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Analysis on the Influence of Height on the Happiness of the Elderly

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Abstract: Previous studies have shown that higher heights can bring greater happiness for human being. Although most scholars agree that height will affect people's happiness through material factors such as higher income and a higher success rate in the mate selection market. Not all scholars believe that the influence of height on happiness can be explained by these material factors. This paper aims to study whether height will have a positive impact on happiness for the elderly when relevant material factors are diluted. The author uses CGSS data in 2017 to establish an OLS regression model and comes to the conclusion that height has a positive impact on the happiness of the elderly, and finds that this impact is more significant for men than for women. The author excluded the possibility that this effect was caused by the accumulation of material in the past by adding interactive regression to the model. At the end of the article, the author looks forward to further clarifying the mechanism behind this influence.

Keywords: height, happiness, the elderly, subjective well-being

1. Introduction

In the 21st century, subjective well-being is one of the research focuses of economists. Generally speaking, economists believe that the function composed of personal factors, economic factors, and social system conditions determines personal well-being [1]. And the specific mechanism still needs more research to explore.

As one of the basic attributes of the human body and appearance, height has a profound impact on all aspects of people's lives. Academic circles generally agree that even in modern society, where most people no longer need to rely on physical conditions to earn a living, height will still affect people in both psychological and material aspects. Existing research shows that higher height often means higher income [2], and has a higher success rate in the marriage market (especially for men) [3]. The influence of height on people's spiritual level, that is, "happiness", is more complex. Of course, when taller people have a higher income and are more likely to have a spouse, it can be predicted that taller people will have a stronger sense of happiness. However, there is controversy about whether the influence of height on happiness can be fully explained by material factors. Deaton et al. believe that this influence can be fully explained by higher income and higher education level [4], while Sohn's research shows that, at least for men, height still has a direct impact on happiness after discarding the intermediate material factors [5].

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The author will establish an OLS regression model based on the data of the China General Social Survey (CGSS) in 2017 to study the relationship between height and happiness for the elderly in China and test the robustness. Selecting the elderly, which is largely divorced from the needs of economic production and courtship, to study the relationship between height and happiness, this paper further explores the influencing factors of the happiness of the elderly, plays a great guiding role in exploring the influence mechanism of height on human subjective feelings, and has great practical significance and research value. At the same time, this is also a beneficial supplement to the subjective well-being theory in economics.

2. Research Assumptions

Research shows that in addition to health status, the happiness of the elderly will also be affected by social support and self-efficacy. That is, the surrounding social environment and their own psychology play an important role in the happiness of the elderly [6].

The author hypothesized that for the elderly, higher heights can still bring greater happiness.

The reasons are as follows:

a) Higher height will bring people some corresponding personality or spiritual traits, such as more self-confidence. Although these traits may have been formed in the past workplace and other environments, they will also be maintained in old age so as to make people with higher heights happier.

b) Based on the impression formed in the social cultural environment, people tend to think that tall people have more rational, persuasive and other positive characteristics, and this idea will enable tall people to obtain a more relaxed and pleasant social environment, thereby improving their sense of happiness [7]. Research on Chinese farmers has shown that the "relationship" as personal social capital has a significant positive impact on personal well-being [8]. This proves the possibility that height affects happiness by shaping the social environment.

According to the above research assumptions, the author uses micro survey data and the following empirical model to test:

$$Happiness_j = \beta \times height_j + \gamma \times ctrl_j + province_j + \varepsilon_j$$

For a certain person “j”, “Happiness” represents the happiness of the elderly. “height” represents the height of the respondents, and “Ctrl” is the control variable, including the health status of the elderly, per capita family income and other factors generally considered to have an impact on the happiness of the elderly; “province” is a province-fixed effect. By controlling the province where the elderly live, we can eliminate the influence of different cultures and concepts in different regions. “ε” represents random items.

3. Data, Samples, Variables, and Descriptive Statistics

3.1. Data and Samples

This paper adopts the data of the China General Social Survey (CGSS) in 2017. The survey collected data from 12582 individuals from 31 provincial-level administrative regions in China in the form of questionnaires. After screening the interviewees who were at least 60 years old at the time of interview and excluding the samples with serious missing key data, a total of 3814 samples remained.

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3.2. Definition of Core Variables

For the explained variable "happiness", it is obvious that human subjective feelings cannot be quantitatively measured by a set of commonly used standards. But for each individual, whether his personal experience is happy or unhappy, or where between the two can be described. Although everyone has different standards for happiness and the scale to measure it, when the sample size is large enough, researchers can qualitatively obtain relevant information through a large amount of data on "happiness".

In the CGSS questionnaire, there is a question that perfectly fits the requirements of the research, namely "In general, do you think your life is happy?" Through the answer to this question, the author is able to define the variable “happiness”. According to the interviewees' different answers, "very unhappy", "relatively unhappy", "not happy", "relatively happy", "very happy", were given values of 0, 1, 2, 3 and 4 respectively. In general, the greater the value, the happier the interviewee.

3.3. Selection of Control Variables

For the control variables, the author selected the sample's age, gender, health status, education, marital status, family size, per capita family income, and the province where the respondent is located. Among them, the per capita income of households is logarithmicized to make the data smoother.

3.4. Descriptive Statistics

Table 1: Descriptive statistics of main variables.

