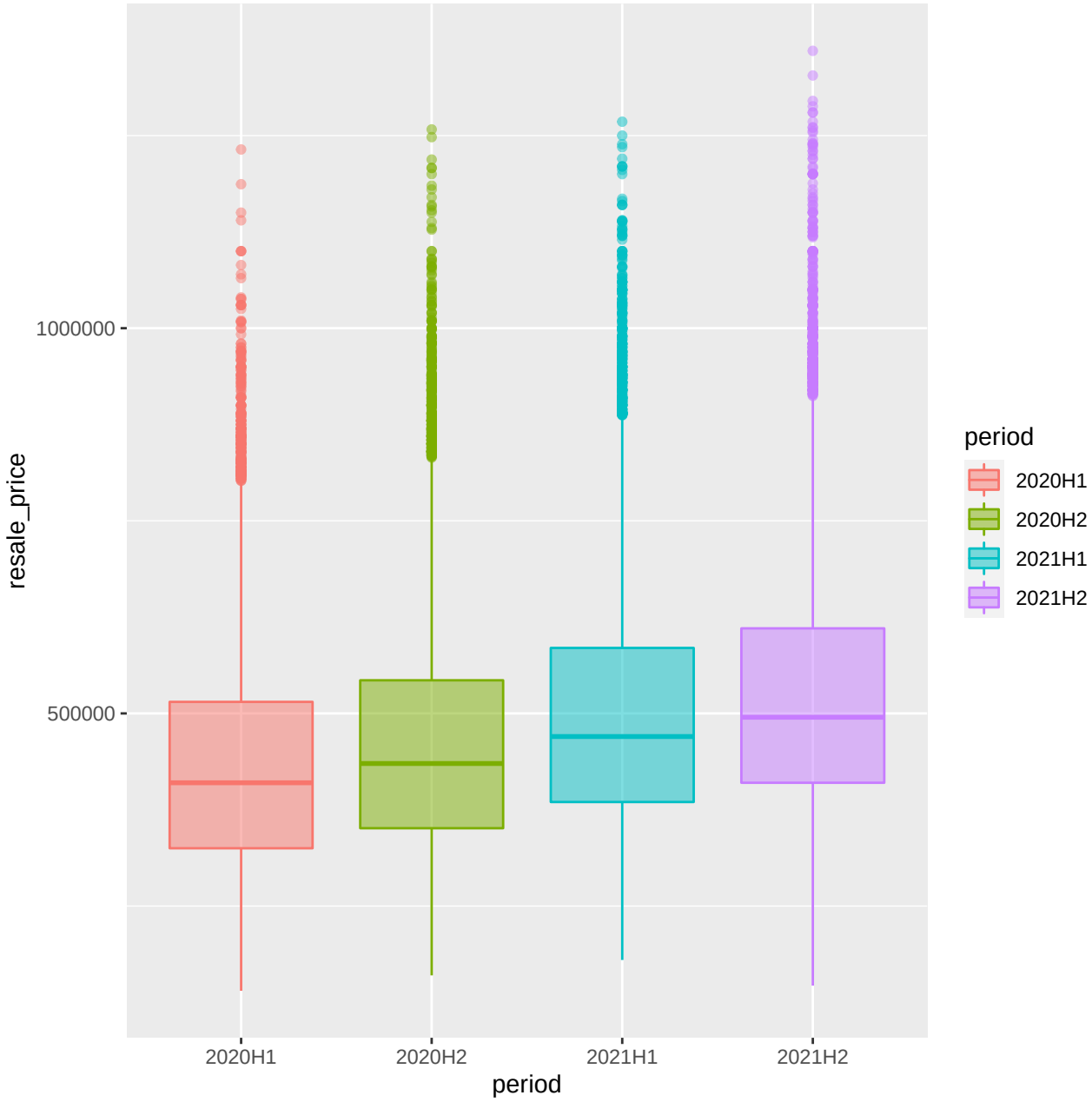
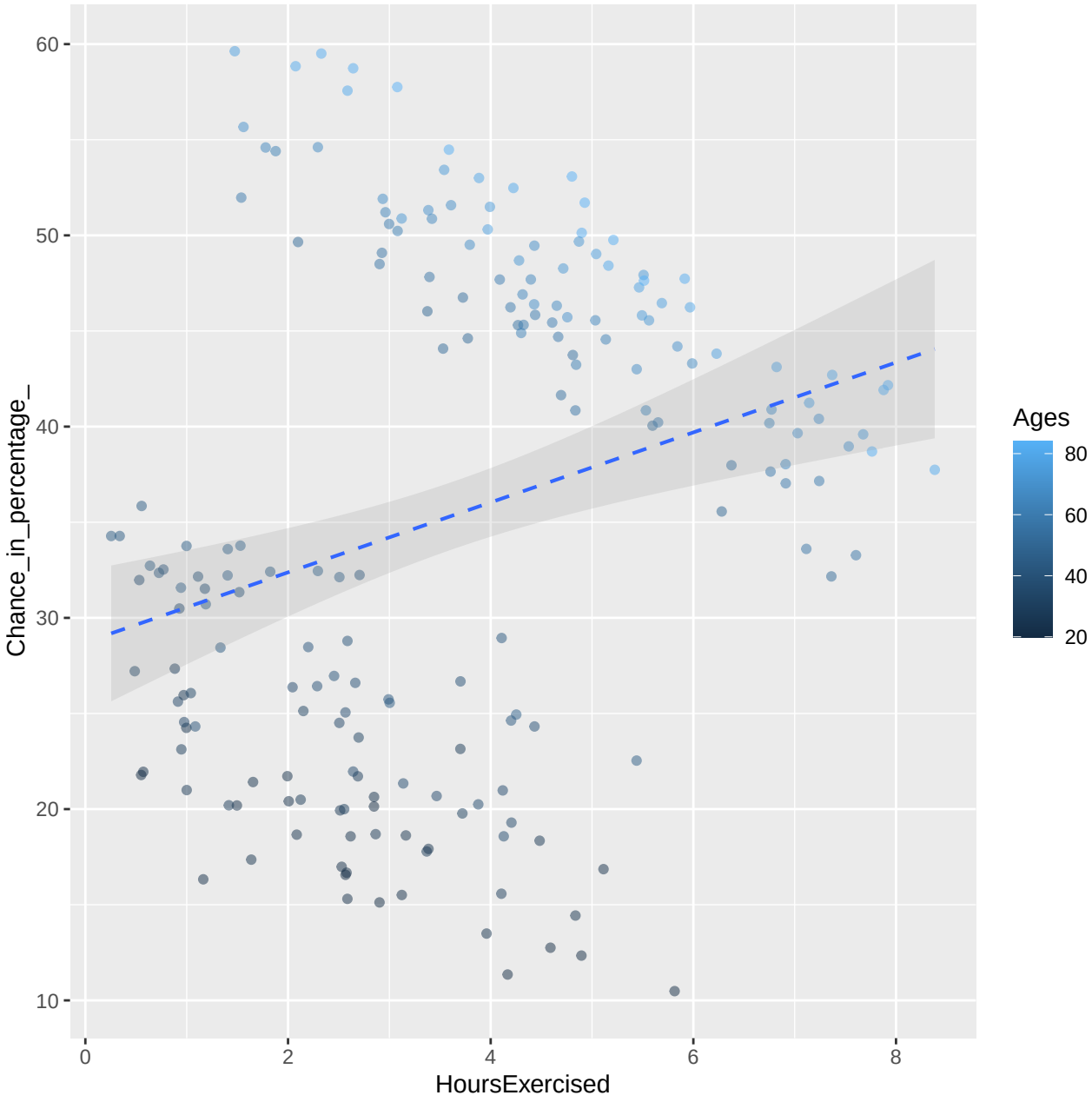
Tutorial 3

