Research on The Influencing Factors of Labor Participation of Urban Elderly Based on CHARLS Data

Weiwei Kong[1a], Yiying Chen[1, *]

[1]*Harbin University of Commerce, School of Finance and Public Administration, Harbin, Heilongjiang, China*
[a]*e-mail: kww119@sina.com*
[*]*Corresponding author: 1810997615@qq.com*

ABSTRACT

With the deepening of my country's population aging, the labor market supply has gradually declined, and the social burden has increased. In this case, it is particularly important to discuss the labor participation of the urban elderly. In this regard, by sorting out the survey data of CHARLS in 2018, a logistic model was constructed to analyze the influencing factors of labor participation of the urban elderly. The study found that the gender, age, education level, health status, and grandparents raising grandchildren of the urban elderly all have a significant impact on the labor participation of the urban elderly. According to the conclusion of the study, the article puts forward relevant suggestions on improving the physical quality of the elderly, improving the labor rights protection system of the elderly, and improving the enthusiasm of the elderly to participate in labor.

Keywords: population aging, labor supply, old age

1. INTRODUCTION

In recent years, China's working-age population has decreased, the number of elderly people has increased, and the demographic dividend has been declining. According to data from the seventh national census, the proportion of China's population aged 65 and above in 2020 will be 13.50%, an increase of 4.63 percentage points from 2010. As the age structure of the population changes, China's labor market has been hit to a certain extent. Relevant research shows that potential labor supply and real labor supply decrease by about 2% with every 1% deepening of population aging [4]. Population aging will have a certain impact on the quantity and quality of labor supply [11]. On the one hand, the gradual increase in the number of elderly people makes the labor market insufficient. On the other hand, due to the increasing number of elderly people, the social pension expenditure is increasing, and the medical expenditure is also increasing, which increases the social burden, and relevant studies have proved that aging has a negative effect on residents' consumption [5]. In this case, it is particularly important to study the labor participation of the elderly, and the labor participation of the urban elderly is an important part of the labor participation of the elderly. Therefore, it is of great significance to discuss the labor participation of the urban elderly. Under the circumstance that the physical and mental health of the urban elderly is guaranteed, if the elderly can re-enter the labor market after retirement, it can not only alleviate the labor shortage but also help to achieve active aging. Studying the influencing factors of labor participation of the urban elderly has important practical significance for promoting labor participation of the elderly.

2. LITERATURE REVIEW

Under the background of population aging, many scholars have carried out research on the factors affecting the labor participation of the elderly. Based on the data of CGSS in 2015, Chinese scholar Hong Zhengjie used the prohibit model to analyze the influence of economic factors on the reemployment intention of the elderly. The research shows that the basic pension insurance has a significant negative impact on the willingness of the elderly to re-employment [3]. Scholar Wang Wei used the samples of young elderly in the CGSS data in 2015, classified the samples according to urban and rural areas, and used logit model regression to find that age, gender and health level affect the willingness of the elderly to work. At the same time, under the choice of different household registration, whether to participate in social

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security and the number of children in the family have different influences on whether the young elderly are employed [9]. Using the data of CLDS in 2019, scholar Sun Yu used the Heckman two-stage model to explore the labor and employment choice behavior and influencing factors by constructing the simultaneous equation of labor employment behavior selection and income acquisition of rural elderly groups. It is found that education level is no longer the key factor that affects rural elderly people's participation in employment choice, but individual factors such as age, health, work experience, and family factors such as housework time, family agricultural production and family members' retirement income have a more significant impact on them [8]. Scholar Li Xiaoning used the data of CGSS in 2015 to investigate the impact of personal characteristics, human capital, and economic factors on the employment choices of the elderly. The study found that gender, age, health, household registration, number of children and human capital have a significant impact on their employment choices [7]. The scholars Dong Feng and Zhou Aojia built an evaluation model of the influencing factors of the employment intention of the young elderly, conducted a practical proof analysis of the survey data reflected in the questionnaire, and used the Logistic regression analysis technology to conduct an in-depth exploration of the influencing factors of the employment intention of the young elderly. The study found that: in the dimension of personality characteristics, the age, health status and marital status of the young elderly have a significant impact on the employment intention of the young elderly. In the dimension of economic status, the elderly with less retirement pension and more unstable financial situation have stronger reemployment willingness [2]. Through the study of the existing literature, it can be found that scholars attach great importance to the development of human resources for the elderly, and have carried out a series of studies on the factors affecting the employment intention of the elderly. Scholars' research on the factors affecting the employment of the elderly can be roughly divided into individual factors, family factors and economic factors.

