Proceedings of ICFTBA 2025 Symposium: Strategic Human Capital Management in the Era of AI
DOI: 10.54254/2754-1169/2025.LD28409

The Impact of the Delayed Retirement Pilot Policy in Jiangsu on the Employment Rate of the Middle-aged and Youth Population

Wuhao Wang[1*], Aimee S. Zhang[2†], Mohan Wang[3†], Chenxi Cui[4]

[1]*Research School of Economics, Australian National University, Canberra, Australia*
[2]*Vancouver School of Economics, University of British Columbia, Vancouver, Canada*
[3]*Department of Asian American Study, University of California, Los Angeles, USA*
[4]*Department of Economics, Shandong University of Finance and Economics, Jinan, China*
[†]*These authors contributed equally to this work and should be considered as co-second author.*
**Corresponding Author. Email: u7597913@anu.edu.au*

Abstract. China's rapidly aging population has placed an unprecedent strain on the labor market and pension system. This paper empirically investigates the causal effects of a delayed retirement policy implemented in early 2022 on the labor market for youth and middle-age worker. Using county-level panel data of Jiangsu province in China from 2018 to 2024 for Jiangsu province, the treatment group, and Zhejiang province, the control group, we discover obvious policy trade-offs. We find that within three years of implementation, middle-aged employment rate in Jiangsu province increased, while youth employment rate decreased. The positive effects on the middle-age were stronger in cities with higher aging rates and heavy industry experience. Whereas for youth, unemployment effects were concentrated in sectors of low-turnover. In addition to this result, were discovered that firm's retention of middle-aged workers was reinforced rather than being reduced, causing a set of trade-offs. These results provide policy implications to contribute to the stability and development of the entire labour market.

Keywords: Delayed retirement, Labour market outcomes, Intergenerational employment tension, Difference-in-differences, Jiangsu pilot policy

1. Introduction

Retirement policy reforms remain a contentious issue today. There has been an abundant number of literatures that emphasizes extending retirement age can stabilize labour market structure and pension systems, which focuses on improving welfare in aging societies. Furthermore, studies shows that delayed retirement may influence a firm's survival by levelling intergenerational employment [1,2]. For this reason, governments have attached great importance to delayed retirement policies, implementing more flexible policies to encourage workers near retirement to remain in the labor force.

However, there is no consensus on whether delaying retirement age mitigates or aggravates employment competition. Simulated analyses and general economic models show raising the retirement age can create jobs by reducing payroll costs [3,4]. In contrast, other labor search and matching models reveal that extending career time may crowd out younger cohorts through substitution and promotional actions [5,6]. While in other countries, delayed retirement raises older worker participation, but no unified result was identified for youth employment and long term development [7,8]. In addition, debate within China circulates around the policy's possible effects of "job creation" or "job occupation", with some scholars suggesting that reducing payroll costs can increase the open opportunities numbers for younger workers [9]. Under this backdrop, empirical research is necessary for China's demographic transformation.

DOI: 10.54254/2754-1169/2025.LD28409

In recent years, by the end of 2022, the population in China of people aged 60 and over exceeded 280 million, weighing 19.8% of the total population. Compared to all other 34 provincial-level divisions, Jiangsu Province faces particularly sever aging pressures (see appendix National Bureau of Statistics, 2023). Therefore, Jiangsu province became the first province to implement a delayed retirement pilot policy in March 2022. This permits insured workers a choice to extend employment beyond previous statutory retirement age. This policy provides a unique and real setting to examine the effects of delayed retirement under China's labor market and societal conditions.

In this paper, we empirically investigate the impact of Jiangsu's delayed retirement pilot policy on the employment outcomes of the middle-aged and youth population in the workforce. Using county level panel data covering Jiangsu Province, the treatment groups, and Zhejiang Province, our control group. This data set spans seven years from 2018 to 2024, being able to measure the before and afters of the implementation. We apply a difference-in-differences (with a 2 way fixed effect) method that includes county and year fixed effects, controlling for: GDP per capital, fixed asset investment, urban outwardness, CPI, aging rate, and minimum wage. According to our results, we find heterogeneous effects, where the middle-aged employment rate increased by 0.19%, suggesting that firms are retaining experienced or older workers. By contrast, the results reveal that youth employment decreased by 1.16% signifying a crowding out effect in sectors of lower turnovers.

