



SPSS Binary Logistic Regression Was Used to Analyze the Influencing Factors of Contemporary People's Pension Preference Under Social Support

Shujun Chen and Zizhu Zhao(✉)

School of Finance and Public Administration, Harbin University of Commerce, Harbin, China
1755774272@qq.com

Abstract. In the face of the weakening of family pension service function and the increase of socialized pension demand, in order to clarify the influencing factors of contemporary people's pension preference, this paper takes social support as independent variable, whether to choose home pension, community pension and institution pension as dependent variable, and personal characteristics as control variable to construct a binary Logistic model. Empirical analysis results show that home care is still the mainstream will, but most people have accepted socialized care. The level of family support has no significant influence on whether to choose home care, community support and government support have significant influence on whether to choose community care and institution care respectively. Therefore, in order to promote the development of socialized endowment, this paper puts forward some suggestions to increase community support and government support: expand the content of community endowment service, improve the ability of community endowment; Strengthen the publicity and construction of community elderly care; Strengthen government support and construct institutional elderly care service under government norms; Guide the transformation of social awareness of the elderly.

Keywords: The pension that occupy the home · Community endowment · Influence factor

1 Introduction

In the face of the aging population increasing year by year, the aging society is increasingly aggravating the current situation, in order to efficiently meet the social needs, the current pension service needs to present a diversified, institutionalized and socialized development trend. The state is gradually establishing and improving the elderly care service system based on home care, supported by community services and supplemented by institutional care, so as to further achieve full coverage of the elderly care system. But the data show that the family pension is still the mainstream will.

Existing studies have shown that the object's choice of pension mode is restricted by subjective and objective factors. The subjective level includes personal demographic

characteristics, traditional concepts and national policy cognition, etc., while the objective level includes supply and demand situation of pension, perfection of pension facilities, regional economic development level and social customs, etc. The authors found that most of these factors were related to social support.

Social support, the core variable of this paper, refers to the material and emotional support that individuals get in crisis [3]. From the perspective of social support, the academic community believes that social support is related to different pension methods. For example, home-based self-care needs to rely on social support to obtain self-care resources embedded in the social network [2]; Family pension is also inseparable from social groups, voluntary activities of neighborhood mutual assistance and economic support from the government and community [1]; The improvement of community home-based pension service system and community mutual assistance pension cannot be separated from the construction of social support network [4]; The elderly in pension institutions need to feel social support to reduce anxiety and depression [5].

This paper divides the support system into family support, community support and government support, formulates questionnaires, and uses SPSS binary Logistic regression model to find out the influence of individual's perception of social support from different dimensions on pension choice preference, and provides suggestions for prominent influencing factors to further promote the realization of pension service socialization. We will help improve the social support system in the old-age care system.

2 Manuscript Preparation

2.1 Selecting a Template

Family support is the support and care from relatives, which can be basically divided into three parts: economic support, life care and emotional support. It belongs to informal social support. This kind of support can achieve great spiritual satisfaction of the elderly and make them feel cared and understood. Studies have shown that compared with the elderly living alone, the elderly who live with their children or have a large number of children prefer the family pension mode. This paper proposes the hypothesis:

H1: The degree of family support positively affects the willingness to take care of the elderly at home.

Community support refers to the support obtained by using and relying on the infrastructure and human resources of the community, which is embodied in the complete facilities and professional services provided for the community, as well as the harmonious relationship with the residents in the community. In the case of sufficient community support, the professional services provided by the community can not only meet the service needs of the elderly, but also enable them to stay in the familiar environment and stay with their existing life, and take care of the spiritual needs of the elderly with their neighbors and friends. This paper assumes:

H2: The degree of community support has a positive impact on the willingness to provide for the elderly in the community.

