Programming R --Assignment 1----visualization in R (Wanwen LIU 100376272)

Instructions:

Education has a great contribution on economic growth. In this report, I focus on college education. Since China has taken an implementation of policy College Expansion in 1999, which directly has increased college enrollment rate. Those affected by this policy are in treatment cohort, were born in and after the year 1981. Take the year 1981 as cutpoint, to compare the difference between the outcomes 8-years before and after the policy to evaluate how the policy College Expansion affect the college education and the outcomes variables.

Data:

The raw data file return.csv has information about whether obatin college education and the outcome variables like employ, non-agriculture employment, annual salary and life-happiness of 2366 respondents who were born between 1973-1989 in China. The data was grouped by birthyear,

The names of the main columns are the following:

birthyear: the birth year of respondent

college: whether obatin college education or not

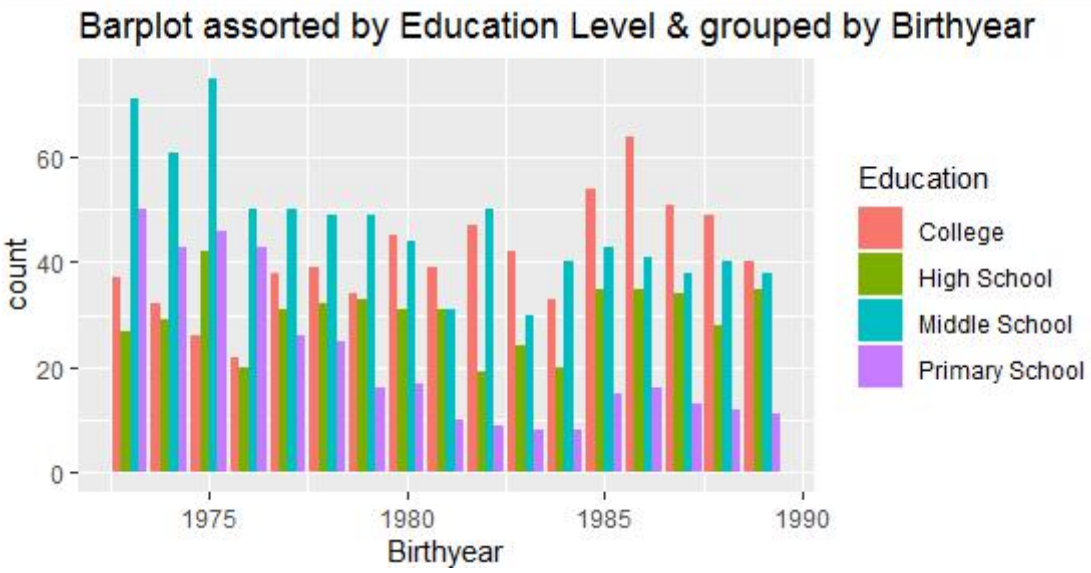
employ: whether get a job or not

nonagrmploy: whether get a non-agricultural job or not

lnw: annual salary logrithm

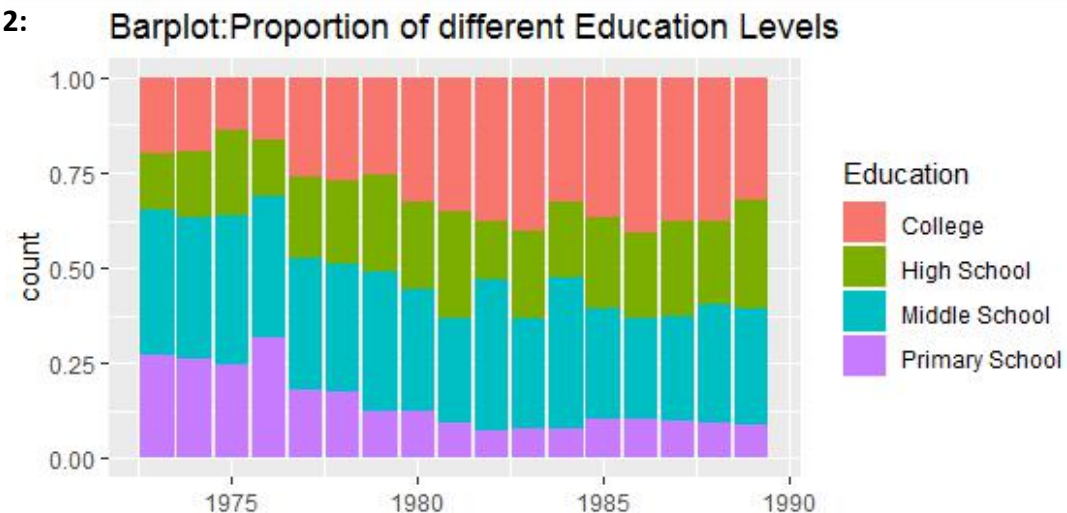
happiness: life-happiness

Figure 1:



In Figure 1, we can see the college graduates increased with time while the amount of primary school and middle school graduates decreased.

Figure 2:



In Figure 2, the proportion of college graduates increased while that of primary school graduates decreased significantly.

Figure 3:

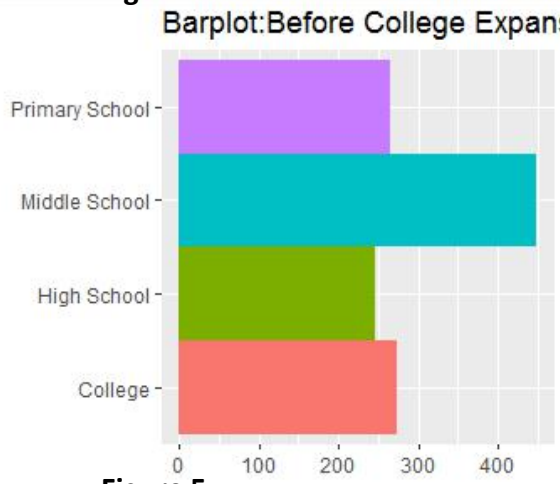


Figure 4:

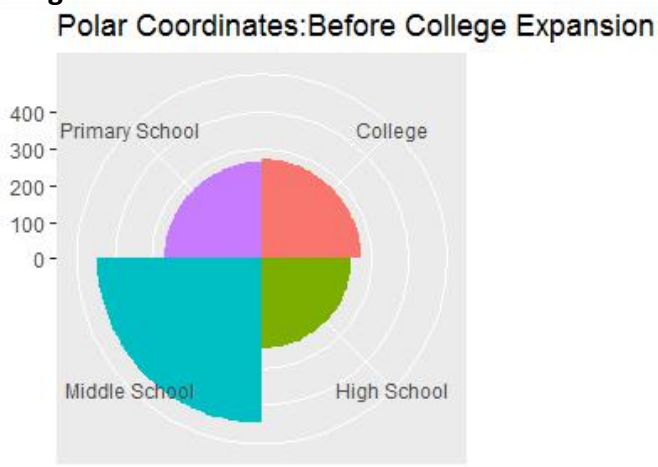


Figure 5:

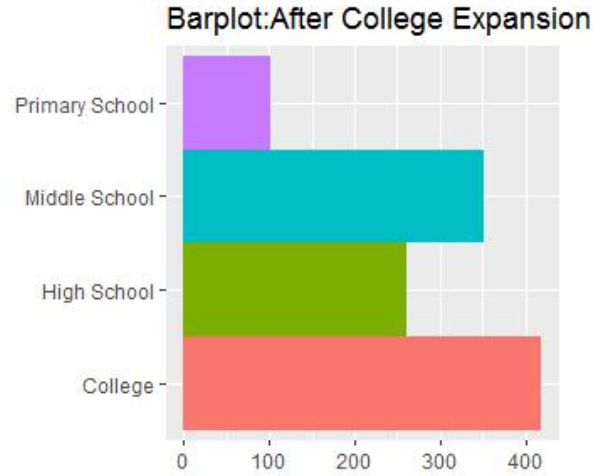
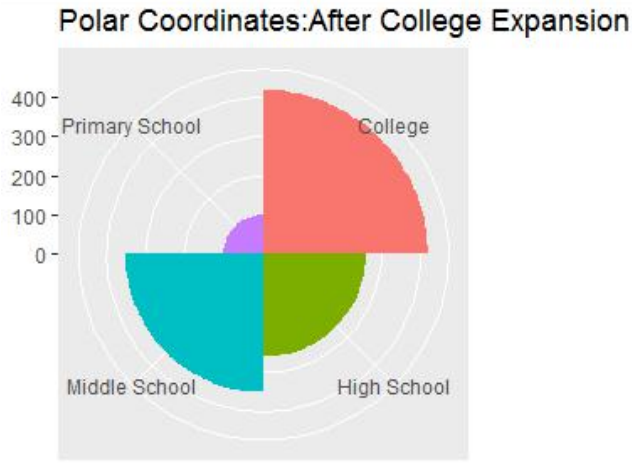


