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Article

The Role of Trust in Government in China's Rural Pension Program

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Abstract: This paper estimates the effect of trust in government on rural residents' contributions in China's rural pension program using the Propensity Score Matching (PSM) method. We construct an analytical framework for rural residents' decision-making in pension program and provide analysis using data from China Family Panel Studies (CFPS) and 25 provincial Departments of the Human Resources and Social Security (DOHRSS) in China. Our analysis shows that rural residents' trust in government will influence their contributions to the pension programs by affecting their expected return of the investments. The policy implication of our study is that the government should improve rural residents' trust in government in order to develop a successful and sustainable rural pension program.

Keywords: China's Rural Pension Program; Pension contribution; Trust in government; Propensity Score Matching method; Rural China

1. Introduction

China is experiencing rapid population aging, as a developing country with the elderly of 65 and older accounting for 13.5 percent of the total population in 2020 [1]. The traditional pattern of providing for the elderly has been gradually weakened under the double impact of industrialization and urbanization, especially for the elderly in rural areas. Many young laborers are moving from rural to urban areas, leaving the elderly to remain in their homes busy with heavy agricultural work. In addition, The One Child Policy implemented in 1980 has significantly reduced the labor force and weakened a family's ability to support the elderly, causing rural residents to live with even less financial security in their later years. The pension program has become a better income source for rural elderly [2, 3].

The Chinese government launched the New Rural Pension Scheme (NRPS) in 2009, which had covered all regions of rural China since 2012 [4]. The NRPS and the Urban Resident Social Pension (URSP) Program were merged at the policy level of the central government in 2014. They became the Government and Institution Pension (GIP) Program to provide greater social equality [5,6]. By the end of 2021, the NRPS participation rate exceeds 91% nationwide, and rural residents account for more than 90% [7]. The implementation of NPRS has been effective in alleviating health opportunity inequalities between urban and rural elderly [7], improving the quality of retirement for rural elderly [8], and improving the well-being of rural elderly [9,10]. However, most participants selected the lowest all annual contribution level [9,10], which may limit the extent of NPRS in improving life quality of rural elderly [11-13], which is an important issue in the Chinese economy [14].

2. Literature Review

Many studies have examined factors that affect participation behavior in the pension programs [15-18]. To increase the contribution level of participants, experts suggest the government can take measures in institutional design, transaction costs, and policy incentives [19-21] .

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However, few have investigated the impact of resident trust in government on the contribution levels in pension program. According to Department for Work and Pensions (DPW) of the United Kingdom, the loss of trust in pensions as a reliable savings vehicle is an important reason for the low contributions in the pension programs [22]. Webb R et al. (2014) investigated the impact of trust between pension participants and providers on participation possibility using data from Scotland, and found that trust can increase the participation rate [23]. Koh (2021) also found that trust in private and public financial represents is positively associated with pension investment using Singapore Life Panel data [24]. Trust is a multifactor concept which should be analyzed on specific conditions [25] (Uslaner, 2008). Trust in government is an individual's belief that government actions are expected to be in line with their requirements [26]. As the government is the makers and executors of pension program, rural residents' trust in government may be the important affecting participation behavior. With a higher level of trust in government, the rural residents will have a reasonable expectation of investment return for pension programs that provides motivation for them to participate in government programs [27,28].

Several studies have investigated the contribution level of pension program for rural residents in China. Part of the reason is that compared with the urban old-age insurance, the rural pension program is a "latecomer". The rural population remained largely ignored by government-funded pension schemes. By the end of 2014, with the full coverage of NPRS in rural China, almost all the rural elderly (over age 60) received pensions. As a universal pension plan covering rural residents, most of the literature focus on the participation rate and incentives to encourage rural residents' participation [29,30] . Our study attempts to investigate the effect of trust in government on the contribution level of rural residents in China's Rural Pension Program using data from NPRS programs in 25 provinces of China and the China Family Panel Studies (CFPS). This study contributes to literature in three ways. First, the results help understand the function of trust in government in pension program. Second, we focus on the contribution level in the pension program in addition to the participation rates. Third, we employ a novel method, Propensity Score Matching (PSM), to examine the effect of trust in government on rural residents' pension contribution to alleviate endogeneity issues. The rest of the paper is organized as follows. Section 3 describes the research methods. Section 3 introduces the analytical framework. Section 4 describes the regression Analysis. Section 5 discusses the l results. Section 6 concludes the paper and makes the policy recommendations.

