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Pathways to Retirement in Taiwan: Do Ethnicity and Cohort Matter?

Fang-Yi Huang and Monika Ardelt

Abstract

Studies about retirement often neglect ethnic identity. This research utilized the "Taiwan Longitudinal Study in Aging" data from 1989 to 1996 when political and social changes in the country occurred to examine the influence of ethnicity (dominant Mainlanders versus Southern Min, Hakka, and various indigenous people) on Taiwanese men's working status at age 60 and above. We asked three questions: (1) Are Mainlanders more likely to retire earlier than non-Mainlanders? (2) Does working in the public versus the private sector affect the age of retirement and does this differ by ethnicity? (3) What factors determine retirement ages of two cohorts? Using chi-square and t-tests, results of a comparison of two cohorts ($n = 1254$ and $n = 526$ for the 1989 and 1996 cohorts, respectively) showed that being a Mainlander, being unmarried, older age, self-reported poor health, and functional limitation were associated with a higher likelihood of earlier retirement. In logistic regression models, public sector work mediated and moderated the effect of ethnicity on the likelihood of earlier retirement only in the older cohort, where Mainlander public sector workers had the greatest likelihood of earlier retirement, indicating that the incentive structure of public pensions contributes to earlier retirement. The results are consistent with cumulative advantage theory. To delay the retirement age for public sector workers, policymakers could reduce public pension incentives.

Keywords: ethnicity, retirement, pension receipt, cohort, cumulative advantage or disadvantage

1. Introduction

The debate of increasing the age for full retirement benefits has centered around the problem of pension deficits but has paid less attention to the outcomes of the policy changes for ethnic groups [1]. Since Taiwan's population is not homogeneous, different groups need to be considered. Southern Min (71% of Taiwan's total population) and Hakka (12% of Taiwan's total population) are two groups of people who emigrated from southern Fujian province and Guangdong province of China, respectively, to Taiwan several centuries ago. Indigenous people (2% of Taiwan's total population) are a collection of various indigenous groups who have lived in Taiwan for several hundred years [2]. Mainlanders (15% of Taiwan's total population) used to be the most powerful group and the ruling party in Taiwan in the

middle and late twentieth century. Although average life expectancy is increasing in Taiwan [3], not all population groups have benefitted equally with respective consequences for labor force participation. For instance, in 1988, the dominant group of Mainlanders were twice as likely to be employed in Taiwan government or state-owned enterprises than non-Mainlanders, including Southern Min, Hakka, and indigenous people [4, 5], and between 1989 and 2007, Mainlanders experienced comparatively less deterioration in instrumental activities of daily living than non-Mainlanders [6]. Mainlanders emigrated from mainland China to Taiwan during the 1940s, when the leader of Kuomintang (KMT), Chiang Kai-shek, fled with millions of people, such as officers, soldiers, and residents, to Taiwan after losing the Chinese civil war.[1] Mainlanders were also more likely to retire earlier with full pension benefits than non-Mainlanders [7]. Increasing the age for full retirement will therefore reduce the lifetime-expected benefits of disadvantaged groups by a larger percentage if they are forced to take earlier retirement due to disability or health problems than of those who can work in their white-collar jobs until they receive full retirement benefits [8, 9]. Thus, the current policy postulate to "postpone retirement age to receive the full benefit of pension" hurts disabled minorities who are overrepresented in physically demanding blue-collar jobs more than nonminority white-collar workers [10, 11].

Unlike income or education, earlier retirement cannot easily be interpreted as a measure of social inequality [12]. However, retirement, as an exit from a cohesive paid work pattern to pension income, reflects both structural changes and individual experiences, which might represent unequal indicators of retirement. This study aimed to analyze how ethnicity affected and still affects retirement trajectories in Taiwan, contributing not only to cumulative advantage and disadvantage theory (CAD) embedded in the life course paradigm [13–16] but also to policy recommendations for developing countries such as Taiwan in the 1980s.

2. Ethnicity and retirement

2.1 Ethnicity and retirement: in general

Although a large body of literature on retirement exists, little research has been conducted on ethnic groups. Yet, according to a study of older Americans' labor market participation after retirement age, racial and ethnic inequality plays an important role in retirement decisions [17]. First, individual factors, such as health and socioeconomic status (SES), which are predictors of retirement, are associated with race and ethnicity. For instance, in comparison to the majority group, minorities are less likely to continue working in old age beyond the normal retirement age, because they are more likely to experience poor or fair health, suffer from cognitive impairment, and need help with a larger number of activities of daily living [18–20]. Moreover, members of the minority group are more likely to suffer from disability and to report poor or fair health [10, 17], even before reaching normal Social Security retirement age, than members of the majority group [10]. Therefore, minorities experience a substantially higher risk of unemployment and earlier retirement due to activity limitations [21]. Workers with a lower education

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[1] The founding father of the Republic of China, Sun Yat-Sen, created the KMT party and overthrew the empire of the Qing dynasty, the last dynasty in China, through a revolution. However, his successor, Chiang Kai-shek, lost the civil war with Mao Zedong, the founding father of the PRC. Chiang Kai-shek absconded to Taiwan and used violence, the army, and martial law to control Taiwan from 1945 to 1987.

and blue-collar workers often retire earlier than expected because of physical limitations [12, 22]. Compared to the majority, minorities tend to have a lower education, earn less income, work in physically more demanding jobs, and leave the labor force earlier due to physical constraints in later life [11].

Race or ethnicity determines retirement age due to financial considerations as well. Although members of the majority group tend to be physically able to work longer than the normal retirement age, sufficient income also allows them to retire earlier if they wish [23]. Stable jobs and belonging to a labor union often allow members of the majority group to withdraw from work before the age of 65. By contrast, members of the disadvantaged minority are more likely to experience involuntary layoffs, low wages, and precarious employment situations without health insurance, private pensions, and labor union coverage, which might force them to work longer to make ends meet [24].

In OECD countries, structural constrains, such as the availability of pension and Social Security retirement income, might either function as incentives to withdraw from work or as motivations to push people out of the labor force [25–28], which further creates retirement inequality between racial groups. For instance, white women tend to gain more from Social Security benefits than black women, because their husbands tend to earn more money and their marriages are more likely to last for ten years or longer, giving them access to the spousal benefit of Social Security [29].

