How does the income disparity for both males and females affect the crime rates?

1

Introduction

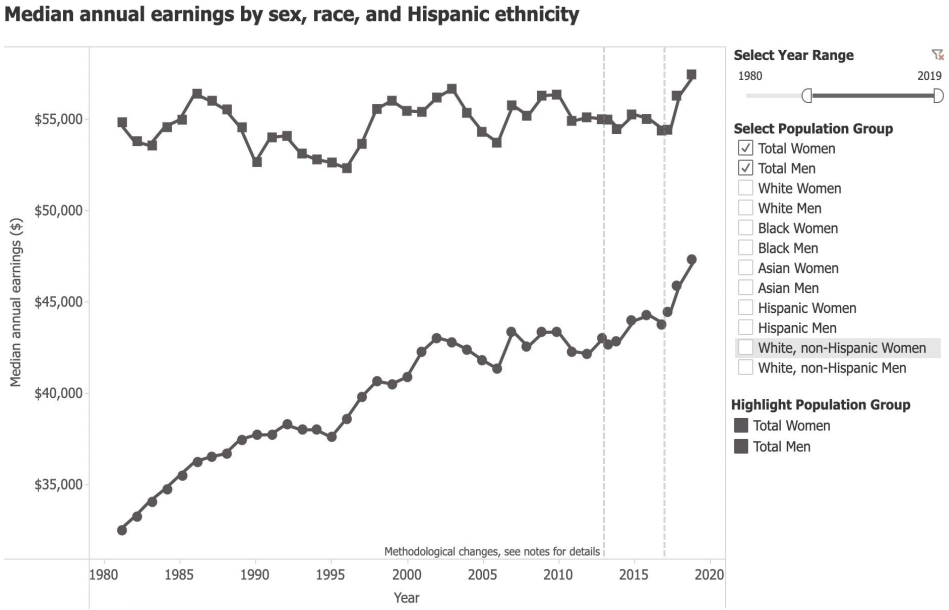
Education VS Crime Rates

Data Sources

Salary Income

-Earnings are based on median annual earnings of full-time, year-round workers, 15 years and older beginning in 1980 and people 14 years and older as of the following year for previous years.

-Median income represents the income for the entire country



Data Sources

Crime and Crime Rates

-Crimes categorized by different offenses

-Information is also filterable by male or female, year, and rate/count.

Select gender: ○ All ○ Males ◉ Females

Display data as: ○ Count ○ Percent (row) ◉ Rate

- All offenses
- Murder and nonnegligent manslaughter
- Forcible rape
- Robbery
- Aggravated assault
- ✓ Burglary
- Larceny-theft
- Motor vehicle theft
- Arson
- Simple assault
- Forgery and counterfeiting
- Fraud
- Embezzlement
- Stolen property (buying, receiving, possessing)
- Vandalism
- Weapons (carrying, possessing, etc.)
- Prostitution and commercialized vice
- Sex offense (except forcible rape and prostitution)
- Drug abuse violations
- Gambling
- Offenses against the family and children
- Driving under the influence
- Liquor laws
- Drunkenness
- Disorderly conduct
- Vagrancy
- All other offenses (except traffic)
- Curfew and loitering
- Violent Crime Index
- Property Crime Index
- Violent crimes*

