

Project Results Section

Total Grade Points: 60 Points (12.8% of Project grade; 6% of the Final Course Grade)

Due Date: Sunday, June 27, 2021 by 11:59 P.M.

Download the Sample Results section and rubric. Also download the appropriate file from the page in Canvas called “The Data Files!” There are three different files: one for those that selected **Age** as their third variable, one for those that selected **Sex Assigned at Birth**, and one for those that selected **Gender Identity**. Make sure you download the correct one! These files contain A LOT of guidance on how to interpret and write up the results.

The **Results** section will be the shortest section of your paper, a little less than a page to a page and a half long. It is unlikely to need a **References** page.

It should consist of three, possibly more, paragraphs each addressing the analysis of one of your three hypotheses. They should be written using the following guidelines

- Restate your first hypothesis.
 - Then describe what test was conducted to evaluate the first hypothesis.
 - Report and interpret the findings.
 - Include the statistical results: M , SD , r or F and possibly t , and p -value.
 - Restate your second hypothesis.
 - Then describe what test was conducted to evaluate the second hypothesis.
 - Report and interpret the findings.
 - Include the statistical results: M , SD , r or F and possibly t , and p -value.
 - Restate your third hypothesis.
 - Then describe what test was conducted to evaluate the third hypothesis.
 - Report and interpret the findings.
 - Include the statistical results: M , SD , r or F and possibly t , and p -value.
- When reporting the results. Do not merely state if the results were significant or not; provide *interpretations*.
 - For example, were I researching a relationship between chocolate consumption & optimism, I *could* write:
 - “Chocolate consumption was significantly related to optimism.”
 - But that is not very informative. It doesn’t tell the reader WHAT the relationship is...
 - Consider this, a better way to report the finding:
 - “Analysis showed that optimism level was higher when chocolate consumption was higher.”
 - That statement describes, or interprets, the relationship!
 - Another example:
 - “Analysis showed that there was a significant negative correlation between age and chocolate consumption; the younger the participant, the more chocolate they consumed.”

Some examples of write-ups of significant and non-significant results. These should be used as guides or even templates. A variable that was NOT used in the class project, chocolate consumption, is used in these examples to permit ALL students to interpret their own analyses correctly.

An example of a write up of a *significant correlation* using chocolate consumption and optimism:

It was hypothesized that chocolate consumption and optimism would have a direct relationship: that increased chocolate consumption would predict more optimism. The results of a *Pearson correlation analysis* showed a significant relationship between optimism ($M = 16.54$, $SD = 2.33$) and chocolate consumption ($M = 22.32$, $SD = 2.17$); with a Pearson correlation coefficient of $r(744) = .361$, $p = .007$. *This supports the hypothesis that a higher level of optimism can predict greater chocolate consumption and that greater consumption of chocolate can predict greater optimism.*

{Professor's note: Notice that I did not say one *causes* the other, just that one can be predicted from the other, and made that clear by looking at the possibility of prediction in both directions: A predicts B OR B predicts A. It's a correlation, we **can't** make cause-and-effect statements.}

An example of a write up of a non-significant correlation using chocolate consumption and age:

It was hypothesized that chocolate consumption would increase as age increases. However, this hypothesis was not supported. The results of a Pearson correlation analysis showed a non-significant relationship between age and chocolate consumption $r(744) = -.030$, $p = .248$.

{Professor's note: Notice that I did not include the means. If the results are not significant, these are typically not reported for correlational analyses.}

An example of a write up using an ANOVA assessing chocolate consumption and gender identity. In our research project the relationships of Sex Assigned at Birth and Gender Identity with the behavioral variables will be analyzed with ANOVA.

A one-factor analysis of variance (ANOVA) was conducted to test the last hypothesis, which focused on whether there are gender identity differences in chocolate consumption. *Five*

Commented [PWL1]: I will use different colored text here to make the comments clearer. **Your Results section should only use black text.**

Commented [PWL2]: Restating the hypothesis

Commented [PWL3]: **Green text:** The test/analysis that was used

Commented [PWL4]: Reporting and interpreting the findings, including the means, standard deviations, and analysis results

Commented [PWL5]: **Green text:** Summarizing the paragraph AND interpreting the data

participants did not give their gender identity, those individuals were excluded from this analysis. It was hypothesized that people who identify as men (cis and trans) would have higher chocolate consumption compared to those who identify as women (cis and trans) or non-binary. Women and non-binary individuals were not expected to differ. Results of the ANOVA indicated that there were significant differences between at least some of the groups $F(2, 737) = 4.72$, $p = .030$. Post-hoc t-tests supported the hypothesis in showing that self-identified men ($M = 23.55$, $SD = 2.28$) scored higher on the chocolate consumption scale compared to women ($M = 21.39$, $SD = 1.93$), $t(613) = 4.76$, $p < .001$ or non-binary individuals ($M = 21.17$, $SD = 1.11$), $t(342) = 5.67$, $p < .001$). The results also supported that there was no difference between people who identify as women and non-binary, $t(417) = 0.79$, $p = .237$.

{Professor's note: ANOVA is useful when there are three or more categories in a variable, such as in the above example. However, when this is the case, additional analyses must be done, usually called post-hoc tests, to determine which groups differ from each other. Using t-tests we can look at each pair of categories and determine which ones differ from each other and which do not.

If there were only two categories, post-hoc testing would not be necessary since there are only two groups being compared. This often happens with the Sex Assigned at Birth variable since it is rare for individuals to fall under the "Other" category. In that case, simply reporting the ANOVA results and descriptive data is necessary, no t-tests will be done.}

{Professor's note: In the case of ANOVA, even if the analysis was not statistically significant it would be traditional to include the means and standard deviations.}

Commented [PWL6]: Since the N and degrees of freedom here will be a little different from those above, due to these excluded individuals, it is important to explain why the numbers are different.

In science we are up front and clear about everything we do!

Commented [PWL7]: Notice that mathematical operators have a space on both sides, separating them from the numbers or variables they are associated with.

Commented [PWL8]: Notice that the variables are italicized: *M*, *SD*, *r*, *F*, *t*, *p*