Looking at Western Europe, it is still unknown whether the occupational sector and pension incentives are pushing or pulling factors in retirement. Those who work in the public sector can afford to withdraw from work earlier than those who work in the private sector [12, 30]. However, the type of employer pension is significantly related to retirement decision-making, and employees whose pension wealth increases with additional work expect to work longer [25]. Hence, minorities with lower socioeconomic status and no access to employer pensions are more likely to claim Social Security benefits earlier compared to members of the majority group who have a higher incentive to delay retirement [31].

In addition, the pension reform can lead to a new retirement pattern. For instance, the private pension structure in the United States has changed from defined benefit (DB) plans to defined contribution (DC) plans [32]. DB plans promise a defined retirement income for the remainder of life after working for an employer for a certain number of years and depending on the length of employment, but they are usually not transferrable from one employer to another and therefore do not benefit mobile workers. DC plans, by contrast, are owned by individual workers. Both employers and employees usually contribute money to the plans, but the employee is solely responsible for investment decisions. Upon retirement, the money in the DC plan is used to finance the worker's retirement. This change from DB to DC plans made the economic environment and the stock market an essential factor for retirement decisions. In particular, the global financial crisis in 2008 forced many people with DC plans to stay in the labor force longer due to the wealth loss in the stock market and the respective decline in DC plans, which tend to invest heavily in the stock market [33].

2.2 Ethnicity and retirement: in Taiwan

In Taiwan, the dominant group of Mainlanders has been overrepresented in public sector jobs, particularly during the period of martial law between 1949 and 1989. Native Taiwanese like Southern Min, Hakka, and indigenous people mainly worked in the private sector [34]. The public sector offers greater access to workplace benefits, including defined benefits pension plans, than the private sector. Employer-sponsored retirement plans remain the essential vehicle for distributing

disproportional retirement income for dominant racial and ethnic groups [35]. For instance, Mainlanders in Taiwan often had tenure in public sector jobs and held managerial or staff positions in most state-owned enterprise [5], which resulted in a steadier employment history, earlier eligibility to claim retirement benefits, and higher retirement benefits through retirement income redistribution.

Admittedly, the literature on how individual and structural factors affect retirement decisions among racial or ethnic groups remains inconclusive. An economic study of retirement decisions in Taiwan found sociodemographic or economic factors might also influence retirement decisions. For instance, studies found that the number of children might influence retirement decisions based on the tradeoffs between investment in children and leisure [36] and married men who are breadwinners are less likely to retire than non-married men [7].

To investigate which factor is the leading force behind earlier retirement, the Taiwanese case with its particular sociopolitical-economic background might help to clarify how ethnic inequality contributes to earlier retirement trajectories. Although Taiwan's public pension system is complicated, it covers zero to four pillars within the World Bank's multi-pillar framework. The usual age of retirement is 60. The noncontributory "zero or basic pillar" for social welfare programs includes the (i) medium-income elderly living allowance (120 USD per month) and low-income elderly living allowance (233 USD per month), (ii) old-age farmer's welfare allowance (233 USD per month), (iii) veteran home care allowance (472 USD per month), (iv) old-age basic guaranteed pension (117 USD per month), and (v) old-age indigenous welfare allowance pension (117 USD per month) [37]. The first pillar, comprising mandatory public insurance programs, works as a DB plan. The insurance programs are based on occupation. Labor Insurance (LI), Old-age Farmer Welfare Allowance (OAF), and Government Employee Insurance (GEI) were three main occupational insurance systems between 1950 and 1990, in addition to welfare assistance provided to a small group of the elderly, the Veteran Homecare Allowance (VHA) [38]. The National Pension Program, enacted in 2009, also belongs to the first pillar [37]. The second pillar contains the labor pension plan, private school pension plan, and Public Service Pension Fund (PSPF). The PSPF covers political appointees, civil servants, public school teachers, and military personnel [37]. The third pillar comprises voluntary pension programs, such as individual savings. Finally, the fourth pillar is an informal support system, such as family and intergenerational support for the elderly.

In Taiwan, ethnicity is regarded as one social inequality indicator [39, 40]. The ethnic group Chinese Mainlander, who emigrated from China to Taiwan in the 1940s during the Chinese civil war and became the ruling class in Taiwan, has a different retirement trajectory than the native Southern Min, Hakka, and indigenous people. Hung found that Mainlanders had a higher likelihood of early retirement than Southern Min [7], but Hung failed to explain why Mainlanders who tend to have a higher income and education chose to retire earlier. Since Mainlanders were the ruling class under the societal conditions of economic hardship and martial law (1940s–1989), the theory of cumulative advantage across the life course could explain how socioeconomic status shaped the dissimilar retirement trajectories among Mainlanders and non-Mainlanders.

We propose three hypotheses:

H1: Mainlanders were more likely to retire earlier than non-Mainlanders.

H2: After controlling for public sector employment, the effect of ethnicity on the likelihood of retirement will decrease significantly in the older cohort, born between 1924 and 1929, but not in the younger cohort, born between 1931 and 1936.

H3: In the older cohort, Mainlander public sector workers were more likely to retire earlier than Mainlander non-public sector workers.

Taiwan is a patriarchic society. Female labor force participation rates were 35.81%, 39.25%, 45.35%, 46.02%, and 50.92% in 1961, 1980, 1989, 2000, and 2017, respectively, compared to 86.37%, 77.11%, 74.84%, 69.42%, and 67.13% for men [41, 42]. Although women's labor force participation rates have steadily increased, men overwhelmingly tend to be the breadwinner. Since our dataset contained only few female respondents with work experience, we focused our analysis on men only.

3. Method

This study takes a quantitative approach and uses the Taiwan Longitudinal Study in Aging (TLSA) from 1989 and 1996. TLSA is a nationwide longitudinal household interview survey, which began in 1989 by the Health Promotion Administration, Taiwan Ministry of Health and Welfare, to monitor the health and economic changes of the Taiwan population aged 60 and above. The sampling plan adopted a three-stage probability design with stratified random sampling. In the first stage, representative cities or towns were chosen randomly. In the second stage, the authorities chose the representative villages randomly from the representative cities or towns. In the last stage, two representative respondents age 60 or above were randomly chosen from each representative village among all households and noninstitutional group residences. All surveys were conducted through face-to-face interviews.