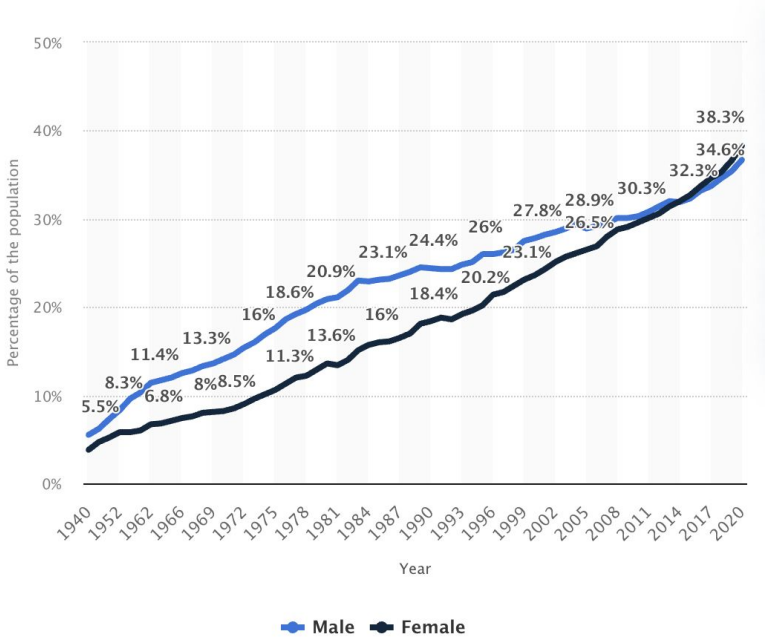
Offenses	All ages	0 to 17	18 & older	10 to 17	0 to 14	15 to 17	18 to 20	21 to 24	25 & older
All offenses	10,085,210	696,620	9,388,590	692,970	224,410	472,210	807,210	1,197,810	7,383,560
Murder and nonnegligent manslaughter	11,060	860	10,200	860	110	760	1,720	1,840	6,640
Rape	NA	NA	NA	NA	NA	NA	NA	NA	NA
Robbery	74,550	16,080	58,460	16,070	3,490	12,590	12,440	10,440	35,590
Aggravated assault	385,280	27,070	358,210	26,870	9,530	17,530	27,080	46,580	284,550
Burglary	171,590	20,700	150,890	20,570	6,860	13,840	15,890	19,700	115,300
Larceny-theft	813,070	83,690	729,380	83,380	24,860	58,830	76,410	87,050	565,930
Motor vehicle theft	80,640	13,610	67,030	13,600	3,670	9,940	7,620	9,310	50,100
Arson	9,070	1,800	7,270	1,730	1,020	780	530	720	6,020
Simple assault	1,025,710	126,130	899,580	125,080	55,190	70,950	67,590	115,930	716,050
Forgery and counterfeiting	45,180	850	44,330	850	140	710	4,440	5,190	34,700
Fraud	112,710	3,690	109,010	3,690	910	2,780	8,140	12,810	88,060

Data Sources

Educational Attainment

-Measured by the number of people from 1980 to 2019 that have completed a 4 years of college or more.

-There is an upward trend for both males and females when it comes to attending college in the United States

