Lesson 6 Hands-On

Directions

For your Hands On, you will be analyzing 20 years of suicide data from different countries around the world. Although this is a depressing topic, it's an important issue to analyze, so they can be prevented.

Requirements

This hands on uses **this data**.

You will determine whether suicide rates (`suicides/100k pop`) has changed over the years (`year`), and see if the `generation` has any influence. To do so, you will be using a mixed measures ANOVA, since there is both a repeated time element and a between subjects element. Provide a one-sentence conclusion at the bottom of your program file about the analysis you performed.

Caution!

Lesson 6 Hands-On Solution

Below you will find the R code to come up with the solution for the Lesson 6 Hands-On.

```
library("rcompanion")
library("car")
library("IDPmisc")
library("dplyr")

# Number of suicides by generation by country, with country
being the repeated factor

## Check Assumptions

### Normality
```

```
plotNormalHistogram(suicide$suicides.100k.pop)

suicide$suicides.100k.popSQRT <- sqrt(suicide$suicides.100k.pop)
plotNormalHistogram(suicide$suicides.100k.popSQRT)

suicide$suicides.100k.popLOG <- log(suicide$suicides.100k.pop)

suicide4 <- NaRV.omit(suicide)

plotNormalHistogram(suicide4$suicides.100k.popLOG)

#### Use the log

### Homogeneity of Variance

leveneTest(suicides.100k.popLOG ~ generation, data=suicide4)

#### This failed the assumption, but proceed anyway for learning
purposes

### Sample size -you have more than enough data

## Run the analysis

RManova1 <-
aov(suicides.100k.popLOG~(generation*year)+Error(ï..country/(yea
r)), suicide4)
summary(RManova1)

### Looks like there is a generational effect to suicide, and an
interaction to how the year has affected the generation

## Post hocs

pairwise.t.test(suicide4$suicides.100k.popLOG,
suicide4$generation, p.adjust="bonferroni")

### Looks like there is a difference in suicide rates among ALL
the generations

## Determine Means and Draw Conclusions
```

```
suicideMeans <- suicide4 %>% group_by(generation, year) %>%
summarize(Mean=mean(suicides.100k.pop))

# Generation Z is the least likely to commit suicide.  They were
born mid 90's to early 2000s. The GI generation is the most
likely. They were born 1901-1924. You can see that these differ
over time as well - looks like the GI generation as do
millenials just keeps rising in terms of suicide rates, while
others like gen z and gen x are staying steady.
```