# Lab #4

Multilevel Linear Models (MLM)

Copy and paste any results and write out your answers in the space provided.

## SPSS

1. Using ‘**samplecancor.sav**’ – (for this part I recommend using a PC to make it easier. If you figure out how to modify the syntax for a mac please share with the class)

1.a. Download ‘**samplecancor.sav’** to a 'c:\temp' on your computer (if the ‘temp’ folder doesn’t exist, create it).

1.b. Download the **‘Lab05\_MatrixSyntax.sps’** syntax, open it in SPSS and run the syntax. Paste the output below, annotate and interpret the results (refer to T&F for help)

HIGHLIGHT HERE AND PASTE THE OUTPUT AND INTERPRETATION FORM #1.b.

1.c. Make a diagram (e.g., Google drawing) that represents the two canonical variate pairs, including loadings and canonical correlations (refer to T&F). Remember that your values will be a little different due to rounding error.

HIGHLIGHT HERE AND PASTE YOUR DIAGRAMS.

## Canonical Correlation using SPSS menu

1. Still using ‘samplecancor.sav’

2.a. Open ‘samplecancor.sav’ and go to Analyze 🡪 Correlate 🡪 Canonical Correlation and move *ts* and *tc* into Set 1: and *bs* and *bc* into Set 2: and click on OK.

HIGHLIGHT HERE AND PASTE YOUR OUTPUT.

2.b. Compare the output to what we computed above.

HIGHLIGHT HERE AND PASTE YOUR ANSWER TO 2.b.

1. Using ‘social2.sav’

3.a. Open ‘social2.sav’ and go to Analyze 🡪 Correlate 🡪 Canonical Correlation and move *srchcomp, eicomp* and *subcomp* into Set 1: and *oocomp* and *supcomp* into Set 2: and click on OK.

HIGHLIGHT HERE AND PASTE THE OUTPUT AND INTERPRETATION FROM #3.a.

3.b. Write a results section describing what you’ve found (see the book and the class website for examples).

HIGHLIGHT HERE AND WRITE YOUR RESULTS SECTION

R

1. Copy and paste the following chunks and run them.

---

title: "Psy524 Lab #5 R code"

author: "Your Name"

output:

word\_document: default

html\_notebook: default

---

# Psy524 Lab #5 R Syntax

```{r Load Libraries, warning=FALSE}

#install.packages("foreign")

library(foreign)

#install.packages("CCA")

library(CCA)

install.packages("knitr")

library(knitr)

```

# Load Data

```{r Loading Data}

social <-read.spss("https://github.com/AndrewAinsworth/psy524/raw/master/LabAssignments/Lab05/social2.sav",

use.value.label=TRUE,

to.data.frame=TRUE)

names(social) <- tolower(names(social))

```

```{r Defining X and Y sets}

X <- social[,5:7]

Y <- social[,8:9]

correl <- matcor(X, Y )

img.matcor(correl, type = 2)

```

1. Copy and paste the chunk below and run it. Annotate and interpret the output.

```{r Computing Canonical Correlation}

cc1 <- cc(X, Y)

cc1$cor

barplot(cc1$cor, main = "Canonical correlations for 'cancor()'", col = "gray")

kable(cc1$xcoef)

kable(cc1$ycoef)

plt.cc(cc1, var.label = TRUE, ind.names = social[,1])

```