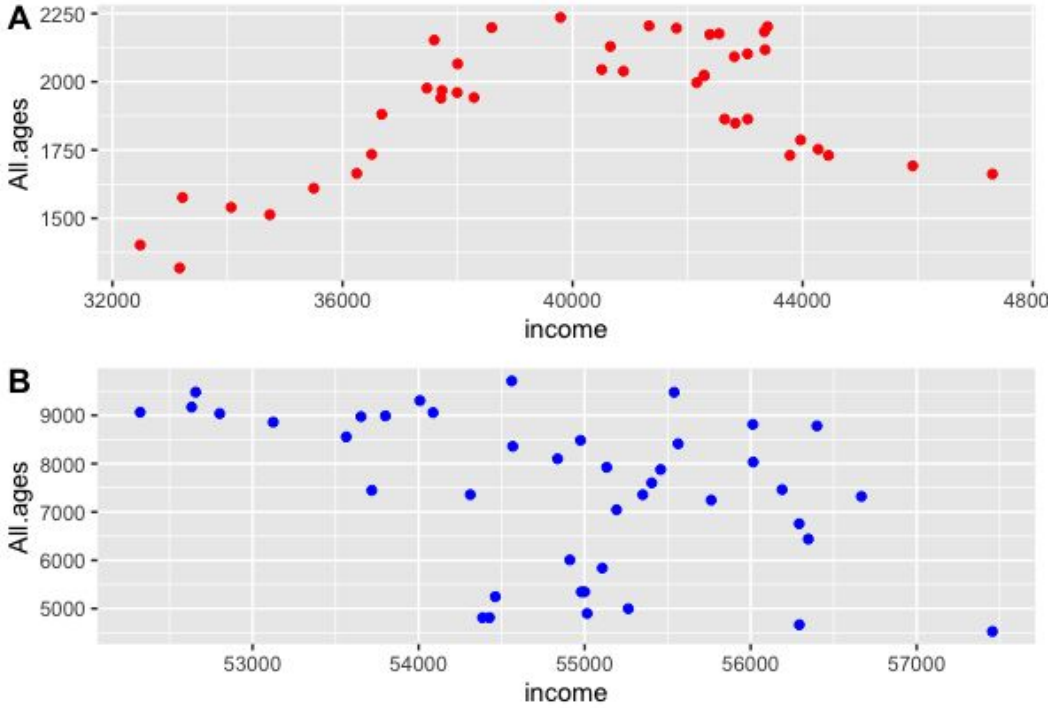


Hypothetically the rise of income should result in the decrease of crimes pertaining to wealth.

Crime Rate and Income

$$\text{All. ages} = \alpha + \beta_1(\text{income}) + \beta_2(\text{isFemale}) + \beta_3(\text{income} \times \text{isFemale}) + \epsilon$$

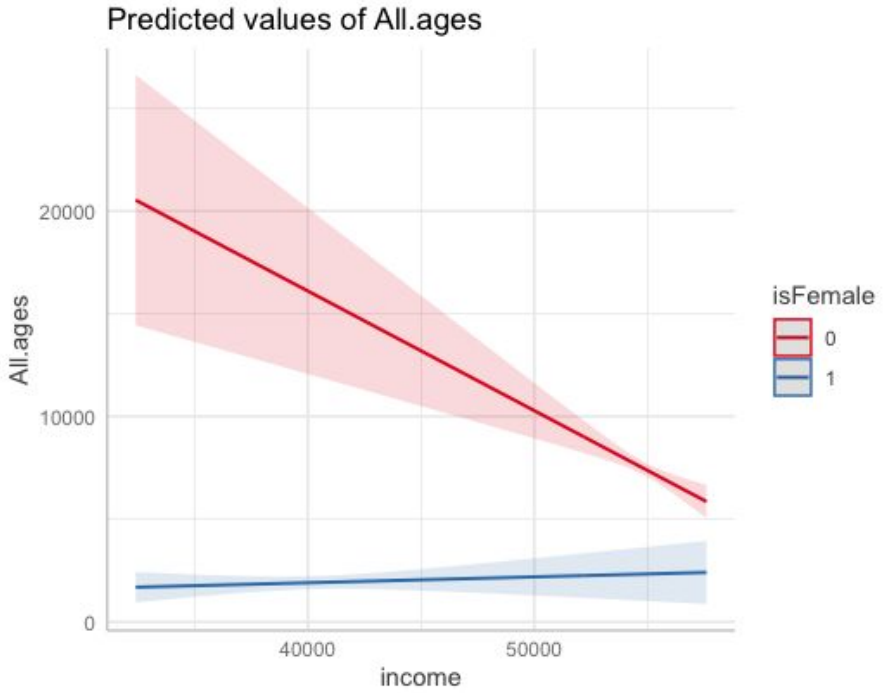
All.ages = -0.58(income) -38635.58(isFemale) + 0.61(income*isFemale)



