

## Discrepancies, Control, and Regression

A psychologist playing the variable-based research game wishes to predict positive affect from the discrepancy between the actual and ideal selves with regard to conscientiousness.

Specifically, he hypothesizes that large discrepancies between the actual and ideal selves will correspond with lower positive affect. This is similar to Carl Rogers' old idea that greater self-discrepancies will accompany higher depression and other clinical symptoms. The psychologist encounters four opinions with regard to how he should analyze his data. These opinions are below.

1. One quant advisor suggests that he simply compute the difference score between the ideal and actual selves and then correlate the difference score with the positive affect scores. Do this in SPSS and report your results. The data set is located on the course website (DASBigFiveStudy3.sav). The variables are: PA\_1 (positive affect); C2\_E2 (Ideal self on conscientious "measure"); C2\_E1 (Actual self ratings on conscientious "measure"). Compute the difference score:  $C2\_E2 - C2\_E1$ . Correlate the difference score with PA\_1. Create a scatterplot as well to look for anomalies. Summarize the results.

2. A second quant advisor suggests that he should instead run a hierarchical regression to examine the variance explained by each of the selves. Does the ideal self contribute significantly to the prediction of PA\_1 above and beyond the actual self ratings? Run a 2-step hierarchical regression analysis. In step 1 regress PA\_1 onto C2\_E1 (actual self). In step 2 add in the C2\_E2 (ideal self) variable. Request your R-squared change statistic, and run all the appropriate diagnostics on the final model. Summarize your results. Did the ideal self ratings contribute to the prediction of PA\_1?

3. A third quant advisor suggests that he should run a hierarchical regression analysis to examine if the difference score contributes anything unique to the prediction of PA\_1. Run a 2-step hierarchical regression. In step 1 regress PA\_1 onto C2\_E1. In step 2, include the difference score that you computed for #1 above. Request your R-squared change statistic, and run all the appropriate diagnostics on the final model. Summarize your results. Did the discrepancy contribute to the prediction of PA\_1?

4. Finally, a fourth advisor agrees with advisors #2 and #3 above. In discrepancy research the idea is to show that the difference is predictive in a way that goes beyond the actual or ideal ratings alone. He claims, however, that running a simple regression analysis will do the trick:  $PA\_1 = C2\_E1, C2\_E2$ . Run this model and diagnose it for anomalies. Also, be sure to examine the regression weights and whether or not they are significant and opposite in sign, as expected. What are the squared semi-partial correlations for each predictor? Do the results suggest that the discrepancy matters, or is it only one predictor that counts.

Compare your various models,  $R^2$  statistics, regression weights, and conclusions for #1-#4. Which advisor offers the best advice?

As another example of using hierarchical regression, a psychologist wishes to predict Internal Religiosity from the Big Five personality traits. It is well known, however, that positive and negative affect correlate with introversion/extraversion. Consequently, the researcher wishes to control for the variance explained by affect when predicting religiosity. Do this with the same data set in SPSS. Here are the relevant variables:

1. Internal Religiosity: IntRel\_1 (this will be your DV)
2. Positive Affect: PA\_1
3. Negative Affect: NA\_1
4. Big Five self ratings: C1\_E1 (openness), C2\_E1 (conscientiousness), C3\_E1 (extraversion), C4\_E1 (agreeableness), C5\_E1 (neuroticism)

You need to run a 2-step hierarchical regression analysis. Be sure to diagnose your final model, as usual and report an anomalies. Summarize your results.