

Happiness in the WVS

Blinding Insight

June 27, 2017

Introduction

We are interested in how happiness varies between countries. We started by selecting some important variables.

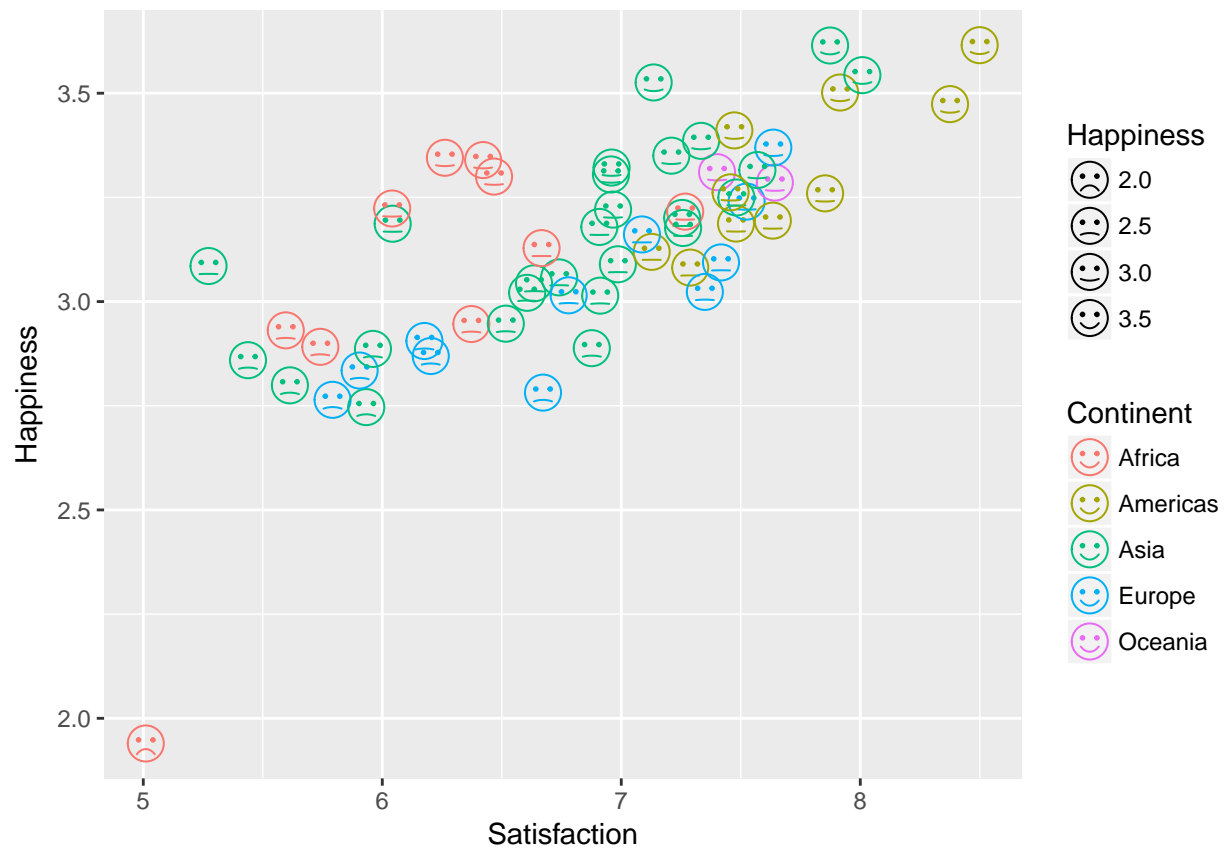
Plotting means by country

```
WVS_mean <- WVS %>% group_by(Country,Continent) %>% summarise_if(is.numeric, mean, na.rm=T)

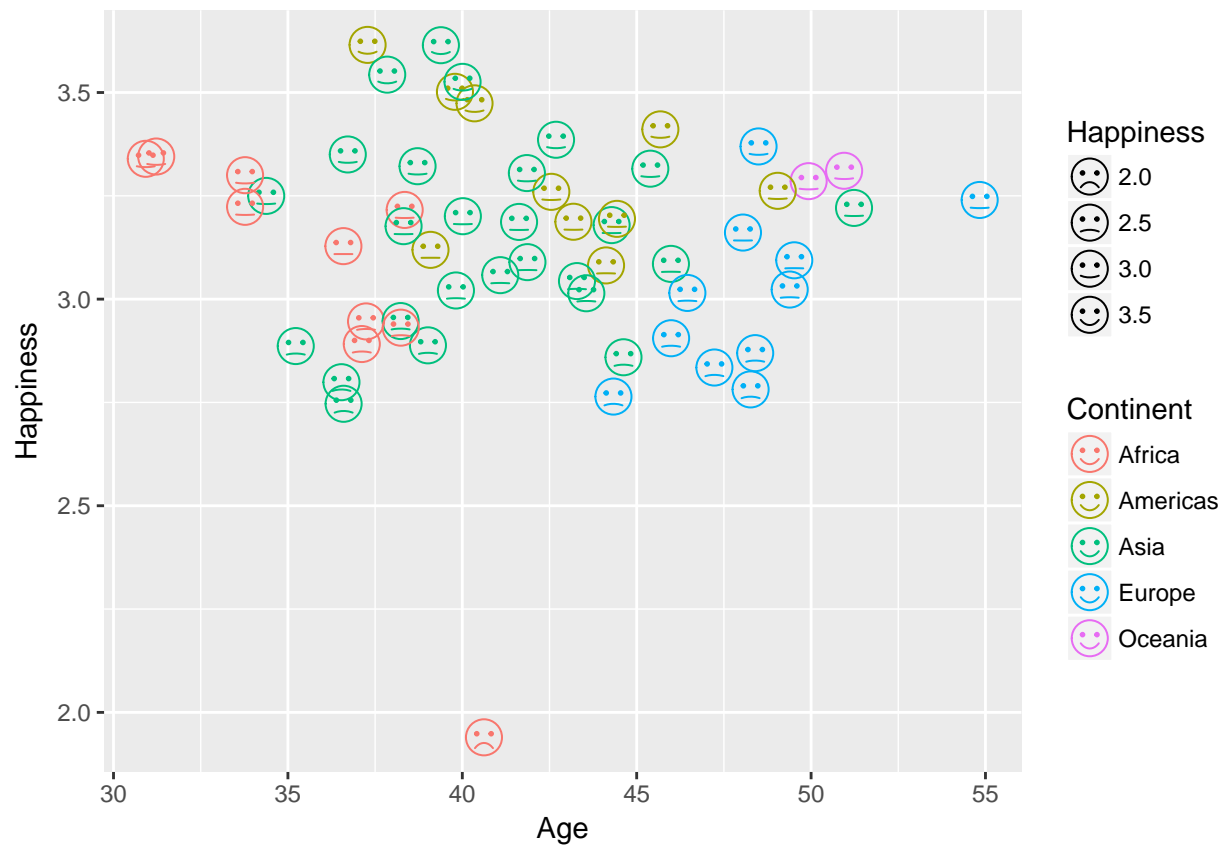
# summarise(Happiness=mean(Happiness),
#           Health=mean(Health),
#           Volition=mean(Volition),
#           Age=mean(Age),
#           Satisfaction=mean(Satisfaction),
#           Income=mean(Income),
#           Kids=mean(Kids,na.rm=T),
#           Sat_Finance=mean(Sat_Finance),
#           Education=mean(Education),
#           Egypt=as.factor(max(Egypt)))

WVS_mean <- WVS_mean %>% mutate(Egypt=(Country=="Egypt"))

ggplot(WVS_mean,aes(x=Satisfaction,y=Happiness,colour=Continent,shape=Egypt, smile=Happiness)) + geom_cl
```



