The purpose of this exercise is for you to become more familiar with extracting relevant information from a research article and gaining a further understanding of the Block Entry (Hierarchical) Multiple Linear Regression Analysis as it relates to a given study.


You will not have to read the entire article to answer the following questions. Read the questions below and then make reference to the applicable sections in the article. **Your responses must be typed, with the exception of symbols and formula calculations.**

1. This study was a replication of Douglas and Martinko’s (2001) study with a noted extension. What did the authors of the current study add to the previous study (i.e., what was the extension)?

   The authors included a situational variable, charismatic leadership, in their model.

2. Relative to the effects on dispositional factors and effects of charismatic leadership on workplace aggression, identify the two hypotheses proposed by the authors.

   Hypothesis 1: Trait anger, negative attribution style, negative affectivity, the desire to seek revenge, and low self-control will be positively related to workplace aggression.

   Hypothesis 2: After controlling for individual differences, charismatic leadership will be negatively associated with workplace aggression.

3. Identify (operationally define) the dependent (criterion) variable (and its scale of measurement) used in the multiple regression analysis – for the two hypotheses stated above.

   Workplace Aggression (continuous scale) measured by a 9-item individual antisocial behavior scale on a 5-point Likert scale (0 = not at all to 4 = frequently, if not always).
Identify (operationally define) the independent (predictor) variables (and their scale of measurement) used in the multiple regression analysis.

For Hypothesis 1:  
- **IV$_1$** = Trait Anger (continuous scale)  
  10-item trait anger subscale of the State-Trait Anger Expression Inventory on a 5-point Likert scale (1 = almost never to 4 = almost always)
- **IV$_2$** = Negative Affectivity (continuous scale)  
  11-item negative affectivity subscale (1 = strongly disagree to 5 = strongly agree) from the short form of the Multidimensional Personality Questionnaire
- **IV$_3$** = Attributional Style (continuous scale)  
  28-item organizational attributional style questionnaire consisting of 7-point Likert-type items (on a 1-7 scale)
- **IV$_4$** = Attitudes Toward Revenge (continuous scale)  
  10-items from a 20-item vengeance scale using 7-point Likert-type items (1 = strongly disagree to 7 = strongly agree)
- **IV$_5$** = Self-Control (continuous scale)  
  Self-control subscale of the Personal Values Scale consisting of 20 Likert-type items on a 5-point scale (1 = absolutely not true to 5 = absolutely true)

For Hypothesis 2:  
Same variables as above – plus a Block 2 variable...
- **Charismatic Leadership** (continuous scale)  
  From the multifactor leadership questionnaire, three 4-item scales – attributed charisma, idealized influence, and inspirational motivation – on a 5-point scale (0 = not at all to 4 = frequently if not always)

Based on your class notes...  
a) does there appear to be an appropriate number of predictor variables for this study, and b) does the author have an adequate sample size to conduct this study? Indicate how you made this determination – be sure to show any calculations and or formulas that assisted you in your decision.

a) This study only used 6 variables, which follows the suggested guidelines from the class handout. And, with over 100 participants, this would be appropriate.
b) The sample size for this study is $N = 213$, and according to the handout (Tabachnick & Fidell, 1996), with 6 predictor variables, we would need a minimum of $N \geq 104 + m$, which $= N \geq 104 + 6 = N \geq 110$. Our sample size $(N = 213)$ is greater than 110, so we have more than the minimum requirement.

Or we can use $50 + 8$ cases for each IV, which $= 50 + 8(6) = 50 + 48 = 98$. Our sample size $(N = 213)$ is greater than 98, so we have more than the minimum requirement.

6. Looking at page 180, why does the author exclude demographic variables (i.e., gender, age, organizational tenure, position, and education level) from subsequent analyses?

The authors report, “…because correlation analyses revealed no significant correlations between these demographic variables and aggressive behavior, demographic variables were excluded from subsequent analyses” (p. 180).

7. On page 181… What results did the authors report in support of Hypothesis 1 (be sure to include all statistical values and symbols).

The set of individual differences significantly predicted workplace aggression, accounting for 27% of the variance in workplace aggression, $F(5, 207) = 15.34, p < .001$. Specifically, trait anger ($\beta = .21$) and low self-control ($\beta = .31$) were significant predictors of workplace aggression. The other variables, negative affectivity, negative attribution style, and attitudes toward revenge, were not related to workplace aggression.

8. On page 181… What results did the authors report in support of Hypothesis 2 (be sure to include all statistical values and symbols).

Charismatic leadership ($\beta = -.19$) was negatively related to workplace aggression and accounted for 3% of the variance in workplace aggression after controlling for individual differences, $F(1, 206) = 9.35, p < .01$.

9. Looking at Table 2 on page 181… under the Workplace Aggression column… indicate what the values (.21**, -.10, .06, .08, .31**, and -.19*) represent.

These values represent standardized (beta, $\beta$) coefficients, which allow us to compare the variables to each other – as they are put on the same (standardized) matrix. Standardizing allows us to rank order the influence of the variable, e.g., from strongest to weakest. The “-” sign indicates a negative relationship, the absence of a sign indicates a positive relationship, and the asterisks represent significance ($*p < .05$ **$p < .01$).
Looking at Table 2 on page 181... the authors report $\Delta R^2$ values of .27** and .03**. Briefly explain what each value means and what is the $\Delta$ (change) in relation to.

$\Delta R^2 = .27**$ refers to the change (from no variables) accounted for by adding the first set of predictor variables (Block/Model 1) into the analysis. This indicates that the first set (block) of (control) variables account for approximately 27% of the total variance in the DV (workplace aggression).

$\Delta R^2 = .03**$ refers to the change (from Block/Model 1) accounted for by adding the second set of predictor variables (Block/Model 2), which in this case was one variable. That is, charismatic leadership provided an additional .03 (3%) variance explanation over and above the block 1 variables for the DV (workplace aggression).