Anti-White Discrimination Claims: Robustness Checks

Elisabeth R Silver

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knitr::opts\_chunk$set(echo = TRUE)  
if (!require("pacman")) install.packages("pacman"); library(pacman)#Load the package manager

## Loading required package: pacman

#devtools::install\_github("silverer/statstring")  
p\_load(tidyverse, stats, stringr, effects,lsmeans,  
 scales, statstring, Hmisc, interactions,  
 cowplot,apaTables,openxlsx)  
filter <- dplyr::filter  
select <- dplyr::select  
output <- "outputs/"  
local\_data <- "data/"  
box\_data <- "../../Library/CloudStorage/Box-Box/EEOC data/"

### 1. Using all unemployment:

grpd\_demog\_county <- read.csv(paste0(box\_data,"agg\_claim\_info\_county\_w\_retal\_v1.csv"))  
#this should be 0  
grpd\_demog\_county <- grpd\_demog\_county[!is.na(grpd\_demog\_county$fixed\_fip),]  
  
grpd\_demog\_county$fixed\_fip <- str\_pad(grpd\_demog\_county$fixed\_fip,  
 width = 5, side = "left",  
 pad = "0")  
#https://www2.census.gov/geo/maps/general\_ref/us\_base/stco2010/USstcou2010\_wallmap.pdf  
acs\_data <- read.csv(paste0(box\_data, "white\_unemployment\_pop.csv"))  
acs\_data["fixed\_fip"] <- str\_pad(acs\_data$fixed\_fip, width = 5, side = "left",  
 pad = "0")  
acs\_data["in\_df"] <- acs\_data$fixed\_fip %in% grpd\_demog\_county$fixed\_fip  
  
grpd\_demog\_county <- left\_join(grpd\_demog\_county, acs\_data, by = "fixed\_fip")  
  
grpd\_demog\_county <- grpd\_demog\_county[grpd\_demog\_county$fixed\_fip!= "FAILED",]  
grpd\_demog\_county<-grpd\_demog\_county[grpd\_demog\_county$n.complaints.noretal>0,]  
grpd\_demog\_county <- grpd\_demog\_county %>%  
 filter(!is.na(mrp\_ideology\_mean))  
  
grpd\_demog\_county$fixed\_fip <- str\_pad(grpd\_demog\_county$fixed\_fip,   
 width = 5, side = "left",  
 pad = "0")  
#grpd\_demog\_county[grpd\_demog\_county$fixed\_fip=="11001",] #double-check that DC is included  
grpd\_demog\_county["prop\_white\_comp"] <- grpd\_demog\_county$n.white/grpd\_demog\_county$n.complaints.noretal  
grpd\_demog\_county$prop\_white\_comp[grpd\_demog\_county$n.white==0] <- 0  
grpd\_demog\_county["sqrt\_prop\_white"] <- sqrt(grpd\_demog\_county$prop\_white\_comp)  
grpd\_demog\_county["acs\_nonwhite\_prop"] <- (100 - grpd\_demog\_county$percent\_white)/100  
grpd\_demog\_county["acs\_unemploy\_white"] <- grpd\_demog\_county$unemploy\_white/100  
grpd\_demog\_county["acs\_all\_unemploy"] <- grpd\_demog\_county$unemploy\_all/100

grpd\_demog\_county <- grpd\_demog\_county %>%   
 filter(!is.na(acs\_nonwhite\_prop)) %>%   
 filter(!is.na(acs\_all\_unemploy)) %>%   
 filter(!is.na(mrp\_ideology\_mean))  
m1.0 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop+mrp\_ideology\_mean+acs\_all\_unemploy,  
 data=grpd\_demog\_county)  
summary(m1.0)

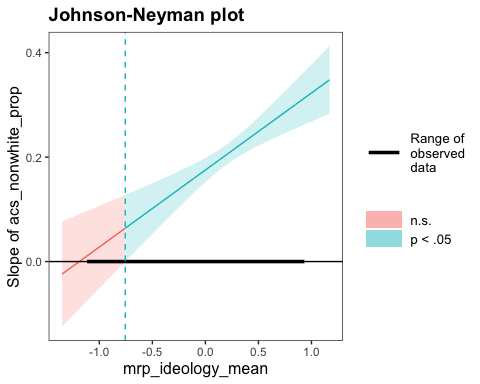
##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop + mrp\_ideology\_mean +   
## acs\_all\_unemploy, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.28253 -0.08572 0.00317 0.05279 0.88133   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.068986 0.005000 13.797 < 2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.204645 0.009871 20.732 < 2e-16 \*\*\*  
## mrp\_ideology\_mean 0.001604 0.007123 0.225 0.82180   
## acs\_all\_unemploy 0.140210 0.051561 2.719 0.00658 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09752 on 3087 degrees of freedom  
## Multiple R-squared: 0.1627, Adjusted R-squared: 0.1618   
## F-statistic: 199.9 on 3 and 3087 DF, p-value: < 2.2e-16

