Contrast Analysis of The Income and Education Differences Between Asian People in 2010 and 2019

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Abstract

Using the American census and survey data from 2010 and 2019 on IPUMS, This article analyzes the change of the salary of Asian people in 2010 and 2019, downloads all the data of Asian people from IPUMS, compares and studies the influence factors of Asian people's working hours and household income, and analyzes the situation of Asian people buying insurance. The results indicate that these differences appear to be largely associated with factors relating to immigration. The theoretical implications of these findings are discussed.

background

"Since the Immigration and Naturalization Act of 1965, the Asian-American population has been significantly increasing in both absolute and percentage terms" (Xie and Goyette 2004). In China, many families of high social status would send their children to receive better education in the United States, even for the children have a good future, the whole family immigrate to the United States, I've been particularly curious about how they are a group, after immigrated to the United States, what kind of life they live. So, I chose this topic, through all aspects of analysis of the data, also let me know the many aspects of Asian.

Data and variables

I use the American census and survey data from IPUMS USA, which provides census and survey data from around the world integrated across time and space. By using the IPUMS USA data combined for the years 2010 and 2019, an adequate sample size for small minority groups is obtained. The IPUMS USA provides reliable information on a variety of demographic and social economic variables. In this article, I choose basic demographic data (e.g., age, race, sex, marital status along with economic data (e.g., income, work status, education, family income, work hours) to analyze the influence factors of Asians' working hours and income. In this article, beside I draw many graphs and create several regression models to analyze

the data more intuitively. For my subset, I decide to select people 25-55 because this time period often be called prime age to analyze how different variables impact wages and work hours. I convert all the numeric variable to the factor, and divide them into different levels, so it easy to count all the variables.

Contrastive analysis

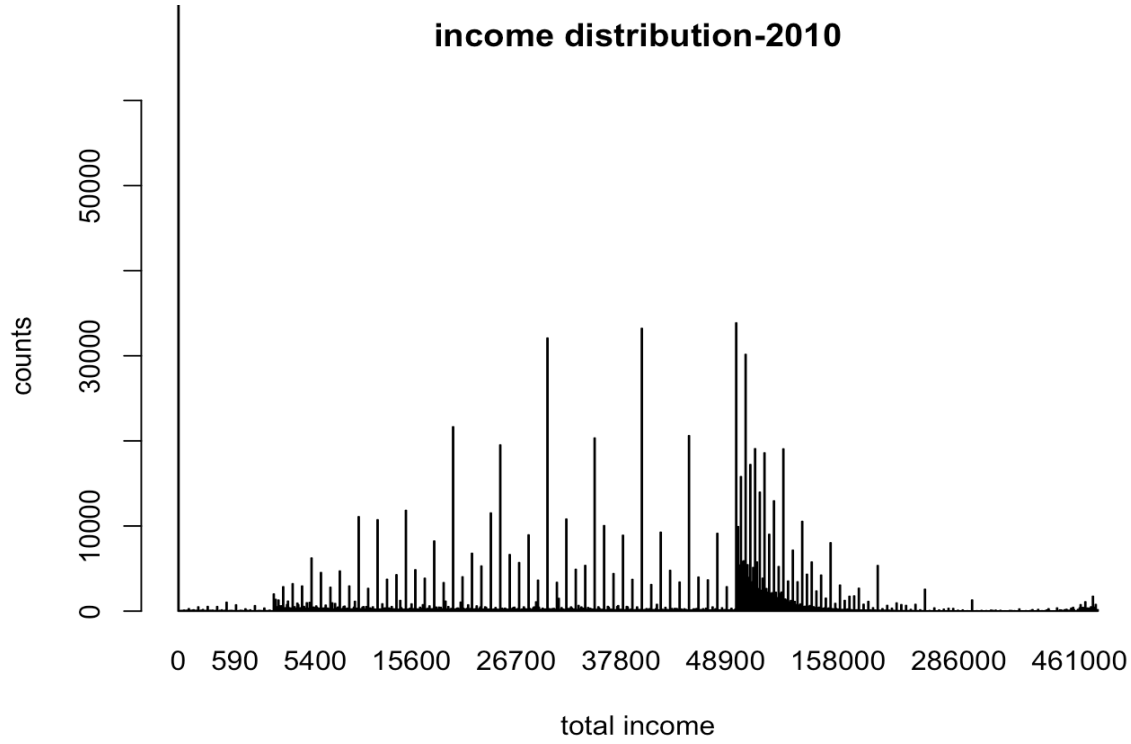
From the variable CLASSWKR which indicates whether respondents worked for their own enterprise(s) or for someone else as employees. We can see that in 2010, Self-employed Works were 131981, however in 2019, it down to 129,541, the number of people working for others has increased.

