Code

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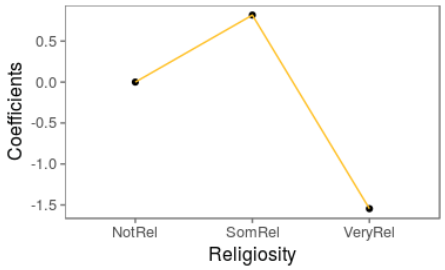
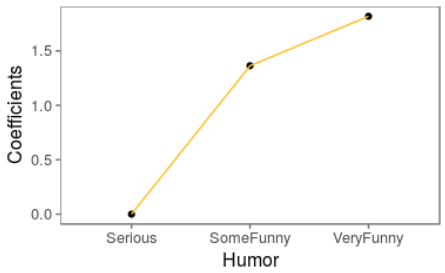
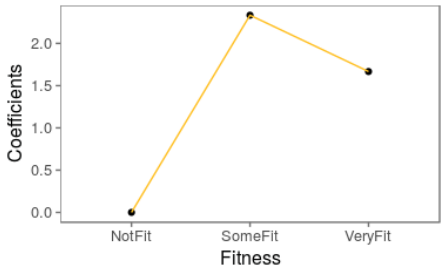
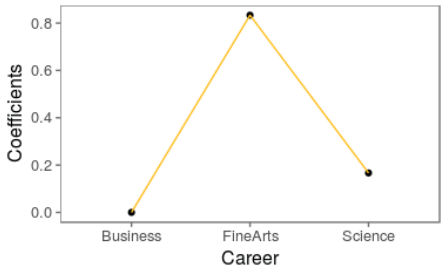
Ratings Based Conjoint

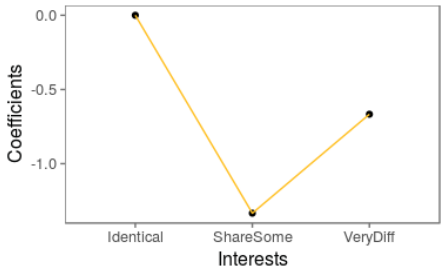
```
library(ggplot2)
library(ggthemes)
library(broom)

cData <- read.csv("~/Dropbox (CBS)/teaching/MarketingAnalytics/conjoint/conjointData.csv", header=TRUE)
xData<-cData[,-1]

attach(cData)

fit<-lm(Rating~ Career+Fitness+Humor+Religiosity+Interests)
summary(fit)


Call:
lm(formula = Rating ~ Career + Fitness + Humor + Religiosity + 
    Interests)

Residuals:
    Min      1Q  Median      3Q     Max 
-0.7879 -0.3674  0.0000  0.3258  0.8636 

Coefficients:
                    Estimate Std. Error t value Pr(>|t|)    
(Intercept)           0.6818     0.5470   1.246 0.252721    
CareerFineArts        0.8333     0.3975   2.096 0.074263 .  
CareerScience         0.1667     0.3975   0.419 0.687576    
FitnessSomeFit        2.3333     0.3975   5.870 0.000618 ***
FitnessVeryFit        1.6667     0.3975   4.193 0.004072 ** 
HumorSomeFunny        1.3636     0.4152   3.284 0.013404 *  
HumorVeryFunny        1.8182     0.4152   4.379 0.003237 ** 
ReligiositySomRel     0.8182     0.4152   1.971 0.089402 .  
ReligiosityVeryRel   -1.5455     0.4152  -3.722 0.007433 ** 
InterestsShareSome   -1.3333     0.3975  -3.354 0.012179 *  
InterestsVeryDiff    -0.6667     0.3975  -1.677 0.137417    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6885 on 7 degrees of freedom
Multiple R-squared:  0.9316,    Adjusted R-squared:  0.8338 
F-statistic: 9.532 on 10 and 7 DF,  p-value: 0.003387

str(Career)

 Factor w/ 3 levels "Business","FineArts",..: 2 1 1 3 1 2 3 1 3 2 ...

pl<-function(attr, df, fit){
  coeff <- c(0)
  for(coef in names(fit$coefficients)){
    if(grepl(attr, coef)){coeff <- c(coeff, as.numeric(fit$coefficients[coef]))}
  }

  labels<-levels(df[[attr]])

  cframe<-data.frame(labels, coeff)

  g <- ggplot(data=cframe, aes(x=labels,y=coeff))+
    geom_point()+
    geom_line(aes(group=1), color="goldenrod1")+
    theme_few()+
    ylab("Coefficients")+
    xlab(attr)

  show(g)
}

for(attr in names(xData)){
  pl(attr = attr, df = xData, fit = fit)
}
```












```
get_importance <- function(xData, fit){
  get_range<-function(attr, df, fit){
    coeff <- c(0)
    for(coef in names(fit$coefficients)){
      if(grepl(attr, coef)){coeff <- c(coeff, as.numeric(fit$coefficients[coef]))}
    }

    range <- max(coeff) - min(coeff)
    return(range = range)
  }


  Ranges <- c()
  for(attr in names(xData)){
    range <- get_range(attr = attr,df = cData, fit = fit)
    Ranges <- c(Ranges, range)
  }

  imp <- round(100 * Ranges / sum(Ranges),2)
  Res <- data.frame(names(xData), Ranges,  imp)
  names(Res) <- c('Attribute', 'Range', 'Importance')
  return(Res)
}

library(knitr)
impTable <- get_importance(xData, fit)
kable(impTable, caption = 'Attributes relative importance', align="lcc", digits=2)
```

Attribute	Range	Importance
Career	0.83	9.60
Fitness	2.33	26.88
Humor	1.82	20.94
Religiosity	2.36	27.23
Interests	1.33	15.36

```
g <- ggplot(data = impTable) + geom_bar(mapping = aes(x = Attribute, y = Importance),stat = 'identity', fill="goldenrod1", col = "goldenrod
show(g)
```