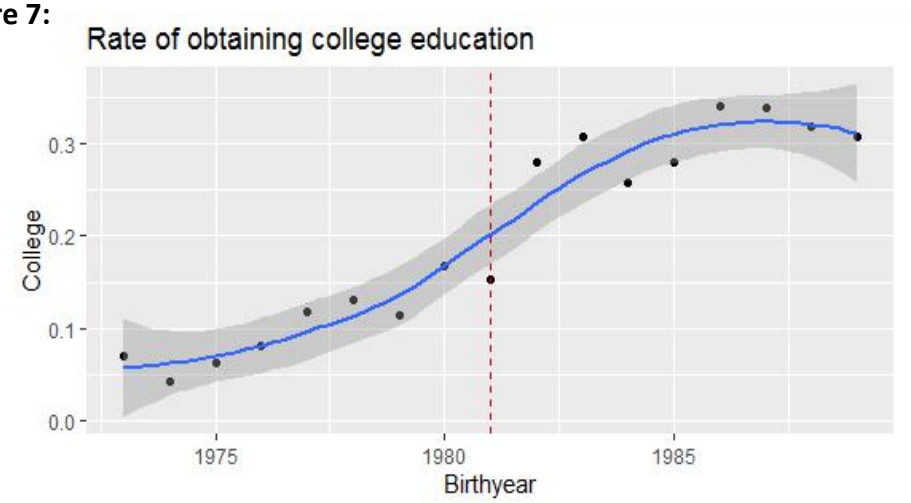
Figure 6:



In Figure 3 & Figure 4, from the bar chart and polar coordinates we can see before the policy College Expansion, in the educational levels,the majority is middle school graduates. In comparision, after the policy College Expansion, in the educational levels,the majorityare collegegraduates and middle school graduates. The increase of the proportion of college education reflect that the policy College Expansion did promote higher education of Chinese.

(From Figure 7 to Figure 11, I want to draw two fitting curves before and after birthyear of 1981 to see whether these two separated fiting lines would have a jump at the cutpoint to emphasize the effect of the policy College Expansion, but I failed)

Figure 7:



In Figure 7, we can see an upwards trend of college rate, especially after treated by the policy, college rate significantly keep in a stable high level.

Figure 8:

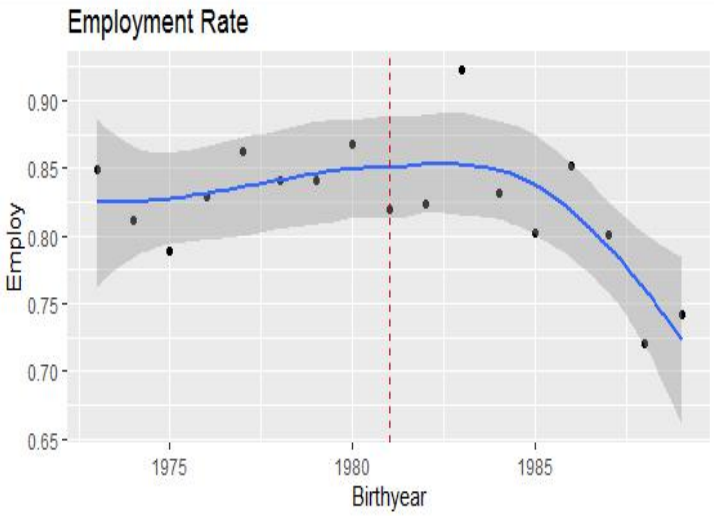
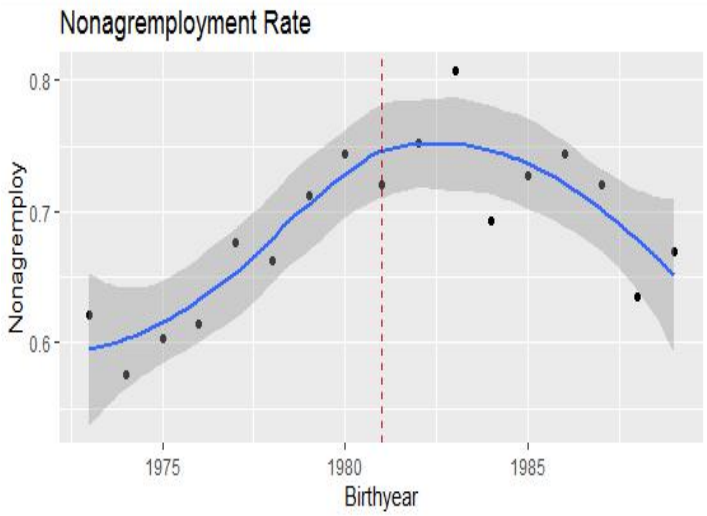


Figure 9:



In Figure 8, the of line employment rate is smooth, which meets the realitic life, due to the reason of age, the employment rate of the control cohort is stable and higher then the treated cohort, since young people just finish college education and enter society.

In Figure 9, there is an upwards trend of non-agricultural employment rate, college education mainly help increase non-agricultural employment. In a personal perspective, College education can help gain more chances in non-agricultural employment.

Figure 10:

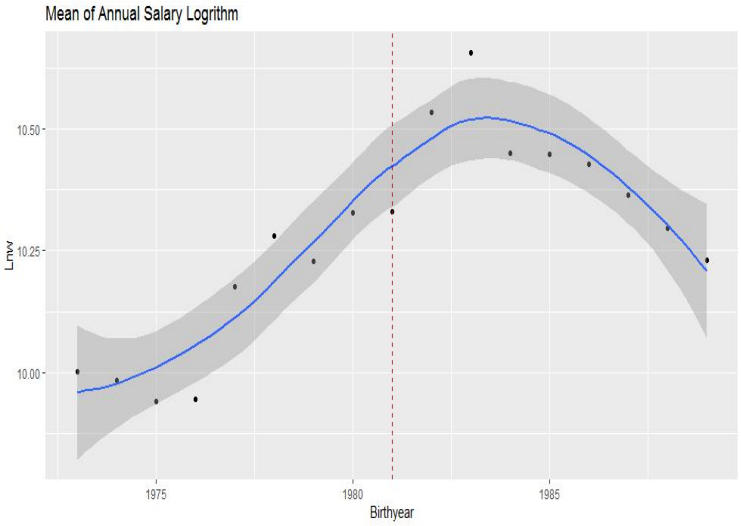
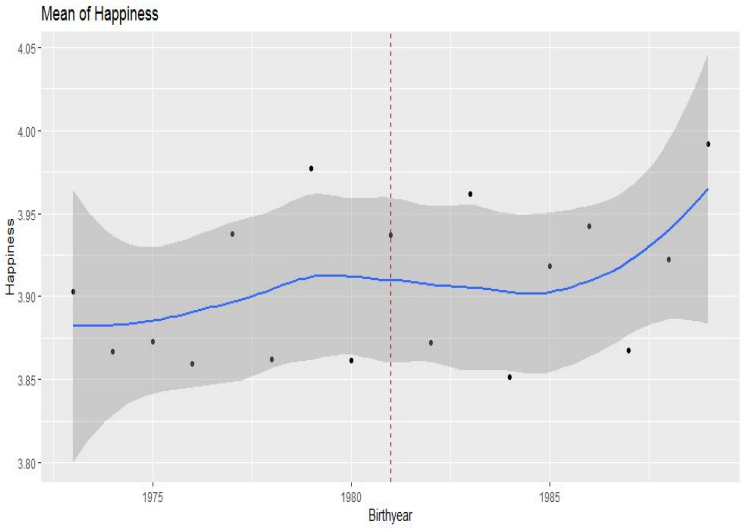


Figure 11:



In Figure 10, there is an upwards trend of mean of annual salary logrithm, college education mainly help increase personal income. In a personal perspective, the economical return of College education is significant.