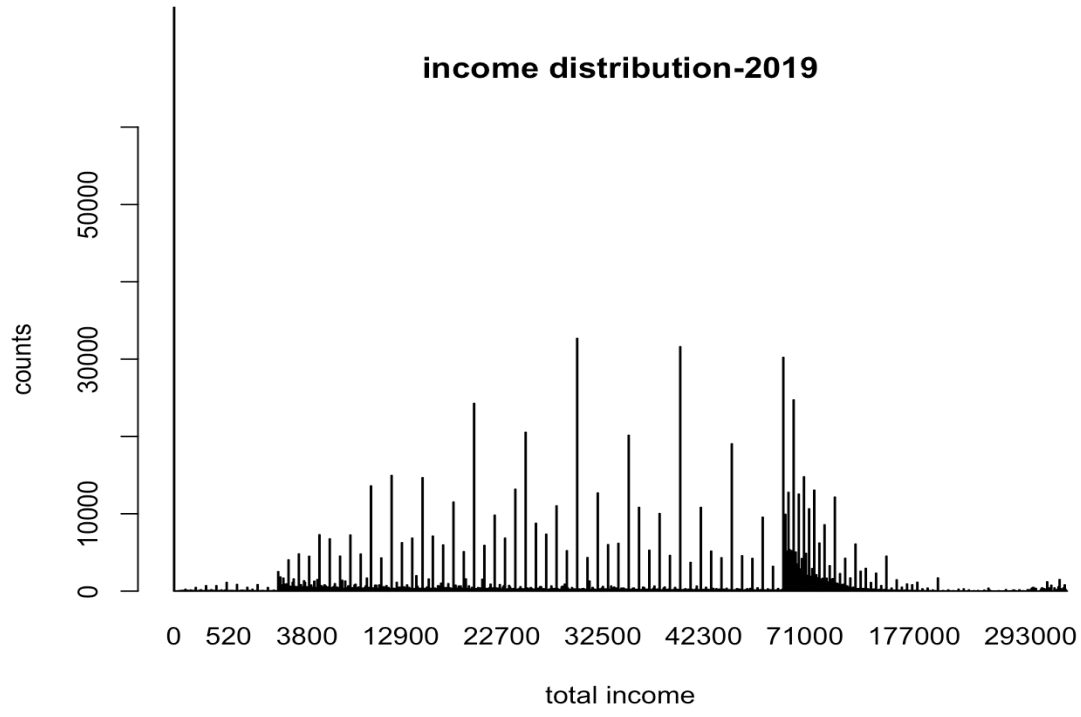
For education level, no matter in 2010 or 2019, the majority of Asians have only a high school degree, accounting for about 40 percent, and only a quarter have a bachelor's degree or higher degree.

Looking at the marital status of Asians in 2010 and 2019, I found that the divorce rate has increased in the last decade, from 126259 to 149725, and a majority of people are married with spouse present.

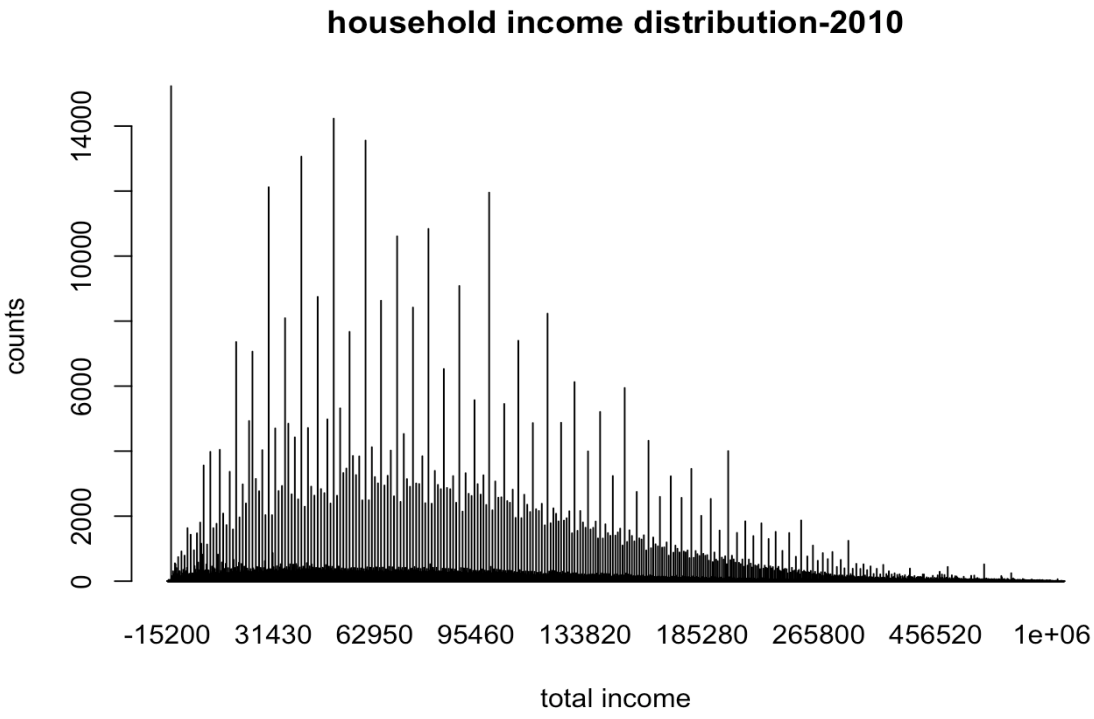
From the income distribution graphs, we can see that the wage for many peoples is concentrated between 50000 dollars and 100000 dollars. Then compared with 2019, I find that Asian wages are concentrated in the range of 71,000 to 120,000. Their wages have generally increased, but this may also be due to the rise in wages caused by this decade's inflation.

