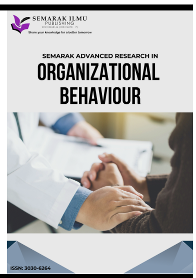
SEMARAK ILMU PUBLISHING
202103268166(003316878-P)

Semarak Advanced Research in Organizational Behaviour

Journal homepage:
https://semarakilmu.myindex.php/sarob/index
ISSN: 3030-6264



Analysis on Retirement Savings among Self-Employed in Malaysia: Comparison between Employees Provident Funds and Private Retirement Schemes

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ARTICLE INFO

Article history:
Received 12 May 2025
Received in revised form 18 June 2025
Accepted 25 June 2025
Available online 30 June 2025

Keywords:
Employee Provident Fund (EPF); Private Retirement Scheme (PRS); monthly retirement income; replacement ratio

ABSTRACT

As at current, self-employed are not compulsory to contribute to any retirement savings funds. Therefore, this study examines the retirement saving options that are available for self-employed individuals in Malaysia, focusing on two major schemes, Employee Provident Fund (EPF) and Private Retirement Scheme (PRS). The paper highlights the importance of comprehensive retirement planning especially among the self-employed and policy enhancements to improve financial security towards Malaysian ageing population. By using deterministic modelling, the research simulates accumulated savings, projected retirement income, and replacement ratios for both schemes EPF and PRS under varying assumptions. The findings indicate that EPF offers the highest accumulated savings and monthly retirement income, outperforming PRS funds such as Public Mutual PRS Islamic. However, neither scheme achieves the recommended 70% replacement ratio or the poverty line income threshold of RM2,690 per month, underscoring the need for supplementary savings strategies. Limitations of deterministic modeling are acknowledged, and stochastic approaches are recommended for future research to account for variable economic conditions.

1. Introduction

Department of Statistics Malaysia [1] in 2024 reported that 2.66 million people, or 17.4% of the total workforce in Malaysia, are self-employed and retirement plan plays a crucial role in ensuring financial stability and security during the post-work years. However as at current, the self-employed in Malaysia are not compulsory to contribute to any retirement savings.

There are many options of retirement savings for a self-employed to choose. One of the most well-known retirement savings vehicles is Employee Provident Funds (EPF). According to Nurin *et al.,* [2] EPF investment is the most well-known occupational pension schemes in Malaysia. The idea of an

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https://doi.org/10.37934/sarob.6.1.5866

employee provident funds may be compared by a self-employed worker to create their own retirement savings plan.

According to Padron [3] 17% of Romania's workforce is self-employed, but only 10% of them receive a contributory retirement pension. Mohamad Shariff and Ramli [4] emphasized that retirement planning is particularly crucial for individuals to meet their financial needs in their post-retirement years. Although EPF is commonly linked to conventional work arrangements in which employers and employees make contributions to a fund overseen by a public or commercial organisation, self-employed individuals would assume responsibility for the contributions on their own.

Another option that a self-employed worker can opt, which is Private Retirement Scheme (PRS). According to Shafie Mohamed Zabri *et al.,* [5], PRS is a retirement scheme that is similar to EPF with slight differences in benefits and returns. PRS has options to favour in which approach their funds will be invested to and these options include investing growth fund, moderate fund and conservative fund, with all of these funds having varying risk levels and investment competitions.

For the purpose of making the best decision to which retirement scheme to invest, this study is conducted to give an overview of the expected amount of retirement savings and to analyse the most optimal retirement scheme for self-employed in Malaysia.

2. Literature Review

2.1 Retirement Benefits

Retirement benefits for private sector in Malaysia that are primarily facilitated through the Employees Provident Fund (EPF), are designed to provide financial support to individuals post-retirement. However, studies indicate that EPF savings may be insufficient for sustaining retirees over the long term. Lin *et al.,* [6] highlights the inadequacy of EPF funds in fully supporting retired workers, necessitating alternative financial support mechanisms. This concern is amplified by Malaysian's demographic trends, with the Department of Statistics Malaysia (2020) projecting a significant increase in the elderly population, with the number of citizens aged 60 and above is expected to rise from 2.25 million in 2010 to approximately 5.1 million by 2030, constituting 13.8% of the total population. This demographic shift underscores the urgency for comprehensive retirement planning and the development of robust social security systems to ensure the financial well-being of Malaysia's aging population.

The Employees' Provident Fund (EPF) in Malaysia, established on October 1, 1951, under the Employees Provident Fund Act of 1991, operates as a government-managed Defined Contribution (DC) scheme. It serves as one of the country's key social security institutions, aiming to help private-sector employees and non-pensionable public-sector workers build sufficient retirement savings, whereas Private Retirement Scheme (PRS) was introduced in Malaysia in 2012, is a voluntary, long-term investment initiative designed to complement the mandatory retirement savings mechanisms, by providing additional savings options for private sector employees and the self-employed.