m2.0 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean+acs\_all\_unemploy,  
 data=grpd\_demog\_county)  
summary(m2.0)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean +   
## acs\_all\_unemploy, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.30236 -0.08245 0.00288 0.05155 0.87936   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.078996 0.005452 14.490 < 2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.175326 0.011776 14.888 < 2e-16 \*\*\*  
## mrp\_ideology\_mean -0.039714 0.011556 -3.437 0.000597 \*\*\*  
## acs\_all\_unemploy 0.145011 0.051409 2.821 0.004822 \*\*   
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.147535 0.032555 4.532 6.07e-06 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09722 on 3086 degrees of freedom  
## Multiple R-squared: 0.1682, Adjusted R-squared: 0.1671   
## F-statistic: 156 on 4 and 3086 DF, p-value: < 2.2e-16

jn\_h2.0 <- sim\_slopes(m2.0, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h2.0

## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-2.26, -0.76], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]



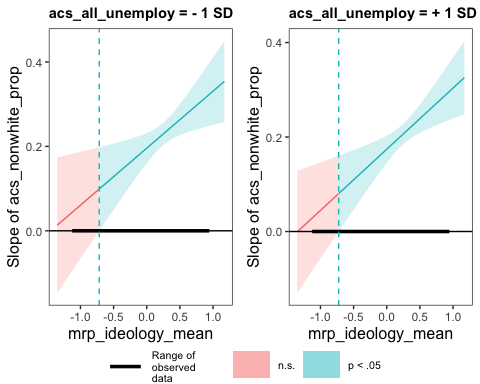
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.18 0.01 0.15 0.20 15.10 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.25 0.01 0.22 0.28 17.69 0.00

m3.0 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean\*acs\_all\_unemploy,  
 data=grpd\_demog\_county)  
summary(m3.0)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean \*   
## acs\_all\_unemploy, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.29984 -0.08042 0.00207 0.05179 0.87856   
##   
## Coefficients:  
## Estimate Std. Error  
## (Intercept) 0.07628 0.01198  
## acs\_nonwhite\_prop 0.20998 0.02972  
## mrp\_ideology\_mean -0.05866 0.03253  
## acs\_all\_unemploy 0.15946 0.14077  
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.13864 0.08255  
## acs\_nonwhite\_prop:acs\_all\_unemploy -0.29016 0.27953  
## mrp\_ideology\_mean:acs\_all\_unemploy 0.26937 0.37520  
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_all\_unemploy -0.07395 0.77696  
## t value Pr(>|t|)   
## (Intercept) 6.366 2.22e-10 \*\*\*  
## acs\_nonwhite\_prop 7.064 1.99e-12 \*\*\*  
## mrp\_ideology\_mean -1.803 0.0714 .   
## acs\_all\_unemploy 1.133 0.2574   
## acs\_nonwhite\_prop:mrp\_ideology\_mean 1.680 0.0931 .   
## acs\_nonwhite\_prop:acs\_all\_unemploy -1.038 0.2993   
## mrp\_ideology\_mean:acs\_all\_unemploy 0.718 0.4729   
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_all\_unemploy -0.095 0.9242   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09719 on 3083 degrees of freedom  
## Multiple R-squared: 0.1695, Adjusted R-squared: 0.1676   
## F-statistic: 89.88 on 7 and 3083 DF, p-value: < 2.2e-16

jn\_h3.0 <- sim\_slopes(m3.0, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 mod2=acs\_all\_unemploy,  
 mod2.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h3.0

## █████████ While acs\_all\_unemploy (2nd moderator) = 0.04905189 (- 1 SD) █████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-6.18, -0.72], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.20 0.02 0.16 0.23 10.88 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.26 0.02 0.23 0.30 13.74 0.00  
##   
## █████████ While acs\_all\_unemploy (2nd moderator) = 0.12336221 (+ 1 SD) █████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-3.93, -0.73], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.17 0.01 0.15 0.20 11.99 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.24 0.02 0.21 0.27 15.31 0.00



Save the results of the first robustness check:

reg\_fmt\_tmp <- read.csv(paste0(local\_data,"regression\_format.csv"))  
reg\_fmt\_tmp <- reg\_fmt\_tmp %>%   
 mutate(across(everything(),   
 ~str\_replace\_all(.x, "acs\_unemploy\_white", "acs\_all\_unemploy"))) %>%   
 mutate(across(everything(),   
 ~str\_replace\_all(.x, "White unemployment", "All unemployment")))  
format\_regression\_table <- function(models,   
 reg\_fmt = read.csv(paste0(local\_data,"regression\_format.csv"))){  
 tracker = 1  
 for(m in models){  
 tmp\_res = summary(m)  
 tmp\_coef = data.frame(tmp\_res$coefficients)  
 tmp\_coef[,1] = number(tmp\_coef[,1],accuracy = .01)#beta  
 tmp\_coef[,2] = number(tmp\_coef[,2], accuracy = .01)#SE beta  
 tmp\_coef[,4] = sapply(tmp\_coef[,4], statstring::format\_sig\_stars)#p-val  
 tmp\_coef[,1] = paste0(tmp\_coef[,1], tmp\_coef[,4])  
 tmp\_coef["Predictor"] = rownames(tmp\_coef)  
 mnum = paste0("model", tracker, "\_")  
 colnames(tmp\_coef) = c(paste0(mnum, c("b", "se\_b", "t", "p")), "Predictor")  
 tmp\_coef = tmp\_coef %>%   
 select(Predictor, ends\_with("\_b"), ends\_with("se\_b"))  
 reg\_fmt = left\_join(reg\_fmt, tmp\_coef, by = "Predictor")  
 print(number(statstring::extract\_r2(m),accuracy = .001))  
 reg\_fmt[reg\_fmt$Predictor == "R2", paste0(mnum, "se\_b")] = number(tmp\_res$adj.r.squared,  
 accuracy = .001)  
 if(tracker > 1){  
 mod\_aov = anova(models[[tracker - 1]], models[[tracker]])  
 reg\_fmt[reg\_fmt$Predictor == "Change in R2",   
 paste0(mnum, "se\_b")] <- paste0(number(mod\_aov$`F`[2], accuracy =.01),  
 format\_sig\_stars(mod\_aov$`Pr(>F)`[2]))  
 }  
 tracker = tracker + 1  
 }  
 reg\_fmt[is.na(reg\_fmt)] = "-"  
 return(reg\_fmt)  
}  
  
modlist <- list(m1.0,m2.0,m3.0)  
reg\_out <- format\_regression\_table(modlist, reg\_fmt=reg\_fmt\_tmp)

## character(0)  
## character(0)  
## character(0)

num\_line <- rep("", ncol(reg\_out))  
num\_line[1] <- paste0("N = ",number(nrow(grpd\_demog\_county), big.mark=","))  
reg\_out <- rbind(reg\_out, num\_line)  
write.xlsx(reg\_out, paste0(output,  
 "robustness\_1\_regression\_outs\_no\_retal\_v1.xlsx"),overwrite = T)

### 2. All EEO cases with 2006-2010 ACS data

grpd\_demog\_county <- read.csv(paste0(box\_data, "agg\_claim\_info\_county\_w\_retal\_v1.csv"))  
#this should be 0  
grpd\_demog\_county <- grpd\_demog\_county[!is.na(grpd\_demog\_county$fixed\_fip),]  
  
grpd\_demog\_county$fixed\_fip <- str\_pad(grpd\_demog\_county$fixed\_fip,   
 width = 5, side = "left",  
 pad = "0")  
#https://www2.census.gov/geo/maps/general\_ref/us\_base/stco2010/USstcou2010\_wallmap.pdf  
#3142 counties in the US  
acs\_data <- read.csv(paste0(box\_data, "white\_unemployment\_pop\_2010.csv"))  
acs\_data["fixed\_fip"] <- str\_pad(acs\_data$fixed\_fip, width = 5, side = "left",  
 pad = "0")  
acs\_data["in\_df"] <- acs\_data$fixed\_fip %in% grpd\_demog\_county$fixed\_fip  
  
grpd\_demog\_county <- left\_join(grpd\_demog\_county, acs\_data, by = "fixed\_fip")  
  
grpd\_demog\_county <- grpd\_demog\_county[grpd\_demog\_county$fixed\_fip!= "FAILED",]  
grpd\_demog\_county<-grpd\_demog\_county[grpd\_demog\_county$n.complaints.noretal>0,]  
grpd\_demog\_county <- grpd\_demog\_county %>%   
 filter(!is.na(mrp\_ideology\_mean))  
  
grpd\_demog\_county$fixed\_fip <- str\_pad(grpd\_demog\_county$fixed\_fip,   
 width = 5, side = "left",  
 pad = "0")  
grpd\_demog\_county["prop\_white\_comp"] <- grpd\_demog\_county$n.white/grpd\_demog\_county$n.complaints.noretal  
grpd\_demog\_county$prop\_white\_comp[grpd\_demog\_county$n.white==0] <- 0  
grpd\_demog\_county["sqrt\_prop\_white"] <- sqrt(grpd\_demog\_county$prop\_white\_comp)  
grpd\_demog\_county["acs\_nonwhite\_prop"] <- (100 - grpd\_demog\_county$percent\_white)/100  
grpd\_demog\_county["acs\_unemploy\_white"] <- grpd\_demog\_county$unemploy\_white/100

grpd\_demog\_county <- grpd\_demog\_county%>%   
 filter(!is.na(acs\_nonwhite\_prop)) %>%   
 filter(!is.na(acs\_unemploy\_white)) %>%   
 filter(!is.na(mrp\_ideology\_mean))  
print(nrow(grpd\_demog\_county))