In R, according to the income, I divide them into six level, poverty level, low income, middle class, upper middle class, high income and highest tax brackets, in 2010, there are 166407 people were poverty level, 305269 people were low-income level, the most of 422504 Asians were in the middle-income range, between 50,000 and 140,000, about 7937 Asians were in the upper middle class. High income class people were 27039, and highest tax brackets class people are 135074. However, in 2019, the number of people with poor incomes and the number of people with low incomes has increased, and the number of people with high and higher incomes has fallen.

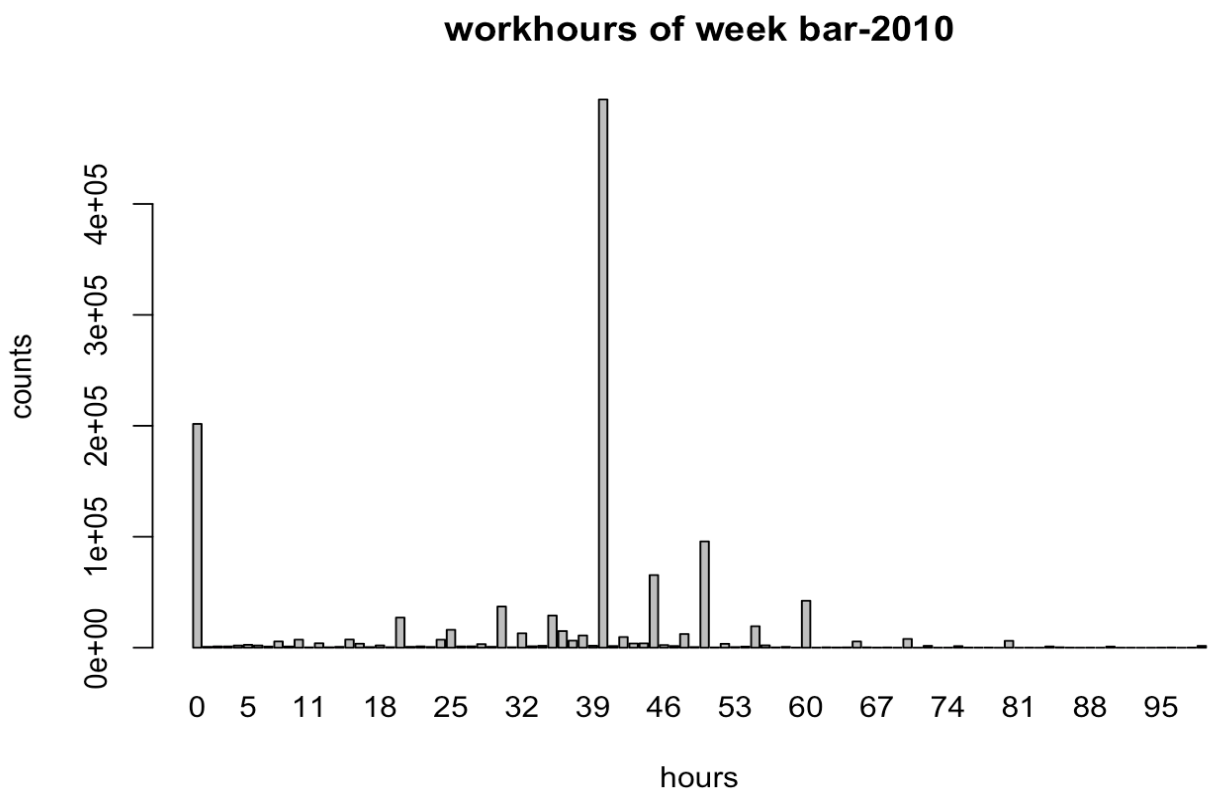

income distribution-2010
counts
0
10000
30000
50000
0
590
5400
15600
26700
37800
48900
158000
286000
461000
total income