According to Abdullahi *et al.,* [7], self-employed individuals who invested in a private retirement scheme boosted Nigeria's GDP by 1.11%. Governed under the Capital Markets and Services Act 2007 and regulated by the Securities Commission Malaysia (SC), the PRS aims to enhance retirement preparedness but faces challenges including limited public awareness, complex processes, and gaps in governance policies, particularly in ensuring Shariah-compliant offerings. Ali *et al.,* [8] stated that PRS was introduced by the government as 30% of the labour force that are self-employed has no other financial coverage for their retirement. Addressing these challenges requires targeted public education campaigns, enhanced regulatory frameworks for robust investor protection, the inclusion of diverse investment options such as Islamic funds, and the simplification of enrolment and contribution processes. These reforms are essential for the PRS to effectively support Malaysians in building a more secure financial future during retirement.

In light of these challenges, it is imperative for Malaysia to explore alternative retirement schemes and enhance the existing EPF framework to ensure comprehensive coverages for all citizens. This includes considering the implementation of social pensions, promoting private retirement schemes, and encouraging personal savings to supplement EPF funds. By adopting a multifaceted approach, Malaysia can better prepare for the impending demographic shifts and secure the financial well-being of its aging population.

2.2 Issues in Retirement Savings among Self-Employed

Self-employed workers across various countries often encounter significant challenges in preparing for retirement due to structural and behavioural barriers. Joulfaian [9] highlighted that in the United States, self-employed individuals typically exhibit lower participation rates in tax-favoured retirement plans. Unlike employees who benefit from employer-sponsored plans with automatic payroll deductions and employer contributions, self-employed workers lack these structured mechanisms, often resulting in inconsistent savings. Lusardi & Mitchell [10] has highlighted that financial literacy plays a key role, as higher financial knowledge is linked to proactive retirement planning and investment in PRS. Irregular income streams further complicate their ability to make regular contributions, while the wide array of retirement options can overwhelm those with limited financial literacy, reducing their likelihood of adopting effective savings strategies.

Similarly, Gutura and Chisasa [11] revealed that in South Africa, while 86% of self-employed individuals anticipate relying on pension schemes for retirement income, a concerning 14% are projected to lack any consistent financial support during retirement. This statistic underscores the disparities in retirement readiness within the self-employed demographic and highlights the risks of inadequate planning. The absence of mandatory savings programs for this group further exacerbates these challenges, leaving many vulnerable to financial insecurity in later years.

These findings point to a critical need for tailored interventions to enhance retirement preparedness among the self-employed. Policies that simplify retirement savings options, incentivize contributions, and provide targeted financial education could significantly improve outcomes. For example, governments already implemented tax benefits or subsidies to encourage participation in voluntary retirement savings programs. Additionally, financial institutions could develop more accessible and flexible retirement products tailored to the unique circumstances of self-employed individuals, fostering greater inclusivity and long-term security.

2.3 Adequacy Measurement

Common adequacy measurement for retirement income is through replacement rates (RR). This involves comparing their income while working to their income after they retire. Kim, J. [12] have stated that replacement ratio of 70% of prior earnings would be adequate for a standard living during retirement.

Another option is analyzed through poverty line income (PLI), where PLI is a key indicator in Malaysia for evaluating the minimum income required for households to meet basic necessities such as food, clothing, and shelter. According to the Belanjawanku 2024/2025 guidelines, an elderly individual requires approximately RM2,690.00 per month as an adequate retirement income to sustain a reasonable standard of living during retirement by EPF [13]. This figure reflects the growing recognition of the financial challenges faced by retirees in adapting to the rising cost of living.

The adjustment to the PLI has prompted a re-evaluation of poverty statistics, revealing that 5.6% of Malaysian households were living below the national poverty line in 2019. This revision highlights the government's commitment to addressing poverty in a more comprehensive manner, considering the changing economic environment and increasing living costs. However, despite these initiatives, significant disparities persist, particularly in rural areas and among marginalized communities.

These inequalities emphasize the need for sustained and targeted policy interventions to promote inclusive economic growth and reduce income inequality. Efforts to improve access to education, healthcare, and employment opportunities for disadvantaged groups are essential to ensuring equitable progress. Additionally, strengthening social protection programs and retirement savings mechanisms can further alleviate financial vulnerabilities, particularly for the elderly and low-income households, fostering a more resilient and inclusive society.

3. Methodology

3.1 Data Collection

This study utilises secondary data that were gathered from reliable sources such as official websites. The variables used in this study are rate of return, which is gathered from EPF website for Employee Provident Fund, while data for PRS are be retrieved from Private Pension Administrator Malaysia (PPA) website [14].