3. Analytical Framework

Rural residents' participation in pension program is a unique investment activity in the long term. Hence the expected return rate and investment risk are the core factors affecting investment behavior [31]. It has a low investment risk as the government implements China's rural pension program. In the analytical framework, we focus on the expected return rate on pension program to analyze its impact mechanism. Assuming that pension contributions and benefits are made at the beginning of the year. Annual pension payments are derived from the arithmetic sum of monthly payments, regardless of the time value of money during the year. The final value of the total investment is denoted by F. Then, the total investment of premiums paid by a rural resident at age X can be expressed as:

$$F = P_1 + P_2(1+r) + P_3(1+r)^2 + \cdots + P_i(1+r)^{60-X} = \sum_{i=1}^{60-X} P_i(1+r)^{59-X} \quad (1)$$

Where P_i is the contribution level for NPRS in year i, r is the annual deposit interest rate. Correspondingly, the final value of the total benefit of participants' contributions W can be expressed, where R is the discount rate and the life expectancy is N:

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$$W = \frac{A_1}{1+R} + \frac{A_2}{(1+R)^2} + \cdots + \frac{A_i}{(1+R)^{N-60}} = \sum_{i=1}^{N-60} A_i \frac{1}{(1+R)^i} \quad (2)$$

The investing return of an individual pension account depends on three factors: individual income, a basic pension, and an annual pension. The monthly individual income is the total savings in a personal account divided by 139.A_i is the investing return obtained in year i, which can be expressed as below:

$$\mathrm{A_i} = 12\left[\frac{\sum_{i=1}^{60-X} (P_i + P0_i)(1+r)^{59-X}}{139} + \tau_i + \varsigma_i\right] \quad (3)$$

Where $P0_i$ is the government subsidy corresponding to the contribution level，τ_i is the monthly basic pension in year i. ς_i is the monthly annual pension in year i. With the assumption that the participation policy and the rural residents' choice of contribution level are unchanged, the expected rate of return S for pension program is:

$$\mathrm{S} = \frac{\mathrm{W}}{\mathrm{F}} - 1 = \frac{12\left[\frac{(P+P_0)\sum_0^{60-X}(1+r)^{60-X}}{139} + \tau + \varsigma\right]\sum_{t=1}^{N-60}\frac{1}{(1+R)^t}}{P\sum_0^{60-X}(1+r)^{60-X}} - 1 \quad (4)$$

Government trust determines the extend of confidence of rural residents that they will receive the corresponding benefits in the future, so we introduce the trust factor δ based on equation, $0 \le \delta \le 1$.

$$\mathrm{S} = \left[\frac{12}{139}\cdot\frac{P+P_0}{P}\cdot\sum_{t=1}^{N-60}\frac{1}{(1+R)^t} + 12(\tau+\varsigma)\frac{\sum_{t=1}^{N-60}\frac{1}{(1+R)^t}}{\sum_0^{60-X}(1+r)^{60-X}} - 1\right]\times\delta \quad (5)$$

We can find that the expected rate of return (S) depends on the life expectancy (N), the age of participation (X), and the level of government trust (δ). Except for the explanatory variable, government trust, the rest should be considered controlled variables in the regression. Residents with a larger trust coefficient (close to 1) have more trust in the government, believing that the real expected rate of return of pension program is higher. They are more inclined to pay more contributions in pension program. In other words, government trust will influence the level of participants' contributions by affecting the expected rate of return on investors' investments.