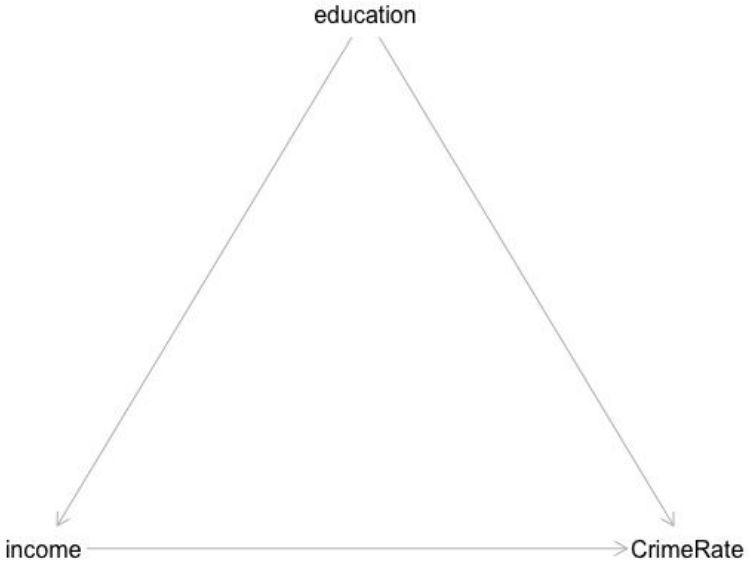
A for Females
B for Males

Predicted Values of All Ages

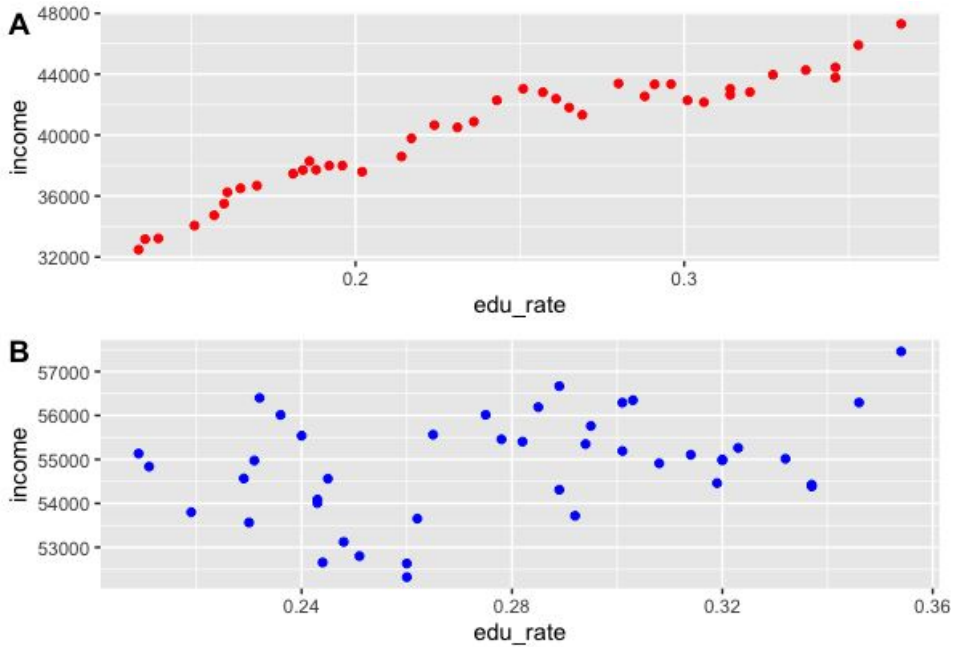
The plot shows different patterns for male and female, so we discuss them separately