We contribute to the literature in several ways. First, this study will provide the first causal evaluation of Jiangsu Province's delayed retirement pilot policy using real measured county level data. This addresses gaps where previous researchers heavily relied on simulation or general economic models, rather than using causal results [3,10]. Second, it identifies retention effects on the middle-age workers, and displacement effects for the youth, highlighting an intergenerational heterogeneity [9]. Third, regarding the concerns about long-run consequences for development in fertility, growth, and demographic balance [6] and missing knowledge on welfare implication in China [1], it highlights trade-offs between the sustainability of China's pension system and fairness in employment. Finally, it situates China's pilot reform within a broader perspective, offering insight for comparative policy studies across nations undergoing aging economies [2,7,8].

The remainder of the paper is organized as follows. Section 2 outlines the policy background and evolution in Jiangsu. Section 3 introduces the data, empirical strategy, and hypothesis. Sections 4 presents descriptive evidence and regression results. Section 5 focuses on discussion and conclusion.

2. Background

2.1. Policy background

Population aging is a significant social trend in the 21st century globally, and China is experiencing the largest and fastest aging process in the world. According to data from the National Bureau of Statistics, by the end of 2022, the population aged 60 and above in China has exceeded 280 million, accounting for 19.8% of the total population, among which the population aged 65 and above accounts for 14.9% of the total population, indicating that China has officially entered a deeply aging society (see appendix National Bureau of Statistics). Within this wider context, Jiangsu Province, as one of China's most economically developped and populous provinces, is facing a particularly severe aging situation. Data from the seventh national population census shows that the proportion of the population aged 65 and above in Jiangsu Province has reached as high as 16.2%, far exceeding the national average level. The pressure on pension payments is continuously increasing, and the proportion of the labor force is declining year by year, posing a severe challenge to the sustainable economic and social development (see appendix Jiangsu Provincial Bureau of Statistics).

DOI: 10.54254/2754-1169/2025.LD28409

2.2. Policy evolution

In response to the national strategy of actively addressing with the aging population and to relieve the long-term balance pressure on the pension system, as well as to fully exploit human resources, the "14th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the Long-Range Objectives for 2035" issued by the Central Committee of the Communist Party of China in March 2021 clearly put forward that "the statutory retirement age will be gradually delayed in accordance with the principles of small-step adjustment, flexible implementation, categorized advancement, and overall coordination." This has laid the general tone and direction for the national-level reform of delayed retirement. However, as a major social policy involving the vital interests of hundreds of millions of people, the introduction of specific and unified implementation details at the national level still takes time and urgently needs local exploration and research to provide practical evidence.

Building on the national strategy, Jiangsu Province, as an economic powerhouse in the Yangtze River Delta region and a "pioneer area" of aging, has a prospective and typical response and practical exploration in terms of policy. On the one hand, Jiangsu Province has a relatively complete social security system and a high level of economic and social development, which provides the conditions for pilot implementation. On the other hand, the increasing aging pressure also makes policy reform more urgent. Since 2018, the human resources and social security departments of Jiangsu Province have begun indepth research on the delayed retirement policy and widely solicited opinions from all sectors of society. In 2020, the Jiangsu Provincial Government issued the "Opinions on Further Strengthening the Work of the Aging Population," which clearly put forward the need to "formulate specific implementation plans for the gradual delay of the retirement age." In 2022, Jiangsu Province officially implemented a delayed retirement policy. According to the "Implementation Measures for Enterprise Employees' Basic Old-Age Insurance in Jiangsu Province" issued by the Jiangsu Provincial Department of Human Resources and Social Security, starting from March 1, 2022, insured individuals may postpone their retirement, provided that they submit an application, obtain the consent of their employer, and file with the human resources and social security administrative department. The postponed retirement period shall not be less than one year.

The specific retirement ages are as follows: 60 years old for men, 55 years old for female cadres, 50 years old for female workers, and 55 years old for female flexible employment in text citation. In addition, there are special provisions for certain situations. For example, female workers who have worked in management and technical positions for at least five years and are still in such positions after the age of 45 may follow the retirement age for female cadres (this policy will be referred to as the Delayed retirement policy in following sections).