A total of 4049 adults, aged 60–103 years, participated in the first 1989 wave of Panel A. The same individuals were contacted in 1993 and 1996. In 1996, 1599 new respondents, aged 50–70, were added to the TLSA, comprising one more additional Panel B. The number of observations for Panel A decreased from 4049 in 1989 to 3155 in 1993 and 2669 in 1996 with response rates of 91.8%, 91.1%, and 88.9%, respectively. For Panel B in 1996, the response rate was 81.2%. This study analyzed members of the TLSA male sample who were 60–87 years old in Panel A in 1989 and 60–70 years old in Panel B in 1996 and had valid values on all study variables, resulting in 1254 and 526 men for Panel A and Panel B, respectively.

The outcome variable is whether the respondent worked or not. We coded respondents who did not work as the retired group (coded as 0) and those who were still working as the working group (coded as 1). The core independent variable is ethnic identity, which is a categorical variable in the first wave with four categories: Southern Min, Hakka, indigenous people, and Mainlander. Ethnic identity was recoded as Mainlander = 1 and non-Mainlander = 0.

Additional variables are cohort, demographics, socioeconomic status, and health. Cohort indicates two panels with data derived from the 1989 wave, 1993 wave, and 1996 wave as the older cohort (Panel A) and from 1996 as the younger cohort (Panel B). Age was measured in years and ranges from 60 to 87 years for the older cohort and from 60 to 70 for the younger cohort. Marital status is a binary variable, assessed as married (1) and not married (0) in each wave.

Socioeconomic status contains three indicators: education, occupational category, and occupational sector. Education is assessed as years of schooling, ranging from 0 to 17. The variable "occupation" originally had 99 occupational classifications. For simplification, only two classifications were used: Occupations that are not related to physical labor were coded as "white-collar work" (1) and all others as "non-white-collar work" (0). "Occupational sector" distinguishes between "public

	1989 Panel A	1993 Panel A	1996 Panel A	1996 Panel B
Still working	619 (49.36%)	412 (32.85%)	247 (19.70%)	255 (48.48%)
Mainlander	409 (32.62%)	409 (32.62%)	409 (32.62%)	123 (23.38%)
Age	65.72 (4.95)	70.44 (4.88)	73.44 (4.88)	63.51 (2.34)
Married	1040 (82.93%)	960 (76.56%)	903 (72.01%)	429 (81.56%)
Education	5.74 (4.70)	5.74 (4.70)	5.74 (4.70)	6.34 (4.17)
White collar	270 (21.53%)	270 (21.53%)	270 (21.53%)	180 (34.22%)
Public sector	181 (14.43%)	181 (14.43%)	181 (14.43%)	130 (24.71%)
Self-reported poor health	2.35 (1.01)	2.39 (1.08)	2.79 (1.10)	2.73 (1.11)
Functional limitation	217 (17.30%)	352 (27.99%)	403 (32.14%)	93 (17.68%)

Note: 1. Frequencies (percentages) are shown for variables "still working, married, white collar, public sector, and functional limitation." The mean (standard deviation) are shown for variables "age, education years, and self-reported poor health"; 2. The datasets only include male respondents; 3. Age ranges from 60 to 87 years for panel A and from 60 to 70 years for Panel B.

Table 1.
Descriptive analysis.

Year Percentage still working	1989 Panel A	χ^2 (p)	1993 Panel A	χ^2 (p)	1996 Panel A	χ^2 (p)	1996 Panel B	χ^2 (p)
Still working	49.36%		32.85%		19.70%		48.48%	
Ethnicity								
Mainlander	47.19%	1.15 (0.284)	**27.38%**	8.24 (0.004)	18.34%	0.71 (0.400)	**40.65%**	3.94 (0.047)
Non-Mainlander	50.41%		**35.50%**		20.36%		**50.87%**	
Marital status								
Not married	**41.59%**	6.24 (0.013)	**25.51%**	9.39 (0.002)	**13.39%**	12.26 (0.000)	**35.05%**	8.59 (0.003)
Married	**50.96%**		**35.10%**		**22.15%**		**51.52%**	
Occupational category								
Non-white-collar	48.78%	0.62 (0.432)	**34.45%**	5.28 (0.022)	20.43%	1.54 (0.215)	**51.73%**	4.29 (0.038)
White collar	51.48%		**27.04%**		17.04%		**42.22%**	
Occupational sector								
Private sector	**52.66%**	32.27 (0.000)	**36.81%**	27.94 (0.000)	**21.62%**	12.77 (0.000)	50.00%	1.48 (0.223)
Public sector	**29.83%**		**9.39%**		**8.29%**		43.85%	
Functional limitation								
No	**52.84%**	29.08 (0.000)	**39.20%**	58.93 (0.000)	**24.68%**	41.52 (0.000)	**53.58%**	25.51 (0.000)
Yes	**32.72%**		**16.52%**		**9.18%**		**24.73%**	
Number working	619		412		247		225	

Notes: 1. The total number of cases is 1254 for Panel A and 526 for Panel B; 2. The datasets only include male respondents; 3. Age ranges from 60 to 87 years for panel A and from 60 to 70 years for Panel B; 4. Bold style indicates statistical significance at p < 0.05.

Table 2.
Comparison of work and retired groups by demographics: chi-square tests.

Dependent variable	Still working	Retired	t-test	P value
	M (SD)	**M (SD)**		
1989 Panel A				
Age	**64.50 (4.22)**	**66.91 (5.31)**	8.89	0.000
Education	5.91 (4.77)	5.58 (4.63)	−1.27	0.203
Self-reported poor health	**2.26 (0.94)**	**2.44 (1.07)**	2.33	0.001
1993 Panel A				
Age	**69.07 (2.89)**	**71.12 (5.16)**	7.83	0.000
Education	**5.28 (4.40)**	**5.97 (4.82)**	2.52	0.012
Self-reported poor health	**2.26 (2.16)**	**2.46 (2.39)**	3.18	0.002
1996 Panel A				
Age	**71.75 (3.77)**	**73.86 (5.03)**	7.33	0.000
Education	5.72 (4.44)	5.75 (4.76)	0.10	0.918
Self-reported poor health	**2.40 (1.05)**	**2.89 (1.10)**	6.46	0.000
1996 Panel B				
Age	**62.99 (2.24)**	**64.00 (2.34)**	5.07	0.000
Education	6.59 (4.20)	6.11 (4.13)	−1.33	0.186
Self-reported poor health	**2.40 (1.00)**	**3.04 (1.12)**	6.90	0.000

Notes: 1. The total number of cases is 1254 for Panel A and 526 for Panel B; 2. The datasets only include male respondents; 3. Age ranges from 60 to 87 years for panel A and from 60 to 70 years for Panel B; 4. Bold style indicates statistical significance at $p < 0.05$.