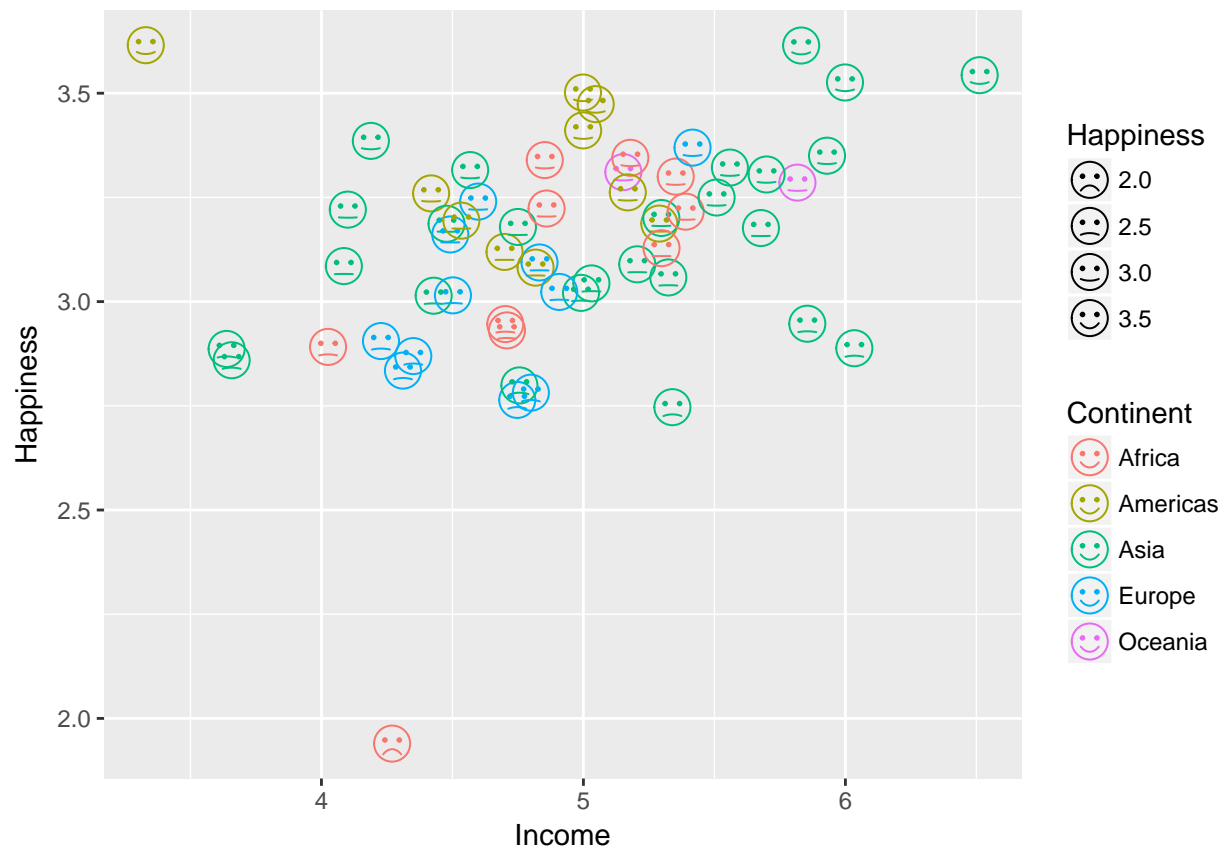
```
ggplot(WVS_mean, aes(x=Age, y=Happiness, colour=Continent, smile=Happiness)) + geom_chernoff()
```



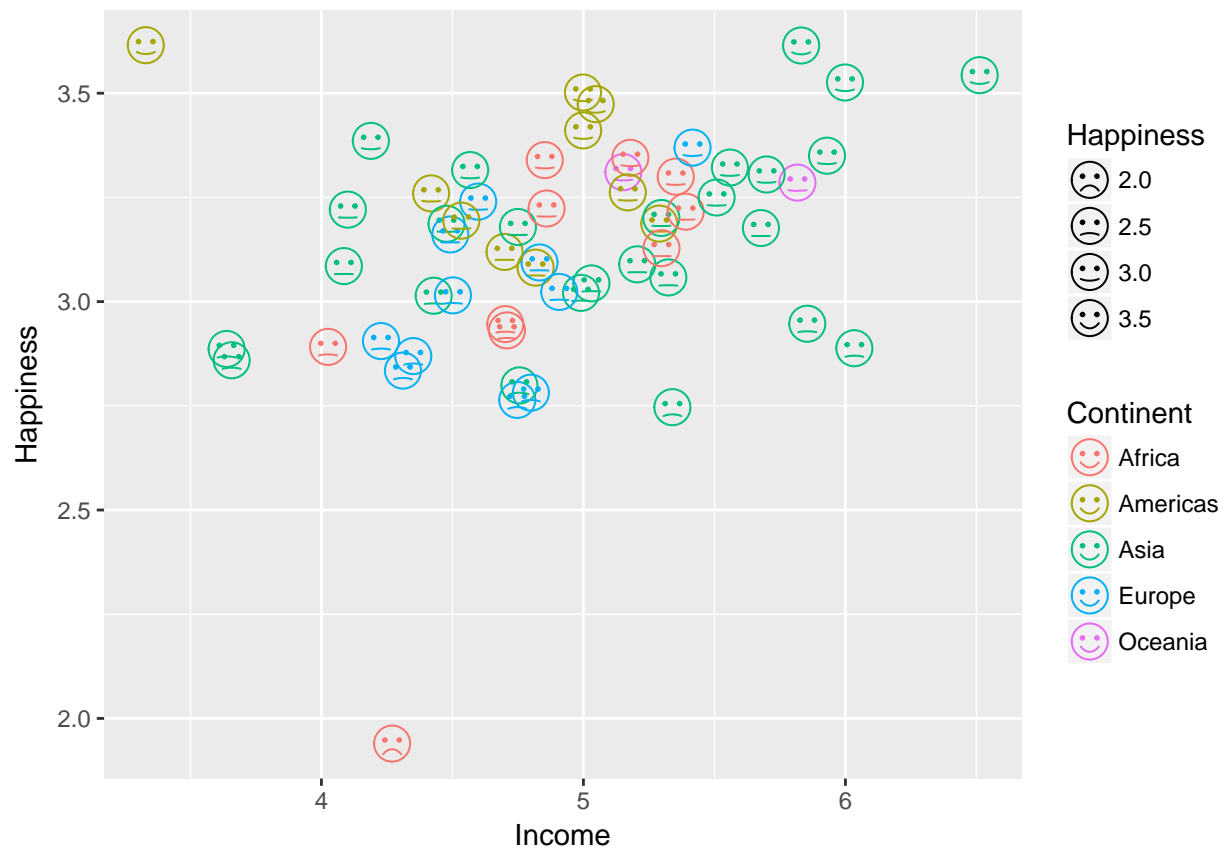
```
ggplot(WVS_mean, aes(x=Kids, y=Happiness, colour=Continent, smile=Happiness)) + geom_chernoff()
```



```
ggplot(WVS_mean, aes(x=Income, y=Happiness, colour=Continent, smile=Happiness)) + geom_chernoff()
```



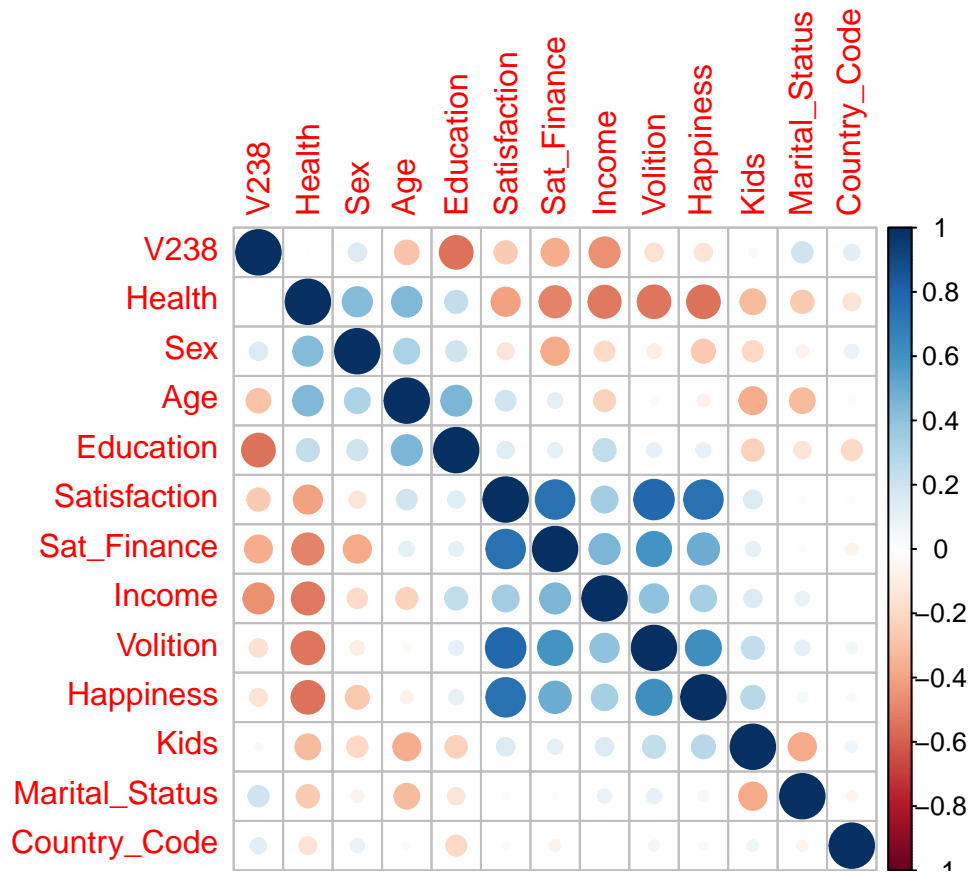
```
ggplot(WVS_mean, aes(x=Income, y=Happiness, colour=Continent, smile=Happiness)) + geom_chernoff()
```