Variables	Variable definition	Mean value		
		Full sample	Male	Female
Height	Height in centimeters	162.1408	167.2576	157.0507
Gender	=0 if male; =1 if female	0.501311	/	/
Health Condition	0 to 4 points correspond to "very unhealthy" to "very healthy" respectively	2.069743	2.250789	1.889644
Age	/	69.1775	69.12198	69.23274
Per capita household income	processed with logarithm	8.23158	8.725919	7.739828
Family Situation	variable=0 if having no spouse; =1 if having a spouse	0.6990037	0.7607781	0.6375523
Education Background	variable=0 if primary school education or below; =1 if middle school education; =2 if university degree or above	0.5028841	0.5941115	0.4121339
Family size	Current number of people living together at home	2.438909	2.497371	2.380753
Province	Set different values for each province to exclude regional factors	/	/	/

The descriptive statistics of the main variables are shown in the figure. It can be found that the average values of all variables are more in line with the truth. The difference between men and women is also within the acceptable error range, or can be explained by common sense. For example, the lower proportion of men living alone than women can be explained by the higher average life expectancy of Chinese women and the fact that men are generally older than women in marriage. These two factors lead to more widowed women than men in old age.

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4. Empirical Results

4.1. Regression Results and Heterogeneity Analysis

It can be found that β is significantly positive. The coefficient of height is 0.0149883, which is significant at the level of 1%. This means that, on average, when there are five levels of happiness, an increase of 10 cm in height can lead to a 0.15 level of happiness increase. The coefficients of other variables are also within a reasonable and interpretable range. For example, the effect of health on happiness is positive and significant, which is obviously in line with common sense. This confirms the conclusion that height has a positive impact on the happiness of the elderly.

Further analyzing the samples into men and women, we can find that whether for men or women, the influence of height on happiness is still significant. An increase of 10 cm in height can lead to a 0.20 or 0.07 level of happiness increase for males or females elderly, respectively. The influence of height on men's happiness is about three times that of women. This result is also consistent with the conclusion obtained in the study of all age groups.

Table 2: Regression results.

Variables	regression coefficient		
	All samples	male	female
Height	0.0149883**	0.0195188*	0.0066307**
Gender	0.1390954	/	/
Health Condition	0.0254756*	0.0094398	0.2586392***
Age	0.008915	0.0080572	0.0105408
Per capita household	0.0338111***	0.026942**	0.0276982***
Family Situation	0.1032552	-0.0041963	0.1788185
Education Background	0.2339651	0.3058947	0.1078839**
Family size	-0.0045763	-0.0047971	-0.0042573
Province	/	/	/

4.2. Machnism of Influence

In recent years, economists have become more and more interested in the measurement of self-happiness [9]. It is clear that when a person thinks he is happy or unhappy, the reasons behind the influence are diverse. Therefore, his measurement of his own happiness can also be disassembled.

Miret and others believe that happiness can be disassembled into evaluative well-being and experienced well-being. The former is people's overall evaluation of their own living conditions, which is reflected in life satisfaction; the latter is the emotion that people experience, which is a more subjective feeling [10].

In order to explore whether the influence of height on happiness is more from the former or the latter, the author adjusted the model.

In the questionnaire, there is a question "are you satisfied with your life?". Its answer also corresponds to five levels from low to high. The author uses them to represent the elderly's satisfaction with life.

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The author uses satisfaction to replace the explanatory variable happiness in the model, and carries out regression again. The regression coefficient obtained is a very weak negative number, -0.0043371, and is not statistically significant.

Therefore, it can be concluded that although older people who are taller are happier on average, they are not more satisfied with their lives. In other words, although higher people do not have a higher evaluation of their material life, they feel more positive emotions and therefore feel happier.

4.3. Robustness Test

Since there is basically no logic that features "happiness significantly affects height", there is a low demand for the robustness test excluding endogenous.

However, it is still necessary to rule out the possibility that other factors rather than height itself have an impact on happiness.

Although most elderly people no longer earn income through their own labor, their past income will still be reflected in real estate or savings, which will have an impact on their happiness. And higher heights in the past brought higher income, which can still play a role after they enter old age through this mechanism. In this case, it is not height itself that affects the happiness of the elderly, but the different material conditions caused by height in the past that affected the happiness of the elderly.

Table 3: Robust test.

	Original model	Add interactive item
Height	0.0149883**	0.014924**
Number of houses owned by the family	/	-0.0117286
ineractive item	/	0.000051

Select "the number of houses owned by families" to represent this material accumulation. After statistics, it is found that height has a positive correlation of 0.0091, which proves that high height does mean more material accumulation from the pre-aging period. Then, the interaction items and the number of houses themselves are added to the model, and the results are shown in table 3. It can be found that the coefficient of height has hardly changed, and the effect is still significant, while the newly added items have little effect.

5. Conclusion

Therefore, it can be considered that height has a direct positive impact on the happiness of the elderly, and this impact is more significant for men than women. And this influence is realized through more positive emotions than through higher satisfaction with their own lives.

The author believes that this paper has positive significance for academic research in the following aspects:1). The research on the elderly provides a strong argument for the view that "the influence of height on happiness is not only realized through material conditions". 2). It has important reference significance for the research in the field of subjective well-being in economics, which shows that height, as a personal factor, plays a role not only through the economic factor. 3). It shows that in the process of height affecting happiness, positive emotions unrelated to life satisfaction have an important impact.

However, this paper has not been able to clarify the psychological or social factors through which this impact is achieved, nor the reasons for the more significant impact on men. In the future possible research, the author believes that this is a feasible research direction. Specifically, it can be achieved by looking for appropriate tool variables and adding interactive terms for regression.

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