Psychology 513 - Quantitative models
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Assignment No. 4

1. The following data are IQ scores, Intolerance of Boredom (IOB) scores, and Number of errors made on an assembly line task for a sample of 14 workers.

IQ	IOB	Errors
104	64	470
89	43	350
85	39	390
125	88	600
93	49	420
88	51	480
115	92	680
96	60	530
109	69	500
77	30	400
98	72	555
120	81	550
83	28	320
112	77	595

a) Put these data into a JMP worksheet and journal some basic statistics for them.

b) Have JMP do several regression analyses. Journal the analyses. Make sure your output includes the following:

1) the correlation matrix of the 3 variables.

2) separate bivariate regressions predicting Errors from IQ and Errors from IOB.

3) a multiple regression predicting Errors from both IQ and IOB. Compare these results with the results in part (2). Look at the *R*-squareds, the residual *SS* and *MS*, and the *Y*-predicted values. When you do this regression save the *Y*-predicted values into the worksheet data set. Then correlate the *Y*-predicted column with the *Y* values.

c) Using a calculator or spreadsheet and the unstandardized weights from the above output verify the correctness of the standardized regression weights for IQ and IOB. Also, give verbal interpretations of the meanings of the 2 standardized weights.

d) What can you conclude from the above analyses about Errors, IQ, and Intolerance of Boredom? What is interesting about this analysis? [*Hint:* Compare the zero-order correlations with the regression weights.]

e) Do a regression analysis predicting *raw* Errors from *standardized* IQ and *standardized* IOB. Give verbal interpretations of all 3 regression weights in this equation.