Corrplots

```
WVS_corr<-WVS_mean %>% filter(!is.na(Kids)) %>% ungroup() %>% select(-Country,-Egypt,-Continent,-Age_s
M<-cor(WVS_corr)
order<-corrMatOrder(M)

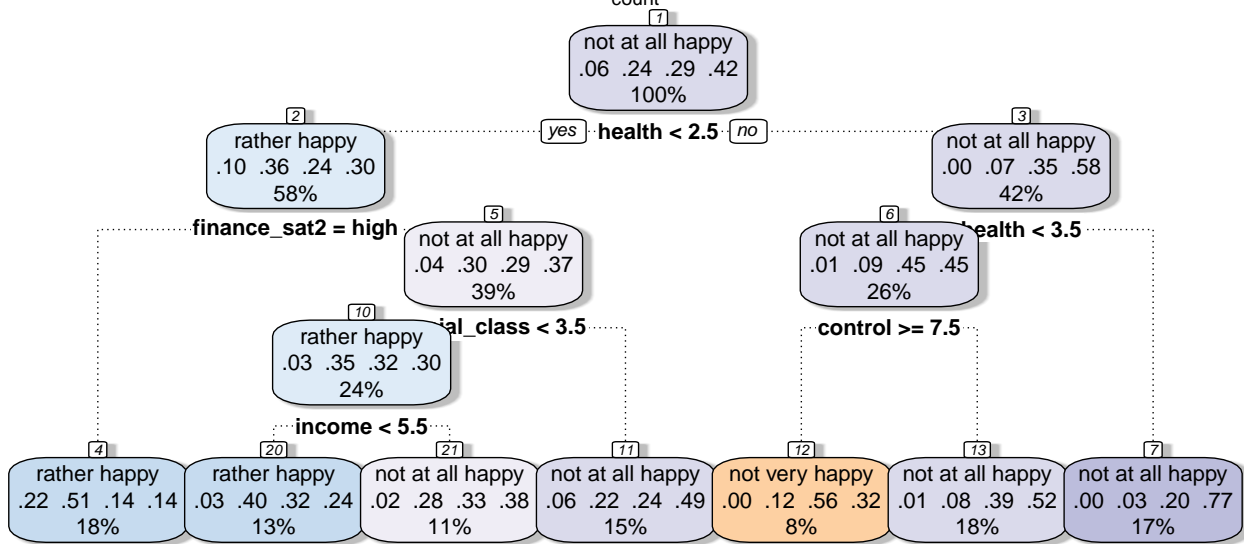
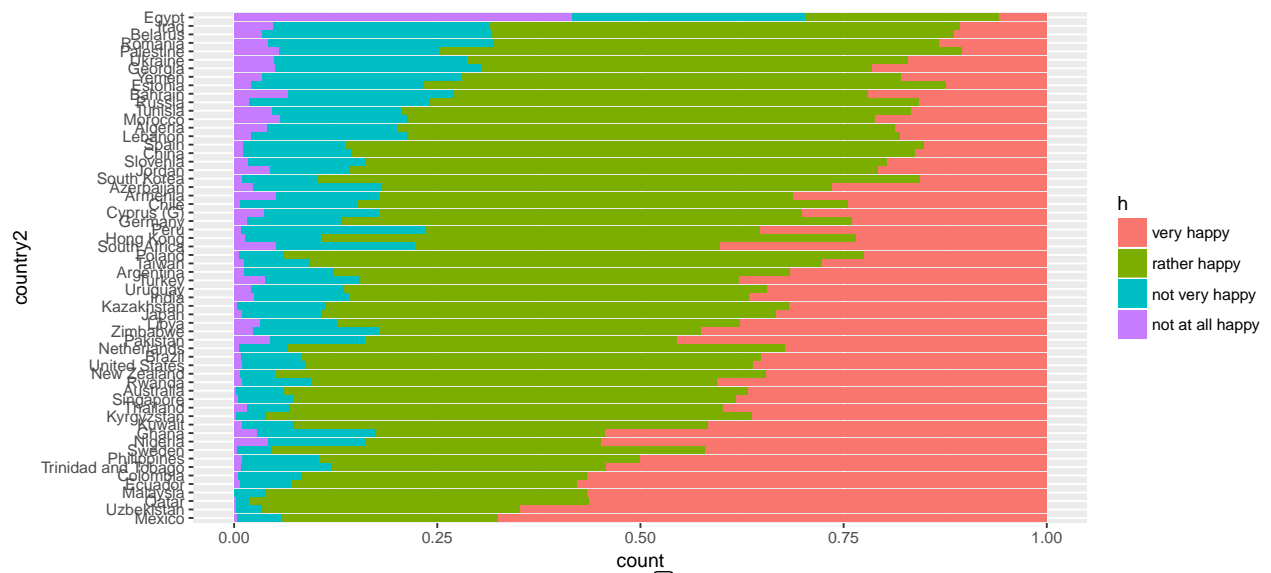
corrplot(M[order,order])
```



