Research on the Influencing Factors of Living Pattern after Retirement

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Abstract

The purpose of this paper is to explore the influence of traditional concepts and income on the choice of retired migrant workers about living out their lives in retirement in urban or rural areas and their choice of care provider. The empirical results show that the pension income determines the pension mode of the current, retired migrant workers.

1 Introduction

According to the statistics from World Health Organization, the proportion of the world's population over 60 years old will double from about 11% to 22% between 2000 and 2050. The absolute number of people aged 60 years and over will increase from 605 million to 2 billion over the same period. Among different countries, low-income and middle-income countries will be the first tier to bear the brunt of the most rapid and dramatic demographic change. Due to longevity, more children will even know their great-grandparents, especially their great-grandmothers, for women live longer than men on average. Thus, long-term care for the elderly requires more attention than ever before.

Among different factors, retirement income is one of the crucial determinants of the retiree's living quality. Countries have different strategies for paying retirement income. Specifically, in the U.S., the pension has two primary sources: state and employer. Citizens can start receiving their Social Security retirement benefits as early as age 62, but

receiving earlier than their full retirement age will reduce their benefits and receiving later than 70 will get a delayed retirement credit. Income from the employer can be categorized into two types: defined benefit plans and defined contribution plans (U.S. Department of Labor), where the former one is guaranteed and less controllable while the latter one is more flexible and nonobligatory. In China, the pension system is three-layered: mandatory and voluntary public pension schemes, voluntary employer-sponsored annuity programs, and household savings-based annuity insurance policies (Fang and Feng, 2018). Among the three layers, the public pension scheme is still the dominant source. No matter in which country, the expenditure for retirement life varies across locations, which affects the elder's decision on retirement living patterns (Edmonds et al., 2004) .

Besides, traditional mindsets and cultures also play a role in determining retirement patterns. On the one hand, raising children in preparation for old age roots in people's mindsets, especially in Eastern countries like China. This value may encourage retired people to live with their children (Yu, 2012), where they may get better care and have more interactions with their family. Since the elderly parents can also help young adults with grandchild care, living together can decrease the young adults' fertility time cost (Guo et al., 2021). On the other hand, local participation and feelings of belonging influence retirees' choice of retirement locations. A higher level of care can reduce the elderly's feeling of loneliness (Gierveld et al., 2015), while social isolation can also lower their adaptability to living in an unfamiliar environment (Treas and Mazumdar, 2002).

This choice for retirement living pattern is tough for those migrant workers. They migrate either within their home country or outside it to pursue work and gain a better life. Migrant life can improve their living standard and savings as well as diverting their traditional concept. Some of them who are peasants initially might also gain a benefit from their land. Then the retirement decision might be even complicated.

Based on the previous discussion, this project will focus on the retirement mode of retired migrant workers, where they live out their lives in retirement and care for the problem. We use Ordered Probit model to explore the effect of retirement income or conventional wisdom on the choice of retirement location, and use Multinomial Logit model to explore the effect of these two factors on the caring types. Regression analyses will explain whether the traditional concept still has a significant influence on the pension mode of retired migrant

workers when considering the pension income. From the perspective of pension income, we strive to put forward policy suggestions to improve the pension mode of retired migrant workers in the future.

The paper organizes as follows: in section two, it reviews prior researches on the living pattern of retired people; in section three, it presents the data source and the empirical strategy; and in the final section four, it describes the findings and summarizes the conclusions.

2 Literature Review

Regarding the influencing factors of migrants' living patterns, previous scholars have paid much attention to the economic aspect, especially the social security system. The differentiation between local citizens and migrants by the pension system will affect the migrants' economic living standard, influencing the retirement location choice. Sevak and Schmidt (2007) find that immigrants had lower expectations and reliance on social security than local citizens. Moreover, non-permanent immigrants' participation rate in retirement social security is much lower than local workers (Heim et al., 2012). Fontes (2011) adds that distributional effects related to ethnic identity, income, and education appear to compound this difference. Sweden's statistics show that women migrants' pension level is higher than the locals (Ekberg and Lindh, 2016). However, Seibold (2021) argue that financial incentives alone cannot explain retirement patterns, but changing the statutory ages through pension reforms is an effective policy to affect retirement behavior. Overall, the pension system can be a two-way force. The enjoyment of rural social security increases the probability of migrant workers returning home for retirement, while the popularization of urban social security increases migrants' willingness to retire there (Xie et al., 2019).