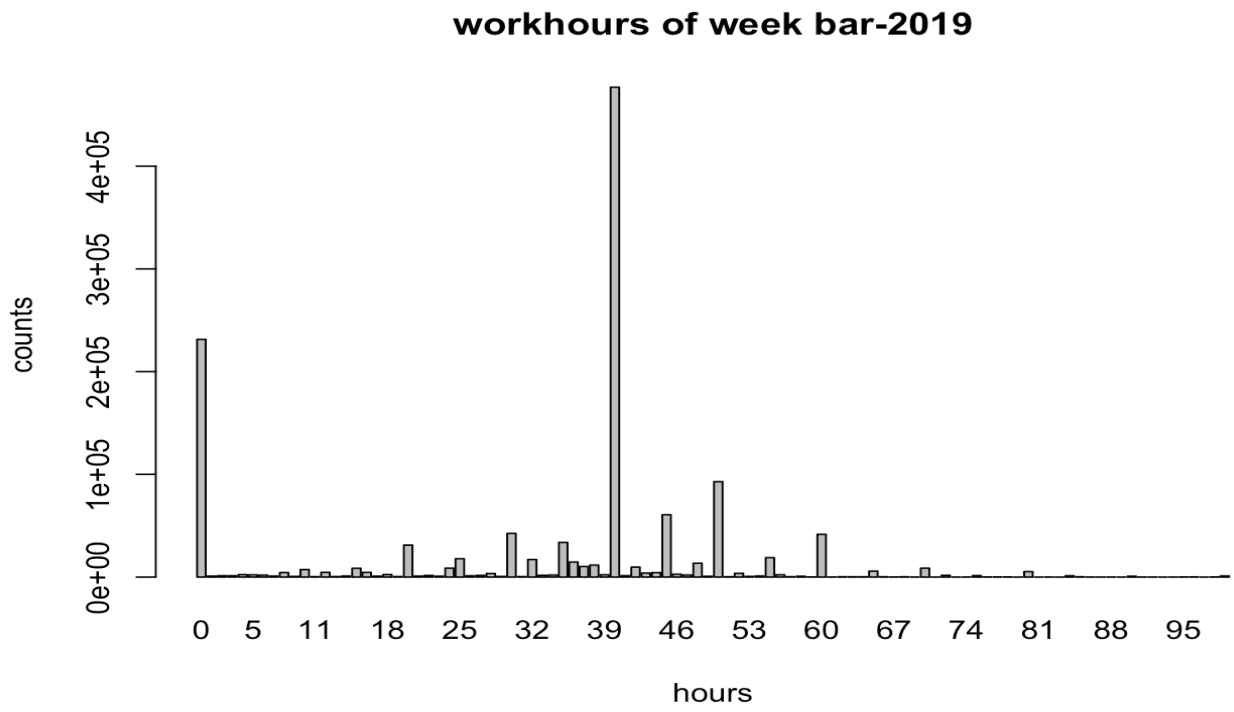

income distribution-2019
counts
0
10000
30000
50000
0
520
3800
12900
22700
32500
42300
71000
177000
293000
total income

The following two tables show the distribution of household income in 2010 and 2019. In 2010, there are 87501 people were poverty level, 189474 people were low-income level, the most of 552,162 Asians were in the middle-income range, between 50,000 and 140,000, about 33176 Asians were in the upper middle class. High income class people were 112040, and highest tax brackets class people are 135074. By contrast, in 2019, the amount of people with poor incomes and the number of people with low incomes has increased, and the number of people with high and higher incomes has dropped a lot.

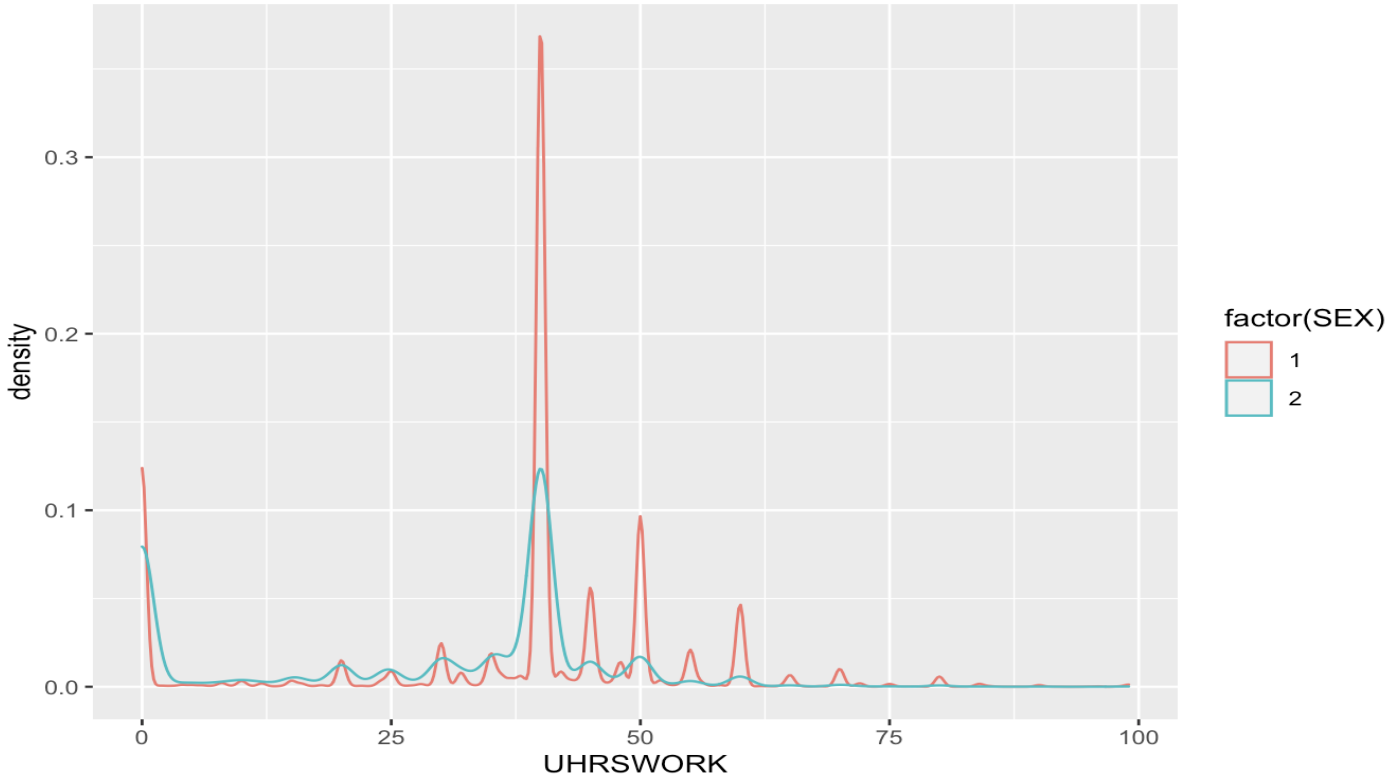


Based on the analysis of their working hours, we can see that half of Asians work full-time, and a third of those who work full-time work excessively extra hours. According to the data from R, we can see that in 2010 and 2019, nearly 200,000 people worked more than 50 hours per week.