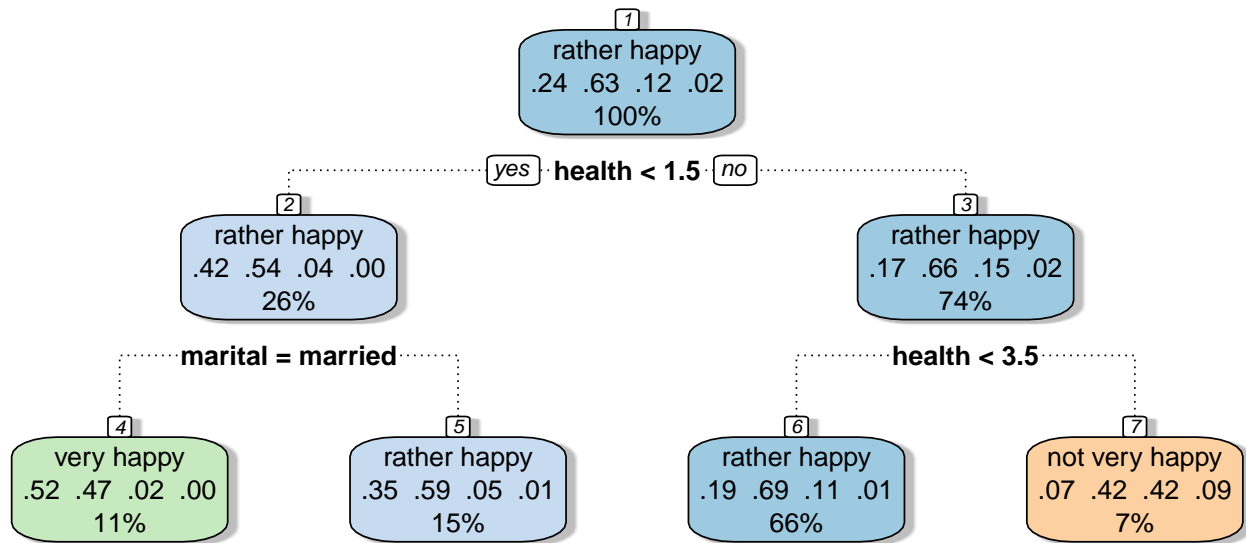
Tree Plots

Tree plots for some countries very different with respect to happiness outcomes

Egypt



Germany

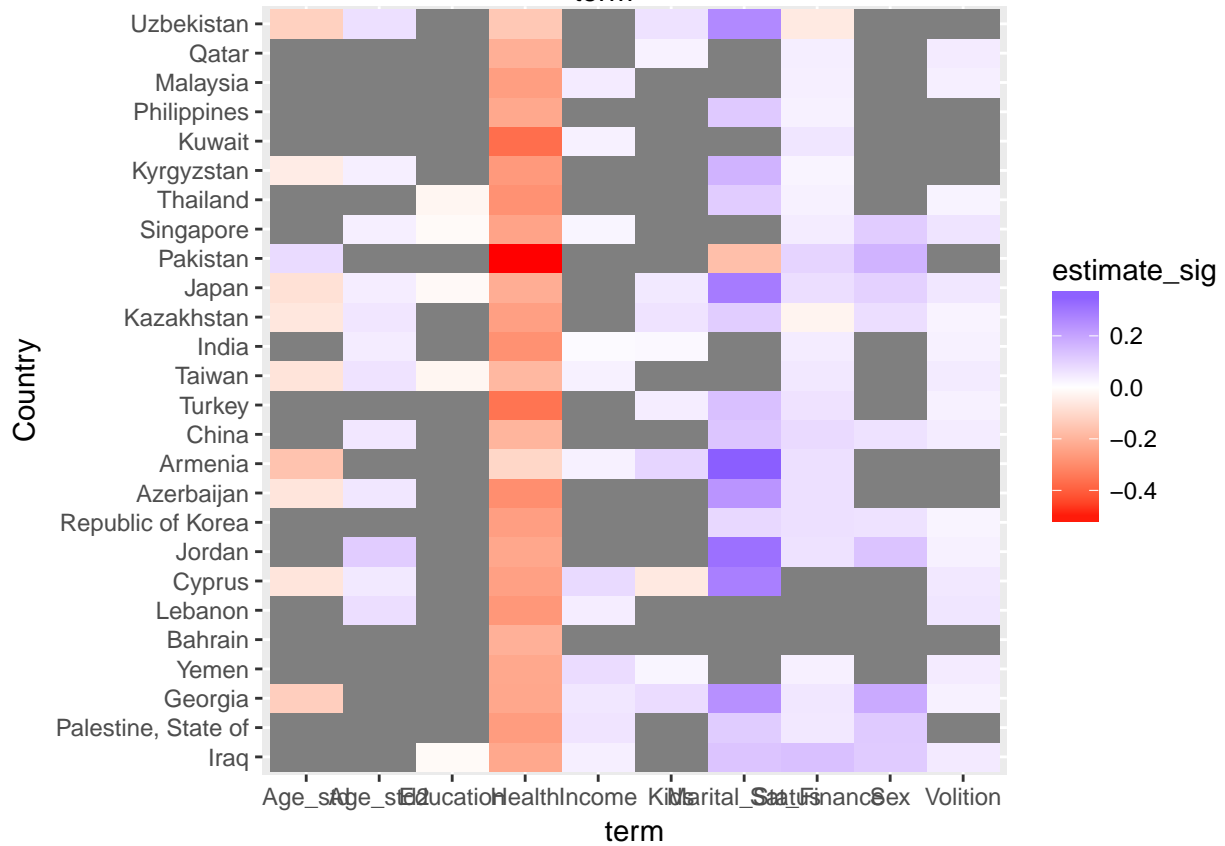
