Practice Quiz 5

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PART 1: Single Regressions

Does conscientiousness contribute to the prediction of performance beyond GMA?

Conscientiousness accounted for an additional 10% of the variance in job performance beyond GMA alone, sr2 = .10, 95% *CI* [.05, .14]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 36%, *R2* = .36, 95% *CI* [.29, .41], F (2, 497) = 137.5, $p < .001$. This indicates that conscientiousness does contribute to the prediction of job performance beyond GMA.

Do assessment ratings contribute to the prediction of performance beyond GMA?

Assessment ratings accounted for an additional 2% of the variance in job performance beyond GMA alone, sr2 = .02, 95% *CI* [-.00, .04]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 28%, *R2* = .28, 95% *CI* [.21, .34], F (2, 497) = 95.56, $p < .001$. This indicates that assessment ratings do contribute to the prediction of job performance beyond GMA.

Do graphology ratings contribute to the prediction of performance beyond GMA? Graphology ratings did not account for any additional variance in job performance beyond GMA alone, sr2 = .00, 95% *CI* [-.00, .00]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 26%, *R2* = .26, 95% *CI* [.20, .32], F (2, 497) = 87.54, $p < .6$. This indicates that graphology ratings do not contribute to the prediction of job performance beyond GMA.

Which additional predictor would you use? Conscientiousness is the additional predictor I would use.

PART 2: Do The Same Thing With Two-Block Regressions

Question 1

Conscientiousness accounted for an additional 10% of the variance in job performance beyond GMA alone, delta R2 = .10, 95% *CI* [.05, .14]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 36%, *R2* = .36, 95% *CI* [.29, .41], F (2, 497) = 137.5, $p < .001$. This indicates that conscientiousness does contribute to the prediction of job performance beyond GMA.

Question 2

Assessment ratings accounted for an additional 2% of the variance in job performance beyond GMA alone, delta R2 = .02, 95% *CI* [-.00, .04]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 28%, *R2* = .28, 95% *CI* [.21, .34], F (2, 497) = 95.56, $p < .001$. This indicates that assessment ratings do contribute to the prediction of job performance beyond GMA.

Question 3

Graphology ratings did not account for any additional variance in job performance beyond GMA alone, delta R2 = .00, 95% *CI* [-.00, .00]. When considering GMA alone, the variance accounted for was 26%, R2 = .26, 95% *CI* [.20, .32]. When considering GMA and conscientiousness together, the total variance accounted for was 26%, *R2* = .26, 95% *CI* [.20, .32], F (2, 497) = 87.54, $p < .6$. This indicates that graphology ratings do not contribute to the prediction of job performance beyond GMA.

PART 3: Confidence Intervals and Prediction Intervals

Using GMA and conscientiousness, what is the CI for predicted performance scores at the mean GMA and mean conscientiousness?

Mean GMA is $M = 100.00$, $SD = 15.10$, and the mean conscientiousness score is $M = 120.00$, $SD = 8.30$. This indicates that the best estimate of the predicted population mean for job performance is $M= 101.00$, 95% *CI* [100.28, 101.72].

Using GMA and conscientiousness, what is the PI for predicted performance scores at the mean GMA and mean conscientiousness?

Mean GMA is $M = 100.00$, $SD = 15.10$, and the mean conscientiousness score is $M = 120.00$, $SD = 8.30$. This indicates that the best estimate of the predicted values for future studies is 95% *CI* [84.87, 117.13].