4. Research Method

The data used in this study were from two main sources, China Family Panel Studies (CFPS) and Departments of the Human Resources and Social Security (DOHRSS) in 25 provinces of China. China Family Panel Studies (CFPS) is a survey carried out by Peking University, with a permanent sample of 14960 households and 42590 individuals interviewed every two years since 2010. CFPS covers 25 provinces in China, excluding Hong Kong, Macao, Taiwan, Xinjiang, Tibet, Qinghai, Inner Mongolia, Ningxia, and Hainan. The data of trust in government used in this study came from the 2012 CFPS when the survey investigated the residents' trust in the government. For all post-2012 data, CFPS no longer included this trust variable therefore in this study we only used the 2012 data. Data of rural residents' pension contribution, family characteristics are also from CFPS. According to the General Office of the State Council of China, the government's subsidies for pension participants in NPRS are determined by each provincial government and thus vary across provinces [32]. The data of subsidies for pension participants sponsored by the government in 2012 were collected from the Departments of the Human Resources and Social Security (DOHRSS) in 25 provinces of China. The sample size is 14356, after eliminating missing values of key variables such as rural residents' trust in local government, the income of the family, the age of the interviewee.

The explanatory variable, trust in government, was measured by residents' answers to the question "how much do you trust local government officials?" in the CFPS survey.

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The responses to the question are reflected in scores on a scale from 0 to 10, with 0 being very mistrustful and 10 being very trusting. We defined residents with scores of 0-4 as the group with low trust in government, residents with scores of 5 as the group with average trust in government, and residents with scores from 6-10 as the group with high trust in government, with 5040, 4254, and 5062 residents in each group respectively.

We also examined other exogenous variables that may affect the trust in government and the contribution level of the pension program. According to the life cycle hypothesis and other related literature, we consider the impact of income, age, education, job, and other variables which affect the trust in government [33-36]. The descriptions of the variables used in the study and the summary statistics are presented in Table 1.

Table 1. Definition of Variables and Descriptive Statistic

variable	Definition	Mean	SD
Contribution	The amount of each participant's contribution	143.44	180.58
Government trust	Level of trust in local government officials（a scale of 0 to10）	4.93	2.48
Gender	0 if female, 1 if male	0.48	0.5
Age	Age of the participants	38.29	12.59
Health	The condition of health (1= Excellent; 2 = Good; 3 = Fair; 4 = Poor; 5 = Very poor)	2.98	1.22
Political identity	0 if not a Chinese Communist, 1 if yes	0.03	0.18
Education	Illiteracy=1, primary school=2, junior middle school=3, senior high=4, training school=5, bachelor=6, master=7, doctor=8	2.62	1.14
Sons	Number of sons	0.8	0.75
Job	0 if non-agriculture, 1 if agriculture	0.84	0.37
Income	Net per capita household income in a year	9197.84	11286.69
Basic pension	Monthly basic pension payable in a year	63.72	42.5
Annual pension	The amount corresponding to the increase in the base pension for each additional year of contribution after 15 years of payment	0.28	1.38
Lowest contribution level	Lowest contribution level available in the participant's province	107.51	53.08
The highest contribution level	The highest contribution level available in the participant's province	1087.51	299.52
The lowest contribution subsidy	The amount of government subsidy corresponding to the lowest contribution level	32.43	20.58

5. Regression Analysis

In this research, we employ Propensity Score Matching (PSM) to examine the effect of trust in government on rural residents' contribution level of pension program to alleviate endogeneity issues. Rural residents' trust in government is self-selection behavior, which is determined by lots of factors such as family characteristics, and personal characteristics. Traditionally, archival studies use multiple regression (MR) model to mitigate endogeneity concerns in observational data. However, if the relation between outcome

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(Y) and explanatory variables (X) were improperly specified, then the MR would suffer from "functional from misspecification" (FFM) and could produce biased estimates [37]. For example, in this study, compared to those who worked outside the area, some rural residents who had been working locally had more contact with local government officials and higher levels of trust in government. While working locally also means that they are paid relatively low wages and thus, they cannot afford to pay higher levels of contributions. Within this case, the relation between residents' trust in the government and the contribution level of pension program is affected by another factor, whether residents work locally and produce FFM issues.

The counterfactual nature of PSM allows for straightforward and intuitive estimation of treatment effects with relaxed assumption regarding the functional relation between variables [38-40]. In this research, we match individuals with high government trust to individuals in similar backgrounds, but with low government trust, to eliminate the difference in other factors between the treatment and control samples. Therefore, we can adjust for the effect of other factors, such as whether residents work locally, without making assumptions about the functional form of the relation between variables.