Casual plot



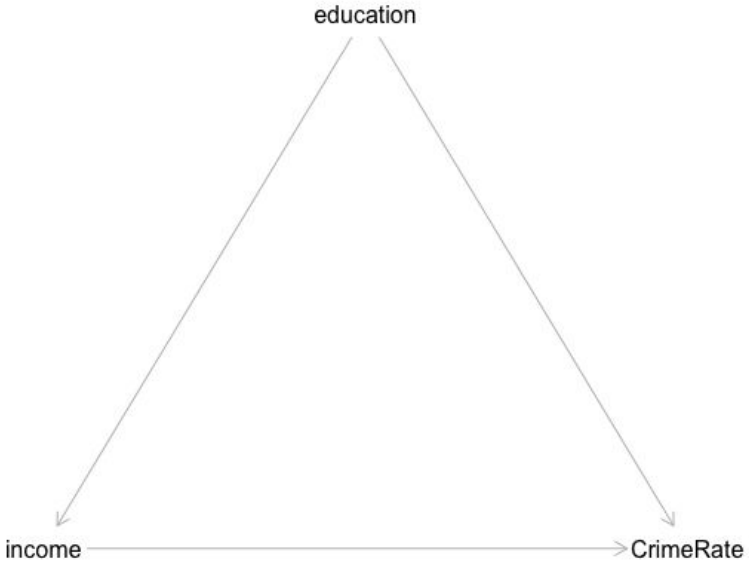
Income and Education Rate



Regression Table

	Dependent variable:	
	income	
	female	male
	(1)	(2)
edu_rate	51,631.52***	10,742.42**
	(2,530.91)	(4,401.62)
Constant	27,675.46***	51,882.63***
	(635.82)	(1,233.31)
Observations	42	42
R^2	0.91	0.13
Adjusted R^2	0.91	0.11
Residual Std. Error (df = 40)	1,117.22	1,120.47
F Statistic (df = 1; 40)	416.17***	5.96**
Note:	*p<0.1;* ***p<0.05;*** p<0.01	

Casual plot



$$\text{All. ages} = \alpha + \beta_1(\text{income}) + \epsilon$$

$$\text{income} = \alpha + \beta_1(\text{edu\_rate}) + \epsilon$$

$$\text{All. ages} = \alpha + \beta_1(\text{edu\_rate}) + \epsilon$$

$$\text{All. ages} = \alpha + \beta_1(\text{income}) + \beta_2(\text{edu\_rate}) + \epsilon$$