Government support refers to the government to give financial support, legislative support and administrative intervention, concrete embodiment in terms of pension for the government to make a complete social security system, pension, medical insurance policy, attaches great importance to the pension for the elderly, industry, infrastructure and urban planning, as well as to the endowment agencies request specification, etc., belong to the formal social support. In the face of a sound social security system and a reasonable level of pension, the elderly have enough capacity to cope with diseases and afford pension expenses. In the face of the perfect pension industry and standardized and professional pension institutions, the elderly can enjoy more comprehensive and perfect care services, so the willingness to participate in institutional pension increases. Therefore, this paper assumes:

H3: The degree of government support has a positive impact on institutional pension intention.

2.2 The Data Source

Starting from January 15, 2022 to January 19, 2022, 301 questionnaires were collected in this study. After screening, 294 questionnaires were valid, with an effective rate of 97.7%. The research objects in this paper are mainly middle-aged and elderly people who are or will face the choice of pension. However, considering the feasibility of issuing questionnaires and the integrity of the preliminary study, there is no restriction on the age of the study, and the pension intention of young people is also included in the research scope.

2.3 The Questionnaire Design

The questionnaire is divided into three parts: The first part measures the population characteristics of residents, including gender, age, health status, education level, income and household registration; The second part measures social support variables, including family support, community support and government support. The third part is about the choice of pension.

Indicators of family support include number of children, relationship with children (parents if no children) and support and care received from relatives. Number of children 1 point for no children, 2 points for 1 child, 3 points for 2 children, 4 points for 3 or more children; Very cold is 1, very close is 5; Relatives are divided into husband and wife (lovers), parents, children, brothers and sisters, and other members (such as sister-in-law). No support will be counted as 1 point, and full support will be counted as 5 points. The score for family support is the sum of the above indicators.

The indicators of community support include community facilities and services and the relationship with the residents in the community. Community ownership and provision of community nursing homes, canteens for the elderly, community clinics, activity centers for the elderly, home care services will be given 1 point, if not, 0 points; The relationship with the residents in the community, very cold score 1, very harmonious score 5. The community support score is the sum of the above indicators.

The indicator supported by the government consists of a series of positive policies, detailed policies can be found in the variable description section. Likert scale was used to measure government support. 1 point was scored for strongly disagree, and 5 points were scored for strongly agree.

2.4 The Research Method

In this study, theoretical analysis and empirical analysis were combined, SPSS22.0 software was used for statistical analysis, and the given significance level was $P = 0.05$.

Descriptive statistics were used to analyze the residents' demographic characteristics, social support and pension choice. After controlling demographic characteristics, a binary Logistic regression model was established to study whether personal characteristics and different dimensions of social support have an impact on pension style preference and what kind of impact.

Binary logistic regression refers to the regression analysis in which the dependent variable is a dichotomous variable, and the value of the target probability will be between 0 and 1, but the value of the dependent variable of the regression equation falls in the set of real numbers, which is unacceptable. Therefore, the Logistic transformation of the target probability can be performed first, so that its value range becomes the whole set of real numbers. The regression analysis using this method is Logistic regression.

3 Copyright Form

3.1 Description of Demographic Characteristic Variables of the Sample

Among the survey samples, 48.98% are aged 46–55, 6.8% are aged 56–60, 6.8% are aged 61–70, and 6.8% are aged 71 and above. Generally speaking, the study mainly targets middle-aged and elderly people who are facing or will soon face the choice of retirement. The proportion was 63.27% for females and 36.73% for males. The vast majority of the respondents (91.16%) lived in cities. More than half of the samples (54.42%) have college or bachelor's degree or above. More than half of the samples (52.38%) had an annual income of less than 50,000 yuan, and 23.81% of them had an annual income of less than 20,000 yuan. More than half of the samples (57.82%) self-rated as healthy. Most of the subjects (81.63%) had a spouse. The detailed description is as shown in Fig. 1.