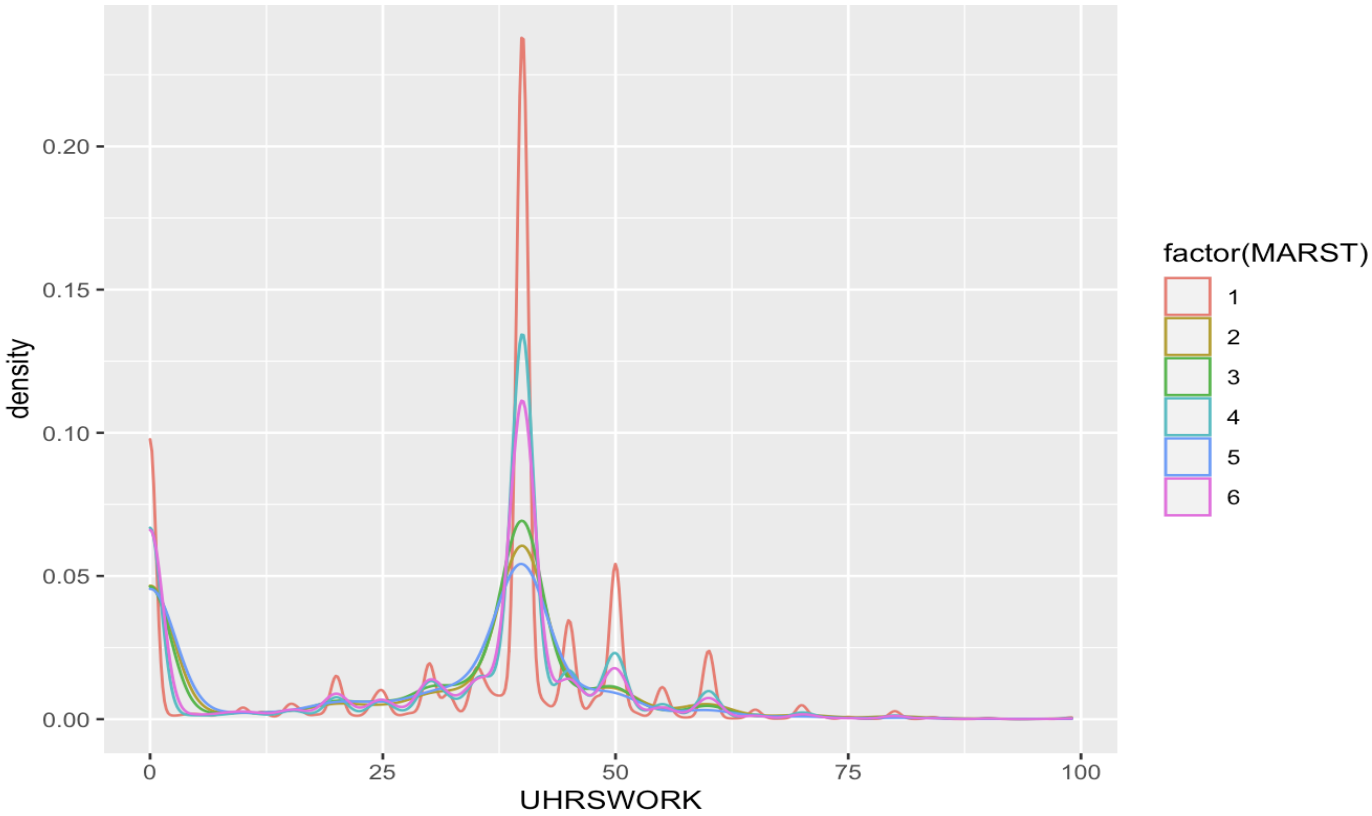

workhours of week bar-2010
counts
0e+00
1e+05
2e+05
3e+05
4e+05
0
5
11
18
25
32
39
46
53
60
67
74
81
88
95
hours


workhours of week bar-2019
counts
0e+00
1e+05
2e+05
3e+05
4e+05
0
5
11
18
25
32
39
46
53
60
67
74
81
88
95
hours