## [1] 3091

#rcorr(grpd\_demog\_county$acs\_nonwhite\_prop,grpd\_demog\_county$prop\_white\_comp)  
m1.2 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop+mrp\_ideology\_mean+acs\_unemploy\_white,  
 data=grpd\_demog\_county)  
summary(m1.2)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop + mrp\_ideology\_mean +   
## acs\_unemploy\_white, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.29921 -0.08499 0.00321 0.05253 0.88610   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.066735 0.005552 12.021 <2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.220292 0.009137 24.110 <2e-16 \*\*\*  
## mrp\_ideology\_mean 0.002280 0.007109 0.321 0.7485   
## acs\_unemploy\_white 0.206854 0.064696 3.197 0.0014 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09736 on 3087 degrees of freedom  
## Multiple R-squared: 0.1654, Adjusted R-squared: 0.1646   
## F-statistic: 204 on 3 and 3087 DF, p-value: < 2.2e-16

m2.2 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean+acs\_unemploy\_white,  
 data=grpd\_demog\_county)  
summary(m2.2)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean +   
## acs\_unemploy\_white, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.29813 -0.08082 0.00240 0.05178 0.88443   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.075955 0.005852 12.980 < 2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.189676 0.011093 17.099 < 2e-16 \*\*\*  
## mrp\_ideology\_mean -0.039699 0.011211 -3.541 0.000404 \*\*\*  
## acs\_unemploy\_white 0.227229 0.064601 3.517 0.000442 \*\*\*  
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.157193 0.032540 4.831 1.43e-06 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09701 on 3086 degrees of freedom  
## Multiple R-squared: 0.1717, Adjusted R-squared: 0.1706   
## F-statistic: 159.9 on 4 and 3086 DF, p-value: < 2.2e-16

m3.2 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean\*acs\_unemploy\_white,  
 data=grpd\_demog\_county)  
summary(m3.2)

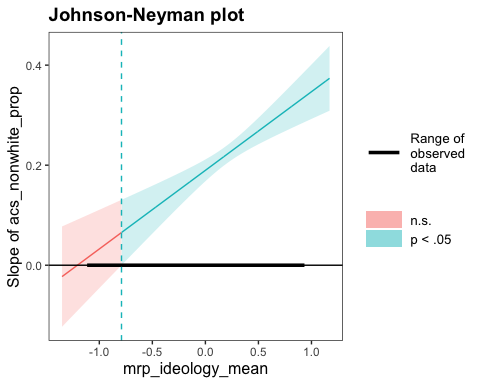
##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean \*   
## acs\_unemploy\_white, data = grpd\_demog\_county)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.31775 -0.08150 0.00211 0.05114 0.88148   
##   
## Coefficients:  
## Estimate Std. Error  
## (Intercept) 0.09327 0.01166  
## acs\_nonwhite\_prop 0.16992 0.02972  
## mrp\_ideology\_mean -0.06529 0.03084  
## acs\_unemploy\_white -0.04800 0.16958  
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.06718 0.08443  
## acs\_nonwhite\_prop:acs\_unemploy\_white 0.33573 0.43199  
## mrp\_ideology\_mean:acs\_unemploy\_white 0.35912 0.44537  
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white 1.81052 1.28389  
## t value Pr(>|t|)   
## (Intercept) 7.996 1.80e-15 \*\*\*  
## acs\_nonwhite\_prop 5.717 1.19e-08 \*\*\*  
## mrp\_ideology\_mean -2.117 0.0343 \*   
## acs\_unemploy\_white -0.283 0.7772   
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.796 0.4262   
## acs\_nonwhite\_prop:acs\_unemploy\_white 0.777 0.4371   
## mrp\_ideology\_mean:acs\_unemploy\_white 0.806 0.4201   
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white 1.410 0.1586   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.09685 on 3083 degrees of freedom  
## Multiple R-squared: 0.1753, Adjusted R-squared: 0.1734   
## F-statistic: 93.6 on 7 and 3083 DF, p-value: < 2.2e-16

anova(m2.2,m3.2)

## Analysis of Variance Table  
##   
## Model 1: sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean + acs\_unemploy\_white  
## Model 2: sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean \* acs\_unemploy\_white  
## Res.Df RSS Df Sum of Sq F Pr(>F)   
## 1 3086 29.043   
## 2 3083 28.918 3 0.12487 4.4374 0.004058 \*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

jn\_h2.2 <- sim\_slopes(m2.2, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h2.2

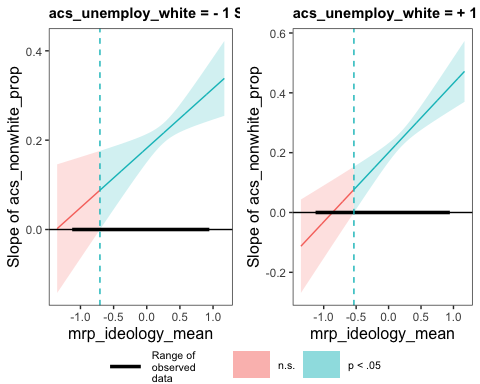
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-2.18, -0.79], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]



## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.19 0.01 0.17 0.21 17.36 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.27 0.01 0.24 0.30 19.62 0.00

jn\_h3.2 <- sim\_slopes(m3.2, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 mod2=acs\_unemploy\_white,  
 mod2.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h3.2