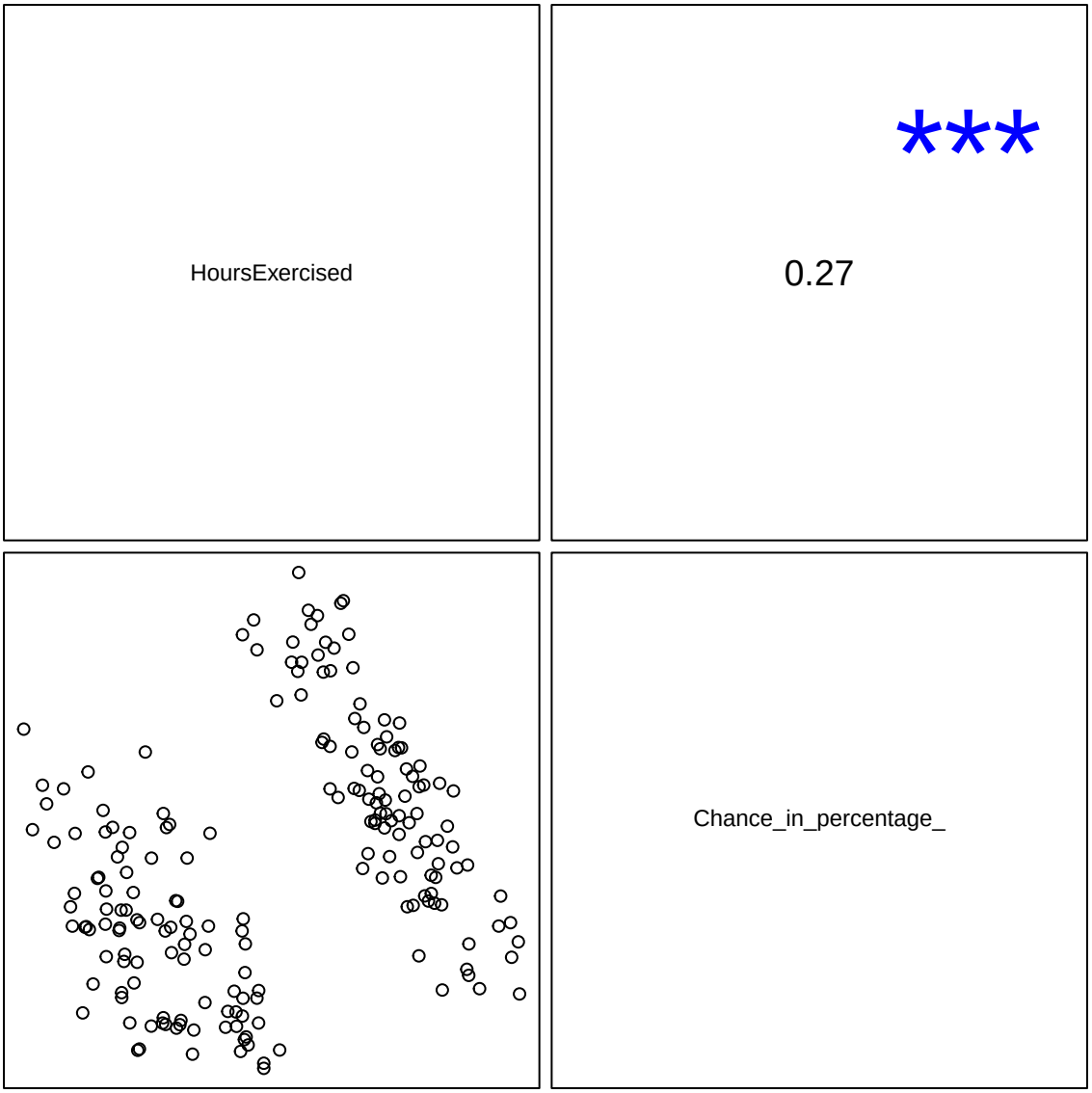
Q1



period	variable	n_obs	mean	sd	min	p25	p75	median	max
2020H1	resale_price	8,734	434,618.3	150,382.3	140,000	325,000	515,000	410,000	1,232,000
2020H2	resale_price	14,599	462,845.3	155,964.3	160,000	351,000	543,000	435,000	1,258,000
2021H1	resale_price	13,687	499,143.4	162,078.3	180,000	385,000	585,000	470,000	1,268,000
2021H2	resale_price	15,426	522,179.2	162,418.6	146,667	410,000	610,417	495,000	1,360,000

Q2a)


Chance_in_percentage_
60
50
40
30
20
10
0
2
4
6
8
HoursExercised
Ages
80
60
40
20