Additionally, since the pension fund is not the only source of retirement income, the reliance degree on social security can also affect migrants' decision on where to retire. Fontes (2011) finds that when to register the local household can affect the reliance degree. Also, Wen (2015) pointed out that there is a substitution between the reliance on retirees' savings and social security. Li et al. (2019) adds that older people in rural areas tend to depend on their children for retirement as more younger migrant workers return to hometown.

Furthermore, the psychic living standard is also of great importance for retirees. Mui (1999) revealed that older Chinese-Americans living alone with higher levels of education are more likely to be depressed if they are in poor health, are more stressed, and are dissatisfied with their families' help. To improve this situation, joining the new heritage culture and broader community provides a platform for social support and integration after immigration, improving life satisfaction and reducing loneliness (Haslam et al., 2020). Thus, concerning the adaptability of living conditions, retirees might hesitate to balance economic factors, convenience, and entertainment demand.

Except for the post-retirement considerations, the retirement intention might also change people's decision on where to retire. Vaillant and Wolff (2012) find that being in poor health increases the intention of migrant workers to retire early. They may need better caring during retirement life. In other cases, a retiree might still be healthy enough with a strong will of self-realization. For instance, age-based preference of employers for promotion will precipitate older women to leave the labor markets due to their perceived discrimination but will not affect men's attitudes because they regard it as ex-ante arrangements (Messe, 2012). In this situation, the retiree might not be satisfied with only taking care of grandchildren.

However, to our best knowledge, there is no prior work to conclude whether conventional wisdom or social security plays an essential role in determining retired migrants' living patterns. Moreover, in the past, economic factors were confined to social security; that is, the social security of rural migrant workers decided the choice of retirement pattern, rather than from the direct impact of retirement income, and did not consider the auxiliary role of children. Besides, the definition of traditional concepts is not quantified, so there is little empirical analysis. This paper will quantify and compare the role of conventional wisdom and retirement income as well as analyze the possible way to improve retirees' welfare.

3 Empirical strategy

3.1 Assumption and Model Selection

According to previous literature, traditional concepts and economic factors respectively affect where and by whom migrant workers choose to care for the aged. This paper first

assumes that the traditional concepts of retired migrant workers impact the current pension mode of this group. However, the effect of traditional concepts is no longer significant after considering the effect of pension income; after reaching the retirement age, the total pension income and source of migrant workers impact their nursing mode.

Hypothesis 1: The retirement income of retired migrant workers has a positive impact on the choice of retirement location; that is, the higher the retirement income is, the retired migrant workers are more inclined to retire in the city;

Hypothesis 2: The pension of retired migrant workers has a positive impact on the choice of pension location; that is, the retired migrant workers with a pension are more inclined to choose the city pension;

Hypothesis 3: The total income of retired migrant workers has a negative impact on the choice of caregivers; that is, the higher the total income of retired migrant workers, the less likely they are to choose family support, and more inclined to buy institutional and community pension services.

Hypothesis 4: The pension of retired migrant workers has a negative impact on the choice of caregivers; that is, retired migrant workers with a pension are more inclined to buy institutional and community pension services than family support.

Hypothesis 5: The retired migrant workers who hold a solid traditional concept may choose to live in rural places. They may spend more time with family or have a larger family.

Hypothesis 6: The retired migrant workers who hold solid traditional concepts may prefer to be cared for by their children. They tend to spend more time with their children.

