

Predicting attitudes towards racist college professors

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Introduction

This report aims at predicting attitudes towards racist college professors. Specifically, each respondent was asked “**Should a person who believes that Blacks are genetically inferior be allowed to teach in a college or university?**” Given the kerfuffle over Richard J. Herrnstein and Charles Murray’s The Bell Curve and the ostracization of Nobel Prize laureate James Watson over his controversial views on race and intelligence, this analysis will provide further insight into the public debate over this issue.

Hypothesis

The determinants of individuals’ opinions on a racist college professors may come from three aspects (2-3 specific variables are selected in each categories for analysis purpose):

- Natural attributes: age, sex
- Race: African American, Hispanic
- Personal value: Authoritarianism Scale, Egalitarianism Scale, Tolerance Scale
- Attitudes towards other social issues: Should Marijuana Be Made Legal, Have Gun in Home

Model Construction

Initial logistic model

```
##  
## Call:  
## glm(formula = colrac ~ age + sex + black + hispanic_2 + authoritarianism +
```

```
##      egalit_scale + tolerance + grass + owngun, family = binomial,
##      data = gss_colrac)
##
## Deviance Residuals:
##      Min        1Q      Median        3Q        Max
## -2.1206  -0.8996  -0.1226   0.7811   2.7575
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)  -6.334459   0.459545 -13.784  < 2e-16 ***
## age           0.008875   0.003208   2.767  0.005660 **
## sexFemale    -0.075712   0.110330  -0.686  0.492568
## blackYes     -0.038977   0.161662  -0.241  0.809475
## hispanic_2Yes  0.195354   0.163915   1.192  0.233337
## authoritarianism 0.134176   0.036916   3.635  0.000278 ***
## egalit_scale  -0.005606   0.006012  -0.932  0.351118
## tolerance     0.532039   0.028346  18.770  < 2e-16 ***
## grassNOT LEGAL  0.086738   0.121901   0.712  0.476746
## owngunNO      -0.126708   0.124025  -1.022  0.306954
## owngunREFUSED  -0.981861   0.542957  -1.808  0.070550 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##      Null deviance: 2735.8  on 1973  degrees of freedom
## Residual deviance: 2066.6  on 1963  degrees of freedom
## AIC: 2088.6
##
## Number of Fisher Scoring iterations: 5
```

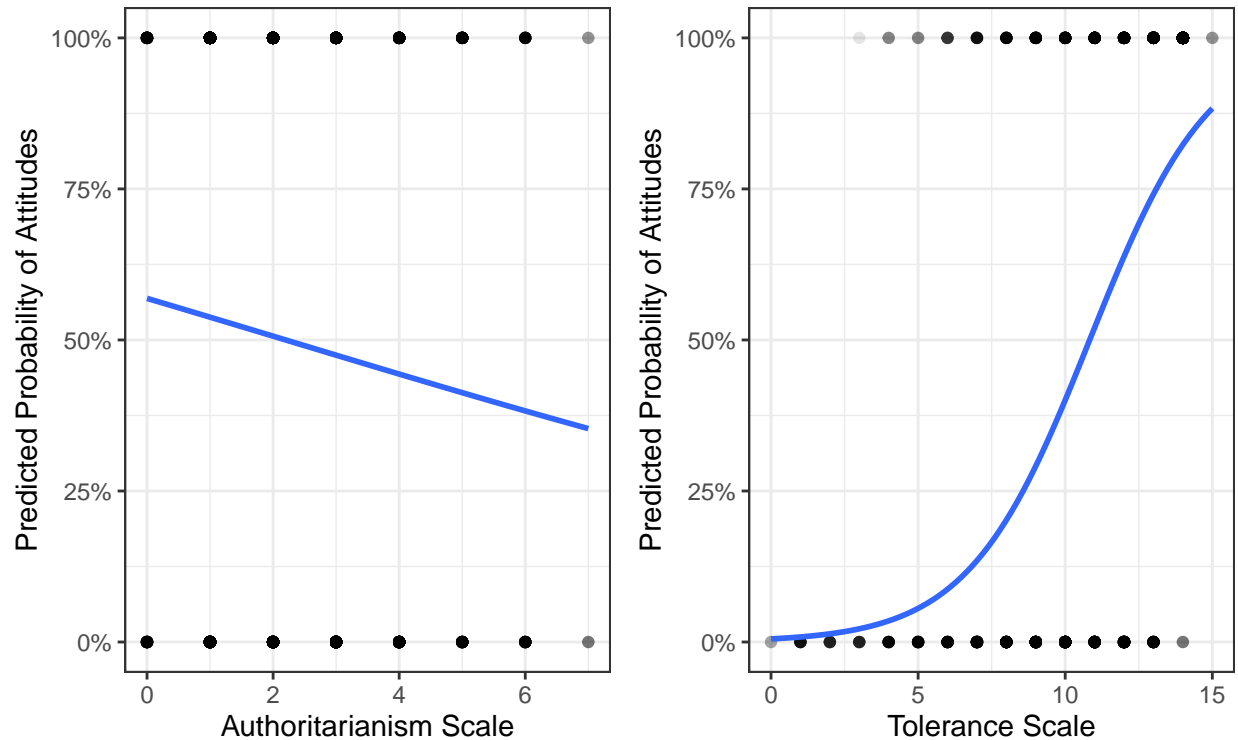
- The result of statistical model shows no significant differences in individuals with different sexes, races, egalitarianism scales and attitudes toward other social issues. These variables can be removed.
- In the model, age has a low coefficient value, which means it makes but rather small impact on the attitudes of individuals, thus we rule out age variables as well.