The PSM matches observations from treatment and control group on several dimensions by using the estimated likelihood of receiving treatment [41]. The likelihood of receiving treatment is measured by propensity score, which estimated from Logit model as follows:

$$D_i = \beta_0 + \beta X_i + \varepsilon_i \tag{6}$$

Treated ($D_i = 1$) observations are matched to untreated ($D_i = 0$) observations with the closest propensity score estimated from above equation, where X_i is a vector of variables affecting rural residents' government trust (D_i) and the contribution level for pension program. After that, we can estimate the average treatment effect (ATT) of government trust on rural residents' contribution levels as follows:

$$\mathrm{ATT} = \mathrm{E}[y_{1i} - y_{0i} | D_i = 1, p(X)] = E[y_{1i} | D_i = 1, p(X)] - E[y_{0i} | D_i = 1, p(X)], \tag{7}$$

where the $p(X)$ is the likelihood of receiving treatment. As we divided the sample into high, average, and low three groups according to the different levels of rural residents' trust in the government, we performed PSM operation three times in this study to estimate ATT effect two by two groups.

For example, in the first operation, the dummy variable $D_i = 0,1$ indicates the degree of trust of rural residents in the government. 1 is the treatment group showing rural residents with high government trust, 0 is the control group showing rural residents with low government trust, and Y_i denotes the contribution level of rural residents, and the treatment effect of D_i on Y_i is:

$$Y_i = \begin{cases} Y_{1i} & D_i = 1 \\ Y_{0i} & D_i = 0 \end{cases} \tag{8}$$

In addition, we reset the value of the dummy variable twice more, with the treatment group consisting of rural residents with high government trust and the control group consisting of residents with average government trust; and the treatment group consisting of residents with average government trust and the control group consisting of residents with low government trust.

Three methods of K-nearest neighbor matching, caliper matching, and Mahalanobis matching are applied to ensure the robustness of the matching results. We perform all three matching methods simultaneously and compare the matching results [42] . K-nearest neighbor matching is a method for determining K individuals from the control group whose propensity score is most close to individual i in the treatment group. Caliper matching is a variation of K-nearest neighbor matching that attempts to avoid bad matches by imposing a tolerance on maximum distance. Mahalanobis matching takes into

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account the propensity score distance between the control and treatment groups by defining the Mahalanobis distance [43,44]. Those equation listed as follows:

$$| p_i - p_j | = \min_{k \in W} | p_i - p_j | \tag{9}$$

$$\delta > | p_i - p_j | = \min_{k \in W} | p_i - p_j | \tag{10}$$

$$d(i,j) = (p_i - p_j)' \sum_{x}^{-1} (p_i - p_j) \tag{11}$$

Where p_i is the propensity score of individual i from treatment group, p_j is the propensity score of individual j from control group. δ is maximum distance, usually suggest $\delta \leq 0.25\sigma$, and σ is sample standard error. $\sum_x^{-1}(p_i - p_j)$is a weighting matrix.

For comparison, we also use MR model to examine the effect of trust in government on rural residents' contribution level of pension program. In this model, we treat the rural residents with average government trust as baseline group. The model describes as follows:

$$Contributionlevel = C + \beta_1 trustlow + \beta_2 trusthigh + \alpha\gamma + \varepsilon, \tag{12}$$

where the γ is exogenous variable which affects the rural residents' contribution, ε is random error term.

6. Results and Discussion

Table 2 presents the result for average treatment effects of contribution levels of rural residents with different government trusts. As shown in column 1, Compared with the rural residents with low government trust, the rural residents with high government trust paid an average increase of ￥10.14. It suggests that trust in the government can significantly increase the contribution level of pension program for rural residents and all three matching methods prove it at the level of 1%. In column 2, we treat rural residents with high government trust as the treatment group and rural residents with average government trust as the control group, which still illustrates that government trust can improve the contribution level of pension program at the level of 5% under the caliper matching, and Mahalanobis matching. In column 3, we treat rural residents with average government trust as the treatment group and rural residents with low government trust as the control group. It still shows that rural residents' trust in the government can increase the contribution of pension program statistically significantly at the 5% level.