## ████████ While acs\_unemploy\_white (2nd moderator) = 0.03655779 (- 1 SD) ████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-4.58, -0.71], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.18 0.02 0.15 0.21 11.44 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.25 0.02 0.22 0.28 15.49 0.00  
##   
## ████████ While acs\_unemploy\_white (2nd moderator) = 0.09090517 (+ 1 SD) ████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-1.68, -0.53], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.005964972 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.20 0.02 0.17 0.23 12.66 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.512500830 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.32 0.02 0.28 0.36 15.12 0.00



p\_load(lsmeans)  
mrp\_levels <- c((mean(grpd\_demog\_county$mrp\_ideology\_mean,  
 na.rm=T)-  
 sd(grpd\_demog\_county$mrp\_ideology\_mean,  
 na.rm = T)),  
 (mean(grpd\_demog\_county$mrp\_ideology\_mean,  
 na.rm=T)+  
 sd(grpd\_demog\_county$mrp\_ideology\_mean,  
 na.rm = T)))  
div\_levels <- c((mean(grpd\_demog\_county$acs\_nonwhite\_prop)-  
 sd(grpd\_demog\_county$acs\_nonwhite\_prop)),  
 (mean(grpd\_demog\_county$acs\_nonwhite\_prop)+  
 sd(grpd\_demog\_county$acs\_nonwhite\_prop)))  
unemp\_levels <- c((mean(grpd\_demog\_county$acs\_unemploy\_white)-  
 sd(grpd\_demog\_county$acs\_unemploy\_white)),  
 (mean(grpd\_demog\_county$acs\_unemploy\_white)+  
 sd(grpd\_demog\_county$acs\_unemploy\_white)))  
m.lst <- lstrends(m2.2, ~mrp\_ideology\_mean,  
 var = "acs\_nonwhite\_prop",at = list(mrp\_ideology\_mean=mrp\_levels))  
pairs(m.lst)

## contrast   
## mrp\_ideology\_mean0.00596497236835691 - mrp\_ideology\_mean0.512500829676936  
## estimate SE df t.ratio p.value  
## -0.0796 0.0165 3086 -4.831 <.0001

m.lst <- lstrends(m3.2, ~mrp\_ideology\_mean|acs\_unemploy\_white,  
 var = "acs\_nonwhite\_prop",at = list(mrp\_ideology\_mean=mrp\_levels,  
 acs\_unemploy\_white=unemp\_levels))  
pairs(m.lst)

## acs\_unemploy\_white = 0.0366:  
## contrast   
## mrp\_ideology\_mean0.00596497236835691 - mrp\_ideology\_mean0.512500829676936  
## estimate SE df t.ratio p.value  
## -0.0676 0.0229 3083 -2.956 0.0031  
##   
## acs\_unemploy\_white = 0.0909:  
## contrast   
## mrp\_ideology\_mean0.00596497236835691 - mrp\_ideology\_mean0.512500829676936  
## estimate SE df t.ratio p.value  
## -0.1174 0.0259 3083 -4.536 <.0001

#   
m.lst <- lstrends(m3.2, ~acs\_unemploy\_white|mrp\_ideology\_mean,  
 var = "acs\_nonwhite\_prop",at = list(mrp\_ideology\_mean=mrp\_levels,  
 acs\_unemploy\_white=unemp\_levels))  
pairs(m.lst)

## mrp\_ideology\_mean = 0.00596:  
## contrast   
## acs\_unemploy\_white0.0365577885219199 - acs\_unemploy\_white0.0909051684499339  
## estimate SE df t.ratio p.value  
## -0.0188 0.0232 3083 -0.813 0.4164  
##   
## mrp\_ideology\_mean = 0.51250:  
## contrast   
## acs\_unemploy\_white0.0365577885219199 - acs\_unemploy\_white0.0909051684499339  
## estimate SE df t.ratio p.value  
## -0.0687 0.0243 3083 -2.831 0.0047

#formats regression coefficients for output in text  
reg\_text <- function(mod){  
 mod.sum = data.frame(summary(mod)$coefficients)  
 ci = data.frame(confint(mod))  
 mod.sum["text\_out"] <- ""  
 for(i in 1:nrow(mod.sum)){  
 mod.sum$text\_out[i] = paste0("b (95% CI) = ", number(mod.sum$`Est.`[i],  
 accuracy = .01),  
 " (",  
 number(ci$`X2.5..`[i],  
 accuracy = .01),  
 ", ",  
 number(ci$`X97.5..`[i],  
 accuracy = .01),  
 "),",  
   
 " SE b = ", number(mod.sum$`Std..Error`[i],  
 accuracy = .01),  
 ", ",   
 format\_pval\_apa(mod.sum$`Pr...t..`[i]))  
 }  
 return(mod.sum)  
}  
#formats point-estimates of slopes for output in text  
format\_slope\_text <- function(slope.df){  
 new.list = rep("", nrow(slope.df))  
 for(i in 1:nrow(slope.df)){  
 new.list[i] = paste0("b [95% CI] = ", number(slope.df$`Est.`[i],  
 accuracy = .01),  
 " [",  
 number(slope.df$`X2.5.`[i],  
 accuracy = .01),  
 ", ",  
 number(slope.df$`X97.5.`[i],  
 accuracy = .01),  
 "],",  
   