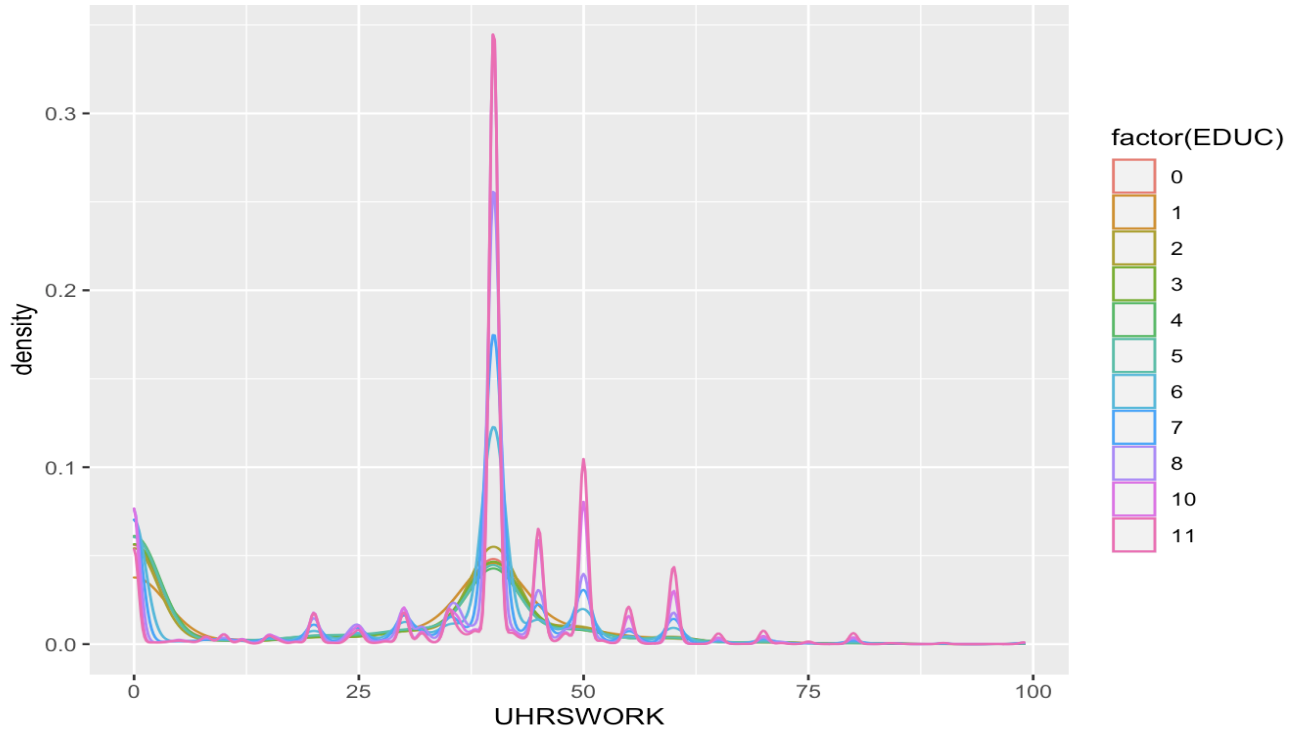
This picture analyzes the influence of gender and working hours in 2019. Factor 2 represents women and factor 1 represents men. We can see that among full-time working people, the proportion of men is much larger than that of women. One phenomenon is that women outnumber men in the category of extra work hours.



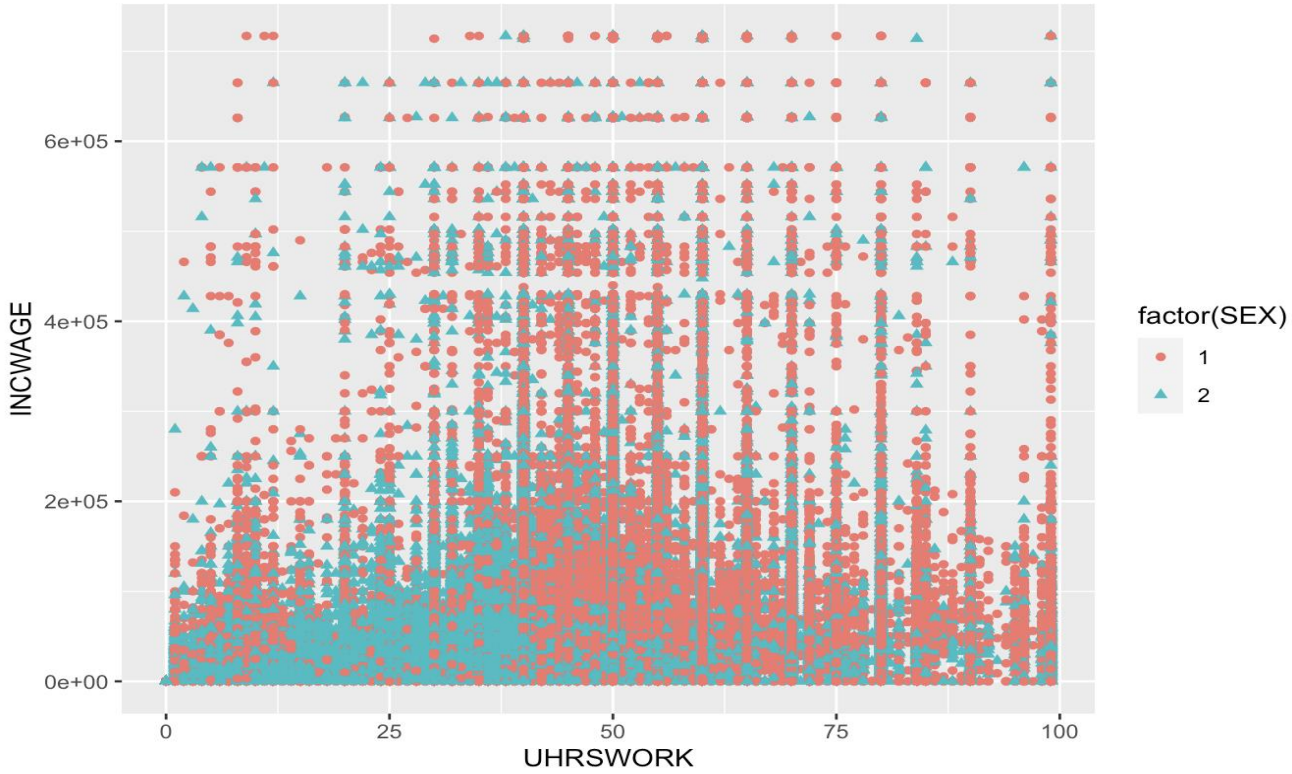
Next, I analyzed whether marital status affected working hours, and the results found that marital status on the influence of working time is very significant, factor1 represents married, and husband spouse present, factor 2 represents married, and husband spouse absent, factor 3 represents Separated, actor 4 represents divorced, factor 5 represents windowed, factor 6 represents never married/single. for a full-time job, this group of married people is very big, the second is divorced and not married, single, married but her husband is not and because emotional problem temporarily separate and people in the window period of working time will be a lot less, this might be because he needs to balance the family and childcare, etc.