3. EMPIRICAL ANALYSIS OF FACTORS INFLUENCING LABOR PARTICIPATION OF URBAN ELDERLY

3.1 Data sources and descriptive statistical analysis

This paper uses data from CHARLS for analysis. CHARLS is a set of high-quality microdata representing families and individuals of middle-aged and elderly people aged 45 and above in China. The CHARLS National Baseline Survey was launched in 2011, covering 150 county-level units, 450 village-level units, and about 17,000 people in 10,000 households. These samples will then be tracked every two to three years, and the data will be rolled out to academia a year after the survey ends. This paper uses the survey data of the China Health and Pensions Tracking Survey in 2018. The data is processed according to the research content of this paper, and finally 3010 valid questionnaire data of urban elderly are obtained.

Labor participation is the dependent variable of this paper, "1" means that the urban elderly participated in the labor, "0" means that the urban elderly did not participate in labor, and the labor variable is constructed according to the labor participation. In the data used, there are 1419 male elderly people and 1591 female elderly people, and the number of female elderly people is more than that of male elderly people. The gender variable is constructed according to gender, with "1" for male elderly and "0" for female elderly. The educational level of the urban elderly is divided into 11 grades, from 1 to 11 represents the continuous improvement of the educational level of the elderly. The health status of the urban elderly is divided into five levels, from 1 to 5, representing the gradual decline of the physical health of the elderly. Nowadays, a large number of young people do not have time to take care of their children due to work or other reasons, while the elderly take care of their grandchildren. Since the elderly taking care of their grandchildren has an impact on whether the elderly participate in labor in the labor market, the Tg variable is constructed. "1" means the elderly take care of their grandchildren, "0" means the elderly do not need to take care of their grandchildren.

Table 1 Description of variables

Variable name	Assign
Labor	Yes=1 No=0
Age	
Gender	Male=1 Female=0

Education	Uneducated (illiterate) = 1 Not completed primary school = 2 Private school graduation = 3 Elementary school graduation = 4 Junior high school graduation = 5 High school graduation = 6 Graduated from technical secondary school = 7 Graduated from college = 8 Bachelor's degree = 9 Master's degree = 10 PhD graduate = 11
Health	Very good = 1 Good = 2 Fair=3 Bad=4 Very bad = 5
Tg	Provide grandchild care = 1 No grandchild care provided = 0

According to Table 2, it can be seen that the average value of labor participation is 0.414. Among the 3010 valid data, a total of 1763 urban seniors did not participate in labor, and 1247 urban seniors participated in labor. It can be seen that most urban seniors chose not to participate in labor. The average age of the urban elderly is 66 years old, and the education level is relatively low. The average education level is 4.627, indicating that most of the elderly have a degree between primary school graduation and junior high school graduation. The average health status of the elderly is 2.8, indicating that most elderly people consider their health status to be average. The average value of Tg is 0.395, indicating that the number of urban elderly people who do not need to take care of their own grandchildren is more than the number of elderly people who take care of their own grandchildren.

Table 2 Descriptive Statistical Results Analysis

variable	average value	standard deviation	Minimum	Maximum value
labor	.414	.493	0	1
age	65.636	10.388	40	99
gender	.471	.499	0	1
education	4.627	1.972	1	10
health	2.8	.997	1	5
Tg	.395	.489	0	1

3.2 Model Settings

In the research on the influencing factors of labor participation of the urban elderly, the dependent variable is "whether to participate in labor", and its values are only two possibilities of "with labor participation" and "without labor participation", and the corresponding variable is defined as "1" and "0". Therefore, it conforms to the research hypothesis of the logistic regression model. A logistic model was established to analyze the influencing factors of labor participation of the urban elderly:

$$Logistic(p)=Ln[p/(1-p)]=a+\sum\beta_i X_i+\varepsilon$$

Let p be the probability that the urban elderly participate in labor, then 1-p is the probability that the urban elderly do not participate in labor, the model defines the independent variable X, and Xi represents the various factors that affect the labor participation of the urban elderly, the size of the coefficient β_i indicates the degree of influence of a certain factor on the labor participation of the urban elderly. ε is a random disturbance term.