Regressions – weapons

Female

Regression Table

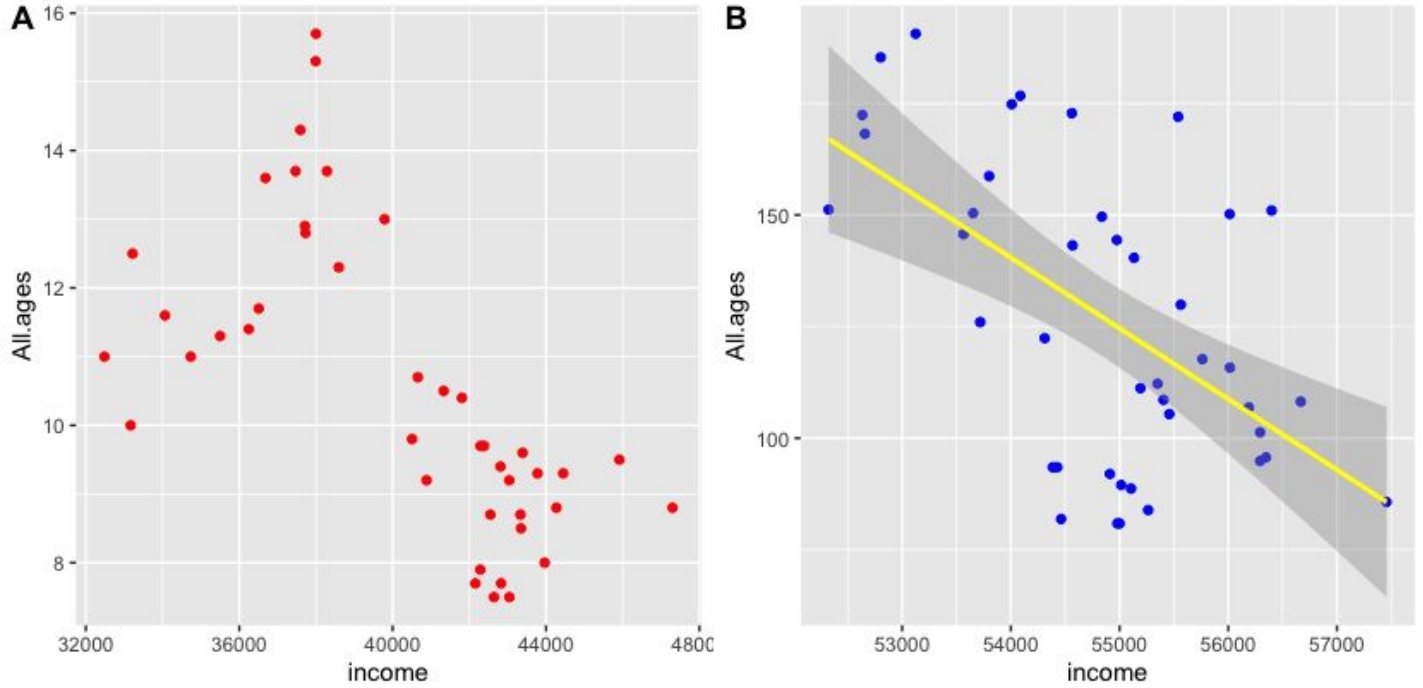
	Dependent variable:			
	All.ages	income	All.ages	
	crime.weapon	income	crime.weapon	crime.weapon
	(1)	(2)	(3)	(4)
income	-0.0004***			0.0003
	(0.0001)			(0.0002)
edu_rate		51,631.52***	-22.88***	-37.09***
		(2,530.91)	(3.51)	(11.75)
Constant	25.84***	27,675.46***	16.10***	8.49
	(2.87)	(635.82)	(0.88)	(6.08)
Observations	42	42	42	42
R^2	0.42	0.91	0.52	0.53
Adjusted R^2	0.40	0.91	0.50	0.51
Residual Std. Error	1.70 (df = 40)	1,117.22 (df = 40)	1.55 (df = 40)	1.54 (df = 39)
F Statistic	28.50*** (df = 1; 40)	416.17*** (df = 1; 40)	42.61*** (df = 1; 40)	22.42*** (df = 2; 39)
Note:				*p<0.1; **p<0.05;** p<0.01