The first explained variable, "retirement place," is a typical ordered data, and the four options are successively downgraded according to the administrative unit level. Referring to the methods Stewart (2005) and Lin and Ai (2008) use in dealing with similar problems, this paper applies the Ordered Probit regression model (OPM for short). The model's input is the vector of factors that affect the retirement place of retired migrant workers,

that is, traditional concepts or pension income, denoted as x_{ij}. The output is the choice of retirement place Y_1. We denote the latent variable as $y^* = x_{ij}\boldsymbol{\beta} + \epsilon$, where $\boldsymbol{\beta}$ is the vector of coefficients, ϵ is the normally distributed error term, and the choice rule is as follows:

$$y = \begin{cases} 1 & if\ y^* \leq r_0 \\ 2 & if\ r_0 < y^* \leq r_1 \\ 3 & if\ r_1 < y^* \leq r_2 \\ 4 & if\ y^* \geq r_3 \end{cases}$$

In the above expressions, $r_0 < r_1 < r_2 < r_3$ are the fixed thresholds, therefore the distribution of Y_1 is :

$$P(Y_1 = 1|X_{ij}) = \phi(r_0 - x_{ij}\boldsymbol{\beta})$$

$$P(Y_1 = 2|X_{ij}) = \phi(r_2 - x_{ij}\boldsymbol{\beta}) - \phi(r_1 - x_{ij}\boldsymbol{\beta})$$

$$P(Y_1 = 3|X_{ij}) = \phi(r_3 - x_{ij}\boldsymbol{\beta}) - \phi(r_2 - x_{ij}\boldsymbol{\beta})$$

$$P(Y_1 = 4|X_{ij}) = 1 - \phi(r_3 - x_{ij}\boldsymbol{\beta})$$

According to the above distributions, we use the Maximum Likelihood method (ML) to estimate the parameters $\boldsymbol{\beta}$ and ϵ.

The second explained variable, "care support", does not have a clear distinction between high and low order and is a disordered multi-category explained variable. This paper uses the Multi-classification Logit regression model (MNL).

According to our assumptions, the regression model can be expressed as:

$$ln[\frac{P(y = j|x)}{P(y = J|x)}] = \alpha_j + \sum_{k=1}^{J} \boldsymbol{\beta_{jk}} x_k + \epsilon, \quad \forall\ j = 1, 2, ..., J.$$

where $P(y = j|x)$ is the probability of the retired migrant worker chooses care support j, x_k is the independent variable that affects the retirement place of retired migrant workers, that is, traditional concepts or pension income, $\boldsymbol{\beta_{jk}}$ is the coefficients vector, ϵ is the random error term. Regarding J as the reference group, the probability ratio of a retired

migrant worker chooses j to him chooses J is $\frac{P(y=j|x)}{P(y=J|x)}$.

3.2 Data Source And Descriptive Analysis

This paper uses the China Health and Retirement Longitudinal Study (CHARLS) national survey of wave four in 2018. CHARLS is a longitudinal survey that aims to represent the residents in mainland China aged 45 and older, with no upper age limit. It attempts to set up a high-quality public micro-database, which can provide a wide range of information from socioeconomic status to health conditions, to serve the needs of scientific research on the elderly. The national baseline survey was conducted in 2011-12, with wave 2 in 2013, wave 3 in 2015, and wave 4 in 2018. This dataset includes demographic background, family relationships, work, retirement, and pension-related information.

This paper mainly focuses on two dependent variables. Y_1 means the location after people retired, which we collect four kinds of value: 1 Central of City/Town, 2 Urban-Rural Integration Zone, 3 Rural, 4 Special Zone. Y_2 means the retired migrants' choice of care, which we collect three kinds: 1 represents institutional care, 2 represents family care, 3 means being unattended, i.e., live alone.

As for the independent variable, X_1 means the total income in the last year. We include the income from wage income, business income (like farming), property income (rent income), and transfer income (pension income), and we use log income in this paper. X_2 means the total time interviewees spent with their family. According to our Literature review, traditional mindsets and cultures can be reflected by retired workers' time with their family(Yu, 2012). We sum the time each interviewee spent with every family member and get this variable. X_3 means the number of children in the retired workers' family. According to past research, family-scale can represent the traditional concept to some extent (Xie and Ni, 2014).

The demographic characteristics and social information of the respondents serve as control variables. The former includes the interviewee's age, gender, and health condition; the latter includes the interviewee's Hukou account type, marital status, pension insured place, educational level. Table 1 contains the meanings and descriptive analysis of the dependent variable, independent variable, and controls.