3.3 Analysis of Influencing Factors

The logistic regression results of the factors affecting the labor participation of the urban elderly are shown in Table 3. According to the regression results, it can be seen that gender and age have a significant impact on the labor participation of the urban elderly. The willingness to participate in the labor force of the urban elderly gradually declines with increasing age. The health status from 1 to 5 indicates that the physical health of the urban elderly gradually declines. The analysis results show that the labor participation of the elderly gradually decreases with the decline of the physical health of the urban elderly. According to previous studies, education has a significant positive causal effect on health [6]. From the analysis of the binomial logistic regression results of the factors affecting the labor participation of the urban elderly, it can be seen that the level of education significantly affects the willingness of the elderly to participate in labor. At the same time, education level also indirectly affects the labor participation of the urban elderly by affecting their health. There is a significant negative impact between Tg and labor participation of the urban elderly. Some older people are less willing to work in the labor market because they need to take care of their grandchildren. However, the elderly return to the family from the labor market to take care of their grandchildren, which is essentially a kind of labor. Scholars Cao Pu and Yao Huiqin pointed out that most of the family labor of the elderly is unpaid or low-paid labor, but this cannot hide the value created by family labor. Under the conditions of a market economy, its value should be equal to the value of homogeneous household service commodities on the market [1].

Table 3 Binomial Logistic Regression Analysis of Factors Influencing Labor Participation of Urban Elderly

labor	Coef.	p-value	Sig
gender	1.121	0.00	***
age	-.146	0.00	***
education	-.088	.001	***
health	-.191	0.00	***
Tg	-.412	0.00	***
Constant	9.61	0.00	***

Note: *, **, *** indicate significant at the 10%, 5%, and 1% levels, respectively.

4. CONCLUSION AND SUGGESTION

The aging of the population age structure, especially the aging of the working-age population, has a negative impact on the labor force participation rate [10]. Population aging poses a challenge to China's labor market. The increasing number of elderly people gradually reduces the labor supply in the labor market, limiting economic development to a certain extent. With the continuous improvement of China's infrastructure, the development of education and medical services is getting better and better, and the ability of the elderly to participate in labor has been continuously improved. According to the seventh national census, 36.69 million people aged 60 and above have a high school education or above, an increase of 20.85 million over 2010. In recent years, China has vigorously developed medical services, focusing on people's health, and people's average life expectancy has gradually increased. In 2000, my country's average life expectancy was 71.40 years, and in 2015 it increased to 76.34 years. As the health of the elderly gets better and better, the ability of the elderly to participate in labor in the labor market continues to increase. With the gradual improvement of the labor participation ability of the elderly, the elderly have the ability to continue to engage in corresponding work. The total number of older people in China is large, and the elderly who have the ability to participate in labor continue to participate in social labor, which can effectively alleviate the pressure of the labor shortage. According to the above analysis of several influencing factors on the labor participation of the urban elderly, the article puts forward some suggestions and countermeasures on how to promote the labor participation of the urban elderly from different aspects.

First, improve the physical fitness of the elderly. According to the above analysis, the labor participation of the elderly gradually decreases with the decline of their physical health of the elderly. Good health status can improve the ability of the elderly to participate in labor, thereby increasing their willingness of the elderly to participate in labor. It is very important for the elderly to have a good health status. Therefore, we should improve

the construction of medical and health services, increase expenditure on public health services, allocate medical resources scientifically and rationally, and improve the health of the elderly. At the same time, regular physical examinations are carried out for the elderly to prevent physical diseases, encourage the elderly to exercise properly, and improve their physical condition of the elderly, so as to increase the willingness of the urban elderly to participate in labor, and appropriately increase the labor supply of the elderly.

Second, the state should further improve the labor rights protection system for the elderly. The relevant rights and interests of the labor participation of the elderly need to be guaranteed by the system. On the one hand, the legal provisions should clarify the rights and interests of the elderly in the process of labor participation, such as pension and medical care, so that the legitimate rights and interests of elderly workers can be fully guaranteed while participating in labor. On the other hand, appropriate preferential treatment should be given to elderly workers, and corresponding clauses can be formulated for the elderly in terms of working hours and wages to protect the legitimate rights and interests of elderly workers.

Third, improve the enthusiasm of the elderly to participate in labor. The elderly will withdraw from the labor market after reaching the statutory retirement age. However, some elderly people are in good health and have accumulated a lot of skills and experience in their work. The elderly are still suitable for some complex labor that is mainly technology-intensive and experience-intensive. Therefore, the elderly can re-enter the labor market through re-employment from the original unit, and the elderly will be more motivated to participate in labor by engaging in familiar jobs. At the same time, because the elderly have a single way to find work, most elderly people can only find work by entrusting relatives and friends, and it is relatively difficult to find work through other channels. Enterprises are more willing to recruit young people, while the elderly have fewer employment opportunities, and it is more difficult to find a job, which limits the labor participation of urban elderly. In this case, the government can provide appropriate subsidy policies to enterprises that recruit the elderly, encourage enterprises to recruit elderly workers, ease the difficulty of finding jobs for the elderly, diversify the labor participation paths of the elderly, and further improve the labor participation of the elderly positivity.

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