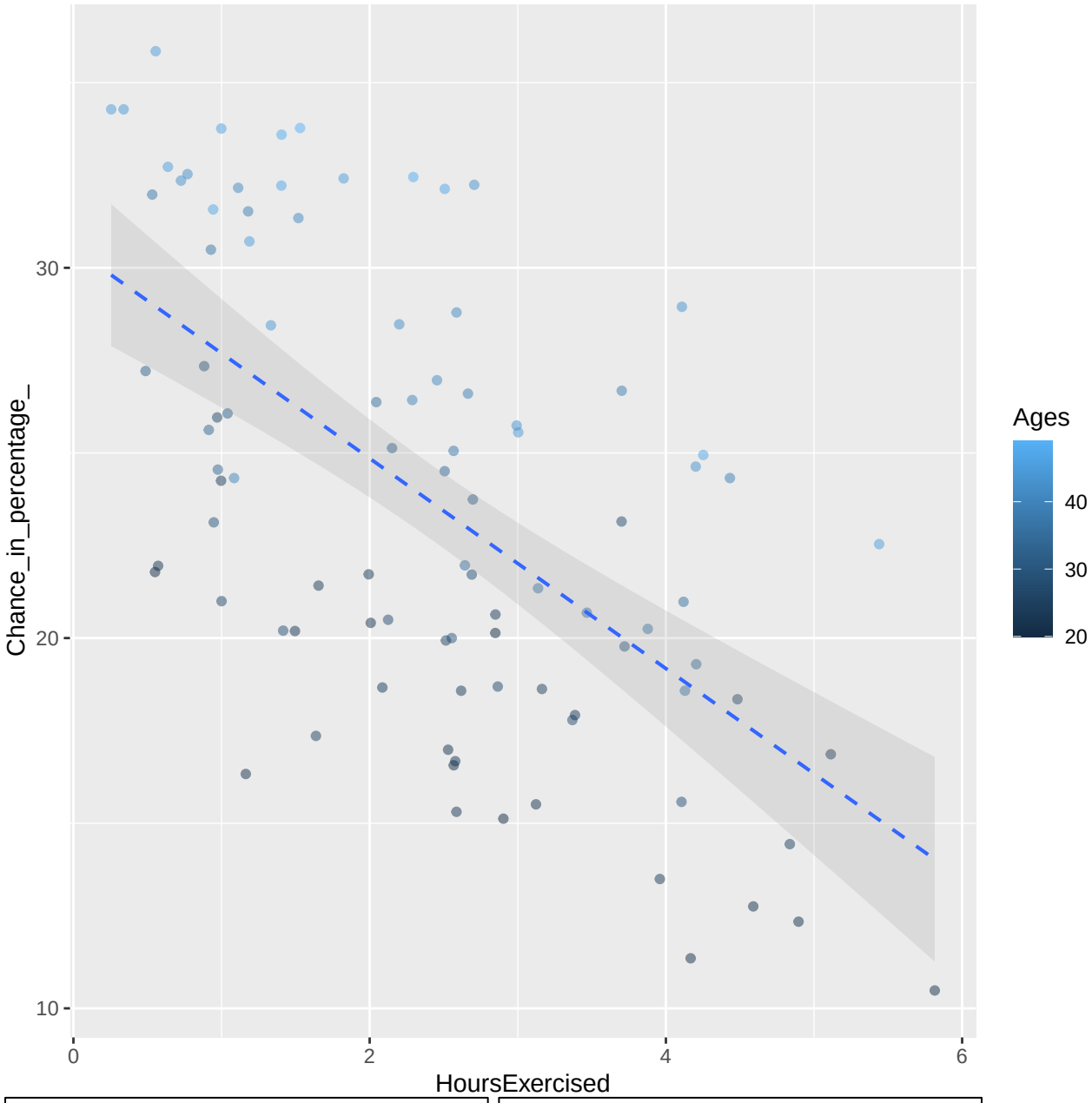


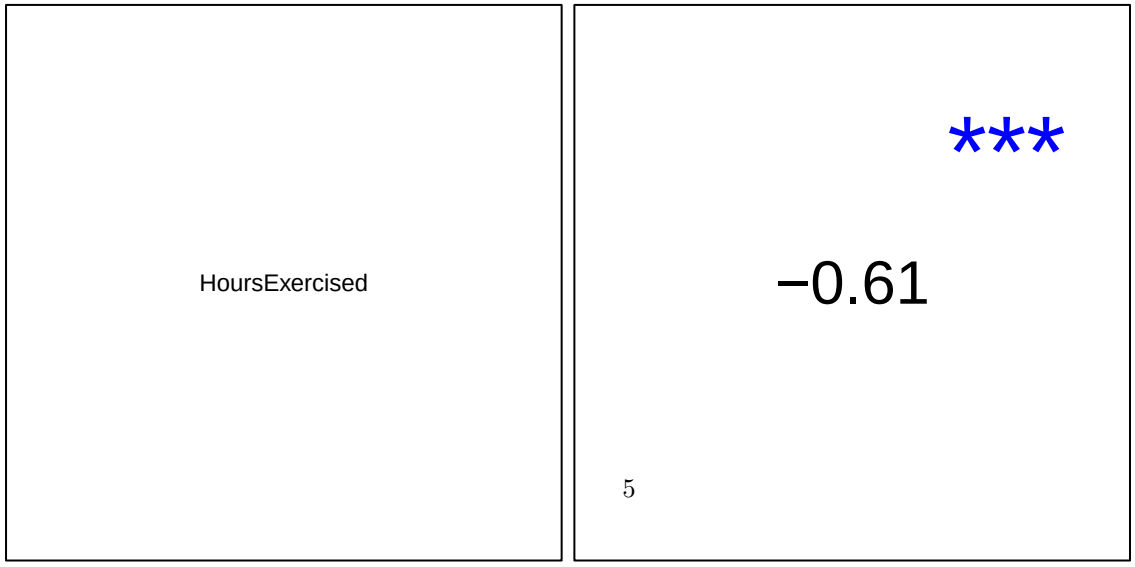
chance = 1.829*hours + 28.721

```
Linear regression (OLS)
Data     : exercise
Response variable    : Chance_in_percentage_
Explanatory variables: HoursExercised
Null hyp.: the effect of HoursExercised on Chance_in_percentage_ is zero
Alt. hyp.: the effect of HoursExercised on Chance_in_percentage_ is not zero

                coefficient std.error t.value p.value
 (Intercept)         28.721     1.904  15.085  < .001 ***
 HoursExercised       1.829     0.462   3.962  < .001 ***

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-squared: 0.075,  Adjusted R-squared: 0.07
F-statistic: 15.699 df(1,193), p.value < .001
Nr obs: 195
```