This policy reflects respect for individual preferences, allowing eligible individuals to choose whether to delay retirement based on their own circumstances.

2.3. Policy implementation effects

The implementation of the delayed retirement policy in Jiangsu Province has achieved preliminary results. On one hand, the delay in retirement has increased the labor supply and alleviated the supply and demand contradictions in the labor market. On the other hand, delayed retirement has also provided support for the sustainable development of the pension insurance fund. However, during the implementation process, the policy also faces some challenges, such as the relatively low acceptance of delayed retirement by some employees and employment pressure in some industries and positions.

2.4. Policy and research relevance

Building on the policy background and evolution, this study focuses on the reality of Jiangsu Province's deeply aging population, the implementation effects of the delayed retirement policy, and its impact on the labor market. At the critical juncture of the impending rollout of the national delayed retirement policy framework, it analyzes the problems and challenges encountered during policy implementation and proposes

DOI: 10.54254/2754-1169/2025.LD28409

recommendations for further optimization. The policy background provides an important theoretical foundation and practical basis for this research, particularly in terms of policy objectives, implementation pathways, and impact assessment. The findings will help bridge the research gap between macro-level policies and micro-level perceptions, offering empirical evidence and policy references for Jiangsu Province to formulate more flexible, humanized, and widely accepted implementation details in the future. Additionally, it serves as a valuable case study for other provinces facing similar challenges of an aging population.

3. Data

To assess the effectiveness of Jiangsu's delayed retirement pilot program, the study evaluates the employment rate of young and middle-aged workers. To achieve this goal, multiple datasets from official statistical agencies and reputable databases were used. This analysis takes Jiangsu Province as the treatment group and Zhejiang Province as the control group, with a time span from 2018 to 2024. This period includes pre-policy years (2018-2021) and post policy years (2022-2024), which allows for the use of a difference-in-differences (DID) framework for causal testing.

3.1. Jiangsu province data (treatment group)

Jiangsu officially launched a pilot policy for delayed retirement in 2022. The collected data includes all of Jiangsu Province's 96 county-level administrative regions from 2018 to 2024, which spans the pre-policy years of 2018 to 2021, and the post-policy years of 2022 to 2024. The dataset includes key variables, such as the employment rate of the middle-aged (45-60 years old) and young (20-44 years old) population, per capita GDP, CPI, aging rate (the proportion of the population over 60 years old), growth of fixed assets investment, export dependence (the proportion of exports in GDP), and local minimum wage. These control measures capture the macroeconomic, demographic, and structural differences between counties.

The main source of data in Jiangsu is the Jiangsu Provincial Bureau of Statistics (https://tj.jiangsu.gov.cn/). This government website provides annual, quarterly, and monthly statistical data on the provincial economy, population statistics, and labor market. We also used the National Bureau of Statistics (NBS) (https://data.stats.gov.cn/). This ensures consistency and comparability with other regions in China. Both institutions collect data through comprehensive population censuses, stratified sampling surveys, and administrative records under strict legal frameworks. They provide authoritative data about Jiangsu Province's delayed retirement policy. In addition to government sources, this study also drew on EPS China data (http://www.epsnet.com.cn/), one of the leading data service providers in China. EPS integrates over 70 databases and provides national, regional, and departmental datasets. EPS has over 150 software copyrights and patents, providing reliable data services for academia, government, and industry. Its regional research platform allows for obtaining county-level insights, which is particularly valuable for capturing the dynamics of Jiangsu's labor market. CEIC data further supplements the dataset (https://www.ceicdata.com/). This database is a globally recognized database that provides macroeconomic and financial data for over 200 countries. CEIC is widely used by international financial institutions, asset management companies, and academic researchers. Its timeliness, accessibility, and standardized structure enable Jiangsu's employment dynamics to be integrated with broader national and international trends. Together, these sources ensure that the Jiangsu dataset is comprehensive, credible, and suitable for rigorous econometric analysis.