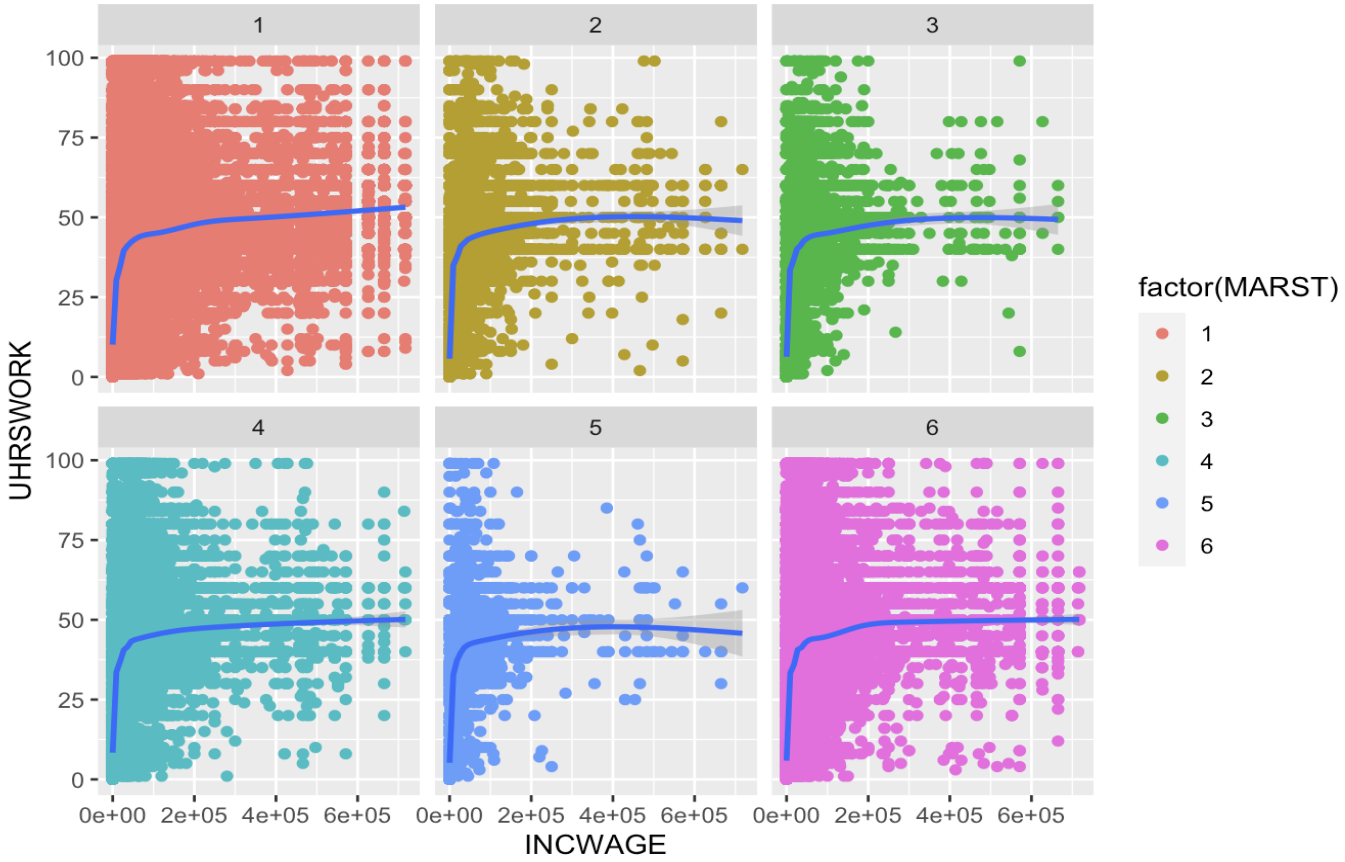
As for the relationship between educational background and working time, it can be seen from the chart that full-time workers have bachelor's degree or above, which accounts for the largest proportion.



