**Research Study**:

Subjects took two questionnaires. First, they filled out a survey rating different words on their meaningfulness or pleasantness. Scores were rated on a Likert scale from 1 (not meaningful, not pleasant) to 5 (very meaningful, very pleasant). These words were grouped into sets based on previous research, and the data set contains the averages for the words by set. Then they completed a meaning in life questionnaire (scores on questions were totaled).

Include the appropriate output into this document while answering the questions. You can also upload your excel file for data screening, which will help us figure out what happened if your answers are incorrect. In the assignment, you will delete people (the whole row) if they should be excluded.

**IV X-Variables:**

* Control variables: Age, gender (1=female, 2=male)
* Experimental manipulation: priming type (1=meaningful, 2=pleasantness)
* Education words averaged (i.e. accomplish, College, Degree, Education, Grades, Graduate, School, Teacher, Undergrad, University)
* Goals words averaged (i.e. achieve, ambition, become, goals, progress, success)
* Nouns words averaged (i.e. everything, know, lot, many, mind, much, right, some, something, thing, time, what, when)
* Religion words averaged (i.e. serve, glorify)

**DV – Y-variable:**

* PIL total – scores on the purpose in life questionnaire

**Research Question:** We thought that word ratings would predict scores on the PIL questionnaire in some format. First control for demographics (step 1), then priming type (step 2), then use the average of their word ratings (step 3) to predict the PIL total (DV).

**Accuracy:**

1. Include a summary showing you do/do not have out of range scores.
2. If necessary, fix the out of range scores.
   1. Indicate what the problems were in the dataset.
   2. Make all out of range values NA.
   3. Include a summary showing that you fixed the accuracy issues (i.e. rerun the descriptives and show the min and max are correct).

**Missing data:**

1. Include information about percent complete by participant.
2. Include information about percent complete by column after you exclude participants with too much missing data.
3. Exclude all missing data.

**Outliers:**

1. Calculate z-scores for each column of data.
   1. How many outliers did you have?
   2. Delete a participant if they have z-score outliers on more than one column. You can also view standardized residuals as a criteria for deleting.

**Additivity:**

1. Include a correlation table of the continuous independent variables.
2. Are any of the variables too highly correlated?

**Normality:**

1. Include the multivariate normality histogram.
2. Interpret the graph. Does it indicate multivariate normality?

**Linearity:**

1. Include the multivariate PP plot.
2. Interpret the graph. Does it indicate multivariate linearity?

**Homogeneity and Homoscedasticity:**

1. Include the multivariate residuals plot.
2. Interpret the graph.
   1. Does it indicate homogeneity?
   2. Does it indicate homoscedasticity?

**Power:**

1. Calculate the number of participants you would need for this analysis with a small effect size for the FINAL step.
   1. Include a screen shot or summary of the numbers you typed into G\*Power, so we can give you partial credit if you get a different sample size than us.

**Regression test:**

1. Steps:
2. Include the model summary for each step.
3. Fill in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Model 1 Summary | F STATISTIC | | |
| Age | b | t statistic | pr2 |
| Gender | b | t statistic | pr2 |
| Model 2 Summary | F STATISTIC | | |
| Priming type | b | t statistic | pr2 |
| Model 3 Summary | F STATISTIC | | |
| Education | b | t statistic | pr2 |
| Goals | b | t statistic | pr2 |
| Nouns | b | t statistic | pr2 |
| Religion | b | t statistic | pr2 |

**Chart:**

1. Include a regression chart for the y and y-hat values.
2. Be sure to add the line of best fit.
3. Cleaned up graph (no gray backgrounds).
4. X-axis labels are appropriate.
5. Y-axis labels are appropriate.

**Write up:**

1. Write up an analysis of what you find in this data, including all the information you answered above. Use the example in the notes for a guide. This write up should include the following for credit:
2. Result section style (APA and AMA):
3. Double space
4. Times New Roman 12 point
5. Two decimals
6. Centered, bolded Results
7. Include a brief description of the experiment, variables, and order entered into steps.
8. Data screening summary:
9. Accuracy – did you have problems? What did you do to fix it?
10. Missing data – did you have problems? What did you do to fix it?
11. Outliers – did you have problems? What did you do to fix it?
12. Assumptions:
    * 1. Additivity
      2. Normality
      3. Linearity
      4. Homogeneity/Homoscedasticity
13. Include the all *F*-values for each step of the model.
14. Include all the *b* or *beta* values for variables *in the step they were entered*. So, you will not have double *b* values for any predictor.
    1. You can put either model values or *b* values in a table (so you don’t have a paragraph full of numbers).
    2. Be sure each model value (*F, p, R2*) and b value (*t, p, pr2*) has the appropriate statistics with it (even if not significant).