Table 3.
Comparison of work and retired groups by demographics: t-tests.

Model	1989 Panel A Model 1	1989 Panel A Model 2	1989 Panel A Model 3	1989 Panel A Model 4	1996 Panel B Model 1	1996 Panel B Model 2	1996 Panel B Model 3	1996 Panel B Model 4
Ethnicity								
Mainlander	0.798[*] (0.624–1.020)	0.817 (0.631–1.056)	1.009 (0.770–1.322)	1.163 (0.868–1.557)	1.106 (0.697–1.755)	1.020 (0.614–1.696)	1.130 (0.631–2.022)	0.966 (0.442–2.114)
Control factors								
Age	0.897[***] (0.874–0.920)	0.901[***] (0.877–0.925)	0.895[***] (0.871–0.920)	0.897[***] (0.871–0.920)	0.823[***] (0.757–0.895)	0.824[***] (0.754–0.900)	0.825[***] (0.755–0.901)	0.824[***] (0.754–0.900)
Married	1.238 (0.907–1.689)	1.243 (0.906–1.706)	1.174 (0.849–1.623)	1.162 (0.839–1.608)	1.938[***] (1.205–3.115)	1.849[**] (1.119–3.056)	1.886[**] (1.137–3.129)	1.879[**] (1.133–3.118)
Individual factors								
Education		0.995 (0.965–1.025)	1.011 (0.980–1.042)	1.010 (0.979–1.041)		1.032 (0.981–1.086)	1.037 (0.984–1.092)	1.039 (0.986–1.095)
White collar		1.031 (0.742–1.432)	1.385 (0.974–1.968)	1.349 (0.948–1.920)		0.616[**] (0.393–0.965)	0.640 (0.403–1.015)	0.644 (0.406–1.023)
Self-reported poor health		0.885 (0.783–1.002)	0.876[**] (0.773–0.994)	0.879[**] (0.775–0.997)		0.623[***] (0.511–0.759)	0.621[***] (0.509–0.757)	0.620[***] (0.508–0.755)

Model	1989 Panel A Model 1	1989 Panel A Model 2	1989 Panel A Model 3	1989 Panel A Model 4	1996 Panel B Model 1	1996 Panel B Model 2	1996 Panel B Model 3	1996 Panel B Model 4
Functional limitation		0.566*** (0.404–0.795)	0.566*** (0.401–0.799)	0.567*** (0.401–0.802)		0.516** (0.289–0.920)	0.512** (0.287–0.913)	0.510** (0.286–0.909)
Structural factors								
Public sector			0.254*** (0.170–0.380)	0.448*** (0.249–0.805)			0.809 (0.450–1.457)	0.703 (0.332–1.489)
Interaction term: Public sector*mainlander				0.386** (0.183–0.814)				1.396 (0.460–4.230)

Notes: 1. The total number of cases is 1254 for Panel A and 526 for Panel B; 2. The datasets only include male respondents; 3. Age ranges from 60 to 87 years for panel A and from 60 to 70 years for Panel B; 4. Odds ratios with 95% confidence intervals in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4.
Logistic regression models for the probability of working in 1989 for Panel A and in 1996 for Panel B.

Model	1993 Panel A Model 1	1993 Panel A Model 2	1993 Panel A Model 3	1993 Panel A Model 4	1996 Panel A Model 1	1996 Panel A Model 2	1996 Panel A Model 3	1996 Panel A Model 3
Ethnicity								
Mainlander	0.643*** (0.492–0.841)	0.691** (0.520–0.917)	0.866 (0.645–1.164)	0.836 (0.615–1.136)	0.842 (0.618–1.145)	0.851 (0.615–1.179)	1.007 (0.721–1.406)	1.074 (0.760–1.518)
Control factors								
Age	0.903*** (0.877–0.930)	0.907*** (0.880–0.935)	0.902*** (0.875–0.931)	0.902*** (0.874–0.931)	0.898*** (0.866–0.932)	0.906*** (0.872–0.941)	0.903*** (0.869–0.938)	0.903*** (0.869–0.938)
Married	1.309 (0.965–1.776)	1.452** (1.058–1.993)	1.416** (1.026–1.954)	1.420** (1.029–1.958)	1.581** (1.111–2.249)	1.679*** (1.165–2.418)	1.627*** (1.127–2.348)	1.623*** (1.124–2.344)
Education		0.954*** (0.924–0.986)	0.970 (0.937–1.004)	0.970 (0.938–1.004)		0.973 (0.936–1.011)	0.985 (0.947–1.024)	0.985 (0.947–1.024)
White collar		0.778 (0.542–1.116)	1.058 (0.720–1.555)	1.069 (0.727–1.571)		0.702 (0.459–1.073)	0.869 (0.560–1.351)	0.848 (0.544–1.323)
Self-reported poor health		0.928 (0.817–1.054)	0.943 (0.827–1.074)	0.944 (0.828–1.076)		0.727*** (0.629–0.842)	0.721*** (0.623–0.836)	0.719*** (0.620–0.833)
Functional limitation		0.338*** (0.239–0.477)	0.325*** (0.229–0.460)	0.324*** (0.228–0.459)		0.415*** (0.278–0.619)	0.416*** (0.279–0.621)	0.416*** (0.278–0.620)
Structural factors								
Public sector			0.162*** (0.0928–0.282)	0.117*** (0.0446–0.306)			0.278*** (0.153–0.508)	0.437 (0.184–1.036)

Model	1993 Panel A Model 1	1993 Panel A Model 2	1993 Panel A Model 3	1993 Panel A Model 4	1996 Panel A Model 1	1996 Panel A Model 2	1996 Panel A Model 3	1996 Panel A Model 3
Interaction term: public sector*mainlander				1.656 (0.524– 5.228)				0.470 (0.149– 1.480)

*Notes: 1. The total number of cases is 1254 for Panel A; 2. The dataset only includes male respondents; 3. Age ranges from 64 to 91 years for the 1993 wave of Panel A and from 67 to 94 years for the 1996 wave of Panel A. The data includes all men from Panel A who participated in 1989, 1993, and 1996; 4. Odds ratios with 95% confidence intervals in parentheses: *** p < 0.01, ** p < 0.05, * p < 0.1*

Table 5.
Logistic regression models for the probability of working for in 1993 and in 1996 for Panel A.

sector work" (1), defined as working for the government or various government bodies, and nongovernment or "private sector work" (0).

