**Quiz VII-D**

Part I – Individual Quiz (Before Class)

Part II – Group Quiz (During Class)

1. Did you complete the reading (6 points)?

YES

**End of Part I**

1. Were you in class on time (2 pts)?

YES

The effects of three factors: fee level (high/low), scope of work (in-house/sub-contracted), and type of supervisory control (local/traveling supervisors) on the quality of work performed by independent marketing research agencies was assessed. Higher quality ratings are better. The file (see attached data file - in Quiz VII- D) contains the data. In this exercise, you will assess the effects of these three factors on the quality.

Do the following.

1. Do a data decomposition and degrees of freedom of this analysis (3 points)

On excel sheet.

(b) Complete an ANOVA table showing the sum of squares, degrees of freedom, F, and P-value for each of the main effects and all interactions using R. Make Conclusions based off of the results (3 points)

Analysis of Variance Table

Response: quality

Df Sum Sq Mean Sq F value Pr(>F)

fee\_level 1 7765.7 7765.7 1004.9834 < 2.2e-16 \*\*\*

scope 1 1191.9 1191.9 154.2528 6.113e-12 \*\*\*

supervision 1 2543.6 2543.6 329.1790 1.614e-15 \*\*\*

fee\_level:scope 1 1.0 1.0 0.1314 0.7202

fee\_level:supervision 1 0.8 0.8 0.0971 0.7580

scope:supervision 1 341.3 341.3 44.1633 7.125e-07 \*\*\*

fee\_level:scope:supervision 1 0.3 0.3 0.0389 0.8454

Residuals 24 185.5 7.7

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Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

We can make a conclusion that the main factors are significant and the interaction between scope and supervision are significant. Everything is not significant.