Table 2. Average treatment effects of contribution levels of rural residents under different government trusts

	(1)	(2)	(3)
matching method	**rural residents with high government trust VS rural residents with low government trust**	**rural residents with high government trust VS rural residents with average government trust**	**rural residents with average government trust VS rural residents with low government trust**
nearest neighbor matching	9.66***	5.2	8.74**

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caliper matching	10.13***	4.64*	6.18**
Mahalanobis matching	10.62***	6.40**	7.49**
Average ATT	10.14	5.41	7.47

Note: *p<0.1, **p<0.05, ***p<0.01

We find rural residents with high government trust pay more contributions to NPRS than those with average government trust. Local governments act as the main body of the implementation of NPRS and the administrator of the pension fund. If rural residents have more trust in the government, which implies a higher trust factor, and a higher expected rate of return, they will invest more in NPRS. As shown in Table 3, trust in the government can increase the contribution level of pension program for rural residents at the 10% significance level. The rural residents with high government trust paid an average ￥5.16 more than those with average government trust, and rural residents with average government trust paid an average ￥4.78 more than those with low government trust. Compared to Table 2, the results shown in Table 3 are less statistically significant, and the coefficients is smaller, which means that to some extent PSM is a better choice to analysis in this research.

Table 3. the effect of trust in government on rural residents' contributions (MR model)

	trustlow	trusthigh	age	gender	education	health	party	work	sons	income
coefficient	-4.78*	5.16*	2.75***	-3.04	4.91***	-0.69	-6.19	-5.10	-10.35***	0.00**
p-value	0.08	0.06	0.00	0.18	0.00	0.48	0.34	0.10	0.00	0.03

Note: *p<0.1, **p<0.05, ***p<0.01

The balance test results in Table 4 show that the percentage of bias in all the characteristic variables is reduced to within 2% after matching. The percentage of the absolute value of reduced bias is higher than 50% in all cases. In addition, the T-test statistical values indicate that the original hypothesis of zero variability of the matched variables between the two sample groups cannot be rejected, thus showing that PSM significantly reduce the differences between the two sample groups.

Table 4. The result of the balance test

Variable	Matching type	High government trust	Low government trust	Difference in group T value	Bias percentage（%）	Reducing the percentage of bias（%）
Gender	matching before	0.486	0.472	1.52	2.7	74.3
	matching after	0.485	0.482	0.47	0.7	
Age	matching before	38.728	37.479	5.68***	10	92.2
	matching after	38.715	38.618	0.53	0.8	

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Education	matching before	2.623	2.632	-0.47	-0.8	-89.5
	matching after	2.622	2.64	-1.06	-1.6	
Health	matching before	2.94	3.066	-5.92***	-10.3	95.6
	matching after	2.941	2.936	0.31	0.5	
Political identity	matching before	0.037	0.023	4.47***	8.1	84.5
	matching after	0.035	0.038	-0.77	-1.3	
Sons	matching before	0.82	0.818	3.27***	5.7	95.7
	matching after	0.819	0.82	0.17	0.2	
Job	matching before	0.849	0.823	4.16***	7.2	81.5
	matching after	0.849	0.854	-0.94	-1.3	
Income	matching before	9126.3	9331.6	-1.04	-1.8	49.9
	matching after	9124.9	9227.9	-0.63	-0.9	
FE				YES		

7. Concluding Remarks

This study provides useful policy implications in China's rural pension system by examining whether trust in government can increase rural residents' contribution level in the pension program. Consistent with previous literature, we found that psychological factors such as government trust would affect residents' participation behavior in pension program. Using the date from CFPS and DOHRSS, we provide new evidence that rural residents' trust in government is significantly positively associated with rural residents' contribution levels to pension program. Furthermore, compared with the rural residents with low trust in government, those with high trust in government, and our results are robust both in PSM and MR model.

We further investigate the mechanism of the impact of trust on rural residents' decision-making on pension program participation. We found that life expectancy, the age of participation in pension program, and the level of government trust will influence rural residents' investment behavior by affecting the expected return rate, while the expected return rate is a critical factor influencing rural residents' contribution level. If rural residents have more trust in the government, which means a higher expected rate of return, they will invest more in pension program.