Table 1: Data Source And Descriptive Analysis

Variable Name	Label	Description	Num. obs.	Mean	Sd
Retired Location	location,Y_1	1 Center of City/Town(18%) 2 Uran_Rural Integration Zone(7%) 3 Rural(74%) 4 Special Zone(0.3%)	11411	2.57	0.78
Choice of Care	care support, Y_2	1 Institutional care (1.39%) 2 Family care (62.24%) 3 No care (36.37%)	1438	2.35	0.51
Income After Retired	income,X_1	Wage income, business income, property income and transfer income	11514	14493.85	26911.31
Time Spend With Family	time,X_2	total time spend with each family member	11514	6.64	7.66
Children Num	children_num,X_3	the number of children	11514	2.42	1.48
Gender	gender,C_1	1male(46%) 2female(53%)	11514	1.53	0.5
Age	age,C_2	age	11317	65.74	10.76
Health Condition	health,C_3	1very_good(12%) 2good(13%) 3fair(47%) 4poor(21%) 5very_poor(6%)	11018	2.97	1.03
Hukou Type	hukou,C_4	1Agricultural_Hukou(78%) 2Non_agricultural_hukou(21%) 3unifired_residence_hukou(0.1%) 4not_have_hukou(0.0%)	11329	1.21	0.42
Marital Status	marital,C_5	1married_with_spouse_present(68%) 2married_but_not_living(7%) 3separated(0.5%) 4divorced(2%) 5widowed(21%) 6never_married(1%)	11514	2.06	1.70
Pension_Place	pension,C_6	1this_county(75%) 2place_of_hukou(8%) 3other_place(16%)	1642	1.42	0.76
Education	education,C_7	1illiterate(22%) 2not_finish_primary_school(21%) 3home_school(0.2%) 4elementry_school(22%) 5middle_school(21%) 6high_school(8%) 7vocational_school(2%) 8associate_degree(1%) 9college(0.8%) 10master(0.05%) 11doctoral(0%)	11514	3.46	1.95

4 Empirical Analysis

4.1 Probit model

The first part of retired workers' living pattern is the retirement location. To test the influence of income and traditional concept on the living place of the retired migrant worker, we use the Ordered Probit model, and the regression results are in Table 2 and Table 3.

According to Table 2, model 1 is the base model where the independent variable is children number. The coefficient of children number is positive and is significant at the statistical level of 1%. Based on model 1, in model 2 and model 3, we add the respondents' basic personal characteristics and social information characteristics as control variables. The coefficient is also significantly positive, which means that the more children they have, or the more powerful the retired migrants' traditional concept is, the more likely the retired migrants will live in areas with lower administrative levels. Model 4, model 5 and model 6 tend to explain the effect of time spent with family on retirement. However, in model 4 and model 5, the coefficient is not significant and is significantly negative at a statistical level of 5% in model 6. In Hypothesis 5, the retired migrant workers who hold strong traditional concepts may choose to live in a rural place, while the result shows that the time spent with children may not influence the choices of living place.

Table 3 shows the result of using the Ordered Probit model to analyze the total income effect on the retirement location. Model 1 is the basic model, where the independent variable is the total income. The coefficient is significantly negative at the statistical level of 1%. In model 2 and model 3, we also add demographic characteristics and social information of the respondents as control variables, and the coefficient is significantly negative. It shows the total income has a negative influence on the living place retired workers will choose. The more income they have, the less likely they will choose to live in areas with lower administrative levels. In model 4, 5 and 6, we add the independent variable *children number* and time with family. According to the Table, the income effect is significantly negative and the traditional concept effect is significantly positive. A retired employee who is not rich or has traditional ideas is more likely to live in a low-level city.

