CONTEXT
* Enough detail that the model/analysis could be reproduced

*Do not include code or lengthy output in the main body of your report (as that level of detail belongs in the Appendix).*

**4.0 – RECOMMENDATIONS**

*Succinct response to each question laid out in Section 1.2. Provide a succinct (1 to 3 sentence) answer based on your analysis. This a much shorter version of section 3, and focuses on conclusions rather than the analyses.*

Question 1:

Question 2:

Etc.

*(Follow a parallel order as sections above.)*

**5.0 - RESOURCES**

*List resources that your client might find useful. This section may be small or larger depending on the client’s needs.*

**6.0 - CONSIDERATIONS**

*For example:*

* Limitations to the recommendations
* Concerns you may have about the study
* Technical comments

*At the end of the report, you may want to thank your client for the opportunity to work on this project.*

Detailed information and a copy of the program used should be referred to in an Appendix. Additional graphs and supporting figures may also be placed in the Appendix.