Variable Name	Indicators	Frequency	Percentage (%)
<i>Age</i>	30 and below	46	15.65
	30-45	44	14.97
	46-55	144	48.98
	56-60	20	6.80
	61-70	20	6.80
	71 or more	20	6.80
<i>Gender</i>	Female	186	63.27
	Male	108	36.73
<i>Place of Abode</i>	Rural	26	8.84
	City	268	91.16
<i>Level of Education</i>	Uneducated	8	2.72
	Primary School	16	5.44
	Junior High School	36	12.24
	High school	74	25.17
	College or Bachelor degree	142	48.30
	Postgraduate and above	18	6.12
<i>Annual Income</i>	20000 and below	70	23.81
	20001-30000	34	11.56
	30001-50000	50	17.01
	50001-80000	54	18.37
	80001-100000	18	6.12
	100001-150000	34	11.56
	150001 or more	34	11.56
<i>Health Degree</i>	Unhealthy	12	4.08
	General	112	38.10
	Healthy	170	57.82
<i>Presence of a Spouse</i>	No	54	18.37
	Yes	240	81.63

Fig. 1. Description of control variables and demographic characteristic variables. Photo credit: Original

3.2 Social Support System

On the whole, the subjects considered that they had received relatively high level of family support and moderate level of community support and government support. Most of the subjects lived in communities without nursing homes, senior dining halls or in-home care services, while nearly half of the subjects lived in communities without senior activity centers. A further 34.7 per cent did not have a community clinic.

In addition, in order to verify the reliability and validity of the scale, the reliability and validity of the government-supported part of the questionnaire was analyzed. The results showed that the Kronbach α coefficient was 0.917, greater than 0.9, indicating that the questionnaire had good consistency. KMO value was 0.822, higher than the critical value 0.8 for factor analysis, and Bartlett's sphere test value $p = 0.000 < 0.001$, indicating a good significance.

3.3 Pension Choice

Nearly 92.52% of the subjects chose home pension, nearly 60% of the subjects chose community pension, 48.98% of them said they would consider institution pension, but only 2% of those over 60 years old chose institution pension. Specific variables are shown in Table 1.

3.4 Variable Coding and Model Building

Whether to choose home care, community care and institution care as dependent variables, social support as independent variable, demographic characteristics as control variable, variable assignment as shown in Fig. 2 and Fig. 3.

Establish binary Logistic regression model:

$$\ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots \dots + \beta_{10} x_{10i} + \varepsilon$$

p_i is the probability that the sample chooses a certain pension method, it is the probability of $Y = 1$; β_0 is a constant; $\beta_m (m = 1, 2, \dots, 10)$ is the partial regression coefficient; $x_m (m = 1, 2, \dots, 10)$ is the independent variable; ε is the random error term.

Table 1. Dependent variable and result of choice of pension mode.

Variable Name	Indicators	Frequency	Percentage (%)
Home care	No	22	7.48
	Yes	272	92.52
Community pension	No	118	40.14
	Yes	176	59.86
Institutional pension	No	150	51.02
	Yes	144	48.98

Variable Name	Mini mum	Maxi mum	Mean value	Stand ard devia tion	Media n
<i>Family support (total 34)</i>	11	34	24.23 1	5.612	25.000
<i>Community support (total 10)</i>	1	10	5.340	1.797	5.000
<i>Community nursing home (0= none, 1= yes)</i>			0.190	0.393	0.000
<i>Old canteen</i>			0.102	0.303	0.000
<i>Community clinic</i>			0.653	0.477	1.000
<i>Senior Citizen activity Center</i>			0.544	0.499	1.000
<i>Home care service</i>			0.170	0.376	0.000
<i>Relationship with residents in the community (5 means very harmonious)</i>			3.680	0.834	4.000
<i>Government support (total 30)</i>	6	30	18.53 7	4.566	18.000
<i>Be satisfied with current or expected future pension levels</i>			3.102	0.880	3.000
<i>Think the social endowment security system is perfect</i>			3.095	0.869	3.000
<i>The social infrastructure construction for the elderly is perfect</i>			3.041	0.850	3.000
<i>That the elderly industry in society is perfect</i>			2.966	0.916	3.000
<i>Think national standardization construction was carried out on the social endowment mechanism</i>			3.197	0.947	3.000
<i>The government considers the needs of the elderly in urban planning</i>			3.136	0.961	3.000

