Making a Forest Plot With R

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date: '2021-03-24'

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1 Background

In meta-analysis, one of the most common tasks is making a forest plot. Many packages in R and Stata have their own abilities to make a forest plot, but below we present some options for making a forest plot in R, using the kind of results you might get as output from another package.

2 Simulate a Table of Results

Below, we simulate a table of data such as one might obtain from a meta-analysis routine in R or Stata. We simulate variables for *author*, *year*, *Cohen's d*, *Lower Confidence Interval*, and *Upper Confidence Interval*.

```
author <- c("Smith", "Jones", "Smith & Jones") # authors

year <- c(2015, 2019, 2020) # publication year

d <- c(1, 2, 3) # Cohen's d

LCI <- c(.9, 1.5, 2.8) # Lower Confidence Interval

UCI <- c(1.1, 2.5, 3.2) # Upper Confidence Interval

metadata <- data.frame(author, year, d, LCI, UCI) # make into a dataframe

metadata$id <- row.names(metadata) # add id variable

metadata # display the data
```

```
##          author year d LCI UCI id
## 1         Smith 2015 1 0.9 1.1  1
## 2         Jones 2019 2 1.5 2.5  2
## 3 Smith & Jones 2020 3 2.8 3.2  3
```

```r
library(foreign) # save in other formats

write.dta(metadata, file = "metadata.dta")
```

3 ggplot Graph

```r
library(ggplot2)

ggplot(metadata,
       aes(x = d, # x is Cohen's d
           y = id)) + # y is article id
  # geom_point() + you could use points instead
  geom_col(width = .5) + # columns
  geom_errorbarh(aes(xmin = LCI, # errorbars
                     xmax = UCI,
                     height = .2),
                 color = "red") +
  geom_text(aes(x = -1, # labels
                label = paste(author,
                              year))) +
  labs(title = "Meta-Analytic Results",
       x = "Cohen's d") +
  xlim(-2, 4) + # manually set x limits
  theme_minimal() # nice theme
```