Wrapping up Survey Data Analysis

We wrap up the survey analysis this weekend. The following are some guidelines of this week's assignment. The report is the combined assignments you completed in the last weeks and the regression analysis you are working for this week. To be more specific, the structure of the report is outlined in the following.

Title – you need to give a meaningful title that reflects the analysis you conducted in the recent three weeks.

1. **Introduction** – What is the objective of this analysis? The description of data source (two survey instruments and a set of demographic variables), what analyses you will perform to address the objective (clients research questions). You can reword the clients' informational documents in this introduction section.

2. **Data Management and Analytic Data Set Creation** – need several subsections to cover the work in the past few weeks.
   2.1. *Handling Missing Values* – a short section to describe how missing values were inputted.
        [This is part of the assignment of week 9, the week before last week]
   2.2. *Definitions of Demographic Variables* – briefly describe the rationale of re-categorizing the demographic variables and the explicit definitions of all revised demographic variables.
        [This is part of the assignment of week 9, the week before last week]
   2.3. *Combining Survey Items: PCA* – Write a paragraph or two to outline: what is PCA? what PCA can do? Why the PCA is used for this survey analysis? After these brief descriptions of PCA, you could use two sub-subsections to organize your PCA for each survey instrument.
        2.3.1. *Self-compassion Score* – what you should report in this section are: factor loadings, number of principal components you plan to use to in the modeling section.
        2.3.2. *Gratitude Scores* - what you should report in this section are: factor loadings, number of principal components you plan to use to in the modeling section.
   2.4. *Analytic Data Set* – This is a short sub-subsection. A brief description of the analytic data set and its variables.
        [Subsections 2.3 and 2.4 are the major parts of the assignment of last week]

3. **Data Analysis** – before opening sub-subsections, write an opening paragraph to describe the types of analyses you plan to do to address clients' questions.
   3.1. *Exploratory Data Analysis (EDA)* – this subsection contains basic descriptive statistics such as frequency tables of categorical variables and histograms of numerical variables (particularly the response variables – i.e., PCAs in this analysis).
   3.2. *Regression Models* – Based on what you learnt from STA319 to build candidate linear regression models and identify final model to address the clients' questions. Please keep in

mind that the results such as the output of the regression coefficients and residual plots in the final model should be reported and explained.

4. **Conclusion and Discussion** – The section concludes the analysis. A few paragraphs to summarize (1) whether the clients' questions are completely addressed; (3) whether there are issues or potential improvements in data and analyses, etc.
   [Sections 3 and 4 are the major components of this week's assignment!]

Please note that this assignment is NOT the final group project. We will start planning the final group project next week.