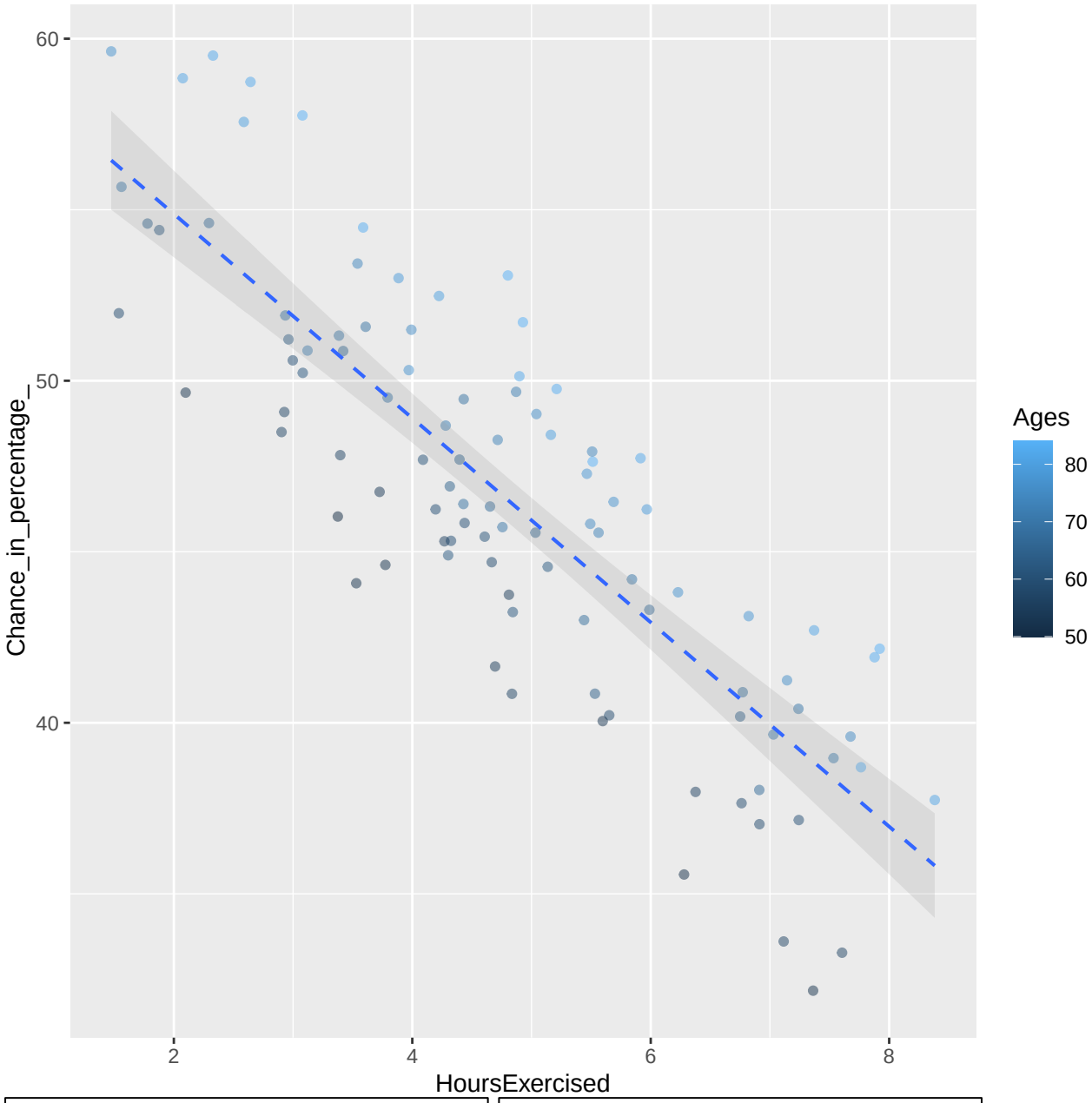
Q2b)

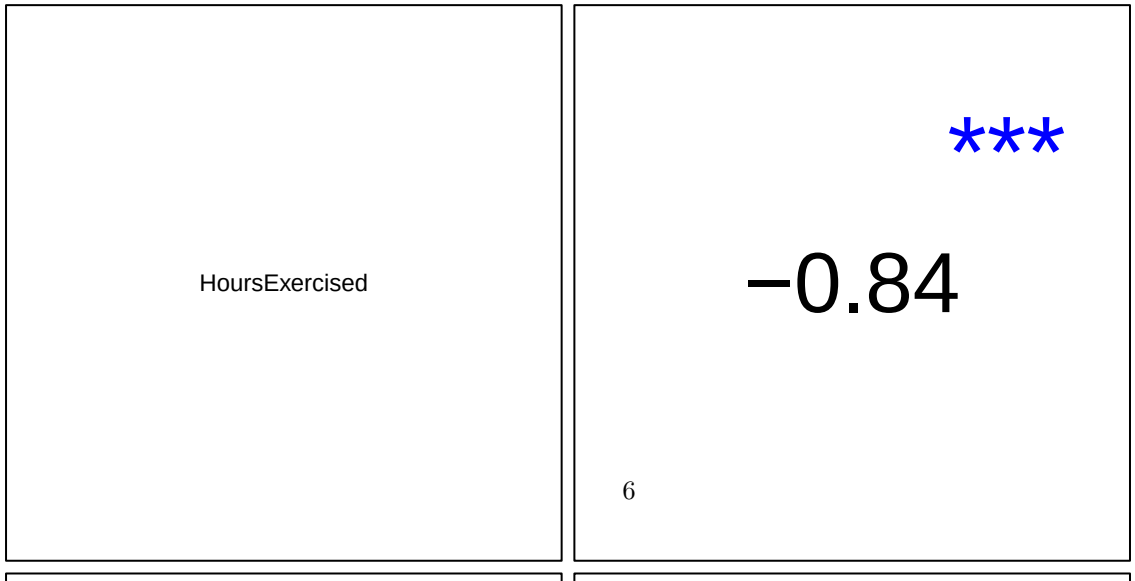
Q2c) Correlation amongst people < 50 years old





