**Homework #7**

This week, you have the same meta-analytic data as you had last week. However, you need to perform some follow-up analyses pertaining to psychometric adjustments (i.e., “corrections”), heterogeneity detection, and meta-analytic moderation.

1. Recompute the random-effects MAES and 95% confidence interval (for both z and r) using the correction for attenuation (both predictor and criterion) at the local (primary study) level. [10 points]
2. Describe the differences in interpreting MAES estimates that have or have not been corrected for attenuation. [10 points]
3. Assume the primary studies did not include reliability estimates, so you decide to use a global correction (i.e., correct the MAES, not each individual primary study). You estimate the average predictor reliability to be .88 and the average criterion reliability to be .52. You compute the unrestricted variance in the predictor to be 5.99 and the restricted variance in the predictor to be 3.84. [Where applicable, use the random-effects estimates, use the case 2 range restriction formula, assume that all statistical artifacts are independent, and correct for attenuation first]  
   1. Compute and interpret the operational validity [5 points]
   2. Compute and interpret the true validity [5 points]
4. Do the *uncorrected* results demonstrate primary study heterogeneity? Justify your response by computing and interpreting Q, τ2, H2, I2, and R2. [10 points]
5. Do Q, τ2, H2, I2, and R2 provide consistent or inconsistent evidence to support moderation? How should each be considered when considering the potential presence of meta-analytic moderation? [10 points]
6. Assume that your results demonstrated the potential presence of meta-analytic moderation. You decide to use subgroup analysis to investigate the MAES separately for private and public organizations. Calculate both MAESs using a random-effects model. *No corrections are necessary*. Report each MAES using both z and r. [10 points]
7. Assume (again) that your results demonstrated the potential presence of meta-analytic moderation. You decide to use subgroup analysis to investigate the MAES separately for studies that only relied on self-reported data and studies that relied on at least some archival or objective data. Calculate both MAESs using a random-effects model. *For this analysis, correct for predictor and criterion for attenuation locally (at the primary study level)*. Report each MAES using both z and r. [10 points]
8. Compute three single meta-regressions to determine if attenuation-adjusted primary study effect sizes (r values) vary as a function of (a) publication year, (b) sample size, and/or (c) the number of employees in the organization. For this question, adjust effect sizes locally, or at the primary study level, and only correct for predictor and criterion reliability. For each meta-regression, report r (correlation between continuous moderator and primary study effect size), the corresponding Z test to determine whether the correlation was statistically significant, the standard error of this z statistic, and an interpretation of the results. [10 points]
9. Using all three continuous moderators (publication year, sample size, and number of employees) in a series of hierarchical meta-regressions, answer the following questions [Again, correct for both predictor and criterion attenuation before running your models]:  
   1. How much variance does each two-way interaction predict after controlling for its respective main effects? Do any two-way interactions statistically predict effect size after controlling for their respective main effects? [5 points]
   2. How much variance does the three-way interaction predict after controlling for all main effects and two-way interactions? Does the three-way interaction statistically predict effect size after controlling for all main effects and two-way interactions? [5 points]
10. Compute the unique and joint variance components for all three continuous variables (publication year, sample size, and number of employees). [10 points]