3.2. Zhejiang province data (control group)

Due to its geographical and economic similarities with Jiangsu Province, Zhejiang province was selected as the control group. Both Jiangsu and Zhejiang provinces are located in the Yangtze River Delta region, with comparable levels of economic development, urbanization, and population structure. For example, before the policy was introduced, the GDP per capita of these two provinces was almost the same in 2018, Jiangsu recorded 110 thousand RMB per person, while Zhejiang showed 93.2 thousand RMB per person. The data

DOI: 10.54254/2754-1169/2025.LD28409

for all 90 county-level regions in Zhejiang Province were collected during the same period (2018-2024), including the same variables as in Jiangsu. The data source is consistent with the data source used in Jiangsu, ensuring consistency and comparability.

The Zhejiang dataset covers 90 county-level administrative regions and annual observations were conducted from 2018 to 2024. The same variables used in Jiangsu:employment rate, GDP per capita, CPI, aging rate, fixed assets investment, export dependence, and minimum wage, are also included in Zhejiang. This parallel structure ensures comparability between the treatment group and the control group. The data for Zhejiang Province comes from the National Bureau of Statistics, EPS China Data, CEIC Data, and Provincial Statistical Yearbook. Similar as in Jiangsu Province, these data are summarized annually at the county level to ensure consistency in panel structure.

These sources provide a reliable foundation for implementing the DID methodology.

3.3. Data usage

A comprehensive dataset can be used for differential analysis to compare the changes in employment rates between Jiangsu (treatment group) and Zhejiang (control group) before and after 2022. By controlling for macroeconomic and demographic variables, this study separated the causal relationship of delayed retirement reform. This empirical strategy is particularly applicable because the economic trajectories of these two provinces are similar, but only Jiangsu has experienced policy shocks.

In addition to causal analysis, these data can also be used for mechanism testing. For example, the retention effect of human capital among middle-aged workers and the crowding out effect on youth employment can be evaluated by examining specific sectors and population subgroups. Therefore, this dataset not only measures policy outcomes, but also provides insights into potential mechanisms.

Hypothesis:

Based on the data and analytical framework, it can be hypothesized that the implementation of the delayed retirement pilot policy in Jiangsu may lead to a decrease in the employment rate of middle-aged population (45-60 years old). Since middle-aged workers have similar experience to elder workers, the reason for this negative impact is that a portion of the labor demand is absorbed by elderly workers who remain in the labor market. Companies with limited job vacancies may reduce the recruitment of middle-aged employees, thereby intensify competition and delaying career development. This 'crowding-out effect' limits opportunities for middle-aged people, especially in industries with low turnover rates. Secondly, it can be hypothesized that the delayed retirement pilot policy may decrease the employment rate of younger workers (20–44 years old). The policy may encourage older workers to maintain their positions for a longer period than before. Because there is a limited number of jobs in the labor market, it may reduce job opportunities for new incoming workers. In this case, it would post challenges to younger workers' employment rate.

4. Empirical results

4.1. Descriptive statistics

Table 1 to 4 report the statistical summary of two provinces before and after policy implementation. In Jiangsu province, the mean of employment rate for both middle-aged population group and youth group showed a slight increase, the standard deviation of these two groups is between 3 to 5, which indicates relatively small disparities among different counties in Jiangsu province. The GDP per capita increased from 12.35 to 14.94, showing improvements in living standards. Nevertheless, the standard deviation increases from 6.03 to 7.17, displaying larger difference between different counties. The mean and standard deviation of urban outwardness is nearly unchanged, while the standard deviation between different counties is around 13.8 to 13.9, this phenomenon is well fitted with the relatively large industry discrepancies among different counties. The mean of aging rate increases from 18.72 to 19.67, indicating the problem of aging is gradually becoming apparent.

DOI: 10.54254/2754-1169/2025.LD28409

For Zhejiang province, the mean of employment rate for both middle-aged population group and youth group also had a slight increase, and the standard deviation of these two groups are like Jiangsu province. The mean and standard deviation of GDP per capita also increased. However, the lower standard deviation of GDP per capita for Zhejiang province shows the balanced development of Zhejiang province compared to Jiangsu province. Also, Zhejiang province indicated higher urban outwardness and lower minimum wage than Jiangsu province. In addition, the problem of aging for Zhejiang province is more serious than Jiangsu province, since the ageing rate is 20.6 before the policy, 22.34 after the policy, both higher than Jiangsu province in same periods.