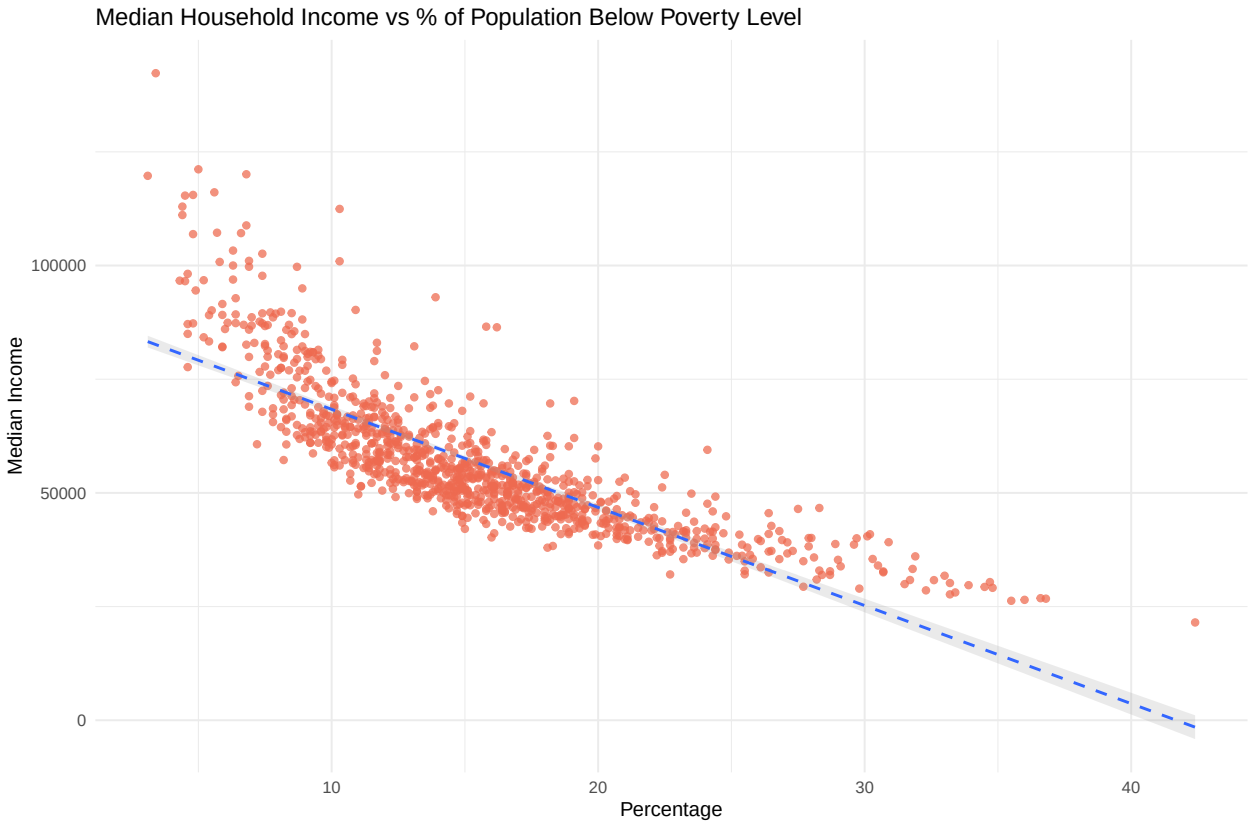
Correlation amongst people >= 50 years old