Table 2: Regression analysis of traditional concept on living place

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Children_num	0.21***	0.27***	0.13***			
	(0.01)	(0.01)	(0.01)			
Time_with_family				0.0017	0.0016	−0.0062**
				(0.0016)	(0.0017)	(0.0019)
Threshold (1->2)	−0.43***	−1.17***	−4.02***	−0.90***	−0.63***	−3.98***
	(0.02)	(0.10)	(0.14)	(0.02)	(0.10)	(0.14)
Threshold (2->3)	−0.18***	−0.92***	−3.63***	−0.66***	−0.39***	−3.60***
	(0.02)	(0.10)	(0.13)	(0.02)	(0.10)	(0.14)
Threshold (3->4)	3.28***	2.57***	0.22	2.66***	2.94***	0.23
	(0.06)	(0.11)	(0.14)	(0.05)	(0.11)	(0.14)
Gender		−0.08**	−0.21***		−0.04	−0.19***
		(0.03)	(0.03)		(0.03)	(0.03)
Age		−0.02***	−0.01***		−0.00	0.00
		(0.00)	(0.00)		(0.00)	(0.00)
Health		0.11***	0.06***		0.12***	0.06***
		(0.01)	(0.01)		(0.01)	(0.01)
Hukou			−1.68***			−1.75***
			(0.03)			(0.03)
Marital status			−0.01			−0.01
			(0.01)			(0.01)
Education			−0.12***			−0.13***
			(0.01)			(0.01)
AIC	16291.92	15291.38	11397.98	16891.65	15949.36	11506.03
Log Likelihood	−8141.96	−7638.69	−5688.99	−8441.83	−7967.68	−5743.02
Num. obs.	11411	10765	10688	11411	10765	10688
Iterations	8	8	8	8	8	8
McFadden's R^2	0.04	0.05	0.28	0.00	0.01	0.28

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 3: Regression analysis of income and traditional concept on living place

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Log Income	-0.09^{***}	-0.09^{***}	-0.03^{***}	-0.03^{***}	-0.03^{***}	-0.03^{***}
	(0.0039)	(0.0041)	(0.0045)	(0.0045)	(0.0045)	(0.0046)
Children_num				0.13^{***}		0.14^{***}
				(0.01)		(0.01)
Time_with_family					-0.008^{***}	-0.012^{***}
					(0.002)	(0.002)
Threshold (1->2)	-1.64^{***}	-1.05^{***}	-3.88^{***}	-4.02^{***}	-4.00^{***}	-4.20^{***}
	(0.03)	(0.10)	(0.13)	(0.14)	(0.14)	(0.14)
Threshold (2->3)	-1.38^{***}	-0.80^{***}	-3.50^{***}	-3.63^{***}	-3.61^{***}	-3.81^{***}
	(0.03)	(0.10)	(0.13)	(0.13)	(0.14)	(0.14)
Threshold (3->4)	2.09^{***}	2.67^{***}	0.33^{*}	0.24	0.22	0.07
	(0.05)	(0.11)	(0.14)	(0.14)	(0.14)	(0.14)
Gender		-0.09^{***}	-0.20^{***}	-0.22^{***}	-0.20^{***}	-0.21^{***}
		(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Age		0.01^{***}	0.00^{*}	-0.00^{*}	0.00	-0.01^{***}
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Health		0.10^{***}	0.06^{***}	0.05^{***}	0.05^{***}	0.05^{***}
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Hukou			-1.70^{***}	-1.64^{***}	-1.71^{***}	-1.64^{***}
			(0.03)	(0.04)	(0.03)	(0.04)
Marital status			-0.02	-0.01	-0.02	-0.01
			(0.01)	(0.01)	(0.01)	(0.01)
Education			-0.12^{***}	-0.12^{***}	-0.12^{***}	-0.12^{***}
			(0.01)	(0.01)	(0.01)	(0.01)
AIC	16302.23	15378.76	11478.46	11361.13	11463.78	11328.87
Log Likelihood	-8147.12	-7682.38	-5729.23	-5669.57	-5720.89	-5652.43
Num. obs.	11411	10765	10688	10688	10688	10688
Iterations	8	8	8	8	8	8
McFadden's R^2	0.03	0.04	0.28	0.29	0.28	0.29