Health consists of self-reported health and functional limitation. Self-reported poor health was measured by the following items: 1 = very good health, 2 = good health, 3 = fair health, 4 = poor health, and 5 = very poor health. Functional limitation was measured by the eight-item scale of advanced physical functions. Respondents were asked how difficult (0 = no difficulty, 1 = some difficulty, 2 = very difficult, 3 = cannot do it at all) it would be for them to (1) stand for 15 min, (2) squat without anyone's help, (3) raise both hands over their head, (4) grasp or twist objects, (5) lift or carry 12 kg, (6) run for 20 or 30 m, (7) walk for 200 or 300 m, and (8) climb 2 or 3 flights of stairs. Respondents who mentioned any functional limitation were coded as 1, and all others were coded as 0.

We used descriptive analysis (**Table 1**) to describe the samples and χ^2 tests (**Table 2**) and t-tests (**Table 3**) to investigate demographic differences between the work group and the retired group. Finally, we applied multivariate logit models in **Tables 4** and **5** to analyze the relative contribution of the independent variables on the likelihood of still working and whether the interaction between Mainlander and working in the public sector is significant.

All the analyses were conducted by STATA 14 and incorporated the weighted procedure used in TLSA sampling design.

4. Data collection and results

Table 1 contains the descriptive analysis for both cohorts. Frequency and per-centages are shown for "still working," "marital status," "occupation category," "occupation sector," and "functional limitation." Means and standard deviations are shown for "age," "education," and "self-reported poor health." In Panel A, 49.36% of the men were still working in 1989, which declined to 32.85% in 1993 and 19.70% in 1996. In Panel B, 48.48% of the men were still working in 1996. Only 32.62% and 23.38% were Mainlanders among the 1989 and 1996 panelists, respectively. The mean age was 65.72 years (*SD* = 4.95) in 1989 for Panel A and 63.51 years (*SD* = 2.34) in 1996 for Panel B. In Panel A, the proportions of married men changed from 82.93% in 1989 to 76.56% in 1993 and 72.01% in 1996. In Panel B, 81.5% of the men were married in 1996. Mean education years were 5.74 and 6.34 for Panel A and B, respectively. In Panel A, 21.53% of the men were white-collar workers and 14.43% worked in the public sector, compared to 34.22% of white-collar workers and 24.71% of public sector workers in Panel B. For Panel A, means of self-reported poor

health increased from 2.35 (*SD* = 1.01) in 1989 to 2.39 (*SD* = 1.08) in 1993 and 2.79 (*SD* = 1.10) in 1996, compared to 2.73 (*SD* = 1.11) for Panel B in 1996. Similarly, the proportions of men with functional limitation increased from 17.30% in 1989 to 27.99% in 1993 and 32.14% in 1996 for Panel A, compared to 17.68% for Panel B in 1996.

Table 2 shows the results of the chi-square tests. Compared to retired men, men who were still working were more likely to be married and without functional limitations in all waves. Non-Mainlanders, such as Southern Min, and non-white-collar workers were more likely to be working in 1993 for Panel A and in 1996 for Panel B. In Panel A but not Panel B, a higher proportion of private sector workers was still working from 1989 to 1996. To be specific, 52.66%, 36.81%, and 21.62% of private sector workers still worked in 1989, 1993, and 1996, respectively, in Panel A compared to 29.83%, 9.39%, and 8.29% of public sector workers.

Table 3 compares the means of the still working and retired groups of men for "age," "education," and "self-reported poor health," using *t*-tests. The retired group tended to be older and in worse health for both panels and in all years. On average, retirees were 66.91 and 64.00 years old in 1989 in Panel A and in 1996 in Panel B, respectively, whereas men who were still working were 64.50 years old in Panel A and 62.99 years old in Panel B. Additionally, the average scores of self-reported poor health for retirees were 2.44, 2.46, 2.89, and 3.04 in 1989, 1993, and 1996 for Panel A and 1996 for Panel B, respectively, which were significantly higher than the respective average scores of 2.26, 2.26, 2.40, and 2.40 for those men who were still working. However, education was unrelated to working status, except in 1993 for Panel A when the average years of education was 5.97 for retired men, which was significantly higher than the average years of education of 5.28 for men who were still working.

Table 4 compares the results between Panel A and B when the men were of similar ages, using nested logistic regression models. The left side of the table estimates the probability of men still working in 1989. In Model 1, Mainlanders were 20.2% less likely to work at age 60 and above than non-Mainlanders after controlling for age and marital status. As predicted by Hypothesis 2, the effect of ethnicity on the likelihood of still working became nonsignificant after controlling for socioeconomic status and health condition in Model 2 and adding occupational sector in Model 3. Each age year decreased the odds of still working. Marital status, education, and occupational category were unrelated to the likelihood of working. In Model 3, a one-unit increase in self-reported poor health was associated with a 12.4% less likelihood of working. Men with a functional limitation and public sector workers were 43.4% and 74.6%, respectively, less likely to be still working. In Model 4, the interaction between public sector worker and Mainlander was significant. As predicted by Hypothesis 3, Mainlanders who worked in the public sector had much greater odds of being retired. They were 61.4% less likely of being in the labor force than other men, which might explain the earlier retirement of Mainlanders.

The right side of **Table 4** shows the odds ratios of still working among the younger cohort of Panel B. Being a Mainlander, public sector worker, and education were not associated with earlier retirement in all models. The interaction between public sector worker and Mainlander was also not significant in Model 4. In Model 4, each age year decreased the odds of still working by 17.6%, and married men had a 1.879 times higher probability of still working than non-married men at age 60 and above. Additionally, a one-unit increase in self-reported poor health was associated with a 38% lower likelihood of still working. Men with a functional limitation were 49% less likely to be still working, indicating that those with worse health conditions were more likely to retire than healthier men.

Table 4 shows that members of Panel A and B had different odds of retirement related to being a Mainlander, marital status, and occupational sector. The results suggest that marital status plays a more significant role for the younger cohort than the older cohort, whereas being a Mainlander and occupational sector were no longer predictors of retirement for the younger cohort.