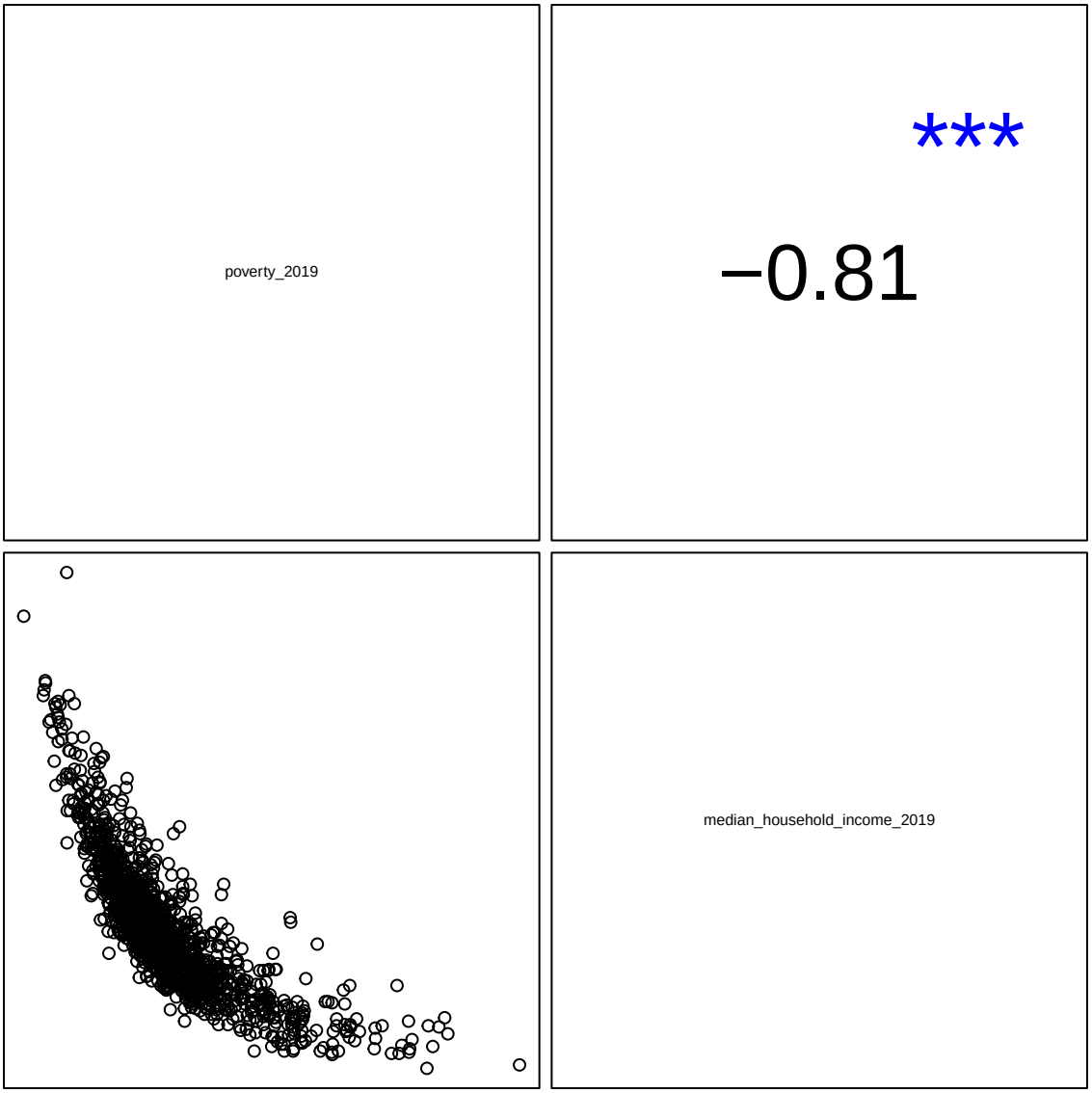




Q3a)