 " SE b = ", number(slope.df$`S.E.`[i],  
 accuracy = .01),  
 ", ",   
 format\_pval\_apa(slope.df$p[i]))  
 }  
 return(new.list)  
}

reg\_text(m3.2) %>% select(text\_out)

## text\_out  
## (Intercept) b (95% CI) = (0.07, 0.12), SE b = 0.01, \_p\_ < .001  
## acs\_nonwhite\_prop b (95% CI) = (0.11, 0.23), SE b = 0.03, \_p\_ < .001  
## mrp\_ideology\_mean b (95% CI) = (-0.13, 0.00), SE b = 0.03, \_p\_ = .03  
## acs\_unemploy\_white b (95% CI) = (-0.38, 0.28), SE b = 0.17, \_p\_ = .78  
## acs\_nonwhite\_prop:mrp\_ideology\_mean b (95% CI) = (-0.10, 0.23), SE b = 0.08, \_p\_ = .43  
## acs\_nonwhite\_prop:acs\_unemploy\_white b (95% CI) = (-0.51, 1.18), SE b = 0.43, \_p\_ = .44  
## mrp\_ideology\_mean:acs\_unemploy\_white b (95% CI) = (-0.51, 1.23), SE b = 0.45, \_p\_ = .42  
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white b (95% CI) = (-0.71, 4.33), SE b = 1.28, \_p\_ = .16

r2.slopes <- data.frame(jn\_h3.2$slopes[[1]])  
r2.slopes["acs\_unemploy\_white"] <- "Low White Unemploy"  
tmp.slopes <- data.frame(jn\_h3.2$slopes[[2]])  
tmp.slopes["acs\_unemploy\_white"] <- "High White Unemploy"  
r2.slopes <- rbind(r2.slopes, tmp.slopes)  
r2.slopes["mrp\_ideology\_mean"] <- c("Low Conservatism", "High Conservatism",  
 "Low Conservatism", "High Conservatism")  
r2.slopes["text"] <- format\_slope\_text(r2.slopes)  
r2.slopes %>%   
 select(acs\_unemploy\_white, mrp\_ideology\_mean, text)

## acs\_unemploy\_white mrp\_ideology\_mean  
## 1 Low White Unemploy Low Conservatism  
## 2 Low White Unemploy High Conservatism  
## 3 High White Unemploy Low Conservatism  
## 4 High White Unemploy High Conservatism  
## text  
## 1 b [95% CI] = 0.18 [0.15, 0.21], SE b = 0.02, \_p\_ < .001  
## 2 b [95% CI] = 0.25 [0.22, 0.28], SE b = 0.02, \_p\_ < .001  
## 3 b [95% CI] = 0.20 [0.17, 0.23], SE b = 0.02, \_p\_ < .001  
## 4 b [95% CI] = 0.32 [0.28, 0.36], SE b = 0.02, \_p\_ < .001

Save results of second robustness check:

modlist <- list(m1.2,m2.2,m3.2)  
reg\_out <- format\_regression\_table(modlist)

## character(0)  
## character(0)  
## character(0)

num\_line <- rep("", ncol(reg\_out))  
num\_line[1] <- paste0("N = ",number(nrow(grpd\_demog\_county), big.mark=","))  
reg\_out <- rbind(reg\_out, num\_line)  
write.xlsx(reg\_out, paste0(output,"robustness\_2\_regression\_outs\_no\_retal\_v2.xlsx"),  
 overwrite = T)

### 3. Using only 2010-2014 EEO data + 2010-2014 Census data:

Read in the EEO data by year and county

grpd\_year <- read.csv(paste0(box\_data, "agg\_claim\_info\_county\_w\_retal\_robust.csv"))  
grpd\_year <- grpd\_year %>% filter(fixed\_fip!="FAILED")  
grpd\_year <- grpd\_year %>% filter(!is.na(mrp\_ideology\_mean))  
grpd\_year$fixed\_fip <- str\_pad(grpd\_year$fixed\_fip, width = 5, side = "left", pad = "0")

t1 <- grpd\_year %>%   
 filter(n.complaints.noretal>0) %>%   
 mutate(prop\_white\_complaints = n.white/n.complaints.noretal)  
  
acs\_t1 <- read.csv(paste0(box\_data, "white\_unemployment\_pop.csv"))  
acs\_t1["fixed\_fip"] <- str\_pad(acs\_t1$fixed\_fip, width = 5, side = "left",  
 pad = "0")  
t1.merge <- left\_join(t1, acs\_t1, by = "fixed\_fip")  
nrow(t1.merge %>% filter(n.complaints==0))