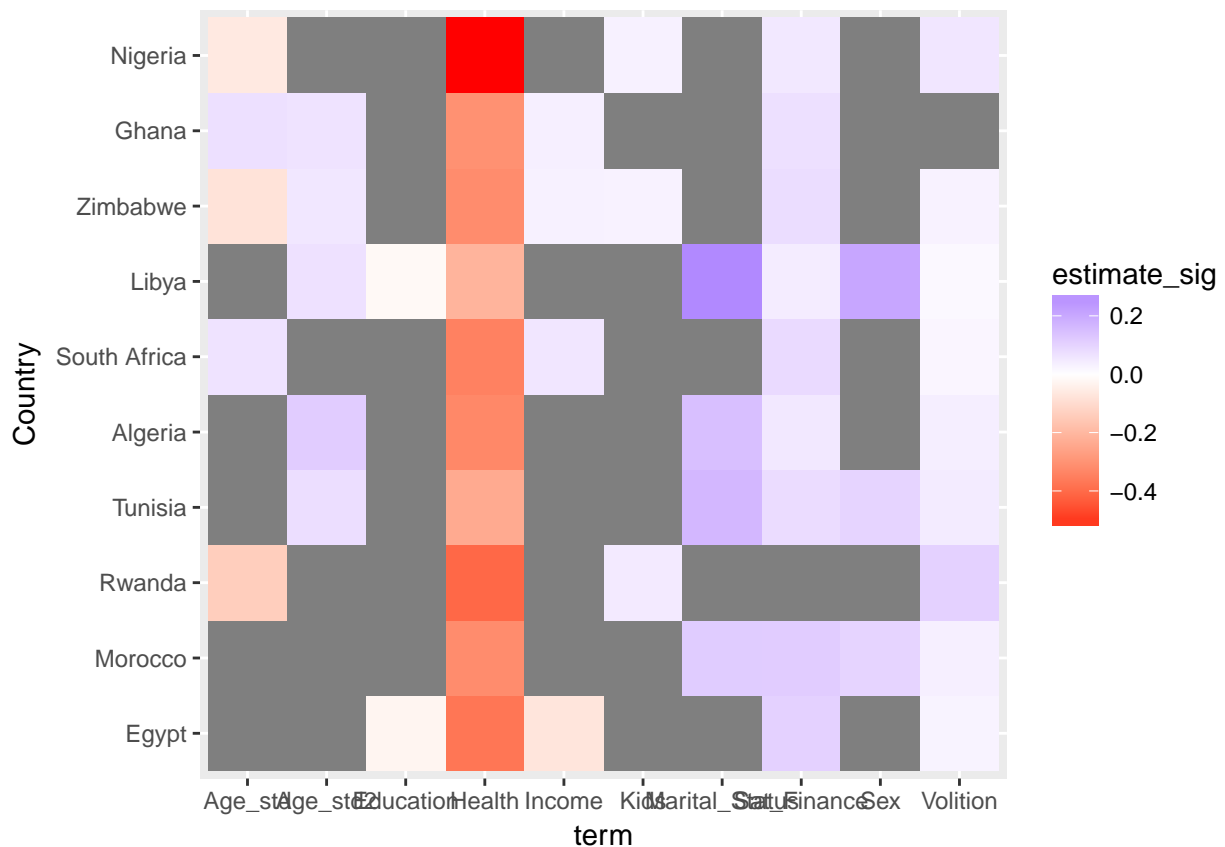


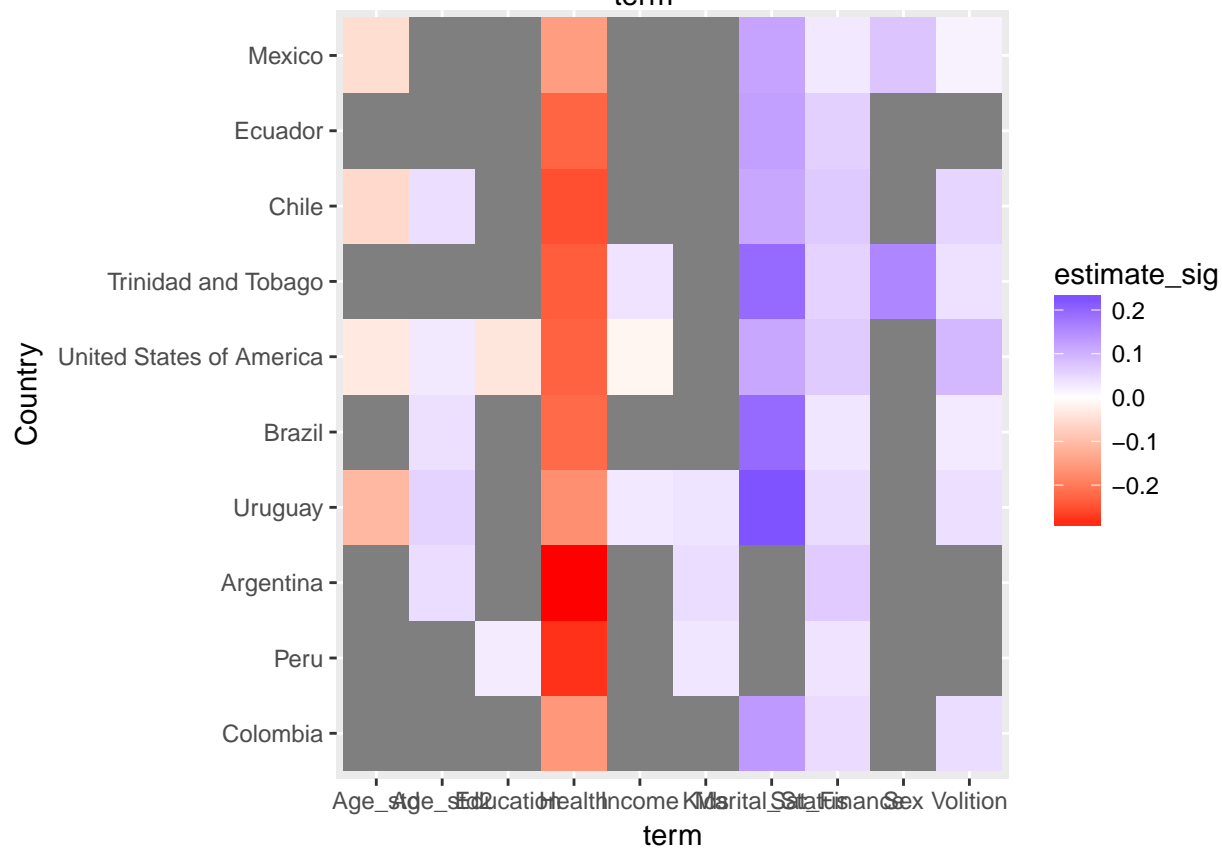
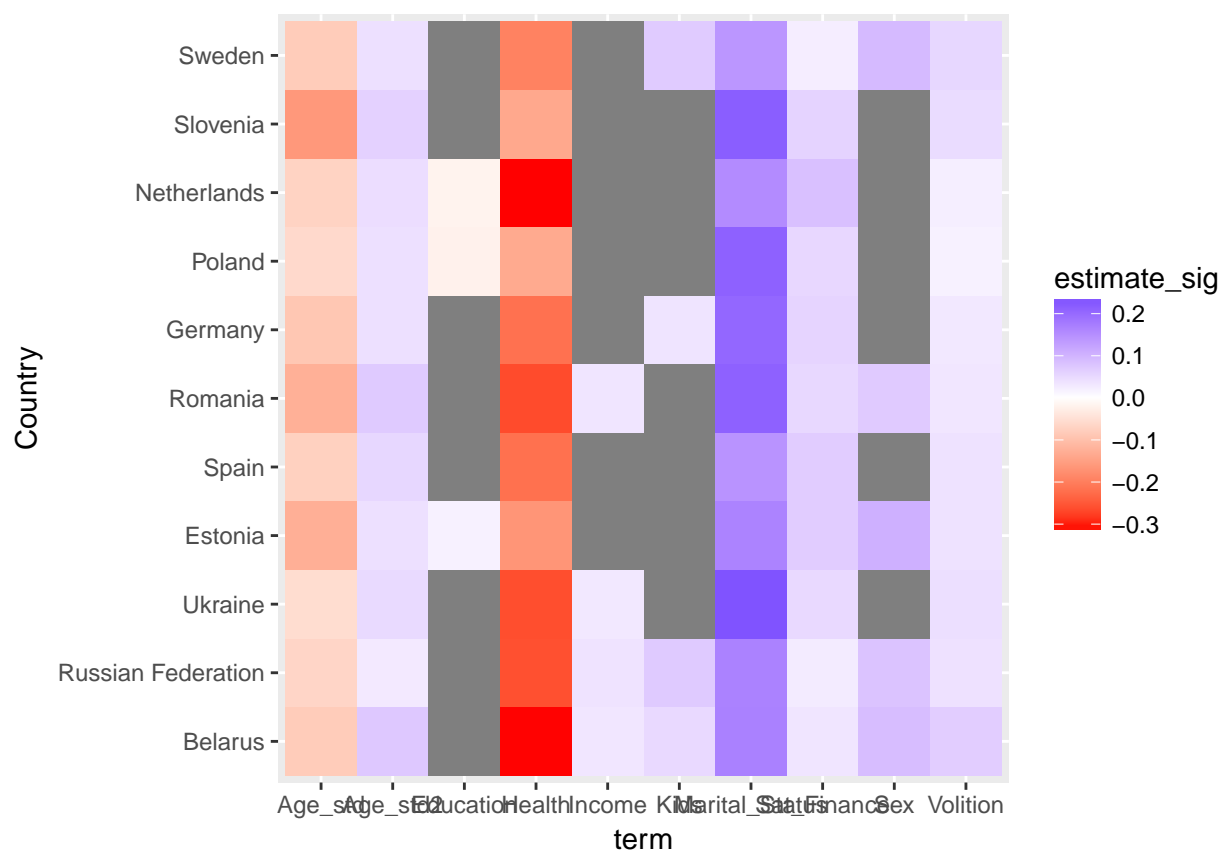
Rattle 2017-Jun-28 11:37:47 jason