According to the analysis of income, gender and working time, we can intuitively see that men's working time is significantly more than that of women. In terms of income, women in low-income groups tend to be more. In terms of middle income and high-income levels, men are significantly more than women.



As can be seen from the analysis of marital status, income and working time, the results are basically the same as above. Single, married and married people work more hours than other groups, and their working income is also significantly higher than that of other groups.



Regression

According to the above analysis, working hours, marital status and educational background have a great impact on income, so I set up a regression model on income. We get the following results, we can see that their P value is much less than 0.01, they are all very significant for income.

model_temp0 <- lm(INCWAGE ~ AGE + I(AGE^2) + female + UHRSWORK + WKSWORK2 + POVERTY + CLASSWKR + TRANWORK + MARST + educ_hs + educ_smcoll + educ_bach + educ_adv)

```
##
## Call:
## lm(formula = INCWAGE ~ AGE + I(AGE^2) + female + UHRSWORK + WKSWORK2 +
##     POVERTY + CLASSWKR + TRANWORK + MARST + educ_hs + educ_smcoll +
##     educ_bach + educ_adv)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -120947  -16188   -3353   10214  521363
##
## Coefficients:
##                Estimate Std. Error  t value Pr(>|t|)
## (Intercept)  -7.839e+04  7.818e+02 -100.267  < 2e-16 ***
## AGE           2.893e+03  3.812e+01   75.885  < 2e-16 ***
## I(AGE^2)     -3.166e+01  4.693e-01  -67.449  < 2e-16 ***
## female       -1.241e+04  6.851e+01 -181.094  < 2e-16 ***
## UHRSWORK      5.080e+02  2.989e+00  169.947  < 2e-16 ***
## WKSWORK2      2.138e+03  2.383e+01   89.717  < 2e-16 ***
## POVERTY       7.580e+01  2.485e-01  305.024  < 2e-16 ***
## CLASSWKR      1.617e+03  6.296e+01   25.680  < 2e-16 ***
## TRANWORK     -6.369e+01  2.226e+00  -28.613  < 2e-16 ***
## MARST         2.269e+01  1.677e+01    1.353 0.176164
## educ_hs1     -2.031e+03  1.721e+02  -11.804  < 2e-16 ***
## educ_smcoll1  6.592e+02  1.799e+02    3.664 0.000248 ***
## educ_bach1    1.305e+04  1.860e+02   70.138  < 2e-16 ***
## educ_adv1     3.149e+04  1.997e+02  157.703  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 36870 on 1251447 degrees of freedom
## Multiple R-squared:  0.3947, Adjusted R-squared:  0.3947
## F-statistic: 6.278e+04 on 13 and 1251447 DF,  p-value: < 2.2e-16
```

According to the analysis of working hours at the beginning of the article, I also know that marital status, educational background and working mode have great influence on working hours, so I also set up a regression model about working hours. And we get the following results, we can see that their P value is much less than 1, they are all very significant for working hours.

model_temp1 <- lm(UHRSWORK ~ AGE + female + WKSWORK2 + POVERTY + CLASSWKR + TRANWORK + MARST + educ_hs + educ_smcoll + educ_bach + educ_adv)

```
##
## Call:
## lm(formula = UHRSWORK ~ AGE + female + WKSWORK2 + POVERTY + CLASSWKR +
##     TRANWORK + MARST + educ_hs + educ_smcoll + educ_bach + educ_adv)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -49.606  -6.025  -1.355   3.902  91.481
##
## Coefficients:
##                Estimate Std. Error  t value Pr(>|t|)
## (Intercept)   4.117e+00  7.678e-02   53.626  < 2e-16 ***
## AGE          -1.145e-02  1.154e-03   -9.921  < 2e-16 ***
## female       -5.050e+00  1.999e-02 -252.675  < 2e-16 ***
## WKSWORK2      5.065e+00  5.502e-03  920.504  < 2e-16 ***
## POVERTY       8.116e-03  7.387e-05  109.867  < 2e-16 ***
## CLASSWKR      3.864e+00  1.850e-02  208.801  < 2e-16 ***
## TRANWORK      3.676e-02  6.649e-04   55.297  < 2e-16 ***
## MARST        -3.140e-02  4.960e-03   -6.331 2.43e-10 ***
## educ_hs1     -7.620e-02  5.146e-02   -1.481    0.139
## educ_smcoll1  3.740e-02  5.381e-02    0.695    0.487
## educ_bach1    4.678e-01  5.563e-02    8.410  < 2e-16 ***
## educ_adv1     2.090e+00  5.969e-02   35.015  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 11.03 on 1251449 degrees of freedom
## Multiple R-squared:  0.6585, Adjusted R-squared:  0.6585
## F-statistic: 2.193e+05 on 11 and 1251449 DF,  p-value: < 2.2e-16
```

Conclusion

According to all the analysis results, it can be intuitively known that marital status, educational background and work style have a great impact on working time. In addition, working time, age, marital status and educational background also have a great impact on income.

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