Table 1. Descriptive statistics of the variables for Jiangsu province before the policy

Variable	Number	Mean	Max	Min	Standard Deviation
Middle-aged Employment Rate	380	71.24	80	62.5	4.21
GDP per Capita	380	12.35	43.2	4.5	6.03
Urban Outwardness	380	18.77	62.8	3.1	13.83
Fixed asset Investment	380	8.21	14.5	1.2	2.88
Aging Rate	380	18.72	28.5	10.5	3.37
CPI	380	101.46	102.7	100.1	0.63
Minimum Wage	380	2004.95	2280	1830	145.47
Youth Employment	380	72.74	83.2	63.3	4.14

Table 2. Descriptive statistics of the variables for Jiangsu province after the policy

Variable	Number	Mean	Max	Min	Standard Deviation
Middle-aged Employment Rate	285	72.53	80.5	64.3	4.13
GDP per Capita	285	14.94	48.2	5.8	7.17
Urban Uutwardness	285	19.72	63.7	4	13.87
Fixed asset Investment	285	8.17	13.5	2.5	2.29
Aging rate	285	19.67	29.4	11.1	3.38
CPI	285	101.55	103	100.6	0.55
Minimum Wage	285	2324.39	2480	2070	141.29
Youth Employment	285	74.09	83.3	66.1	3.84

DOI: 10.54254/2754-1169/2025.LD28409

Table 3. Descriptive statistics of the variables for Zhejiang province before the policy

Variable	Number	Mean	Max	Min	Standard Deviation
Middle-aged Employment Rate	360	73.75	84.3	62.2	4.66
GDP per Capita	360	9.795	24	4.3	3.28
Urban Outwardness	360	27.44	70.5	3.8	14.95
Fixed Asset Investment	360	7.42	13.2	3.5	1.83
Aging Rate	360	20.60	29.3	10.2	3.14
CPI	360	102.07	103.3	100.1	0.72
Minimum Wage	360	1957.31	2280	1660	176.12
Youth Employment	360	75.96	89.7	63.3	4.96

Table 4. Descriptive statistics of the variables for Zhejiang province after the policy

Variable	Number	Mean	Max	Min	Standard Deviation
Middle-aged Employment rate	270	77.12	86.4	66.1	4.59
GDP per Capita	270	11.56	28.2	5.1	3.92
Urban Outwardness	270	29.55	73.2	4.8	15.46
Fixed Asset Investment	270	7.43	11.8	4.8	1.15
Aging Rate	270	22.34	30.8	11.4	3.19
CPI	270	100.82	102.4	99.2	0.84
Minimum Wage	270	2196.22	2420	1840	166.30
Youth Employment	270	80.77	95.6	68.2	5.09

4.2. Empirical model

In order to analysis the causal effect of the Delayed-Retirement Pilot Policy on the employment, we adopt the DID method with two fixed effects. For county i in year t, the estimated regression equation is as follows:

$$\begin{aligned}\text{EmploymentRate}_{i,t} = \beta_0 + \beta_1\,\text{DID}_{i,t} + \beta_2\text{GDPpc}_{i,t} + \beta_3\text{UrbanOut}_{i,t} + \beta_4\,FAI_{i,t} \\ + \beta_5\,\text{AgingRate}_{i,t} + \beta_6\,\text{CPI}_{i,t} + \beta_7\,\text{MinWage}_{i,t} + \theta_i + \gamma_t + \epsilon_{i,k}\end{aligned}$$

Employment is our dependent variable, which could capture the employment rate of two population groups: 20-44 (the youth) and 45-60 (middle-aged group). We will run this regression for these two groups separately. DID is the indicator equal to one if the time is from 2022 to 2024 and the county belongs to Jiangsu province. The regression includes six control variables that we will be mentioned later. $\theta_i$represents the county fixed effects and $\gamma_t$symbolizes the time fixed effects. Since the data we collected is county-level and the economic disparities among counties in the two provinces show significant differences, we selected the county fixed effects rather than city fixed effect. In addition, the explanation of these variables is displayed in table 5.

