**Assignment 9**

Rahul Dipak Patel

Department of Psychology, University of Guelph

PSYC 6380: Multivariate Statistics

Dr. Cassidy

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**Part 1**

**Questions ­­­­­­**

***1***

Fixed intercept of performance: 4.78

Variance of performance due to airport location: 3.80

ICC of performance: 0.84

The resulting ICC(1) value of .84 exceeded James' (1982) recommendation of an ICC(1) value of .12 or higher, justifying the use of multilevel data analysis; suggesting that approximately 84 percent of the variance in participants’ individual-level job performance ratings could be explained by the airport that the participants were employed at.

***2***

Raw unit fixed slope coefficient for humour (i.e., b): 0.48

95% CIs around this raw unit slop coefficient: [0.41, 0.56]

Inspection of the 95% confidence intervals around the raw unit slope coefficient suggested that, for every one unit increase in agents’ sense of humour, individual-level job performance ratings could plausibly (though not certainly) be expected to increase by between 0.41 and 0.56 raw score units. Population-level effects outside of this range are possible but are relatively less probable (see Cumming & Finch, 2005).

***3***

Conditional pseudo-R2: 0.90

Moreover, the conditional *pseudo*-*R2* index suggested that adding individual-level sense of humour as a predictor of job performance, and adding a random intercept of job performance that is allowed to vary based on the airport location, decreased the proportional random error variance in individual-level job performance ratings (relative to a null, random intercept-only model) by approximately 60 percent.

Marginal pseudo-R2: 0.60

Moreover, the marginal *pseudo*-*R2* index suggested that adding individual-level sense of humour as a predictor of job performance decreased the proportional random error variance in individual-level job performance ratings (relative to a null, random intercept-only model) by approximately 60 percent.

***4***

Delta chi-square value: 3.39

Df: 2

P-value: 0.184

Thus, allowing the slopes to vary by airport location does not significantly improve model fit.