exam\_answers

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# Power Analysis

A power analysis was conducted prior to conducting the study. It was found that an N of 74 would be required under the assumption that agreeableness would uniquely predict 10% of the variance and that combined, agreeableness and conscientiousness would predict 20% of the variance in performance scores to ensure the power is .85.

# Results Paragraph

I examined the extent to which agreeablesness predicts job performance, and more specifically whether it predicts academic success above and beyond conscientiousness, see Table 1. Conscientiousness alone predicted 7% of the variance in academic success, R2=.07, *CI*[.05,.09]. Agreeableness accounted for an additional 17%, =.17,*CI*[.14,.19], of the variance in job performance ratings beyond conscientiousness alone bringing the total percentage variance accounted for to 24%, =.24, *CI*[.21,.26]. I then examined the extent to which this relation holds for each gender. When looking specifically at males, conscientiousness alone predicted 9% of the variance in academic success, R2=.09, *CI*[.05,.12]. Agreeableness accounted for an additional 18%, =.18,*CI*[.14,.23], of the variance in job performance ratings beyond conscientiousness alone bringing the total percentage variance accounted for to 27%, =.27, *CI*[.22,.31], see Table 3. In contrast when looking specifically at females, conscientiousness alone predicted 6% of the variance in academic success, R2=.06, *CI*[.04,.08]. Agreeableness accounted for an additional 15%, =.15,*CI*[.12,.18], of the variance in job performance ratings beyond conscientiousness alone bringing the total percentage variance accounted for to 20%, =.20, *CI*[.17,.23], see Table 4. These results suggest that agreeableness and conscientiousness account for the total variance in job performance more so in males than for females. However, the amount that agreeableness accounted for variance above and beyond conscientiousness does not show much difference between males and females.

Appendix

Table 1

*Means, standard deviations, and correlations with confidence intervals*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | *M* | *SD* | 1 | 2 | 3 |
|  |  |  |  |  |  |
| 1. agreeableness | 4.65 | 0.90 |  |  |  |
|  |  |  |  |  |  |
| 2. conscientiousness | 4.27 | 0.95 | .26\*\* |  |  |
|  |  |  | [.22, .29] |  |  |
|  |  |  |  |  |  |
| 3. performance | 4.15 | 1.06 | .46\*\* | .26\*\* |  |
|  |  |  | [.43, .49] | [.23, .30] |  |
|  |  |  |  |  |  |
| 4. age | 48.78 | 11.13 | .19\*\* | .12\*\* | .06\*\* |
|  |  |  | [.15, .22] | [.08, .15] | [.03, .10] |
|  |  |  |  |  |  |

*Note.* \* indicates *p* < .05; \*\* indicates *p* < .01. *M* and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014).

Table 2

*Regression results using performance as the criterion*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predictor | *b* | *b*  95% CI  [LL, UL] | *beta* | *beta*  95% CI  [LL, UL] | *sr2* | *sr2*  95% CI  [LL, UL] | *r* | Fit |
| (Intercept) | 1.10\*\* | [0.88, 1.31] |  |  |  |  |  |  |
| conscientiousness | 0.17\*\* | [0.13, 0.21] | 0.15 | [0.12, 0.19] | .02 | [.01, .03] | .26\*\* |  |
| agreeableness | 0.50\*\* | [0.46, 0.54] | 0.42 | [0.39, 0.46] | .17 | [.14, .19] | .46\*\* |  |
|  |  |  |  |  |  |  |  | *R2*  = .235\*\* |
|  |  |  |  |  |  |  |  | 95% CI[.21,.26] |
|  |  |  |  |  |  |  |  |  |

*Note.* \* indicates *p* < .05; \*\* indicates *p* < .01. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights; *beta* indicates the standardized regression weights; *sr2* represents the semi-partial correlation squared; *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

Table 3

*Regression results using performance as the criterion for Males*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predictor | *b* | *b*  95% CI  [LL, UL] | *beta* | *beta*  95% CI  [LL, UL] | *sr2* | *sr2*  95% CI  [LL, UL] | *r* | Fit |
| (Intercept) | 0.76\*\* | [0.40, 1.12] |  |  |  |  |  |  |
| conscientiousness | 0.22\*\* | [0.15, 0.28] | 0.19 | [0.13, 0.24] | .03 | [.01, .05] | .29\*\* |  |
| agreeableness | 0.53\*\* | [0.46, 0.60] | 0.44 | [0.38, 0.50] | .18 | [.14, .23] | .49\*\* |  |
|  |  |  |  |  |  |  |  | *R2*  = .269\*\* |
|  |  |  |  |  |  |  |  | 95% CI[.22,.31] |
|  |  |  |  |  |  |  |  |  |

*Note.* \* indicates *p* < .05; \*\* indicates *p* < .01. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights; *beta* indicates the standardized regression weights; *sr2* represents the semi-partial correlation squared; *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

Table 4

*Regression results using performance as the criterion for Females*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Predictor | *b* | *b*  95% CI  [LL, UL] | *beta* | *beta*  95% CI  [LL, UL] | *sr2* | *sr2*  95% CI  [LL, UL] | *r* | Fit |
| (Intercept) | 1.30\*\* | [1.03, 1.57] |  |  |  |  |  |  |
| conscientiousness | 0.15\*\* | [0.10, 0.19] | 0.14 | [0.09, 0.18] | .02 | [.01, .03] | .23\*\* |  |
| agreeableness | 0.48\*\* | [0.43, 0.53] | 0.40 | [0.36, 0.44] | .15 | [.12, .18] | .43\*\* |  |
|  |  |  |  |  |  |  |  | *R2*  = .204\*\* |
|  |  |  |  |  |  |  |  | 95% CI[.17,.23] |
|  |  |  |  |  |  |  |  |  |

*Note.* \* indicates *p* < .05; \*\* indicates *p* < .01. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights; *beta* indicates the standardized regression weights; *sr2* represents the semi-partial correlation squared; *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.