Covariates

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Thu 8/6/2020 5:36 PM

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```
library("rcompanion")
library("car")
library("effects")
library("multcomp")
library("dplyr")

# Data Wrangling

## Making this smaller just for the purposes of learning

burritos3 <- na.omit(burritos %>% select(Burrito, Cost, Reviewer) %>% filter(Burrito %in% c("Carne asada",
"Carnitas", "California")) %>% filter(Reviewer %in% c("Emily", "Scott", "Luis")))

## Make sure the IV is a factor

str(burritos3$Burrito)

## Make srue the CV is a factor

str(burritos3$Reviewer)

## Test Assumptions

plotNormalHistogram(burritos2$Cost)

## Looks relatively normal, keep it

## Homogeneity of Variance

leveneTest(Cost~Burrito, data=burritos2)

### Not significant, so it has homogeneity of variance and meets the assumption!

## Homogeneity of Regression Slopes

HomogeneityRegr = lm(Cost~Reviewer, data=burritos2)
anova(HomogeneityRegr)

# It is NOT significant, so you do meet the assumption of homogeneity of regression slopes

## Sample size - 20 cases for each IV/CV - we need 40 and we have 60, so good to go!

## Analysis

ANCOVA = lm(Cost~Reviewer + Burrito*Reviewer, data=burritos3)
anova(ANCOVA)
```

```
# No effect of reviewer or how reviewer may interact with a particular burrito type; but the type of burrito does impact how expensive it is!

## Post Hocs

postHocs <- glht(ANCOVA, linfct=mcp(Burrito = "Tukey"))
summary(postHocs)

adjMeans <- effect("Burrito", ANCOVA)
adjMeans
```

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