As shown in **Table 5**, the results were also dissimilar for the 1993 and 1996 waves among the older Panel A cohort. In Models 1 and 2 of the 1993 wave, Mainlanders were 35.7% and 30.9%, respectively, less likely than non-Mainlanders to be still working at age 64 and above. The likelihood of still working increased for Mainlanders after controlling for age and marital status in Model 2, but ethnicity was still a significant predictor of retirement for the older cohort as stated in Hypothesis 1. After including working in the public sector in Model 3, Mainlanders did not have a higher likelihood of retirement than non-Mainlanders. This confirms Hypothesis 2 that working in the public sector mediates the effect of ethnicity on the likelihood of retirement in the older cohort but not in the younger cohort. In 1996, however, when the men were at least 67 years old, ethnicity was no longer associated with the probability of retirement.

The interaction between working in the public sector and being a Mainlander on the odds of still working was not significant in Model 4 for both the 1993 and 1996 waves. In Model 3, a 1-year increase in age was related to a 9.8% and 9.7% decrease in the probability of still working in 1993 at age 64 and above and 1996 at age 67 and above, respectively, controlling for all the other variables in the model. Married men had a 1.416 and 1.627 times higher chance of still working than non-married men in 1993 and 1996, respectively. Education and occupational category were unrelated to the probability of still working. A one-unit increase in self-reported poor health decreased the likelihood of still working by 27.9% in 1996. Men with a functional limitation were 67.5% and 58.4% less likely to be still working in 1993 and 1996, respectively, than those without a functional limitation. Finally, men who worked in the public sector had an 83.8% and 72.2% lower likelihood of still work-ing than those who worked in the private sector in 1993 and 1996, respectively.

5. Cumulative advantage or disadvantage

Cumulative advantage or disadvantage (CAD) can be regarded as the systemic tendency for inter-individual divergence in a specific feature (e.g., money, health, or status) with the progress of time [43]. The inter-individual divergence derives from the interaction of social forces over time but not necessarily from individuals' positions at the point of origin [43]. CAD reverberates with old sayings, such as "success breeds success" and "the rich get richer; the poor get poorer" and helps to interpret economic inequality across the life course [44, 45]. It describes processes by which the effects of early economic, educational, and other advantages can cumulate over the life course. It also emphasizes that these processes are moderated by changing societal institutions [48]. This assumption of CAD in the life course perspective has two implications [14, 46]. One is that the power of systemic deter-minants of inequality from structural arrangements, such as the educational and occupational sectors, is interrelated with individual behaviors or efforts. The other is that the timing, duration, and temporal characteristics of life transitions tend to strengthen accumulation of inequality.

Take Mainlanders as an example of the CAD approach: Compared to native non-Mainlanders, Mainlanders were more likely to be employed in stable public sector jobs for their whole working life, for example, as military personnel, public teachers, or civil servants [47]. Soldiers, public school teachers, and civil servants

have tenure track positions in Taiwan, so they experience unemployment far less than non-Mainlanders. Consistent with the cumulative advantage approach, they can reach the eligible age of receiving public pensions sooner than native laborers

Year	Support for the elderly/pension schemes	Groups of people who access the scheme
1950	Labor Insurance promulgated	Private employees, self-employed, working employers, seafarers, aged 15+
1953	Fisherman Insurance promulgated	Fishermen or Fishermen's Association members
1958	Government Employee Insurance promulgated	Government employees, public school teachers, and school employees
1958	Civil Servant and Teacher Insurance Act and Public Insurance of Retired Civil Servants promulgated	Civil servants, public sector workers, public school teachers
1960	Regulations for Preferential Interest Rate for Retirement Payment of Retired Civil Servants	Political appointees, civil servants, public school teachers, and military personnel
1980	Insurance of Private School Teachers promulgated	Private school teachers
1983	Implementation of the 18% Preferential Savings Rate to Regulations for Preferential Interest Rate for Retirement Payment of Retired Civil Servants	Political appointees, civil servants, public school teachers, and military personnel
1984	Insurance of Retired Private School Teachers promulgated	Retired private school teachers
1985	Old-age Farmer Welfare Allowance promulgated	Farmers or Farmers' Association members
1993	Civil Service Retirement Act promulgated	Government employees, public school teachers, and school employees
1995	Sunset Clause of the 18% Preferential Savings Rate to Regulations for Preferential Interest Rate for Retirement Payment of Retired Civil Servants	Political appointees, civil servants, public school teachers, and military personnel
1995	Public Service Pension Fund promulgated	Political appointees, civil servants, public school teachers, and military personnel
2008	National Pension Program promulgated	All Taiwanese
2009	Labor Insurance Act amended	Change the eligibility age for private employees, self-employed, working employers, seafarers, aged 15+
2009	The Amendment Draft of the 85-plan in Civil Service Retirement Act formulated and announced	Retired civil servants and public school teachers
2017	Act Governing Civil Servants' Retirement, Discharge and Pensions (including implementation of the 85-plan) promulgated Act Governing the Retirement and Pensions of Public School Teachers and Employees promulgated	Retired civil servants and public school teachers
2018	Act of Military Service for Officers and Noncommissioned Officers of the Armed Forces promulgated	Retired military personnel

Table 6.
Pension scheme enactment and reform in Taiwan.

who often have low-wage jobs without health insurance coverage and are more likely to be laid off. As Radl pointed out in relation to social stratification in Western Europe, people with accumulated pension rights or significant wealth assets can afford to retire earlier than those without those privileges [48]. Thus, Mainlanders were more likely than non-Mainlanders to leave the labor force earlier and receive a pension income.

Moreover, public pension programs benefited Mainlanders more than non-Mainlanders. Government Employee Insurance (GEI) and Veteran Insurance (VI) are the public pension programs for military personnel, public teachers, and civil servants, who are white-collar, middle-class workers. GEI and VI have much higher income replacement ratios (over 90%) in retirement income than Labor Insurance (LI) with its less than 50% replacement ratio [47]. When the interest rate of special savings is added to GEI and VI, the replacement rate exceeds 100% [49]. Since pension satisfaction generates higher retirement incentives, GEI and VI, regarded as institutional constraints, can become the "push factors" that caused Mainlanders to retire earlier. These pension schemes are summarized in **Table 6** [37, 38].