DOI: 10.54254/2754-1169/2025.LD28409

Table 5. Definition of variables

Type of Variables	Variable Name	Definition
Dependent Variable	Employment Rate	The ratio of employed people from labor force of each county
Independent Variable	DID	The policy variable and a dummy variable
Control Variable	GDPpc	The GDP per capita of each county
Control Variable	UrbanOut	Export as a percentage of GDP of each county
Control Variable	FAI	Fixed asset investment growth rate
Control Variable	AgingRate	The ratio of population which over 60 years old from total population
Control Variable	CPI	The price level of each county (using 2015 as base year)
Control Variable	MinWage	The minimum wage of each county

4.2.1. Baseline model results

Table 6-8 stands for the estimated causal effects of the Delayed-Retirement Pilot Policy on the employment of middle-aged population group and employment of youth group.

Firstly, we run a basic regression without adding any control variables we mentioned above, which is displayed in table 6. The results show that the policy variables (DID) are significant at 1% level both on middle-aged population group and youth population group, pointing out the delayed retirement imposed crowding out effect on employment of these two groups.

Table 6. Basic results: the impact of the policy on the employment of two groups (ignoring control variables, time fixed effect and county fixed effect)

	(1)	(2)
VARIABLES	Middle-aged	Youth
DID	-2.080*** (0.021)	-3.458*** (0.027)
Constant	72.141*** (0.059)	74.720*** (0.038)
Observations	1,295	1,295
Number of cid	185	185
R-Squared	0.8399	0.9548
Time FE	No	No
County FE	No	No

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.2.2. Middle-aged population group results

Things changed when we added control variables into our baseline model. In this section, we found that because the policy put into effect, the employment rate of middle-aged population will increase 0.19, which is statistically significant at 5% level. The result is contrasted with the results without adding control variables. This point is counter-intuitive and needs to be further explored.

DOI: 10.54254/2754-1169/2025.LD28409

Table 7. Regression results: the effect of the policy on employment of middle-aged group(including control variables, time fixed effect and county fixed effect)

(1) VARIABLES	midemp
DID	0.191**
	(0.084)
PGDP	-0.145***
	(0.051)
Open	0.447***
CPI	-0.490***
	(0.024)
Minwage	0.006***
	(0.000)
Constant	68.199***
	(3.776)
Observations	1,295
Number of cid	185
R-Squared	0.932
Time FE	Yes
County FE	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.2.3. Youth population group results

Table 8 is the estimated causal effects of the Delayed-Retirement Pilot Policy on the youth population group. The regression results also exhibit relatively large variations: although the policy variable still significant at 1% level, the effect of policy greatly reduced, which means that the policy only reduced nearly 1% employment rate for youth, rather than more than 3%. Nevertheless, we still observed the significant negative effect of the policy on youth employment rate, we proved that the policy has a crowding-out effect on youth employment.

Table 8. Regression results: the effect of the policy on employment of youth group(including control variables, time fixed effect and county fixed effect)

(1) VARIABLES	Youth
DID	-1.156***
	(0.087)
PGDP	-0.057
	(0.041)
Open	0.580***
	(0.070)
FAI	0.174***
	(0.031)

DOI: 10.54254/2754-1169/2025.LD28409

AgingRate	1.385***
	(0.119)
CPI	-0.321***
	(0.018)
Minwage	-0.001**
	(0.000)
Constant	68.548***
	(3.031)
Observations	1,295
Number of cid	185
R-Squared	0.985
Time FE	Yes
County FE	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion and discussion

In this study, we explored the employment impact of the delayed retirement pilot policy issued by Jiangsu province in 2022. We were among the earlier groups to separately study the impact of this policy on employment for both youth and middle-aged populations. Overall, the delayed retirement policy had a positive influence on the employment of middle-aged people while it had a negative impact on the employment of youth. Concerning the crowded-out effect of the policy on youth, we attribute it to the substitute effect between youth employees and employees from other age groups. Nevertheless, for the counter-intuition results in middle-aged groups, we considered one possible mechanism: companies recognize that middle-aged workers are experienced and skilled. Before the policy is issued, companies may worry about the short return cycle for middle-aged workers, since firms need to invest in firm-specific training in employees to let employees better adapt to the firms' business [11]. After the policy is issued, these employees can be employed for a longer period, allowing firms to enjoy a longer return cycle and higher productivity gains. As a result, firms are more willing to hire and retain middle-aged employees. It may be that the mechanism led to an increase in the employment rate of the middle-aged group and had a greater impact than the substitution effect between different age groups.