In summary, our results suggest that, to improve the current situation of high participation rate but low contribution level in the rural pension program, the government should increase residents' trust in the government. Our study has some limitations. Although we use the PSM model to control individual heterogeneity, the rural residents'

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trust in government may not be stable over time. The PSM model provides straightforward and intuitive estimation of treatment effects with relaxed assumption regarding the functional relation between variables. However, the propensity score is decided by the covariates we chose subjectively. Future research should take into account these challenges.

References

1. NBS (National Bureau of Statistics of China), 2021, Main Data of the Seventh National Population Census, Commissioner of the National Bureau of Statistics of China, Beijing.
2. Smith J P, Tian M, Zhao Y. Community effects on elderly health: evidence from CHARLS national baseline[J]. The journal of the economics of ageing, 2013, 1: 50-59.
3. Lin B, Lin Z, Zhang Y Y, et al. The impact of the new rural pension scheme on retirement sustainability in China: Evidence of regional differences in formal and informal labor supply[J]. Sustainability, 2018, 10(12): 4366.
4. Shen C, Williamson J B. China's new rural pension scheme: can it be improved?[J]. International journal of sociology and social policy, 2010.
5. Zhu, H., & Walker, A. Pension system reform in China: Who gets what pensions?. Social Policy & Administration, 2018, 52(7), 1410-1424.
6. Williamson J B, Fang L, Calvo E. Rural pension reform in China: A critical analysis[J]. Journal of aging studies, 2017, 41: 67-74.
7. NDRC (National Development and Reform Commission), 2022, The 14th "Five-Year Plan Outline" of the main indicators of 11: Basic pension scheme participation rate. NDARC News, 2021-12-25. [2022-10-1]. https://www.ndrc.gov.cn/fggz/fzzlgh/gjfzgh/202112/t20211225_1309658.html?code=&state=123. (In Chinese)
8. Liu T, Sun L. Pension reform in China[J]. Journal of aging & social policy, 2016, 28(1): 15-28.
9. Zhao, Y., & Zhou, J. Does New Rural Social Endowment Insurance improve the happiness of middle aged and elderly people: an empirical study based on China Family Panel Studies Data, 2021(06):105-122. DOI:10.19365/j.issn1000-4181.2021.06.08
10. Lin, B., & Zhang, Y. Y. The Impact of Fiscal Subsidies on the Sustainability of China's Rural Pension Program. Sustainability, 2019,12(1), 186.
11. Ministry of Human Resources and Social Security (MOHRSS). (2014c). 25 provinces included the introduction of new regulations to protect urban and rural residents treatment in the agenda. Retrieved from http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/shizhengyaowen/201411/t20141102_143301.htm
12. Zhang C, John Giles, Zhao Y. Policy evaluation of China's New Rural Pension program: income, poverty, expenditure, subjective, wellbeing and labor supply [J]. Economics (Quarterly),2015,14(01):203-230.
13. Wang H, Huang J. How Can China's Recent Pension Reform Reduce Pension Inequality?[J]. Journal of aging & social policy, 2021: 1-15.
14. Zhang, Y. Y., Zheng, Q., & Wang, H.. Challenges and opportunities facing the Chinese economy in the new decade: epidemics, food, labor, E-commerce, and trade[J]. The Chinese Economy, 2021,54(6), 373-375
15. Yabiku S T. Family history and pensions: The relationships between marriage, divorce, children, and private pension cov-erage[J]. Journal of Aging Studies, 2000, 14(3): 293-312.
16. Harris J R, Todaro M P. Migration, unemployment and development: a two-sector analysis[J]. The American economic re-view, 1970, 60(1): 126-142.
17. Packard T. Is there a positive incentive effect from privatizing social security: evidence from Latin America[M]. World Bank Publications, 2001.
18. Holzmann R, Packard T, Cuesta J. Extending coverage in multi-pillar pension systems: Constraints and hypotheses, pre-liminary evidence and future research agenda[J]. World Bank Social Protection Discussion Paper, 2000, 2.
19. Mesa-Lago C. Informal employment and pension and healthcare coverage by social insurance in Latin America[J]. IDS Bulletin, 2008, 39(2): 79-86.
20. Ferreira F H G, Robalino D A. Social protection in Latin America: achievements and limitations[J]. World Bank Policy Re-search Working Paper, 2010 (5305).
21. Marino I, Pericoli F, Ventura L. Tax incentives and household investment in complementary pension insurance: some recent evidence from the Italian experience[J]. Risk management and insurance review, 2011, 14(2): 247-263.
22. Department for Work and Pensions (DWP). Security in retirement: Towards a new pensions system[J]. 2006.
23. Webb R, Watson D, Ring P, et al. Pension confusion, uncertainty and trust in Scotland: an empirical analysis[J]. Journal of Social Policy, 2014, 43(3): 595-613.
24. Koh B S K, Mitchell O S, Fong J H. Trust and retirement preparedness: Evidence from Singapore[J]. The Journal of the Economics of Ageing, 2021, 18: 100283.
25. Uslaner E M. Trust as a moral value[J]. The handbook of social capital, 2008: 101-121.
26. Citrin J. Comment: The political relevance of trust in government[J]. American Political Science Review, 1974, 68(3): 973-988.
27. Madrian B C. Matching contributions and savings outcomes: A behavioral economics perspective[R]. National Bureau of Economic Research, 2012.