Overall the cumulative advantage for Mainlanders was reduced by democratization and modernization in the 1980s with increasing labor force participation among minorities, including women and non-Mainlanders. The Ten Construction Projects were held in the 1970s by the Taiwan government, martial law was abolished in 1989, a National Health Insurance was implemented in March 1995, and the first president, Lee Teng-hui, was elected by Taiwan citizens in 1996. Between 1970 and 1990, Taiwan became one of the "Four Asian Tigers" and rapidly expanded economic development. During this period, ethnic equality improved under the context of greater economic development, a higher degree of democratization and modernization, better employment opportunities, and stronger commitments to sociopolitical causes, such as the social movement for employment opportunity equality [3]. Unlike the older cohort who tended to be GEI and VI receivers, the younger Mainlander cohort was less likely to work in the public sector and tended to have less power compared to older Mainlanders. Hence, "working in the public sector" partially mediated the effect of ethnicity on retirement for the older cohort but not for the younger cohort.

6. Discussion

As predicted in Hypothesis 1, we found significant ethnic inequality in retirement, which was mediated by age, marital status, socioeconomic status, and health conditions. Moreover, the effect of ethnicity on the likelihood of retirement was significantly reduced in the older cohort but not in the younger cohort after controlling for working in the public sector, corroborating Hypothesis 2. Mainlanders who worked in public sectors were more likely to retire than others, which supports Hypothesis 3. In addition, men who were Mainlanders, older, non-married, and in poor health were more likely to be retired than those who were non-Mainlanders, younger, married, and in good health.

6.1 The effects of marital status, social class, and ill health on retirement

In a patriarchic society, such as Taiwan, the man is always supposed to be the breadwinner [42]. Married men are expected to take responsibility for the family's economic security and become financial contributors to their adult children's economic well-being, which explains the higher likelihood of extending their work life and delaying the onset of retirement compared to non-married men [36, 50, 51].

However, education and occupational category, regarded as indicators of social class, were not significantly related to the likelihood of retirement. By contrast, health was a robust predictor of retirement. Similar to prior research, self-reported poor health [11, 52–55] and physical disability [18–21] largely explained why men retired earlier. Physical impairments, such as mobility limitations, could be one of the most salient reasons for leaving the labor force. Congruent with a particular pension policy [20, 48, 55], public sector workers had a higher likelihood of earlier retirement than private sector workers but only in the older cohort.

6.2 The effect of ethnicity on retirement differs by cohort

As expected, the effect of ethnicity on the likelihood of earlier retirement was fully explained by occupational sector. Working in the public sector mediated and moderated the effect of ethnicity on the likelihood of still working in the older cohort. After adding public sector worker to the model, ethnicity was no longer significantly related to the probability of still working, and Mainlanders who worked in the public sector were least likely to be still in the labor force in 1989 at age 60 and above. This is consistent with current studies [24, 35, 48], suggesting that exposure to favorable employment circumstances across the life course, such as pension eligibility and the incentive structure of public pensions for public sector workers, can contribute to the higher likelihood of earlier retirement and pension receipt in later life.

Yet, the younger cohort in 1996, Panel B, faced a different situation. In bivariate associations, Mainlanders were also significantly more likely to retire earlier than non-Mainlanders. However, after controlling for age and marital status, being a Mainlander was no longer associated with earlier retirement. Age and marital status, rather than working in the public sector, explain why Mainlanders tended to retire earlier than non-Mainlanders in the younger cohort. Yet, working in the public sector was the strongest predictor of earlier retirement among Mainlanders in the older cohort of Panel A. This suggests that the pension reform in the 1980s improved the retirement situation for private sector workers [56–58] as shown in **Table 6**. Labor Insurance expanded its entitlement coverage of the Taiwanese population dramatically from 4.4% in 1961 to 40.1% in 1994 compared to civil servant-related insurances whose coverage of the population only increased from 1.9% in 1961 to 8.5% in 1994 [56]. This means that compared to civil servant-related insurances, Labor Insurance covered an increasing percentage of the Taiwanese population from 1961 to 1994. The new pension eligibility and coverage after the implementation of the pension reform appeared to have resulted in distinct retirement trajectories of the two cohorts.

Our results are consistent with past studies [59, 60], which found that retirement trajectories differ by cohorts. For example, Carlson [60] showed that the Lucky Few cohort, born between 1929 and 1945, had a lower unemployment rate and a more stable employment history and retired earlier than other cohorts. By contrast, members of the baby boom cohort were laid off more frequently, tended to have a lower salary, and could not afford to retire early due to the economic crisis of 2008 [60]. In short, every cohort forms a distinct retirement pattern based on its particular employment pattern and the operation of social processes through cumulative advantage or disadvantage.

The pension system in Taiwan is based on occupational pensions [61]. Whether men, as breadwinners, can afford to retire is largely driven by the incentive structure of public pensions [12, 48, 62]. Those who work in the public sector tend to reach the eligibility of full retirement benefits earlier and with a larger income

replacement ratio, which allows them to leave the labor force earlier than those who work in lower social class private sector jobs [47, 49].

Despite the well-documented impact of the employment history in cumulative advantage, research on the linkage between the occupational sector and earlier retirement remains limited. Also, the first publications that linked CAD with age [63, 64] neglected aspects of cohort; we enrich the CAD theory and underline CAD is a not a property of individuals but of cohort collectivities. In this study, we used unique data collected across two different cohorts of ethnic groups, Mainlanders and the native group of non-Mainlanders, i.e., Southern Min, Hakka, and indigenous people, to evaluate pathways to earlier retirement. We found that Mainlander status, working in the public sector, older age, nonmarital status, poor health, and functional limitation were associated with a higher likelihood of earlier retirement. Consistent with our hypotheses based on the theory of cumulative advantage/disadvantage, the occupational sector was an important mediator and moderator in explaining the link between ethnicity and the odds of earlier retirement in the older cohort. The results suggest that employment experiences in middle age shape retirement trajectories and result in socioeconomic inequality in old age, as demonstrated by Mainlanders' higher probability of retirement under the age of 60.

In sum, this study showed that working in the public sector decreased Mainlanders' likelihood of staying in the labor force longer, but only among the older cohort. This means that structural factors can fully explain the effect of ethnicity on retirement, suggesting a cumulative advantage of earlier retirement for Mainlanders compared to Southern Min, Hakka, and indigenous people, formed by the structural factor of "pension policy," which favors the public sector.