Nonetheless, our research still has several limitations. Firstly, because of absence of more detailed data (such as employment rate by age groups with five-year intervals for middle-aged workers), it is hard to confirm the mechanism which we provided could explain the positive policy effect on employment of middle-aged workers. Future research needs to identify the phenomenon that the employment rate increasing mainly focuses on the population groups which are close to retirement age to confirm the accuracy of the mechanism. Secondly, this paper does not separately discuss the impact of the policy on the employment rates of different gender groups, different social economic levels, etc. The influence of the policy on different population groups is also well worth to be explored in future studies.

Acknowledgement

Aimee S. Zhang and Mohan Wang contributed equally to this work and should be considered co-second authors.

DOI: 10.54254/2754-1169/2025.LD28409

References

[1] Hu, Zhen, and James Yang. “Does Delayed Retirement Crowd out Workforce Welfare? Evidence in China.” SAGE Open, vol. 11, no. 4, Oct. 2021, p. 215824402110544, https: //doi.org/10.1177/21582440211054488. Accessed 19 Jan. 2022.
[2] Kuitto, Kati, and Jan Helmdag. “Extending Working Lives: How Policies Shape Retirement and Labour Market Participation of Older Workers.” Social Policy & Administration, vol. 55, no. 3, 4 Mar. 2021, pp. 423–439, https: //doi.org/10.1111/spol.12717.
[3] Zhang Yi, Wang Wei, and Liu Yufei."Delayed Retirement Age, Employment Rate and Labor Mobility: Job Occupancy or Creation?". China Economic Quarterly 16.03(2017): 897-920. DOI: 10.13821/j.cnki.ceq.2017.02.03.
[4] Zhang Zhiyuan, and Zhang Minghong."Analysis of the Impact of the Delayed Retirement Policy on Employment Rate". East China Economic Management. 33.09(2019): 103-110. DOI: 10.19629/j.cnki.34-1014/f.180910010.
[5] Dai, Tiantian, et al. “Delayed Retirement Policy and Unemployment Rates.” Journal of Macroeconomics, vol. 71, Mar. 2022, p. 103387, https: //doi.org/10.1016/j.jmacro.2021.103387
[6] Dai, Yuhui, et al. “Study on the Impact of Delayed Retirement on Labor Employment, Fertility Rate and Economic Growth in China.” International Review of Economics & Finance, Apr. 2025, p. 104103, https: //doi.org/10.1016/j.iref.2025.104103.
[7] Pilipiec, Patrick, et al. “The Effect of an Increase of the Retirement Age on the Health, Well-Being, and Labor Force Participation of Older Workers: A Systematic Literature Review.” Journal of Population Ageing, vol. 14, 6 May 2020, pp. 271–315, https: //doi.org/10.1007/s12062-020-09280-9.
[8] Lai Desheng, and Wang Yan."Employment Effects of Delayed Retirement: An International Comparative Perspective". Journal of University of Jinan (Social Science Edition).35.03(2025): 5-20. DOI: 10.20004/j.cnki.ujn.2025.03.001.
[9] Liu Fengqin, Wang Meitian, and Bi Lei."Study on the Crowding-in Effect of Delayed Retirement on Youth Employment". Research on Financial and Economic Issues.04(2024): 94-106. DOI: 10.19654/j.cnki.cjwtyj.2024.04.008.
[10] Tian, Ying, et al. “Evaluating the Impact of Social Security Contribution Rate, Delayed Retirement Age, and Employment Rate on Pension Replacement Rate: An Overlapping Generation (OLG) Model Analysis.” Research in Economics, vol. 78, no. 2, 4 Mar. 2024, pp. 100954–100954, https: //doi.org/10.1016/j.rie.2024.100954. Accessed 5 Oct. 2024.
[11] Becker, Gary S. Human Capital : A Theoretical and Empirical Analysis, with Special Reference to Education. Chicago, University Of Chicago Press, 1983.

Appendix

EPS Data, 2025. EPS China Data. Available at: http://www.epsnet.com.cn/
Jiangsu Provincial Bureau of Statistics, 2025. Available at: https://tj.jiangsu.gov.cn/
National Bureau of Statistics (NBS), 2025. Available at: https://data.stats.gov.cn/
CEIC, 2025. CEIC Data. Available at: https://www.ceicdata.com/