Empirically Examining the Impact of Education on Subjective Well-Being through CGSS Data and ABM Policy Simulations

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Abstract. This article uses SPSS software to conduct WLS regression and path analysis on the 2015 CGSS data. The factors affecting Chinese residents' subjective well-being were empirically tested. It is found that education level has a positive effect on Chinese residents' happiness, and income level and sense of social class are mediating factors. Finally, combined with the results of the ABM policy simulation, recommendations are made for education reform in China.

Keywords: cgss data; educational attainment; subjective well-being; path analysis

1   Introduction

In recent years, with the rapid development of China's economy, more and more people have begun to pay attention to their life's wellness level and spiritual feelings. Happiness has gradually become one of the important indicators used to evaluate the quality of residents' lives. The Communist Party of China (CPC) has repeatedly mentioned keywords such as "working for the happiness of the Chinese people" and "achieving national prosperity and people's happiness" at its regular National People's Congress meetings.

Studies have acknowledged the influence of education on subjective well-being and concluded that there is a positive correlation between education and subjective well-being, in which there are both direct effects and indirect mediating factors such as income level, health status, and socioeconomic status.[1-7]China has always emphasized "providing education that satisfies the people", and it is of great theoretical and practical importance to explore in detail the mechanisms of education on residents' subjective well-being in China in the opening year of building a strong socialist modern state. There are more studies by Chinese scholars using China Social Survey (CGSS) data to quantify subjective well-being, but very few studies have explored the effect of education on subjective well-being.[8-12]. After analysis, it was found that the questionnaire setting of CGSS 2015 was more consistent with the theme of this study. We selected data from CGSS2015 to examine the mechanism of the effect of education on subjec-

tive well-being in China in 2015, expecting to provide an objective reference for the reform direction of China's education policy.

2   Research design

2.1   Theoretical framework

Drawing on Hu's analytical perspective, this paper argues that the mechanism of the effect of education level on happiness can be analyzed from two perspectives: direct effect and mediating effect (as shown in Figure 1). According to Schultz, "The productive component of schooling is an investment in intellectual skills that increases future earnings." The direct effect emphasizes the benefits of education, i.e., acquiring knowledge through education and thus positively influencing individuals' self-confidence, self-esteem, and happiness. The mediating effect emphasizes income level and self-perception of class, i.e., people who are well-educated are more likely to have higher income levels and be in a higher social class, and thus, education can positively influence happiness.
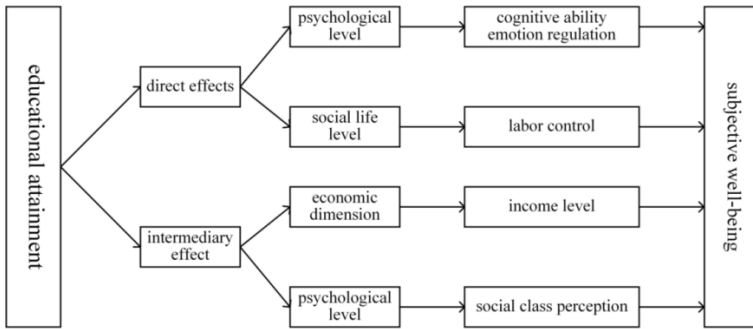

Fig. 1. The influence mechanism of subjective well-being.

2.2   Data

This paper selects the 2015 China General Social Survey (CGSS), which systematically and comprehensively collects data at multiple levels of society, community, family, and individual, and summarizes the trends of social changes, covering 28 provinces (autonomous regions and municipalities directly under the central government), with strong reliability and authority. In this paper, by screening and comparing the CGSS data of previous years, we found that the CGSS2015 section is about subjective well-being, setting the topic in line with the theme of this study, so we choose the data of 2015. the sample size of CGSS2015 is 10,968, and after data coding and eliminating missing values, the sample size obtained in 2015 is 8225.

2.3   Research model

To solve the heteroscedasticity problem, this paper chose weighted least squares regression (WLS), which means that the regression weighted variables were obtained using Stata software, The regression analysis was then completed using the weighted variables, to solve the heteroskedasticity of the residuals.

$$\frac{1}{\sigma}*Y= \frac{1}{\sigma}*\alpha + \frac{1}{\sigma}*b_1X_1 + \frac{1}{\sigma}*b_2X_2 +\cdots\cdots +\frac{1}{\sigma}*b_{10}X_{10} + \frac{1}{\sigma}*\varepsilon \tag{1}$$