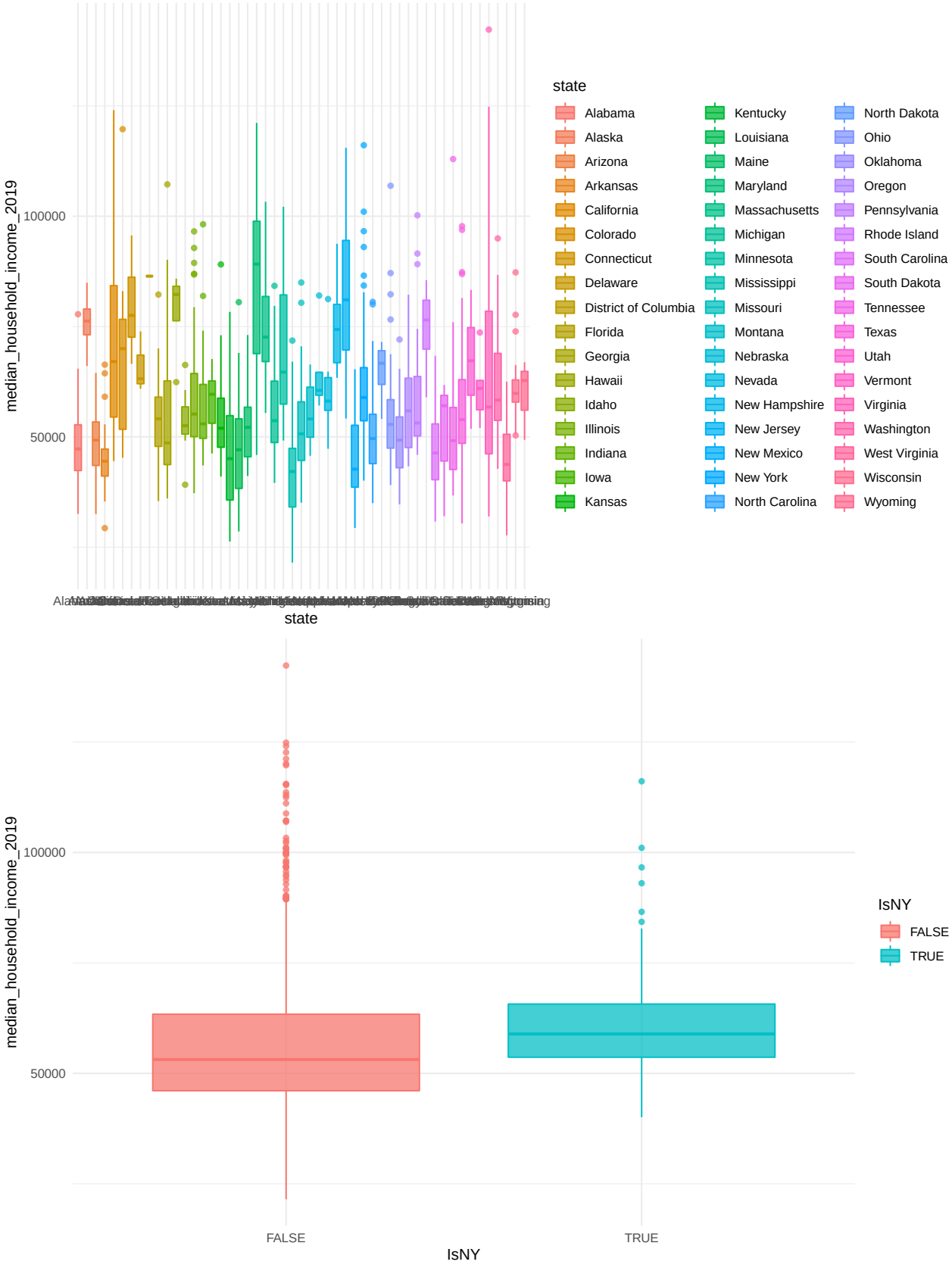
income = -2161.959*percentage + 90074.378

