Fred Sun

004407430

1. Centering:

DESCRIPTIVES VARIABLES=YrsOnJob Age JobSat PsyWellBeing IQ

/STATISTICS=MEAN STDDEV MIN MAX.

compute YrsOnJobCent = YrsOnJob - 10.05.

compute AgeCent = Age - 37.95.

compute JobSatCent = JobSat - 5.99.

compute PsyWellBeingCent = PsyWellBeing - 6.27.

compute IQCent = IQ - 100.10.

execute.



DATASET ACTIVATE DataSet2.

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT JobPerf

/METHOD=ENTER AgeCent YrsOnJobCent PsyWellBeingCent JobSatCent IQCent.

1. The entire set of predictor variables does explain a statistically significant proportion of the variability because *F*(5, 474) = 42.855, leading to a *p*-value < .001. This *p­*-value means that the probability that none of the predictor variables affected the outcome variable and that this *F*-statistic was obtained through complete random chance is less than .1%.
2. The R2 value is the proportion of the variation in this data set that is due to the entire set of explanatory variables that we have: in this study, our R2 value is *SS*Regression/*SS*Total = 234.672/753.792 = .311. This means that the entire set of explanatory variables is responsible for 31.1% of the total variation in our population’s outcome variables; according to standard conventions, this is a large effect size.
3. The regression intercept is the expected value if the effect of all explanatory variables was 0 (i.e., they don’t affect the outcome); in this study, it is 6.020.
4. The regression coefficient is a function of to what degree the outcome variable is affected by the explanatory variable. For psychological well-being, an unstandardized coefficient of .396 means that for every 1 point increase in psychological well-being, we can predict an increase of .396 points in job performance.
5. The null hypothesis for the t-test is that psychological well-being has no effect on job performance; the alternate hypothesis for the t-test is that psychological well-being has an effect on job performance. The t-value of 9.236 for this experiment means that the difference between the estimated value (the Beta value) and the hypothesis (that psychological well-being has an effect on job performance) is 9.236 times larger than we’d expect to see based on random chance alone. The probability of this occurring due to random chance is less than .001.
6. The standardized coefficient is the degree to which an explanatory variable affects an outcome variable expressed in terms of standard deviation units. In this study, if IQ has a standardized coefficient of .338, this means that as IQ score increases by 1 point, job performance increases by .338 standard deviations.
7. Based on standardized coefficients, the explanatory variable responsible for explaining the most individual differences in job performance scores is psychological well-being, because it has a beta value of positive .390, above the second of IQ, which has a beta value of .338.
8. The explanatory variables that uniquely affect job performance above and beyond other variables are age (*t* = -2.908, *p* = 004), psychological well-being (*t* = 9.236, *p* < .001), and IQ (*t* = 8.005, *p* < 001). The variables years on the job (*t* = .561, *p* = .575) and job satisfaction (t = -1.787,  *p* = .075) were both not statistically significant.