Male

Regression Table

	Dependent variable:			
	All.ages	income	All.ages	
	crime.weapon	income	crime.weapon	crime.weapon
	(1)	(2)	(3)	(4)
income	-0.02***			-0.01***
	(0.004)			(0.002)
edu_rate		10,742.42**	-710.76***	-621.03***
		(4,401.62)	(71.72)	(66.85)
Constant	996.08***	51,882.63***	323.95***	757.29***
	(203.01)	(1,233.31)	(20.10)	(117.55)
Observations	42	42	42	42
R^2	0.31	0.13	0.71	0.79
Adjusted R^2	0.30	0.11	0.70	0.78
Residual Std. Error	28.10 (df = 40)	1,120.47 (df = 40)	18.26 (df = 40)	15.88 (df = 39)
F Statistic	18.35*** (df = 1; 40)	5.96** (df = 1; 40)	98.20*** (df = 1; 40)	71.88*** (df = 2; 39)
Note:				*p<0.1; **p<0.05;** p<0.01

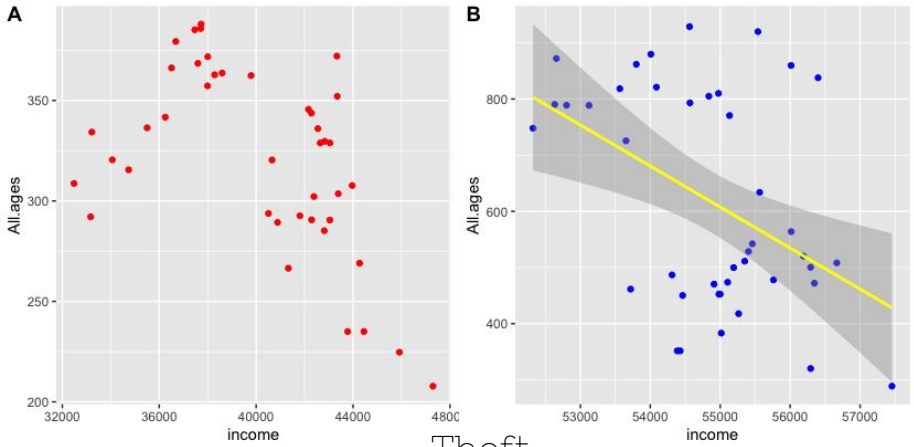
Plots of Male Crime Rate



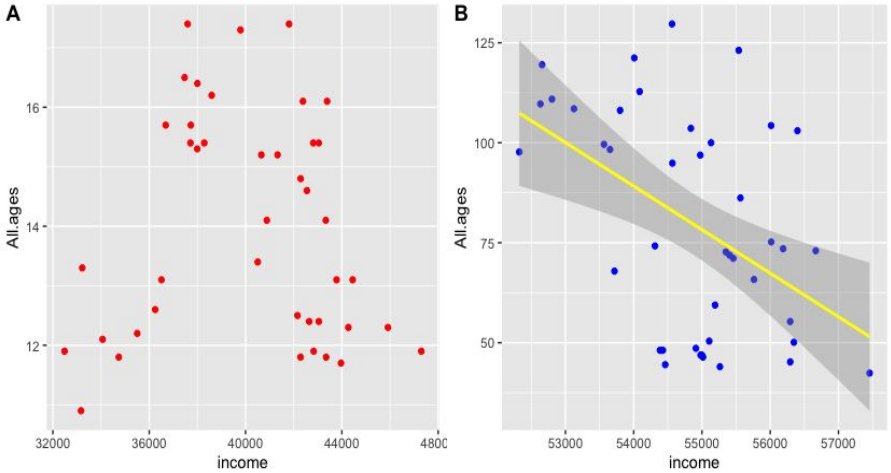
Summary of regression results

type of crimes	Female			Male		
	crime ~ income	crime ~ eduRate	crime ~ income + eduRate	crime ~ income	crime ~ eduRate	crime ~ income + eduRate
Weapons	***	***	notSignificant + ***	***	***	*** + ***
Stolen Property	notSignificant	notSignificant		***	***	** + ***
Simple Assault	***	***	*** + **	***	notSignificant	
Theft	***	***	notSignificant + notSignificant	***	***	** + ***
Embezzlement	***	***	*** + ***	notSignificant	***	

