Untitled

Honey Berk

March 16, 2017

```r
library(data.table)
library(dplyr)
```

```
## -------------------------------------------------------------------------
## data.table + dplyr code now lives in dtplyr.
## Please library(dtplyr)!
## -------------------------------------------------------------------------
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:data.table':
##
##     between, first, last

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
library(ggplot2)


# Load data

post.attitude <- fread(input = "./REVISED_FINAL_POST_ATTITUDE_rename.csv",
                       header = TRUE, stringsAsFactors = TRUE)
Pre_post <- fread(input = "./Pre_post.csv",
                  header = TRUE, stringsAsFactors = TRUE)

# merge pre_post and post.attitude
pre_post.attitude <- merge(Pre_post,post.attitude,by='BPL.BLD.ID', all.x = TRUE)

# select E group
pre_post.attitude_E <- pre_post.attitude %>%
  filter(LogCheck == "Y")



library(broom)
# ONE - NO TECH, NO AGE OR EXPERIENCE
all_pvals <- data.frame(varname=as.character(), col=as.character(), coefest=as.numeric(), p_val=as.nume

overall_stats <- data.frame(col=as.character(), MultR2=as.numeric(), AdjR2=as.numeric(), p_val=as.numer
```

```
for (col in names(pre_post.attitude_E)[grep("X", names(pre_post.attitude_E))]) {
  # cat(col, ":\n")
  lmodel <- lm(paste(col, "~ A0.3 + A0.4 + A0.56 + A0.57 + A0.58 + A0.59 + Age + Experience + A0.68 + A0
  smy <- summary(lmodel)

  all_pvals <- rbind(all_pvals, data.frame(varname = names(smy$coefficients[,4]), col = col, coefest = s
  overall_stats <- rbind(overall_stats, data.frame(col = col,  MultR2 = glance(lmodel)$r.squared, AdjR2
}

overall_stats$q_val <- p.adjust(overall_stats$p_val, method = "BH")
overall_stats
```

```
##      col    MultR2       AdjR2      p_val      q_val
## 1   X1.1 0.1885182 -0.74780694 0.99790313 0.9979031
## 2   X1.2 0.2673400 -0.57803686 0.98197828 0.9979031
## 3   X1.3       NaN        NaN         NaN       NaN
## 4   X1.4 0.6015241  0.14174424 0.31653772 0.8139541
## 5   X2.1 0.8371800  0.45726680 0.16932635 0.6095748
## 6   X2.2       NaN        NaN         NaN       NaN
## 7   X2.3 0.6931920  0.03574617 0.49995617 0.9949598
## 8   X2.4 0.6425648 -0.12336774 0.63569700 0.9949598
## 9   X2.5 0.3914691 -0.67346007 0.95131189 0.9979031
## 10  X3.1 0.9845489  0.90729327 0.02931088 0.5831522
## 11  X3.2 0.5058361 -0.97665564 0.95154469 0.9979031
## 12  X3.3 0.6653120  0.30671773 0.12775116 0.5831522
## 13  X3.4 0.5396056 -0.32363380 0.79392753 0.9979031
## 14  X3.5 0.5664039 -0.02486344 0.54150536 0.9949598
## 15  X3.6 0.5723145  0.03770771 0.45958114 0.9949598
## 16  X3.7 0.4118362 -0.69097106 0.95231881 0.9979031
## 17  X4.1 0.8352437  0.01146217 0.57431037 0.9949598
## 18  X4.2 0.6000512  0.17153456 0.26731378 0.7402536
## 19  X4.3 0.7332461  0.36949082 0.12236234 0.5831522
## 20  X4.5 0.7694957  0.42373920 0.10221585 0.5831522
## 21  X4.6 0.7546736  0.40031319 0.12958937 0.5831522
## 22  X4.7 0.7878347  