## [1] 0

t1.merge <- t1.merge %>%   
 mutate(acs\_nonwhite\_prop = (100 - percent\_white)/100,  
 acs\_unemploy\_white = unemploy\_white/100,  
 acs\_unemploy\_all = unemploy\_all/100)  
t1.merge$prop\_white\_complaints[t1.merge$n.white==0] <- 0  
t1.merge["sqrt\_prop\_white"] <- sqrt(t1.merge$prop\_white\_complaints)

t1.merge <- t1.merge %>%   
 filter(!is.na(acs\_nonwhite\_prop)) %>%   
 filter(!is.na(acs\_unemploy\_white)) %>%   
 filter(!is.na(mrp\_ideology\_mean))  
nrow(t1.merge)

## [1] 3024

m1.3 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop+mrp\_ideology\_mean+acs\_unemploy\_white,  
 data=t1.merge)  
summary(m1.3)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop + mrp\_ideology\_mean +   
## acs\_unemploy\_white, data = t1.merge)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.31266 -0.07913 -0.00819 0.06295 0.61903   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.055322 0.006129 9.026 <2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.216365 0.010173 21.268 <2e-16 \*\*\*  
## mrp\_ideology\_mean -0.007486 0.007972 -0.939 0.3478   
## acs\_unemploy\_white 0.159405 0.062995 2.530 0.0114 \*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.1084 on 3020 degrees of freedom  
## Multiple R-squared: 0.1408, Adjusted R-squared: 0.1399   
## F-statistic: 164.9 on 3 and 3020 DF, p-value: < 2.2e-16

m2.3 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean+acs\_unemploy\_white,  
 data=t1.merge)  
summary(m2.3)

##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean +   
## acs\_unemploy\_white, data = t1.merge)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.31222 -0.07887 -0.00839 0.06176 0.62020   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 0.06126 0.00651 9.411 < 2e-16 \*\*\*  
## acs\_nonwhite\_prop 0.19733 0.01239 15.927 < 2e-16 \*\*\*  
## mrp\_ideology\_mean -0.03511 0.01301 -2.699 0.00700 \*\*   
## acs\_unemploy\_white 0.17129 0.06309 2.715 0.00666 \*\*   
## acs\_nonwhite\_prop:mrp\_ideology\_mean 0.09832 0.03661 2.685 0.00728 \*\*   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.1083 on 3019 degrees of freedom  
## Multiple R-squared: 0.1428, Adjusted R-squared: 0.1417   
## F-statistic: 125.8 on 4 and 3019 DF, p-value: < 2.2e-16

m3.3 <- lm(sqrt\_prop\_white~acs\_nonwhite\_prop\*mrp\_ideology\_mean\*acs\_unemploy\_white,  
 data=t1.merge)  
summary(m3.3)

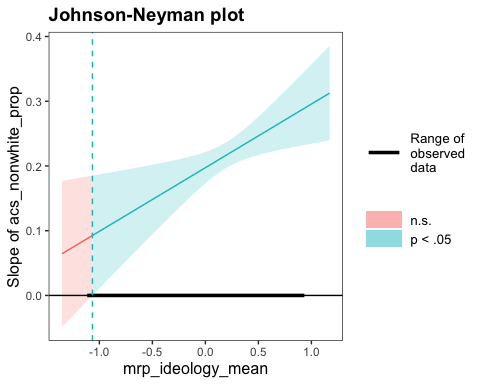
##   
## Call:  
## lm(formula = sqrt\_prop\_white ~ acs\_nonwhite\_prop \* mrp\_ideology\_mean \*   
## acs\_unemploy\_white, data = t1.merge)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -0.27863 -0.07814 -0.00893 0.06167 0.62091   
##   
## Coefficients:  
## Estimate Std. Error  
## (Intercept) 0.05766 0.01330  
## acs\_nonwhite\_prop 0.23982 0.03128  
## mrp\_ideology\_mean -0.02204 0.03696  
## acs\_unemploy\_white 0.20909 0.16914  
## acs\_nonwhite\_prop:mrp\_ideology\_mean -0.07781 0.09907  
## acs\_nonwhite\_prop:acs\_unemploy\_white -0.52806 0.37691  
## mrp\_ideology\_mean:acs\_unemploy\_white -0.17017 0.46275  
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white 2.44119 1.25514  
## t value Pr(>|t|)   
## (Intercept) 4.335 1.51e-05 \*\*\*  
## acs\_nonwhite\_prop 7.667 2.35e-14 \*\*\*  
## mrp\_ideology\_mean -0.596 0.5511   
## acs\_unemploy\_white 1.236 0.2165   
## acs\_nonwhite\_prop:mrp\_ideology\_mean -0.785 0.4323   
## acs\_nonwhite\_prop:acs\_unemploy\_white -1.401 0.1613   
## mrp\_ideology\_mean:acs\_unemploy\_white -0.368 0.7131   
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white 1.945 0.0519 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 0.1082 on 3016 degrees of freedom  
## Multiple R-squared: 0.1447, Adjusted R-squared: 0.1428   
## F-statistic: 72.92 on 7 and 3016 DF, p-value: < 2.2e-16

reg\_text(m3.3) %>% select(text\_out)