Fig. 2. Independent variable and social support variable results. Photo credit: Original

3.5 Logistic Regression Results of Pension Mode Selection

Data analysis showed that the level of family support had no significant impact on the choice of home care, while community support had a significant impact on the choice of community care ($p < 0.01$), while government support had a significant impact on the choice of institution care ($p < 0.05$). H1 is not true, H2 and H3 are true.

Variable types	Variable Name	Indicators	Variable assignment
<i>Dependent variable</i>	Choice of pension mode Y	Home care Y1	Can choose = 1 not = 0
		Community pension Y2	
		Institutional pension Y3	
<i>Independent variable</i>	Family support X1		Assignment by continuous variable
	Community support X2		
	Government support X3		
<i>Control variables</i>	Age X4		Below 30=1, 30-45=2,46-55=3, 56-60=4,61-70=5, 71 or more=6
	Gender X5		Male=1,Female=0
	Place of Abode X6		City=1,Rural=0
	Level of Education X7		Uneducated=1, Primary School=2, Junior High School=3, High School=4, College or Bachelor degree=5, Postgraduate and above=6
	Annual Income X8		20000 and below=1, 20001-30000=2, 30001-50000=3, 50001-80000=4, 80001-100000=5, 100001-150000=6, 150001 or more=7
	Health Degree X9		Unhealthy=1, General=2, Healthy=3
	Presence of a Spouse X10		Yes=1,No=0

Fig. 3. Variable coding. Photo credit: Original

The control variables showed that personal income positively affected whether the subjects chose home care ($p < 0.01$); Age ($p < 0.05$), education level ($p < 0.05$), health level ($p < 0.01$), whether they have a spouse or not ($p < 0.05$) affected whether they choose community pension. Education level and whether they have a spouse or not had

	Home care		Community pension		Institutional pension	
	B	Exp(B)	B	Exp(B)	B	Exp(B)
<i>Independent variable</i>						
<i>Family support</i>	0.045 (0.882)	1.046	0.027 (0.969)	1.028	0.016 (0.564)	1.016
<i>Community support</i>	-0.128 (-0.743)	0.880	0.271 (3.072*)	1.311	0.056 (0.674)	1.058
<i>Government support</i>	0.009 (0.154)	1.009	0.002 (0.056)	1.002	0.077 (2.208*)	1.080
<i>Control variables</i>						
<i>Age</i>	0.322 (1.356)	1.379	-0.262 (-2.170*)	0.769	-0.606 (-4.395*)	0.054
<i>Gender</i>	0.260 (0.490)	1.297	-0.318 (-1.144)	0.728	-0.082 (-0.301)	0.921
<i>Place of Abode</i>	-18.085 (-0.005)	0.000	-0.783 (-1.490)	0.457	0.792 (1.469)	2.208
<i>Level of Education</i>	0.147 (0.485)	1.158	0.361 (2.379*)	1.435	0.077 (0.517)	1.080
<i>Annual Income</i>	0.470 (2.822*)	1.600	0.058 (0.780)	1.060	0.031 (0.431)	1.031
<i>Health Degree</i>	0.682 (1.505)	1.978	-0.848 (-3.182**)	0.428	-0.571 (-2.174*)	0.565
<i>Presence of a Spouse</i>	-0.977 (-1.359)	0.376	0.887 (2.271*)	2.428	0.509 (1.245)	1.663
*p<0.05**p<0.01						

Fig. 4. Logistic regression results of pension mode selection. Photo credit: Original

a positive impact, while age and health level had a negative impact. However, age ($p < 0.01$) and health degree ($p < 0.05$) negatively affected whether they chose institutional endowment (Fig. 4).