In Figure 11, the line of life-happiness is relatively smooth both before and after the cutpoint of 1981, college education hardly affect life-happiness.

Figure 12:

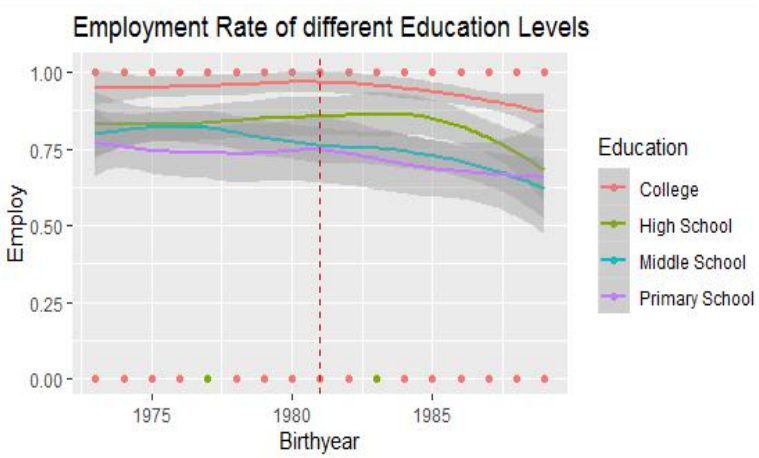
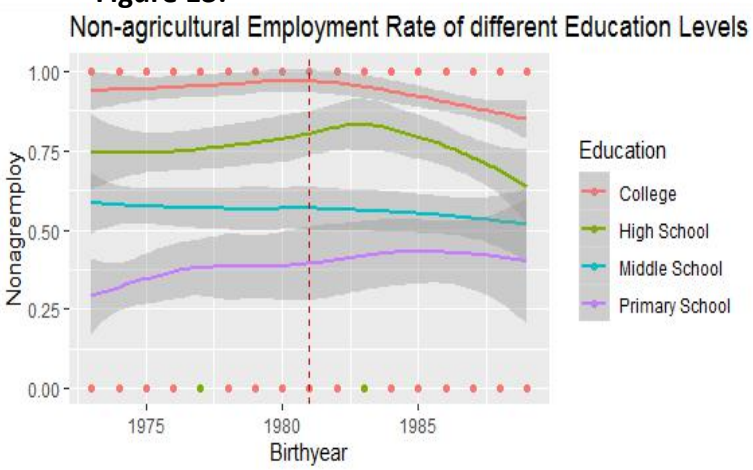


Figure 13:



In Figure 12 and Figure 13, we see that higer level of education, higher employment rate and, especially higher education level graduates have more priorities in non-agricultural employment market.

Figure 14:

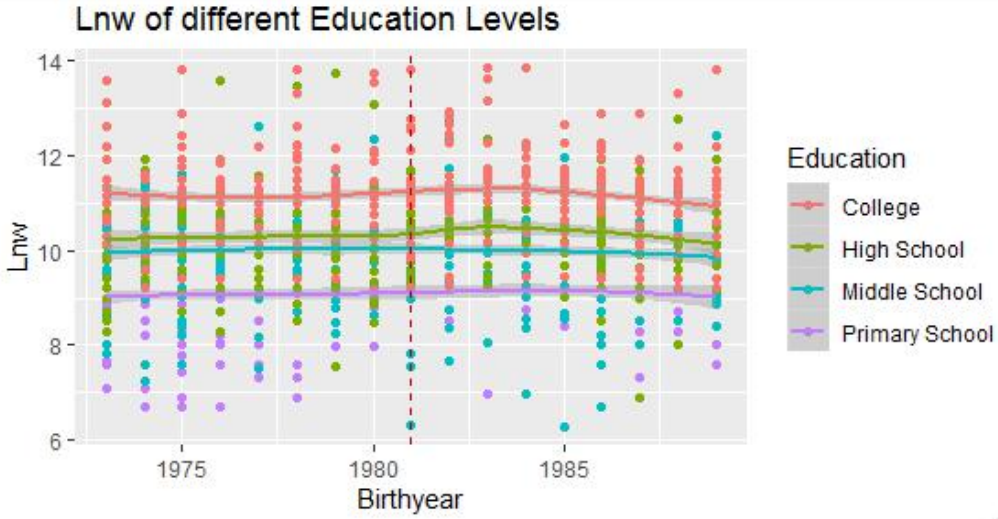
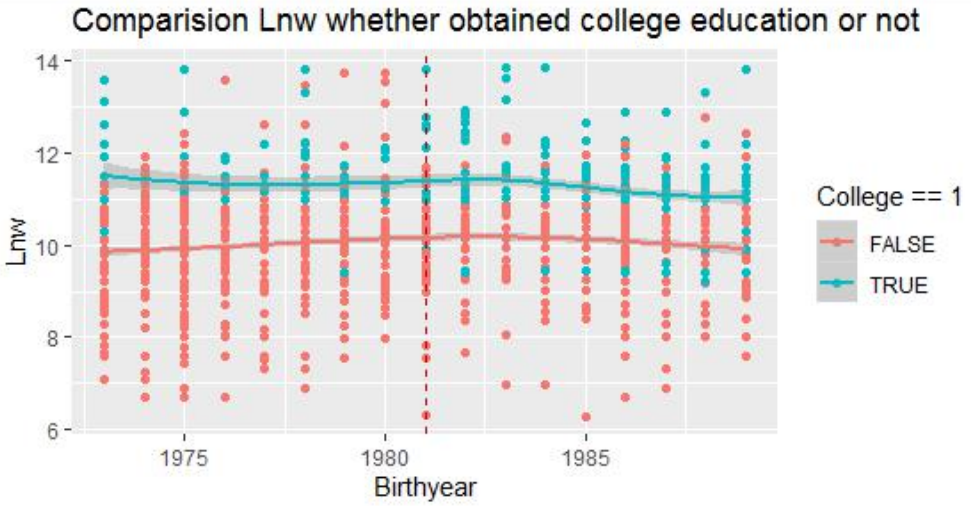
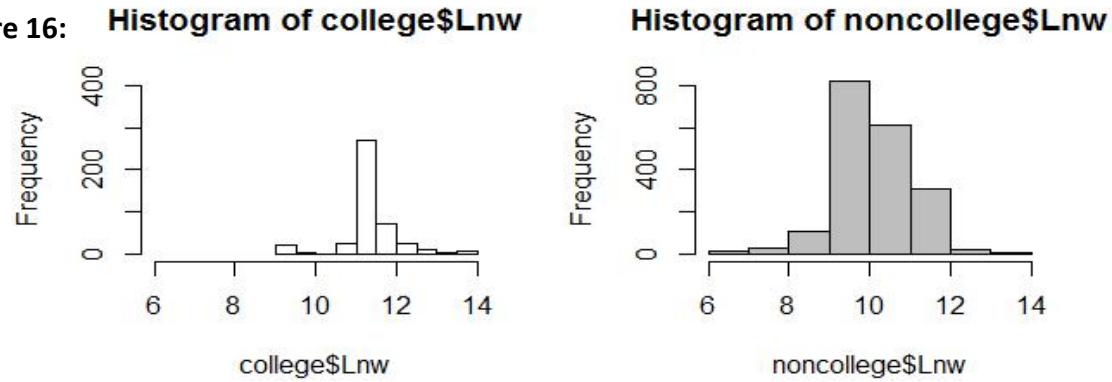


Figure 15:



In Figure 14, higer level of education, higher average annual salary logrithm. In Figure 15, the difference of Lnw is significantly larger between college graduates and non-college graduates. This is also consistent with Figure 12 and Figure 13, college graduates can get a non-agricultural job and higher income easiler. College education is worthwhile in view of economic return in personal respective.