0.43422573 0.11333558 0.5831522
## 23  X4.8 0.8378156  0.43235473 0.18978847 0.6211259
## 24  X5.1 0.3384246 -0.42493169 0.93296715 0.9979031
## 25  X5.2 0.3742356 -0.34780033 0.88805999 0.9979031
## 26  X5.3 0.3019493 -0.50349387 0.96386723 0.9979031
## 27  X5.4 0.7781520 -0.18318927 0.66330654 0.9949598
## 28  X5.5 0.9816886  0.86266447 0.11319252 0.5831522
## 29  X5.6 1.0000000        NaN         NaN       NaN
## 30  X6.1 0.4455932 -0.31041608 0.83145309 0.9979031
## 31  X6.2 0.5843700  0.01760193 0.49030723 0.9949598
## 32  X6.3 0.6571197  0.14279919 0.35452769 0.8508665
## 33  X7.1 0.7465781  0.35236628 0.16878142 0.6095748
## 34  X7.2 0.6337053 -0.09888404 0.61461767 0.9949598
## 35  X7.3 0.6765797 -0.45539135 0.78817599 0.9979031
## 36  X7.4       NaN        NaN         NaN       NaN
## 37  X8.1 0.9908136  0.88057743 0.25552772 0.7402536
## 38  X8.2 0.9979675  0.97764228 0.11064751 0.5831522
## 39  X8.3 0.9013453  0.01345291 0.65311802 0.9949598
## 40  X8.4 1.0000000        NaN         NaN       NaN
## 41  X8.5 0.5535714 -3.46428571 0.97536862 0.9979031
```

```r
all_pvals$adjusted <- p.adjust(all_pvals$p_val, method = "BH")
signif_coefficients <- subset(all_pvals, p_val < 0.05)
signif_coefficients
```

```
##                              varname col     coefest      p_val
## A0.57Yes3                    A0.57Yes X1.4 -0.33382477 0.017476011
## A0.57Yes4                    A0.57Yes X2.1  0.68110609 0.030605236
## (Intercept)9              (Intercept) X3.1  0.88257576 0.041709267
## Age44-549                     Age44-54 X3.1  0.90530303 0.004290497
## Age55+9                         Age55+ X3.1  0.81818182 0.011591706
## Experience15-20Y9     Experience15-20Y X3.1 -0.93181818 0.006519213
## Experience20+Y9         Experience20+Y X3.1 -0.96969697 0.002421040
## Experience5-10Y9       Experience5-10Y X3.1 -1.25000000 0.003974522
## A0.56Yes11                   A0.56Yes X3.3  0.03020066 0.035350768
## A0.57Yes11                   A0.57Yes X3.3 -0.08855896 0.001050115
## A0.59Yes11                   A0.59Yes X3.3 -0.03600794 0.027619137
## A0.56Yes14                   A0.56Yes X3.6 -0.30519700 0.040277584
## A0.56Yes19                   A0.56Yes X4.5 -0.46773691 0.029526885
## A0.58Yes19                   A0.58Yes X4.5 -1.25667177 0.048757364
## Age44-5419                    Age44-54 X4.5  1.61268198 0.009357408
## Age55+19                        Age55+ X4.5  1.07962858 0.035390824
## Experience15-20Y19    Experience15-20Y X4.5 -1.59087173 0.008122051
## Experience20+Y19        Experience20+Y X4.5 -1.12061995 0.018161658
## A0.69Yes22                   A0.69Yes X4.8 -0.95722228 0.023024443
## A0.57Yes30                   A0.57Yes X6.2 -0.90318023 0.038793549
## Experience5-10Y27      Experience5-10Y X6.3  0.39277848 0.039922465
## A0.3Very involved32 A0.3Very involved X7.1  2.88544423 0.035656837
## A0.56Yes32                   A0.56Yes X7.1  0.42173913 0.049678794
## Age55+32                        Age55+ X7.1  1.40756144 