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

4.2 Multinomial Logit model

According to the test, the statistic's p-value is close to 1, which indicates that the null hypothesis is not rejected. Therefore, it is feasible to use the Multinomial Logit model in this part to analyze the influence of traditional concepts (i.e., family size) and pension income on the care support choice of retired migrant workers. As shown in Table 4, this model examines the impact of family size on the care support choice of retired migrant workers. The regression coefficients of family size are all significantly positive at the statistical level of 5%. It suggests that traditional concepts (represented here by family size) positively affect retirees with family care and lack of care. That is to say, the stronger the traditional concept of retired migrant workers, the more likely they are to choose family care or unsupervised care, and vice versa, the more likely they are to choose institutional care. According to the odds ratio, the probability of the retired migrant workers with a solid traditional concept choosing to be cared for by their family members or being unattended is 1.645 times and 1.489 times with a weak traditional concept. That is to say, the retired migrant workers with stronger traditional concepts are more inclined to family care or no care, and the retired migrant workers with weaker traditional concepts are more inclined to institutional care.

Table 4: Regression analysis of traditional concept on care support choice

variables	Institutional care/ Family care		Instituional care/ No care	
	coefficient	odds ratio	coefficient	odds ratio
Children_num	0.2016** (3.14)	1.645	0.1958** (2.36)	1.489
Gender age Health Hukou Marital status Education	control		control	
Obs	1439			
R^2	0.16			

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

As shown in Table 5, we use the Multinomial Logit model to analyze the income and the source of pension income on the care support choice of retired migrant workers. X is the control variable, which is the same as Table 4.

Model 1 examines the impact of the total pension income on the care support choice of retired migrant workers. The regression coefficients of the logarithm of pension income are significantly negative at the statistical level of 5% and 1%, respectively, indicating that the higher the pension income, the more inclined the retired migrant workers are to institutional care.

Model 2 adds the variable of family size, and the coefficient of pension income is still negative. However, under the influence of pension income, traditional concepts' effect on care support choice is no longer significant. The occurrence ratio is 0.6091 and 0.5107, respectively; that is to say, retired migrant workers with higher pension income are more inclined to institutional care.

Table 5: Regression analysis of income on care support choice

variables	model 1				model 2			
	Institutional care/ Family care		Institutional care/ No care		Institutional care/ Family care		Institutional care/ No care	
	coefficient	odds ratio	coefficient	odds ratio	coefficient	odds ratio	coefficient	odds ratio
Log Income	-0.5266**	0.5997	-0.7876***	0.4536	-0.4981**	0.6091	-0.6944***	0.5107
	(-2.48)		(-2.99)		(-2.37)		(-2.46)	
Children_num					-0.2113		-0.4992	
					(-1.09)		(-0.91)	
$C_1 \sim C_7$	control							
Num. obs.	1039				1438			
R^2	0.18				0.11			

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

5 Conclusion

In this paper, we first use descriptive statistics to analyze the status quo of retired migrant workers' retirement income and living patterns. Then we use the Ordered Probit model and Multinomial Logit model to explore the effects of retired migrant workers' conventional wisdom and retirement income on their retirement living patterns. Our findings are as follows.

1) The amount of pension income of retired migrant workers has a positive influence on the choice of place to retire; that is, the retired migrant workers with higher pension income

tend to retire in the city. However, larger family size has the opposite effect, which will make the retired migrants retire in rural areas. Since larger family size usually means the members in the family are more conventional than others, these relationships indicate that conventional wisdom and retirement income are two opposing forces that drive the retired migrants to choose where to retire. In our regression outcome, the economic factor is the dominant force.

2) The pension income of retired migrant workers has a negative influence on the choice of the pensioner; that is, the higher the pension income, the more retired migrant workers will not choose family support but are more inclined to buy elderly care services from institutions and community. At the same time, retired migrant workers with pensions are more likely to buy elderly care services.

Although there are more works to do, we come up with several policy suggestions as far as we can conclude from our analyses.
a. Pay attention to the re-employment of retired migrant workers and increase the income of old-age workers. In order to ensure the diversified choice of the living patterns of retired migrant workers, it is the key to enjoy the right to elderly care services in the cities where they have devoted their labor and raise the retirement income. According to our dataset, 48.5% (8.7% agricultural, 65.2% non-agricultural) retired workers go back to the labor market after proceeding retirement to earn their living. At present, the traditional function of land on affording elderly caring services is weakening, and the second generation of migrant workers' economic support capacity is weak, so all sectors of society should actively create relevant jobs and improve legal protection to support retired migrant workers to re-employment.

b. Lower the entry threshold to guarantee enough supply of elderly care services for retired migrant workers. Due to the aging and the deepening of the "empty nest" problem, retired migrant workers also demand elderly services, though the retirement income is not high. In the future, we should encourage mutual assistance in rural areas and accept more migrant workers returning home. For migrant workers who choose to retire in the city, we should set up different levels of elderly care subsidies according to their income and include retired migrant workers into the social welfare system as much as possible to promote their accessibility to elderly care services constantly.