Figure 16:



In Figure 16, grouped by whether obtained college Education or not. From the frequency, we know that in reality, college graduates are less than non-college graduates. The annual salary logrithm of the majority of college graduates falls closed to 11, and that of non-college graduates falls closed to 10, which is consistent with the result of Figure 10 that college graduates have a priority in employment market and high income.

Figure 17(on the right):

In Figure 17, median and quartile of Box-plot of the annual salary logrithm have significant difference, grouped whether obtained college education. The result is consistent with Figure 15 and Figure 16 that college graduates have a priority in employment market and high income.

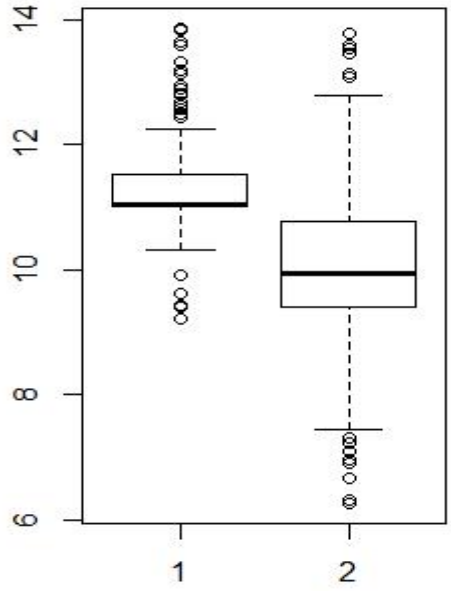


Figure 18:

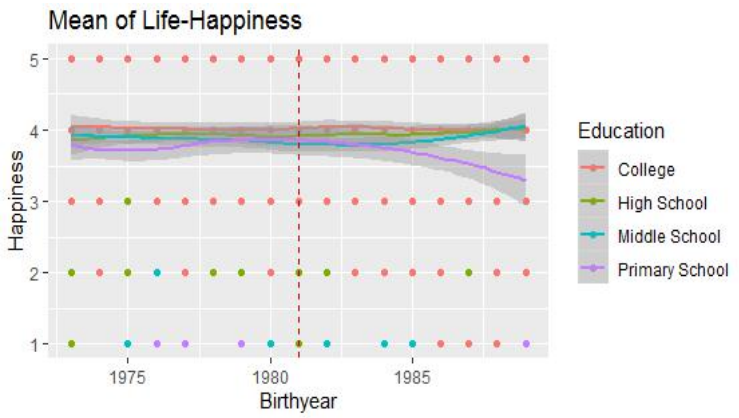
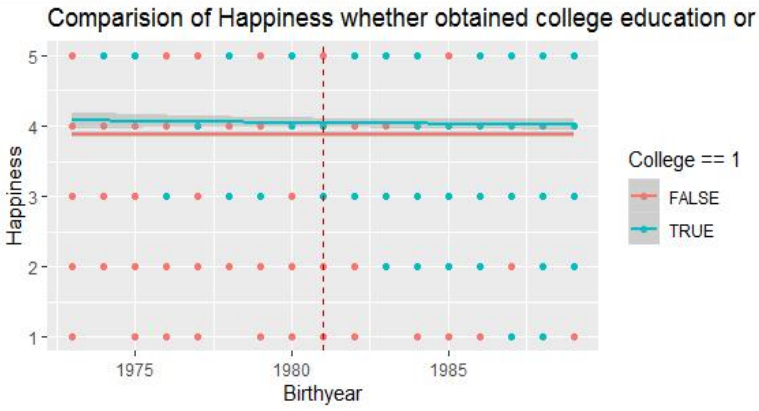


Figure 19:



In Figure 18, there is no significant difference in life-happiness with different education levels. In spiritual aspect, college education did not bring advantages. It may be the reason that people who have higher income and non-agricultural job have greater achievements in life but also have more pressure in their work.