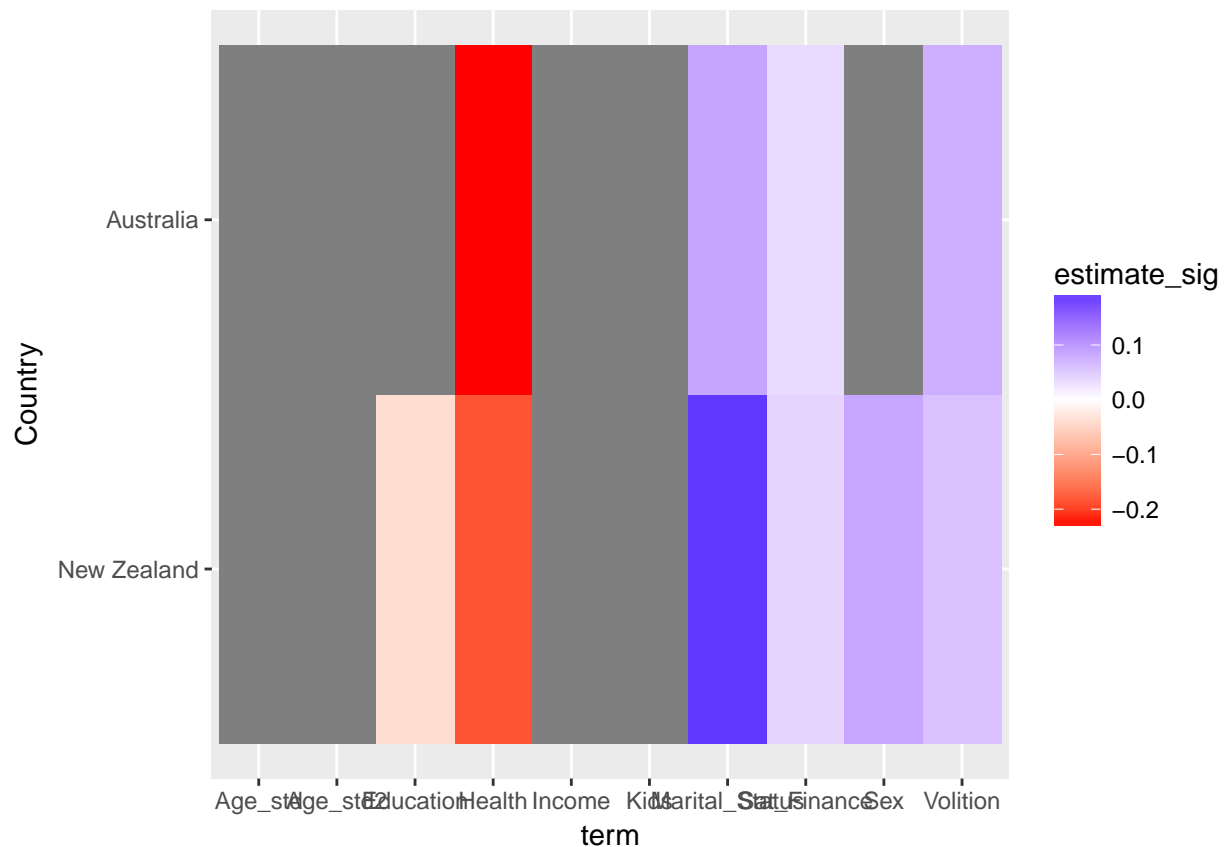
Linear models

Link to shiny app

Shiny App







```
do_models <- function(df){
  lm(Happiness ~ Age_std + Age_std2 + Health + Volition +
    Kids + Sat_Finance + Education + Marital_Status + Income,
    data=df)
}

WVS_model <- WVS %>% filter(Marital_Status > 0) %>% mutate(Marital_Status=ifelse(Marital_Status==1, 1, 0))

WVS_model <- WVS_model %>% mutate(Age_std2 =Age_std**2) %>% filter(Sex==2)

WVS_model <- WVS_model %>% nest(-Country) %>% mutate(model=map(data,do_models))

WVS_model <- WVS_model %>% mutate(model=map(model, tidy))

WVS_model$mean_happiness <- WVS_mean$Happiness

WVS_model <- WVS_model %>% arrange(mean_happiness)

WVS_model$Country <- factor(WVS_model$Country, levels=(WVS_model$Country)[order(WVS_model$mean_happiness)])

WVS_model <- WVS_model %>% mutate(Continent=countrycode(Country,origin = "country.name",