Preprints (www.preprints.org) | NOT PEER-REVIEWED | Posted: 27 December 2022 doi:10.20944/preprints202212.0508.v1

28. Pattie C J, Johnston R J. Routes to party choice: Ideology, economic evaluations and voting at the 1997 British General Election[J]. European Journal of Political Research, 2001, 39(3): 373-389.
29. Lei X, Zhang C, Zhao Y. Incentive problems in China's new rural pension program[M]//Labor market issues in China. Emerald Group Publishing Limited, 2013, 37: 181-201.
30. Zhang C. Intention of the peasants on participating in New Rural Pension Program and its influencing factors[J]. Journal of Agrotechnical Economics, 2010, 6: 4-10.
31. Markowitz, H. M., Portfolio selection[J]. The Journal of Finance, 1952,7(1):77-79.
32. GOSC (General Office of the State Council, PRC). (2014). The Opinions of the State Council on establishment of a unified Basic Pension System for urban and rural residents. General Office of the State Council, PRC. Beijing. http://www.gov.cn/zwgk/2014-02/26/content_2621907.htm. (In Chinese)
33. Modigliani F. The life cycle hypothesis of saving, the demand for wealth and the supply of capital[J]. Social research, 1966: 160-217.
34. Guiso L, Sapienza P, Zingales L. Trusting the stock market[J]. the Journal of Finance, 2008, 63(6): 2557-2600.
35. Majoka Z, Palacios R J. What can we learn about pensions from the FINDEX data?[R]. The World Bank, 2017.
36. Habila M. Influence of Financial Education on Retirement Security: Evidence from the state of Illinois[J]. 2015.
37. Rubin D B. Using multivariate matched sampling and regression adjustment to control bias in observational studies[J]. Journal of the American Statistical Association, 1979, 74(366a): 318-328..
38. Rosenbaum, Paul R., and Donald B. Rubin. "The Central Role of the Propensity Score in Observational Studies for Causal Effects."Biometrika, 1983, 70(1): 41-55.
39. Austin P C. An introduction to propensity score methods for reducing the effects of confounding in observational studies[J]. Multivariate behavioral research, 2011, 46(3): 399-424.
40. Shipman J E, Swanquist Q T, Whited R L. Propensity score matching in accounting research[J]. The Accounting Review, 2017, 92(1): 213-244.
41. Becker S O, Ichino A. Estimation of average treatment effects based on propensity scores[J]. The stata journal, 2002, 2(4): 358-377.
42. Guo S, Fraser M W. Propensity score analysis: Statistical methods and applications[M]. SAGE publications, 2014.
43. Heckman J J, Ichimura H, Todd P E. Matching as an econometric evaluation estimator: Evidence from evaluating a job training programme[J]. The review of economic studies, 1997, 64(4): 605-654..
44. Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. Journal of economic surveys, 22(1), 31-72.