In Eq. 1, Y is the dependent variable subjective well-being; X_1 is the independent variable education level; X_2 is the independent variable income level, taken as logarithm;X_3 is the mediating variable social class perception, and $X_4, X_5, X_6, X_7, X_8, X_9,$and $X_{10}$are the control variables age, age squared, gender, political status, marital status, health status, and household nature, respectively. Next $b_1, b_2, ..., b_{10}$ are the regression coefficients of the corresponding independent variables; α is the intercept, and ε is the random error.
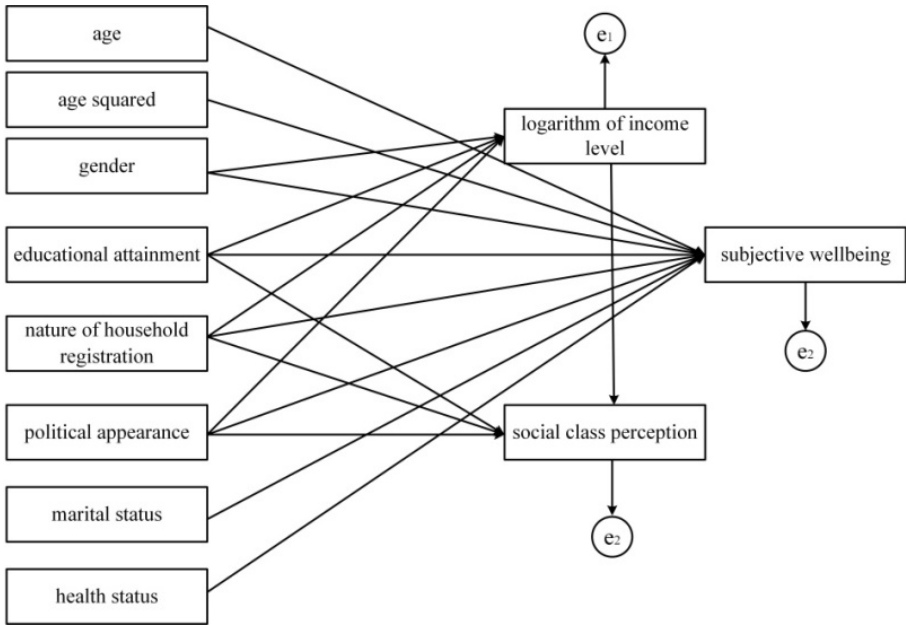

Fig. 2. Path analysis model

The path analysis model is recursive, i.e., a model in which all causal links of the model are one-way chain relationships, do not have feedback effects, and no correlation is assumed to exist between residuals.[11] Path analysis is used in structural equation modeling to estimate whether educational attainment has a mediating effect, whereby subjective well-being is affected through income level and social class perception. Path analysis is also used to test whether this mediating effect is significant.

3   Empirical test

3.1   Research results

In this paper, Table 1 is obtained by WLS regression. Model 1 in Table 1 is the education level model, Model 2 is the education level + income level model, and Model 3 is the education level + social class perception model.

Table 1. WLS regression analysis of factors influencing SWB (CGSS2015)

Variable	Model 1	Model 2	Model 3
Educational attainment	0.028***	0.015**	0.017**)
Logarithm of income level		0.046***	
Social class perception			0.146***
Constant			
R^2	0.068	0.071	0.092
Prob. > F	0	0	0
N	8225	8225	8225

Notes: *P < 0.1, **P < 0.05, and ***P < 0.01; robust standard errors are in parentheses.

3.2   Analysis of results

The results of the regression model and path analysis indicate that:

(1) According to the results of the ABM simulation, it can be seen that there are many factors affecting subjective well-being, such as education, income level, perceived social class, gender, nature of the household, marital status，and other factors. However, education level is its key factor, and income level and social class perception are important factors.

(2)Overall, as shown by the results presented in Table 1, educational attainment had a positive effect on residents' subjective well-being at the 1% significance level in 2015. In 2015, the subjective well-being of Chinese residents increased by an average of 0.028 units for each stage of educational attainment.

(3) After controlling for income level in Table 1, educational attainment still positively affects residents' subjective well-being significantly, but the positive effect of educational attainment in Model 2 is weakened (the regression coefficient decreases from 0.028 to 0.015). Based on the results of Figure 2, educational attainment shows a significant positive effect on Chinese residents' subjective well-being with a direct effect of 0.028. The indirect effect of educational attainment through income level on Chinese residents' subjective well-being is about 0.024 (0.665 × 0.036). It indicates that educational attainment can not only directly affect subjective well-being, but also indirectly affect subjective well-being through the mediating path of income level.

(4) In Table 1, after controlling for social class perceptions, educational attainment still positively affects residents' subjective well-being significantly, but the positive

effect of educational attainment in Model 3 is weakened (the regression coefficient decreases from 0.028 to 0.017). The indirect effect of educational attainment through social class perceptions on Chinese residents' subjective well-being in Figure 2 is about 0.024 (0.665×0.036). It indicates that educational attainment not only affects subjective well-being directly but also indirectly through the mediating path of social class perception.

4   Conclusion and advice

4.1   Conclusion

This study first conducted the ABM policy simulation and found that education level is a key factor affecting subjective well-being, and income level and perceived social class are important factors. Later, it further conducts WLS regression and path analysis on CGSS2015 data, focusing on exploring the role of education on happiness, and finds that the level of education still has a significant positive impact on Chinese residents' subjective happiness, with the level of income and perception of social class as its mediating factors.

4.2   Advice for Education Policy Reform in China

Although the "devaluation of diplomas" has caused a certain impact on the happiness-causing role of education, the happiness-causing role of education still exists, and the high-quality development of education is one of the most important ways to improve the happiness of Chinese residents, and China should unswervingly push forward the construction of a "Stronger Education Nation".

　　Now that China has built a moderately prosperous society, people are paying more and more attention to spiritual satisfaction and happiness. In the process of building a strong socialist modern country, China should pay more attention to the realization of the "spiritual function" and "cultural function" of education, so as to enhance the ideological level of the people and strengthen their cultural self-improvement and cultural self-confidence.

　　Although it is possible to achieve class crossing and promote social equity through education, the current gap between rich and poor in China is still large and the class divide still exists. The Chinese government should promote class integration, continuously deepen education reform, increase educational equity, improve the quality of education, and provide students with fair educational opportunities and quality and equal educational resources.

Acknowledgements

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