Modified Model

```
## # A tibble: 3 x 5
##   term                estimate std.error statistic  p.value
##   <chr>              <dbl>     <dbl>     <dbl>    <dbl>
## 1 (Intercept)       -5.96       0.332     -18.0 4.24e-72
## 2 authoritarianism   0.143     0.0357      4.00 6.23e- 5
## 3 tolerance          0.518     0.0260     19.9 2.62e-88
```

Visualization

Relationship Between Tolerance and Authoritarianism Scales and Attitudes

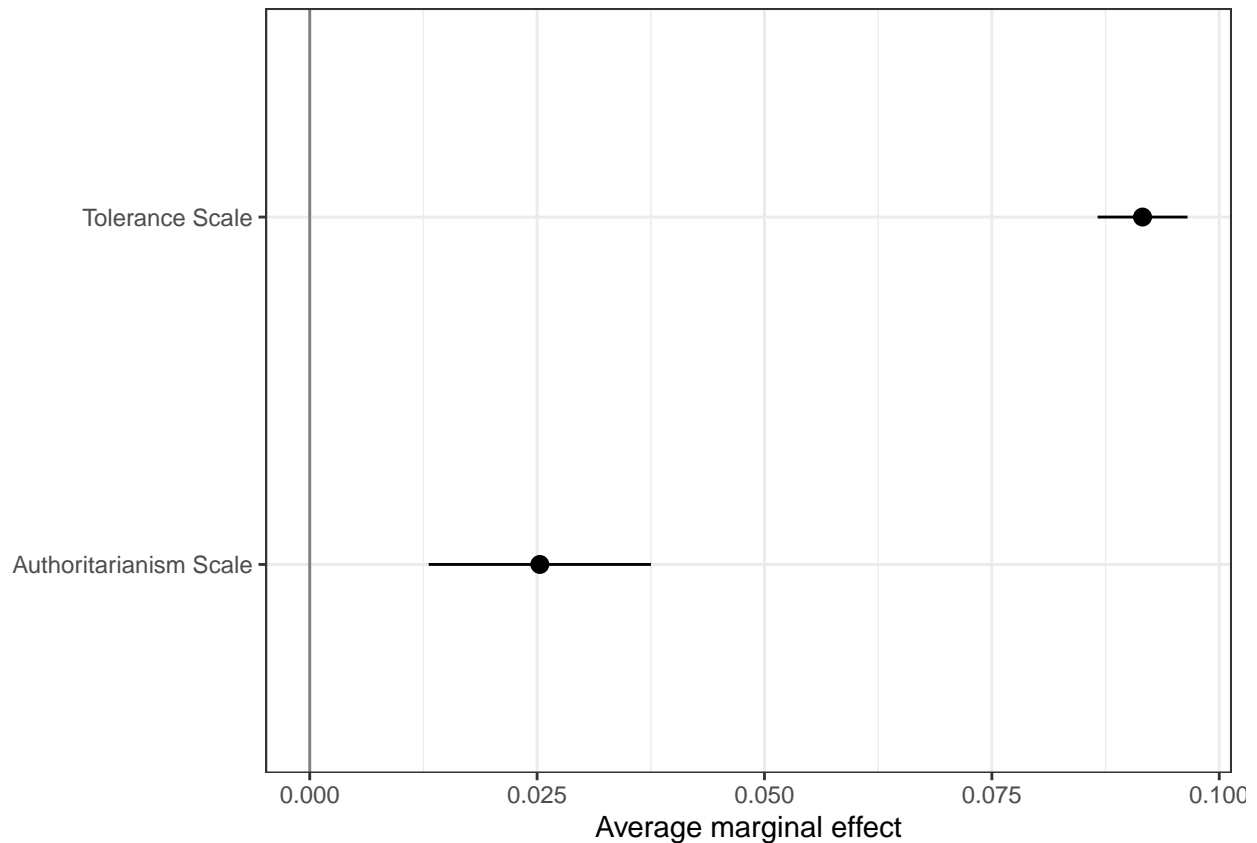


The modified model tells us:

- If an individual's tolerance scale increases by 1, the probability the respondent believes the person should be allowed to teach increases by 51.76%.
- If an individual's authoritarianism scale increases by 1, the probability the respondent believes the person should be allowed to teach increases by 14.3%. *However, the plot tells a different story, thus this relationship remains in question*
- The model's validity can be learned through calculation of its error rate. The model is relatively effective because it only has 27.36% chance being wrong.

Marginal Effect

```
## # A tibble: 2 x 7
##   factor                AME      SE      z      p    lower  upper
##   <chr>                <dbl>   <dbl> <dbl>   <dbl> <dbl>   <dbl>
## 1 Authoritarianism Scale 0.0253 0.00623 4.06 4.95e- 5 0.0131 0.0375
## 2 Tolerance Scale       0.0916 0.00252 36.3 9.63e-289 0.0866 0.0965
```



The average marginal effect graph tells us under 0.5 significance level: - The expected difference in probability of the respondent believes the person should be allowed to teach associated with Authoritarianism Scale is a 2.5% increase. - The expected difference in probability of the respondent believes the person should be allowed to teach associated with Tolerance Scale is a 9.2% increase.

Conclusion

Among all, the tolerance rate of an individual best predicts his or her attitude towards racist college professors. While the statistical model does show a similar pattern in authoritarianism Scale, though smaller in its effect size, the inconsistency of the model results and plot output makes this relationship suspicious. More data or alternative models may be considered to gain more insight into the relationship.