```

```

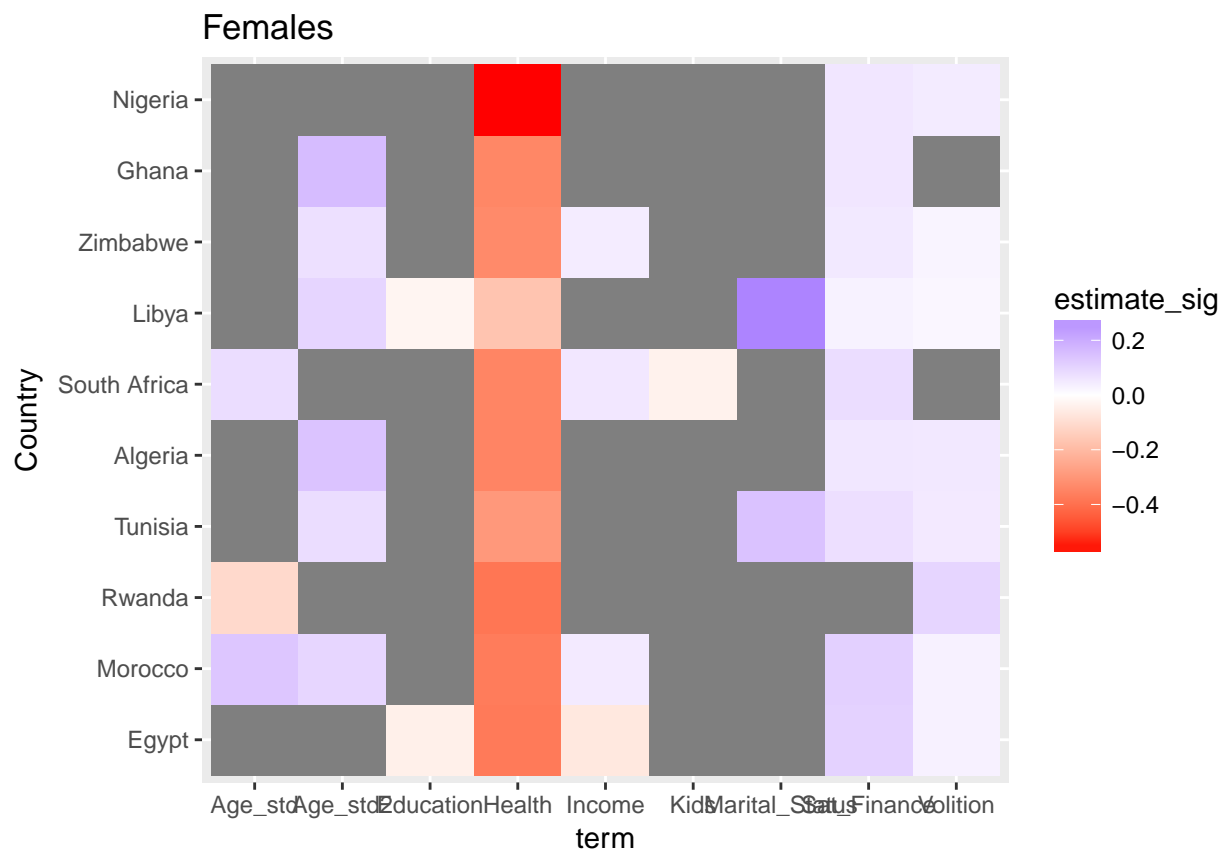
destination = "continent"))

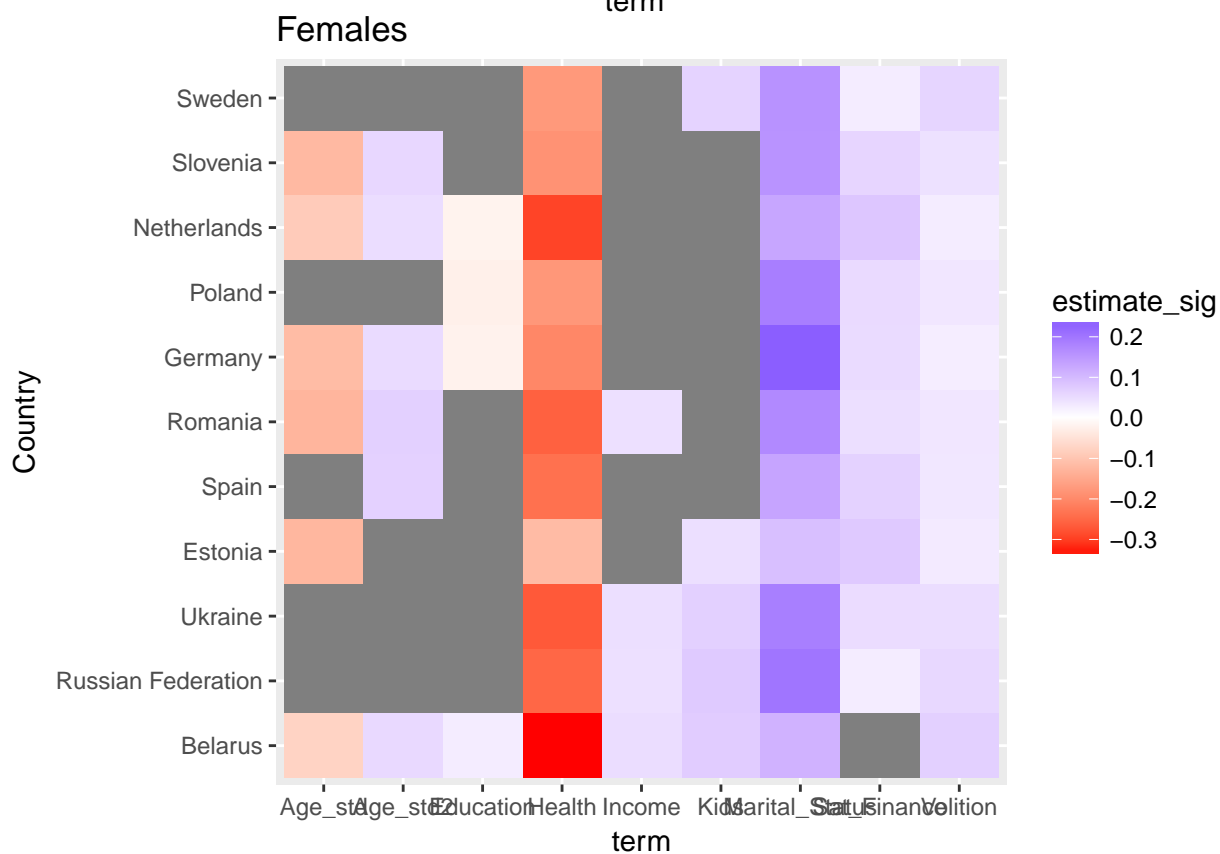
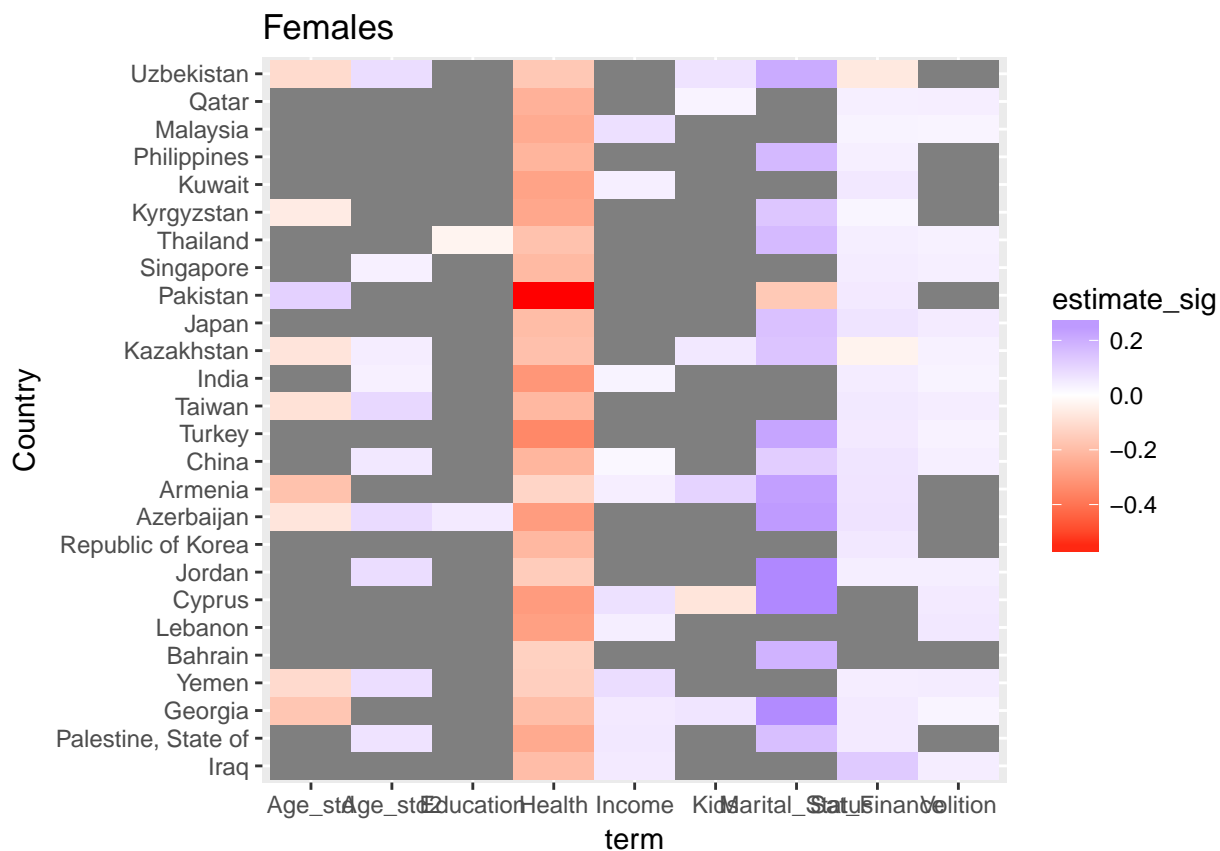
WVS_coefs <- WVS_model %>% select(-data) %>% unnest(model)

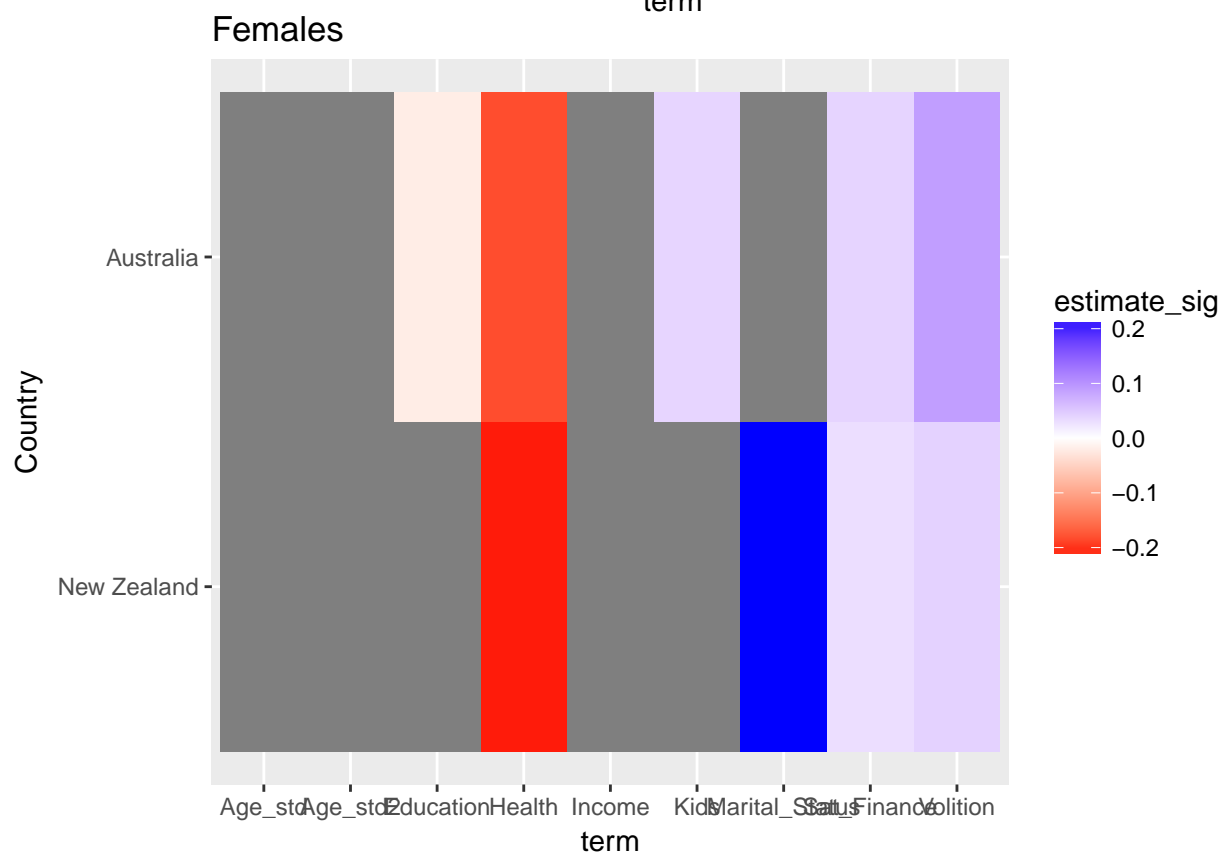
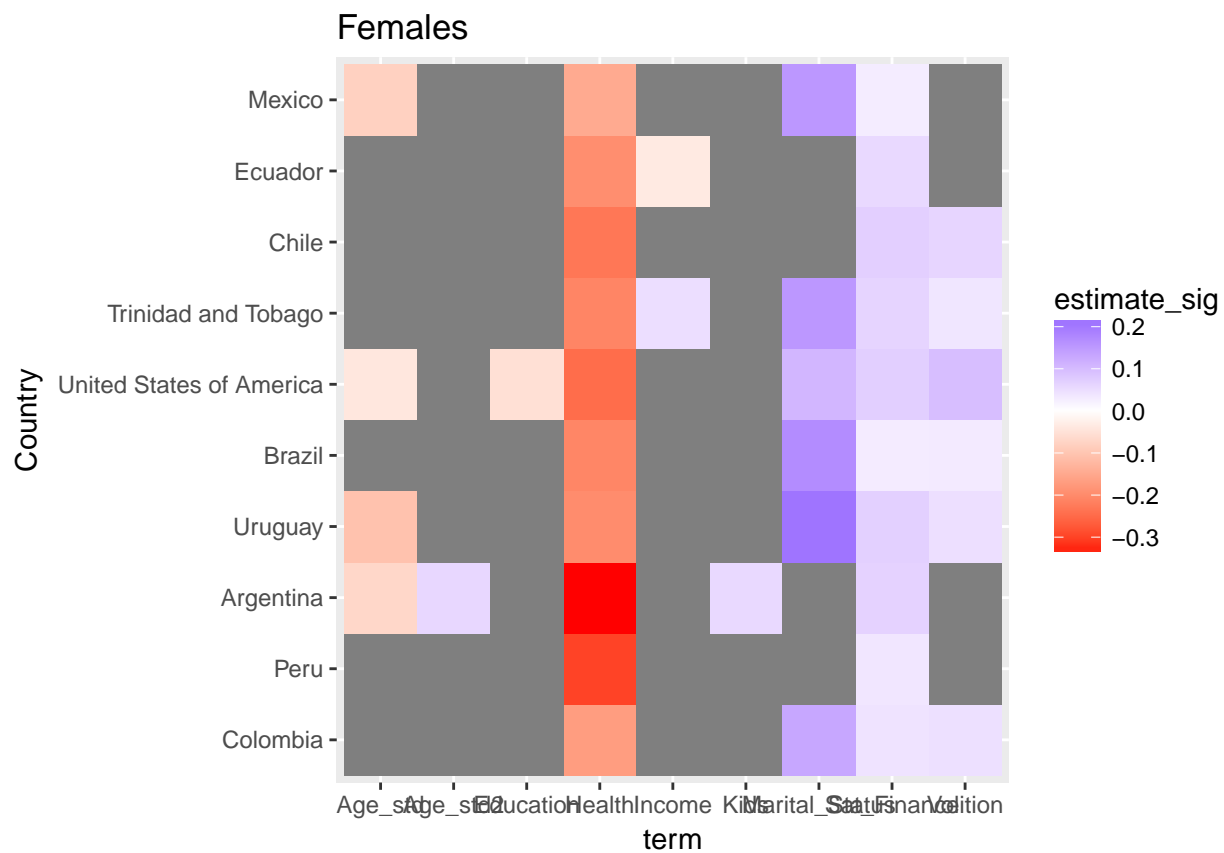
WVS_coefs <- WVS_coefs %>% mutate(estimate_sig = ifelse(p.value>0.05, NA, estimate))

for (cont in unlist(unique(WVS_coefs["Continent"]))) {
p<- ggplot(WVS_coefs %>% filter(!term=="(Intercept)",
                               Continent==cont),
           aes(x=term,y=Country,fill=estimate_sig)) + geom_tile() +
  scale_fill_gradient2(low = "red", mid = "white",
                      high = "blue", midpoint = 0, space = "Lab",
                      na.value = "grey50", guide = "colourbar") + ggtitle("Females")
print(p)
}