Our nationwide, population-based study found that Mainlanders were more likely to retire earlier than non-Mainlanders. After controlling for working in the public sector, the effect of being a Mainlander on the likelihood of earlier retirement decreased significantly. Besides working in the public sector, older age, self-reported poor health, and functional limitation were also significantly related to earlier retirement.

Our study has two important limitations. First, the sample size was small for those who faced the risk of retirement between the age of 60 and 70 in Panel B. In particular, the subsample of Mainlanders in Panel B is much smaller than in Panel A, which might increase heterogeneity in the timing of retirement. Second, we were unable to trace health conditions at earlier older ages since we only consider health conditions at age 60 and above within the study period of both panels. This might suppress the effect of earlier ill health on retirement decisions.

In 2009, two new pension policies were introduced in Taiwan as **Table 6** shows, but they still favor public sector workers. For blue-collar workers, the government enacted a new public pension policy to solve the problem of population aging and the deficit in the retirement benefit fund. Laborers who have accumulated more than 25 working years or those who have worked for more than 15 years by age 60 and above are eligible to enroll in Labor Insurance since 2017 but are required to postpone normal retirement age until age 61 in 2019, age 62 in 2020, age 63 in 2022, age 64 in 2024, and age 65 in 2026 [65]. If they have worked for 15 years or more, they are eligible to get reduced retirement benefits up to 5 years earlier than the normal retirement age. They would receive 4% less than their full benefits for every year they claimed the retirement benefit earlier than the full retirement age. For example, a person who has worked for at least 15 years is eligible to claim retirement benefits at age 60 in 2026, but doing so will result in a reduction of benefits by 20 percent. Reduced benefits are likely to be insufficient to cover the cost of living.

A new pension policy was also was formulated for public sector workers. Before 2009, people who worked in the public sector for at least 25 years were eligible to retire and receive a pension. In 2009, the new pension policy was announced, which requires that the sum of workers' current age and their working years (at least 25 years) is 85 or larger to be eligible to retire at full benefits (the 85-plan in **Table 6**). For example, an individual who started work at age 30 would be eligible to retire at age 55 but only get 80% of full retirement benefits [66]. Individuals who retired at 56, 57, 58, or 59 years of age would get 84%, 88%, 92%, or 96% of full benefits, respectively [66], before 2025 [67]. The eligible age will change into 60 years old during 2026–2030 and 65 years old after 2031 according to the government pension reform [67].

Based on the new polices, the eligible age for receiving retirement benefits is higher for blue-collar workers than public sector workers, while pensions and income replacement ratios are much higher for public sector workers than blue-collar workers, which creates inequality in retirement in Taiwan. Due to an ethnic inequality in workplace retirement plan coverage, raising the retirement age is likely to reduce the minority group's lifetime-expected benefits by a larger percentage than that of the majority group, especially for blue-collar workers.

7. Conclusion

The study offers several policy implications. First, policymakers should take occupational categories, occupational sectors, and income replacement ratios into consideration to build a new and more equitable pension scheme. Admittedly, Chen [37] argued that the new pension reform in 2017 may not attract younger generations to work in the public sector since the income replacement ratio for retired civil servants and public school teachers will gradually be reduced from 75% to 60% over a period of 10 years and the 18% preferential savings rate[2] of retirement income for 450,000 retired teachers, soldiers, and bureaucrats [34] will be reduced to 0% on 1 January 2021 according to the Act Governing Civil Servants' Retirement, Discharge and Pensions and the Act Governing the Retirement and Pensions of Public School Teachers and Employees, passed in June 2017 by Taiwan's Legislative Yuan [37] as shown in **Table 6**. Yet, the 18% preferential rate will still be in place for retired civil servants and public school teachers whose monthly pension is below the threshold of either $833 USD or $1067 USD, respectively. The 18% preferential savings rate for retired military personnel will be gradually phased out over 10 years based on the Act of Military Service for Officers and Noncommissioned Officers of the Armed Forces, enacted in 2018 [37]. However, civil servants' salaries tend to be higher than private workers' salaries. Even though the retirement income replacement ratio has become equivalent, private sector workers' retirement income is still

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[2] People who worked in the public sector with an employment history before 1995 have an over 100% retirement income replacement ratio. Retired military personnel, civil servants, public school teachers, and public sector laborers used to have an 18% preferential savings rate for their pension. On average, retired public sector workers received $2278 USD per month, compared to the $1317 USD monthly earnings of average Taiwanese workers or the $733 USD monthly earnings of a fresh university graduate. Since Mainlanders are more likely to be retired military personnel, retired civil servants, public school teachers, and public sector workers, this advantage still currently exists. However, this advantage may be reduced in the near future due to the new pension reform.

likely to be lower than that of public sector workers. More importantly, civil service welfare, based on the Civil Servant and Teacher Insurance Act and Public Insurance of Retired Civil Servants, provides many more benefits than the private sector welfare from Labor Insurance and other insurance for private sectors, such as the children education subsidy, the allowance for dependents' funerals, the allowance for marriage and birth, Funeral Leave, and so on. These could contribute to the pension inequality of occupational sectors.

Second, our results show that self-reported poor health and functional limitation was related to a higher likelihood of earlier retirement. Since blue-collar workers work in physically demanding jobs and are, therefore, more likely to have poor health and functional limitations, the government should implement the same retirement eligibility age for blue-collar workers and public sector workers and provide supplemental financial assistance to specific disadvantaged groups of older workers, especially blue-collar workers in poor health.

Third, the findings supported our hypotheses that the reason why Mainlanders were more likely to retire earlier than non-Mainlanders was due to their overrepresentation as public sector workers. Private sector workers are more likely to have a more interrupted employment history than public sector workers with tenure track jobs. By contrast, public sector workers are more likely to be eligible for full pension benefits earlier than those in the private sector, which becomes a strong incentive to leave the labor force. Policymakers could change these benefit incentives if they wanted to raise the labor force participation rates of Mainlanders and middle-aged and young old public sector workers. Future studies should consider more recent data, include women in the overall assessment, and look at health in late middle age to understand its impact on retirement.

Abbreviations

KMT	Kuomintang
PRC	People's Republic of China
CAD	cumulative advantage or disadvantage
DB	defined benefit plans
DC	defined contribution plans
USD	US dollar
TLSA	Taiwan Longitudinal Study in Aging
LI	Labor Insurance
OAF	Old-age Farmer Welfare Allowance
GEI	Government Employee Insurance
VHA	Veteran Homecare Allowance
PSPF	Public Service Pension Fund

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