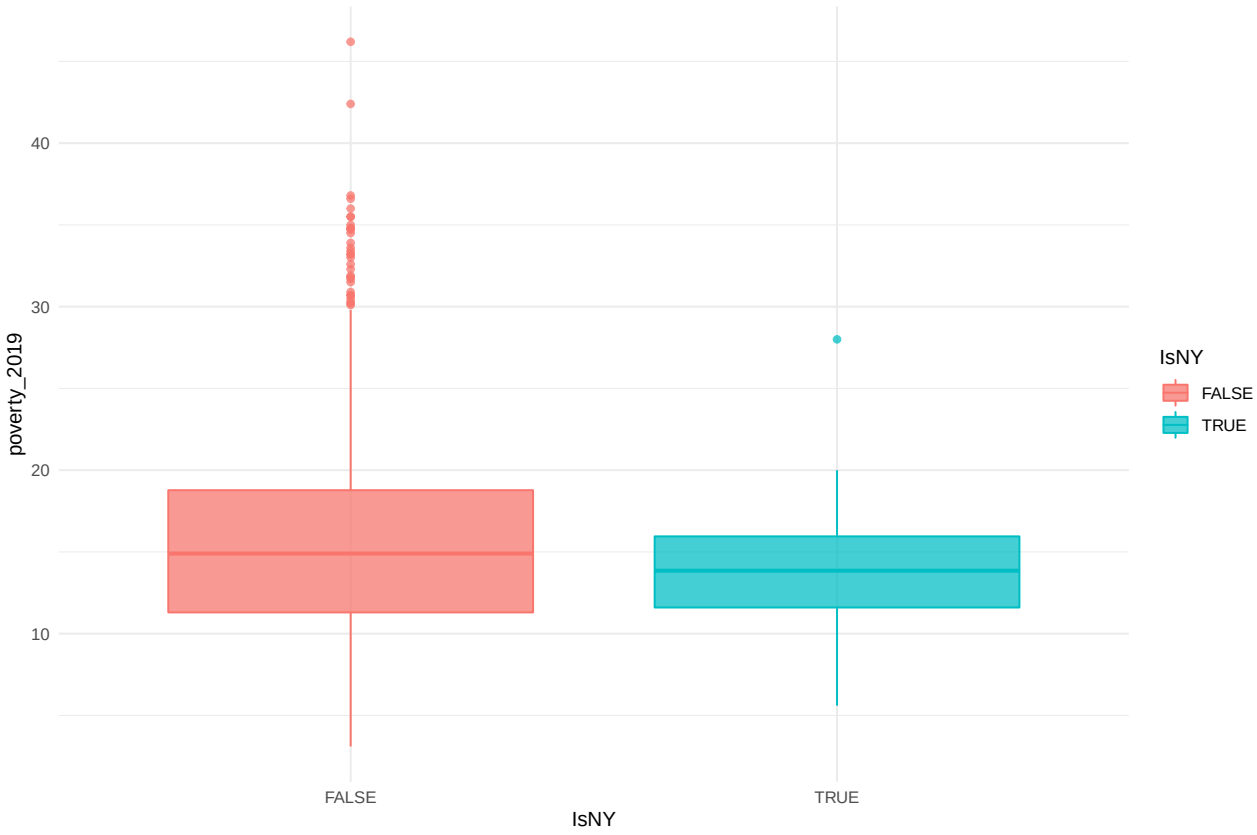





```
Linear regression (OLS)
Data     : county_complete_2019
Response variable    : median_household_income_2019
Explanatory variables: poverty_2019
Null hyp.: the effect of poverty_2019 on median_household_income_2019 is zero
Alt. hyp.: the effect of poverty_2019 on median_household_income_2019 is not zero

              coefficient std.error t.value p.value
 (Intercept)    90074.378   732.958 122.892  < .001 ***
 poverty_2019   -2161.959    44.307 -48.795  < .001 ***

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

R-squared: 0.653,  Adjusted R-squared: 0.653
F-statistic: 2380.968 df(1,1264), p.value < .001
Nr obs: 1,266
```

Q3b)


median_household_income_2019
100000
50000
state
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina
North Dakota
Ohio
Oklahoma
Oregon
Pennsylvania
Rhode Island
South Carolina
South Dakota
Tennessee
Texas
Utah
Vermont
Virginia
Washington
West Virginia
Wisconsin
Wyoming
median_household_income_2019
100000
50000
FALSE
TRUE
IsNY
IsNY
FALSE
TRUE


poverty_2019
40
30
20
10
FALSE
TRUE
IsNY
IsNY
FALSE
TRUE