0.013745740
## Experience15-20Y32    Experience15-20Y X7.1 -1.08931947 0.029065456
## Experience20+Y31        Experience20+Y X7.1 -1.10529301 0.013113864
##                       adjusted
## A0.57Yes3            0.8248419
## A0.57Yes4            0.9471479
## (Intercept)9         0.9471479
## Age44-549            0.5845802
## Age55+9              0.7491428
## Experience15-20Y9    0.7105942
## Experience20+Y9      0.5845802
## Experience5-10Y9     0.5845802
## A0.56Yes11           0.9471479
## A0.57Yes11           0.5723125
## A0.59Yes11           0.9471479
## A0.56Yes14           0.9471479
## A0.56Yes19           0.9471479
## A0.58Yes19           0.9731922
## Age44-5419           0.7285410
## Age55+19             0.9471479
## Experience15-20Y19   0.7285410
## Experience20+Y19     0.8248419
## A0.69Yes22           0.9471479
## A0.57Yes30           0.9471479
## Experience5-10Y27    0.9471479
## A0.3Very involved32  0.9471479
```

```
## A0.56Yes32          0.9731922
## Age55+32            0.7491428
## Experience15-20Y32  0.9471479
## Experience20+Y31    0.7491428
```

```r
hist(all_pvals$p_val)
```

Histogram of all_pvals$p_val
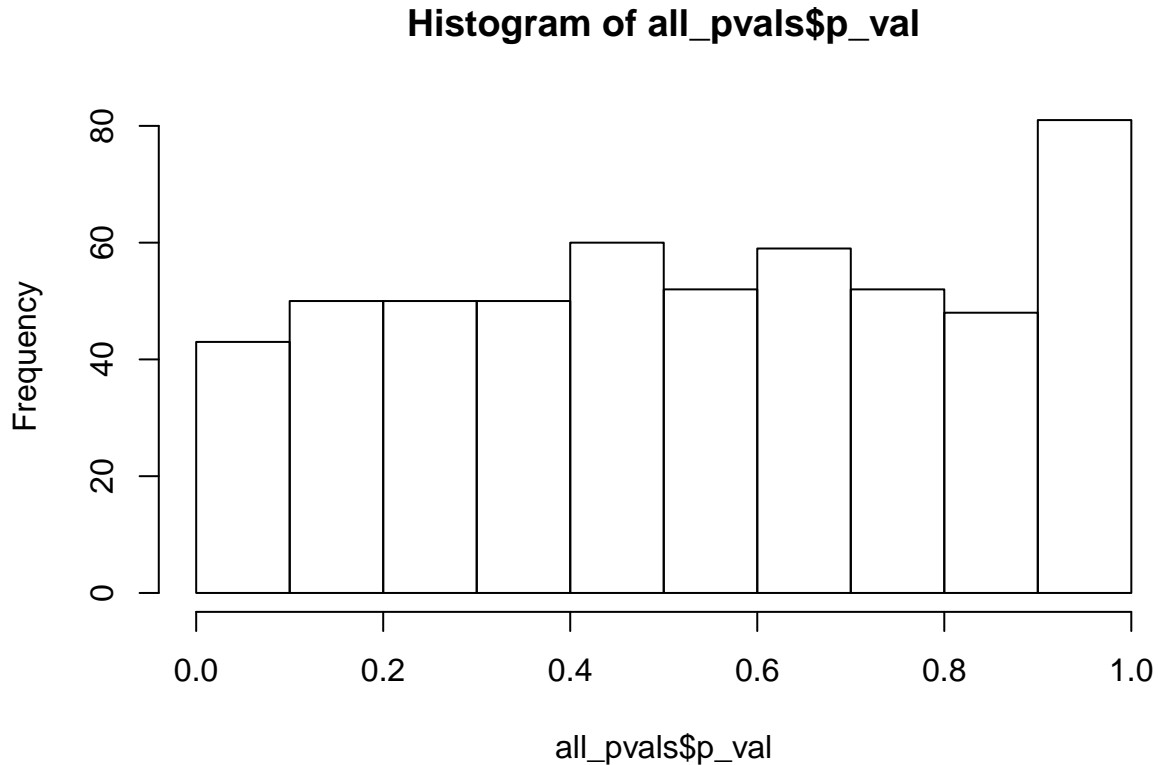

```r
all_pvals %>% filter(p_val < .05)
```

```
##                varname col    coefest       p_val  adjusted
## 1             A0.57Yes X1.4 -0.33382477 0.017476011 0.8248419
## 2             A0.57Yes X2.1  0.68110609 0.030605236 0.9471479
## 3          (Intercept) X3.1  0.88257576 0.041709267 0.9471479
## 4             Age44-54 X3.1  0.90530303 0.004290497 0.5845802
## 5                Age55+ X3.1  0.81818182 0.011591706 0.7491428
## 6     Experience15-20Y X3.1 -0.93181818 0.006519213 0.7105942
## 7       Experience20+Y X3.1 -0.96969697 0.002421040 0.5845802
## 8      Experience5-10Y X3.1 -1.25000000 0.003974522 0.5845802
## 9             A0.56Yes X3.3  0.03020066 0.035350768 0.9471479
## 10            A0.57Yes X3.3 -0.08855896 0.001050115 0.5723125
## 11            A0.59Yes X3.3 -0.03600794 0.027619137 0.9471479
## 12            A0.56Yes X3.6 -0.30519700 0.040277584 0.9471479
## 13            A0.56Yes X4.5 -0.46773691 0.029526885 0.9471479
## 14            A0.58Yes X4.5 -1.25667177 0.048757364 0.9731922
## 15            Age44-54 X4.5  1.61268198 0.009357408 0.7285410
## 16               Age55+ X4.5  1.07962858 0.035390824 0.9471479
## 17    Experience15-20Y X4.5 -1.59087173 0.008122051 0.7285410
## 18      Experience20+Y X4.5 -1.12061995 0.018161658 0.8248419
## 19            A0.69Yes X4.8 -0.95722228 0.023024443 0.9471479
## 20            A0.57Yes X6.2 -0.90318023 0.038793549 0.9471479
```

```
## 21    Experience5-10Y X6.3  0.39277848 0.039922465 0.9471479
## 22 A0.3Very involved X7.1  2.88544423 0.035656837 0.9471479
## 23          A0.56Yes X7.1  0.42173913 0.049678794 0.9731922
## 24            Age55+ X7.1  1.40756144 0.013745740 0.7491428
## 25 Experience15-20Y X7.1 -1.08931947 0.029065456 0.9471479
## 26    Experience20+Y X7.1 -1.10529301 0.013113864 0.7491428
```