References

Edmonds, E., Mammen, K., and Miller, D. (2004). Rearranging the family? income support and elderly living arrangements in a low income country. *Journal of Human Resources*, 40.

Ekberg, J. and Lindh, T. (2016). Immigrants in the old-age pension system: The case of sweden. *International Migration*, 54(5):5–14.

Fang, H. and Feng, J. (2018). The chinese pension system. *NBER Working Paper*, No. 25088(JEL No. H55).

Fontes, A. (2011). Differences in the likelihood of ownership of retirement saving assets by the foreign and native-born. *Day Care and Early Education*, 32:1–13.

Gierveld, J. D. J., der Pas, S. V., and Keating, N. (2015). Loneliness of older immigrant groups in canada: Effects of ethnic-cultural background. *J Cross Cult Gerontol*, 30(3):251–268.

Guo, K., Yu, J., and Gong, L. (2021). Retirement, grandchild care and economic growth. *China Economic Quarterly*, 21(2):493–510.

Haslam, C., Dane, S., Lam, B. C. P., Jetten, J., Liu, S., Gallois, C., and Tran, T. L. N. (2020). Ageing well in a foreign land: group memberships protect older immigrants' wellbeing through enabling social support and integration. *Ageing and Society*, page 1–23.

Heim, B. T., Lrtie, I. Z., and Ramnath, S. P. (2012). Immigrant–native differences in employment-based retirement plan participation. *Journal of Pension Economics and Finance*, 11(3):365–388.

Li, F., Zhang, R., and Shen, S. (2019). Impact of young and middle-aged migrant workers' backflow on elderly care in rural areas. *Jianghan Academic*, 4:17–26.

Lin, X. and Ai, C. (2008). Determinants of chinese residents' demand for medical care –an application of semiparametric estimation of ordered probit model. *Statistical Research*, 11:40–45.

Messe, P. (2012). Do discriminatory attitudes to older workers at work affect their retirement intentions? *International Journal of Manpower*, 33(4):405–423.

Mui, A. C. (1999). Living alone and depression among older chinese immigrants. *Journal of Gerontological Social Work*, 30(3-4):147–166.

Seibold, A. (2021). Reference points for retirement behavior: Evidence from german pension discontinuities. *American Economic Review*, 111(4):1126–65.

Sevak, P. and Schmidt, L. (2007). How do immigrants fare in retirement. *Michigan Retirement Research Center Research Paper*, No. UM WP 2007-169.

Stewart, M. B. (2005). A comparison of semiparametric estimators for the ordered response model. *Computational Statistics Data Analysis*, 49(2):555 – 573.

Treas, J. and Mazumdar, S. (2002). Older people in america's immigrant families: Dilemmas of dependence, integration, and isolation. *Journal of Aging Studies*, 16(3):243–258.

Vaillant, N. G. and Wolff, F. (2012). Retirement intentions of older migrant workers: does health matter? *International Journal of Manpower*, 33(4):441–460.

Wen, W. (2015). Status of the insured and related inspection of migrant workers old age insurance. *Reform*, 8:135–148.

Xie, D. and Ni, Z. (2014). Influences of china's traditional culture and spatial effect on real estate price raising:based on china's inter-province panel data from 1998 to 2011. *Investment Research*, 10:70–86.

Xie, Y., Guo, Q., and Li, S. (2019). Impact of social security system on migrant workers' selection of places for retirement. *Jianghan Academic*, 4.

Yu, C. (2012). Change trend and difference between generations of farmers' concept of raising sons for old age. *Population Journal*, 6:40–50.