3.6 The Data Analysis

SPSS software was used for binary linear regression analysis of the data, and the results are as follows:

The results of social support variables showed that, due to the influence of “filial piety” culture, blood ties and traditional concepts, the subjects felt a strong sense of family support, but their evaluation of community support and government support was not high, believing that there was still room for improvement.

The results of pension preference showed that nearly 92.52% of the subjects chose home care, indicating that social pension cannot completely replace home care at the present stage. Among the elderly over 60 years old, 2% choose institutional pension, which is roughly in line with the planning of “9073” pension service pattern.

Without considering the contradiction between supply and demand and other constraints, 59.86% and 48.98% of people said they would consider community pension and institutional pension, which shows that the demand for social pension arises at the historic moment, and the concept of community pension is gradually accepted by people. On the other hand, it also reflects that the actual situation is far less ideal due to the constraints of facilities and service supply.

Community support and government support affect whether to choose community pension and institution pension respectively, which is consistent with the hypothesis. It is worth noting that people who choose community and state pension tend to be younger and less healthy, which is consistent with existing studies. This paper speculates that compared with the elderly, young and middle-aged people are less affected by traditional ideas and have a stronger ability to accept new things, so they are more able to accept non-home pension forms. At the same time, people with poor health are more dependent on external support for the elderly, so they tend to have professional facilities and services for the elderly in the community and institutions for the elderly.

In addition, education level and whether or not a spouse also affect whether the subjects choose to provide for the aged in the community, among which, people with higher education level and a spouse tend to prefer the aged in the community. As a socialized pension mode emerging in recent years, most of the elderly have narrow information channels and poor media literacy. They do not understand this, and it is more difficult to promote it. Therefore, people with higher education and broader knowledge tend to have a higher tendency. At the same time, the elderly with a spouse can participate in the community pension with their spouse, mutual support for the elderly, so the preference may be high.

These conclusions are consistent with previous studies.

However, this paper also found that whether people choose home care is only affected by personal income, that is, the higher the income, the more inclined they are to home care, and has nothing to do with other personal characteristics and family support, which is inconsistent with previous studies. This paper speculated that there are two reasons: one, influenced by traditional ideas, pension that occupy the home is always the first choice of the majority, this kind of choice and personal characteristics, but the burden of high income people have enough economic ability home daily expenses, and to keep its material basis and spiritual support, so the propensity to high. Second, the family support level is low, can realize home care through the way of self-care; The degree of family support is high, and home care can be realized through family support such as children’s support, so the degree of family support does not affect the choice of pension.

As can be seen from the research conclusions, even though home-based endowment still remains the mainstream, social endowment already has a broad space for development. In order to further alleviate the supply-demand contradiction between community endowment and institutional endowment and promote the orderly development of social endowment, the following suggestions are put forward:

- 1) Expand the content of community pension services and improve the capability of community pension services
- 2) Strengthen the publicity and construction of community elderly care
- 3) Strengthen government support and build institutional elderly care services under government norms
- 4) Guide the deepening of social pension awareness

4 Conclusions

In conclusion, the following conclusions can be drawn: the level of family support has no significant influence on whether to choose home care, while community support and government support have significant influence on whether to choose community care and institution care respectively. In addition, the higher the income, the more inclined to home care; The higher the education level and the spouse, the more inclined to community pension; People who are younger and in poorer health tend to prefer community and institutional care.

In the research of social sciences, binary variables are often encountered. For binary variables, the regression analysis cannot be carried out by using the general multiple linear model directly, because the residual does not meet the assumptions of normality, covariance and so on, and the value range of explanatory variables is no longer $-\infty \sim +\infty$. If the existence of a certain feature or result is predicted according to the value of a series of predictive variables, and the dependent variable is a binary variable, binary Logistic regression is usually adopted. At present, this study only studies the influencing factors of “whether” to choose a certain pension mode, and the subsequent study will combine qualitative analysis to ask “why” not to choose the social pension mode.

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