```







```

#saveRDS(WVS_coefs, "WVS_coefs_Female.Rdata")

do_models <- function(df){
  lm(Happiness ~ Age_std + Age_std2 + Health + Volition +
      Kids + Sat_Finance + Education + Marital_Status + Income,
      data=df)
}

WVS_model <- WVS %>% filter(Marital_Status > 0) %>% mutate(Marital_Status=ifelse(Marital_Status==1, 1,0))

WVS_model <- WVS_model %>% mutate(Age_std2 =Age_std**2) %>% filter(Sex==1)

WVS_model <- WVS_model %>% nest(-Country) %>% mutate(model=map(data,do_models))

WVS_model <- WVS_model %>% mutate(model=map(model, tidy))

WVS_model$mean_happiness <- WVS_mean$Happiness

WVS_model <- WVS_model %>% arrange(mean_happiness)

WVS_model$Country <- factor(WVS_model$Country, levels=(WVS_model$Country)[order(WVS_model$mean_happiness)])

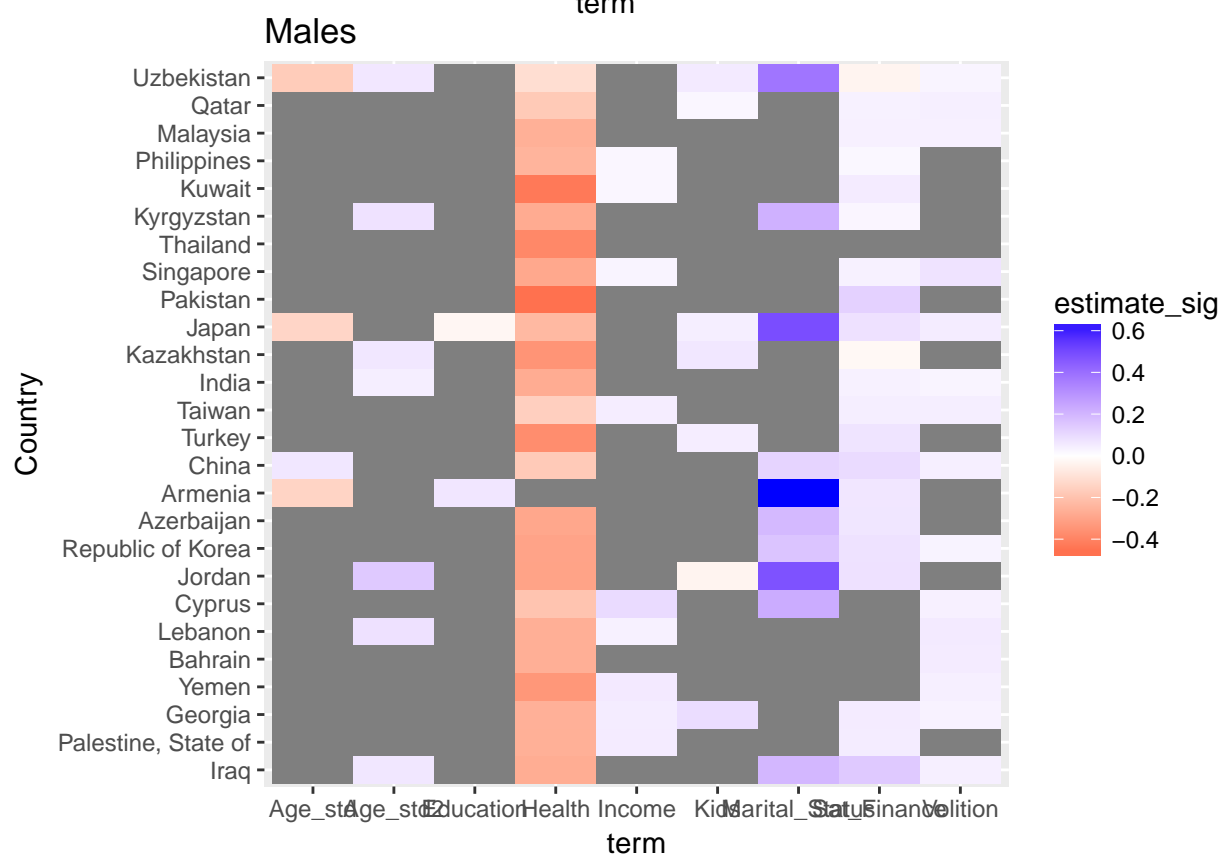
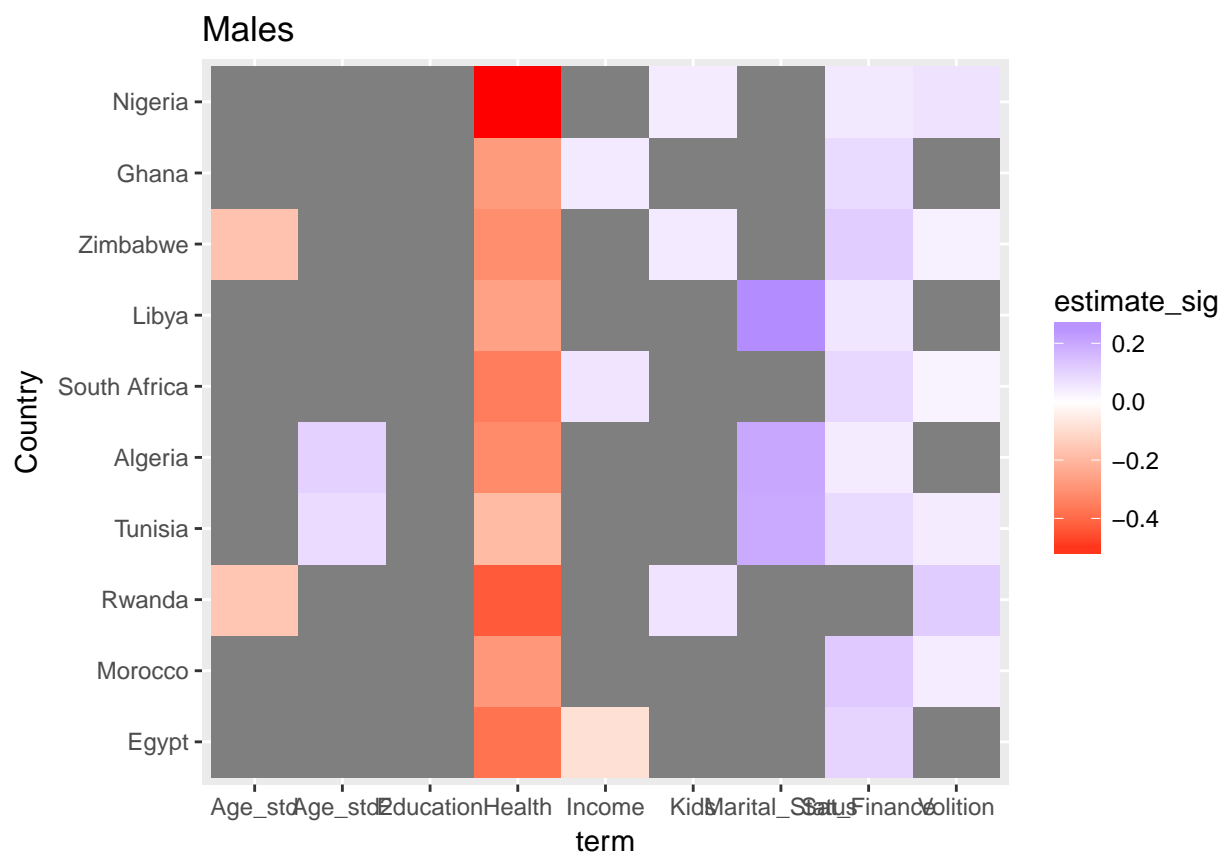
WVS_model <- WVS_model %>% mutate(Continent=countrycode(Country,origin = "country.name",
      destination = "continent"))

WVS_coefs <- WVS_model %>% select(-data) %>% unnest(model)

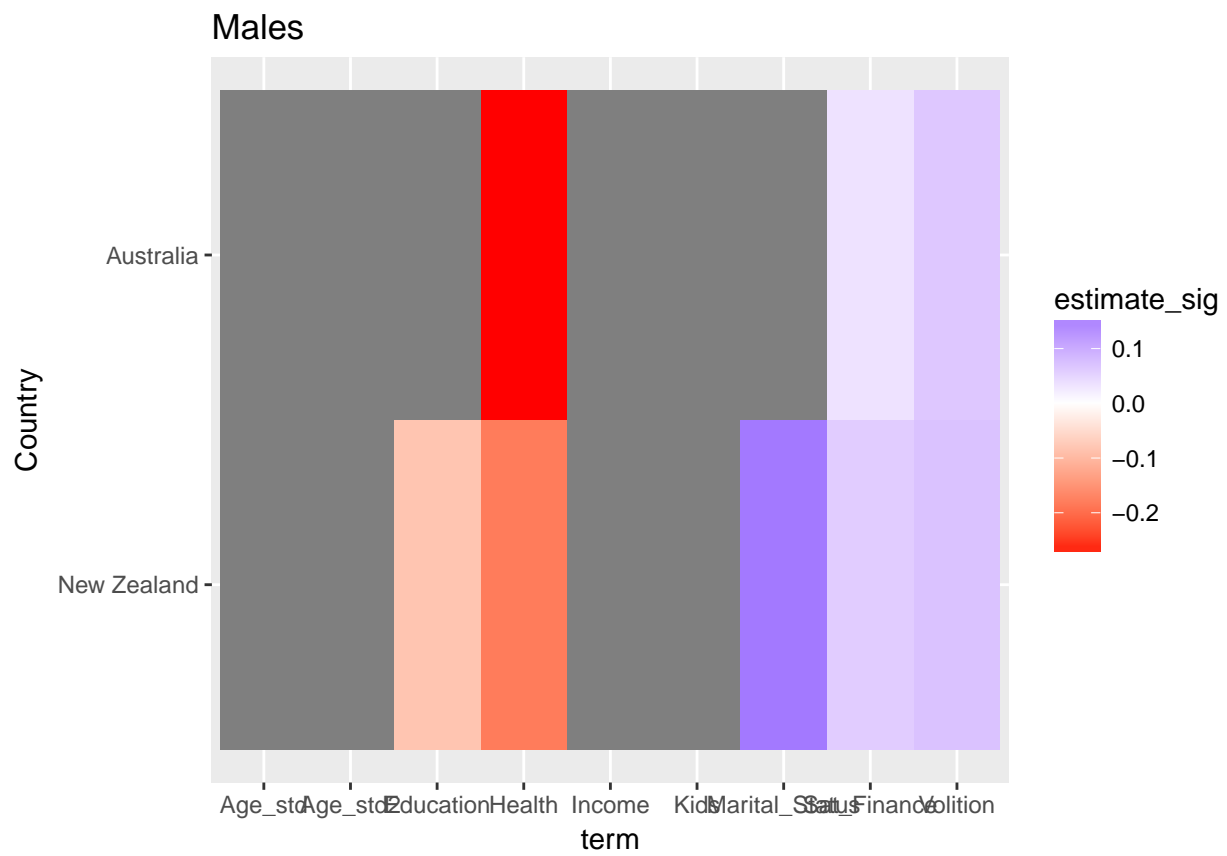
WVS_coefs <- WVS_coefs %>% mutate(estimate_sig = ifelse(p.value>0.05, NA, estimate))

for (cont in unlist(unique(WVS_coefs["Continent"]))) {
  p<- ggplot(WVS_coefs %>% filter(!term=="(Intercept)",
      Continent==cont),
      aes(x=term,y=Country,fill=estimate_sig)) + geom_tile() +
    scale_fill_gradient2(low = "red", mid = "white",
      high = "blue", midpoint = 0, space = "Lab",
      na.value = "grey50", guide = "colourbar") + ggtitle("Males")
  print(p)
}

```





```
#saveRDS(WVS_coefs, "WVS_coefs_Male.Rdata")
```