## text\_out  
## (Intercept) b (95% CI) = (0.03, 0.08), SE b = 0.01, \_p\_ < .001  
## acs\_nonwhite\_prop b (95% CI) = (0.18, 0.30), SE b = 0.03, \_p\_ < .001  
## mrp\_ideology\_mean b (95% CI) = (-0.09, 0.05), SE b = 0.04, \_p\_ = .55  
## acs\_unemploy\_white b (95% CI) = (-0.12, 0.54), SE b = 0.17, \_p\_ = .22  
## acs\_nonwhite\_prop:mrp\_ideology\_mean b (95% CI) = (-0.27, 0.12), SE b = 0.10, \_p\_ = .43  
## acs\_nonwhite\_prop:acs\_unemploy\_white b (95% CI) = (-1.27, 0.21), SE b = 0.38, \_p\_ = .16  
## mrp\_ideology\_mean:acs\_unemploy\_white b (95% CI) = (-1.08, 0.74), SE b = 0.46, \_p\_ = .71  
## acs\_nonwhite\_prop:mrp\_ideology\_mean:acs\_unemploy\_white b (95% CI) = (-0.02, 4.90), SE b = 1.26, \_p\_ = .05

jn\_h2.1 <- sim\_slopes(m2.3, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h2.1

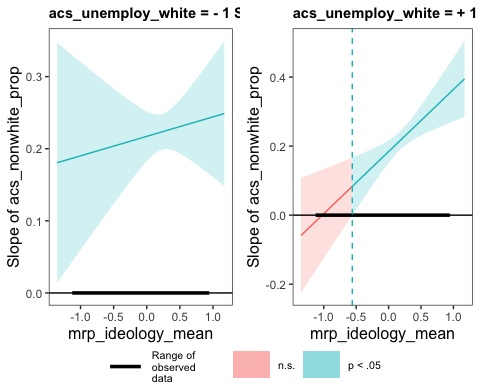
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-7.97, -1.07], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]



## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.002302122 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.20 0.01 0.17 0.22 16.01 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.510652854 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.25 0.02 0.22 0.28 16.04 0.00

jn\_h3.1 <- sim\_slopes(m3.3, pred=acs\_nonwhite\_prop,  
 modx=mrp\_ideology\_mean,  
 modx.values = "plus-minus",  
 mod2=acs\_unemploy\_white,  
 mod2.values = "plus-minus",  
 confint=T,jnplot=T)  
jn\_h3.1

## ████████ While acs\_unemploy\_white (2nd moderator) = 0.04294905 (- 1 SD) ████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is INSIDE the interval [-1.46, 3.13], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.002302122 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.22 0.02 0.18 0.25 12.37 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.510652854 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.23 0.02 0.19 0.27 11.86 0.00  
##   
## ████████ While acs\_unemploy\_white (2nd moderator) = 0.10555227 (+ 1 SD) ████████   
##   
## JOHNSON-NEYMAN INTERVAL   
##   
## When mrp\_ideology\_mean is OUTSIDE the interval [-2.81, -0.56], the slope of  
## acs\_nonwhite\_prop is p < .05.  
##   
## Note: The range of observed values of mrp\_ideology\_mean is [-1.10, 0.92]  
##   
## SIMPLE SLOPES ANALYSIS   
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.002302122 (- 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.18 0.02 0.15 0.22 11.13 0.00  
##   
## Slope of acs\_nonwhite\_prop when mrp\_ideology\_mean = 0.510652854 (+ 1 SD):   
##   
## Est. S.E. 2.5% 97.5% t val. p  
## ------ ------ ------ ------- -------- ------  
## 0.28 0.02 0.23 0.32 12.15 0.00



m.lst <- lstrends(m3.3, ~mrp\_ideology\_mean|acs\_unemploy\_white,  
 var = "acs\_nonwhite\_prop",at = list(mrp\_ideology\_mean=mrp\_levels,  
 acs\_unemploy\_white=unemp\_levels))  
pairs(m.lst)

## acs\_unemploy\_white = 0.0366:  
## contrast   
## mrp\_ideology\_mean0.00596497236835691 - mrp\_ideology\_mean0.512500829676936  
## estimate SE df t.ratio p.value  
## -0.00579 0.0299 3016 -0.194 0.8463  
##   
## acs\_unemploy\_white = 0.0909:  
## contrast   
## mrp\_ideology\_mean0.00596497236835691 - mrp\_ideology\_mean0.512500829676936  
## estimate SE df t.ratio p.value  
## -0.07299 0.0217 3016 -3.358 0.0008

Save results of third robustness check:

modlist <- list(m1.3,m2.3,m3.3)  
reg\_out <- format\_regression\_table(modlist)

## character(0)  
## character(0)  
## character(0)

num\_line <- rep("", ncol(reg\_out))  
num\_line[1] <- paste0("N = ",number(nrow(t1.merge), big.mark=","))  
reg\_out <- rbind(reg\_out, num\_line)  
write.xlsx(reg\_out, paste0(output, "robustness\_3\_regression\_outs\_no\_retal\_v1.xlsx"),overwrite = T)