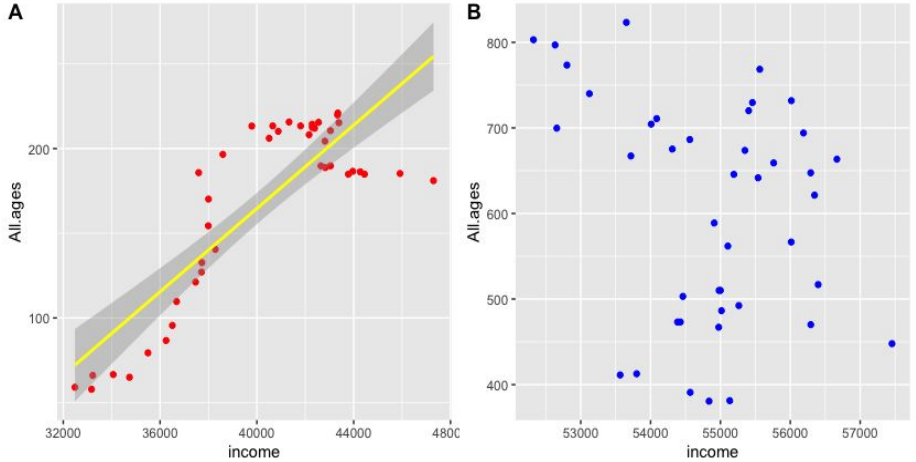
Plots of Crimes



Theft



Stealing

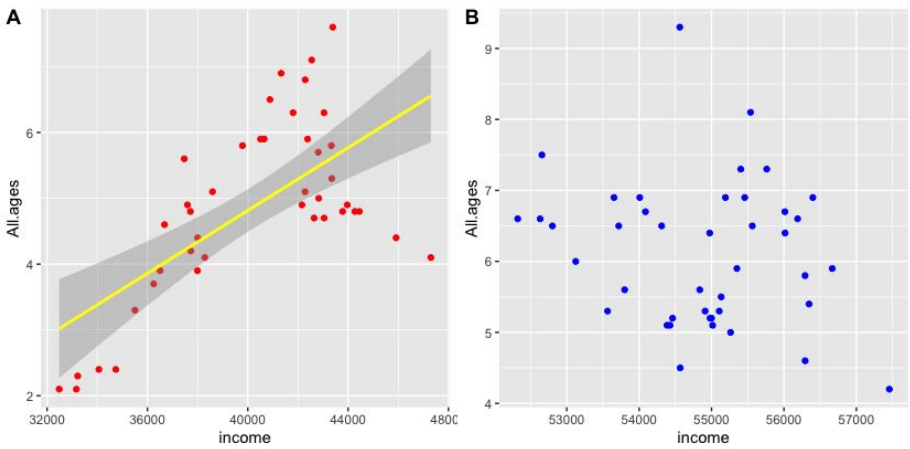


Simple Assault

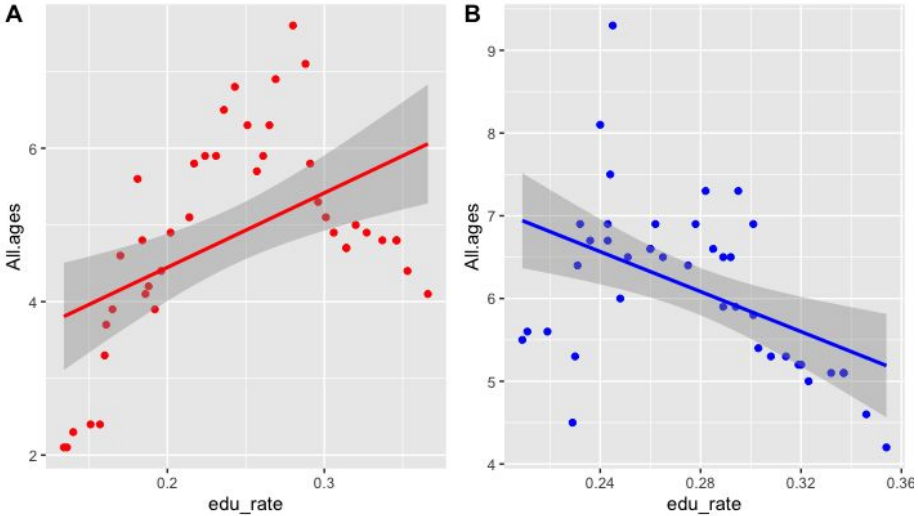
Summary of regression results

type of crimes	Female			Male		
	crime ~ income	crime ~ eduRate	crime ~ income + eduRate	crime ~ income	crime ~ eduRate	crime ~ income + eduRate
Weapons	***	***	notSignificant + ***	***	***	*** + ***
Stolen Property	notSignificant	notSignificant		***	***	** + ***
Simple Assault	***	***	*** + **	***	notSignificant	
Theft	***	***	notSignificant + notSignificant	***	***	** + ***
Embezzlement	***	***	*** + ***	notSignificant	***	

Plots of Crimes



Embezzlement



Summary of regression results

type of crimes	Female			Male		
	crime ~ income	crime ~ eduRate	crime ~ income + eduRate	crime ~ income	crime ~ eduRate	crime ~ income + eduRate
Weapons	***	***	notSignificant + ***	***	***	*** + ***
Stolen Property	notSignificant	notSignificant		***	***	** + ***
Simple Assault	***	***	*** + **	***	notSignificant	
Theft	***	***	notSignificant + notSignificant	***	***	** + ***
Embezzlement	***	***	*** + ***	notSignificant	***	

Questions?