Table 1
Data collection for simulation

Variable	Value	Year of Data	Source
Interest Rate	3.00%	2024	Bank Negara Malaysia
Salary	RM 2745.00	2024	DOSM
Started Working Age	25	2024	Statista
Retirement Age	60	2024	MRAA

3.2 Assumptions

3.2.1 Employee Provident Fund

To conduct the simulation for this study, a few assumptions are made in order to accurately calculate the accumulated amount for Employee Provident Fund (EPF). Since this simulation is only for self-employed, hence there are no contribution rate from employer. The assumptions for the simulation are as follows:

Table 2
Assumptions for EPF simulation

Retirement scheme	Employee Provident Fund
Starting salary	RM 2750.00
Salary Increment	5%
Rate of return	5.50%
Monthly contribution rate	11%
Age of employee	25
Retirement Age	60

3.2.2 Private Retirement Scheme

In order to find the best fund to raise the retirement benefits, five PRS from different companies are compared. This includes yearly return across the three different funds which are growth fund, moderate fund and conservative fund. For a self-employed to invest within PRS at the age of less than 45, they can opt to invest within growth fund first, then transfer the amount into moderate fund from age 45 to 54 and lastly transfer the amount into conservative fund until retirement. Below is table with assumptions used for simulating accumulated amount in PRS funds until retirement age. The figures were taken from PPA website, with all the PRS funds are Shariah Compliant funds with growth, moderate and conservative funds. Data were taken from January 2025.

Table 3
PRS rate of return

PRS Funds	Yearly rate of return (%)		
	Growth (25 ~ 44)	Moderate (45 ~ 54)	Conservative (55 ~ 59)
AHAM Aiiman PRS	4.52	1.67	1.64
Kenanga Shariah OnePRS	3.21	3.42	2.55
Manulife Shariah PRS	4.07	3.78	1.89
Principal Islamic PRS	3.59	4.30	3.10
Public Mutual PRS Islamic	6.60	3.43	3.67

3.3 Calculation
3.3.1 Calculation of EPF accumulation

In order to achieve the first objective of this research, the accumulation of EPF is calculated. Formula taken from EPF website. The projected formulas are applied to calculate the accumulation amount until retirement age:

$$Yearly\ accumulated\ EPF\ fund = 12 * (Monthly\ employee\ contribution\ rate * salary) * rate\ of\ return \quad (1)$$

3.3.2 Calculation of PRS accumulation

To achieve the second objective of this research, this study is then to calculate the accumulation amount of PRS. In order to do so, the following formula are applied to calculate the accumulation amount upon reaching retirement age. Formula taken from PPA website.

$$Yearly\ accumulated\ PRS\ fund = 12 * (Monthly\ employee\ contribution\ rate\ * salary) * rate\ of\ return \quad (2)$$

3.3.3 Calculation of expected retirement income annuity

Next, using term life annuity, separated monthly retirement incomes are simulated. Mortality table M115 are used in this study. The accumulated amount of the funds from previous calculations are then applied to calculate the expected monthly retirement income. The formula are as follows:

$$Expected\ retirement\ income = \frac{EPF\ or\ PRS\ accumulated\ amoun}{12*(\sum_{m=0}^{n-1}((1+i)^{-n}*\ {}_{n}p_{x}) - \frac{11}{24}(1-(1+i)^{-n}*\ {}_{n}p_{x})}$$
(3)

Where,

i= interest rate

${}_{n}p_{x}$ = probability of a person aged x to survive another n years

3.3.4 Calculation of Replacement Ratio (RR)

The final earnings are then used to calculate the replacement ratio. This calculation is necessary to achieve the third and final objective. The formula is as follows:

$$Replacement\ ratio = \frac{Expected\ monthly\ retirement\ income\ of\ EPF\ or\ PRS}{Amount\ of\ last\ salary\ before\ retirement}$$
(4)

4. Results

4.1 Accumulated Amount in Both Funds

The accumulated amounts for male and female for all funds are similar as the accumulation formula does not involve any calculation on mortality rates. In Table 4, the accumulated savings amount upon reaching retirement age for Employee Provident Fund is RM367,019.57. This amount is the highest savings amount among other funds. The next highest accumulated savings amount is RM362,889.61 by Public Mutual PRS Islamic followed by Principal Islamic PRS at RM359,977.29 upon reaching retirement. Manulife Shariah PRS yields the fourth highest savings amount is RM358,679.72. The fifth highest savings accumulated fund is Kenanga Shariah OnePRS at the amount of RM357,981.77. The lowest savings amount accumulated among the funds is RM356,490.08by AHAM Aiiman PRS. The difference between EPF fund and the highest PRS fund is RM 4,129.95.

Table 4
EPF and PRS accumulated amount by retirement

Funds	Savings Amount
Employee Provident Fund	RM367,019.57
AHAM Aiiman PRS	RM356,490.08
Kenanga Shariah OnePRS	RM357,981.77
Manulife Shariah PRS	RM358,679.72
Principal Islamic PRS	RM359,977.29
Public Mutual PRS Islamic	RM362,889.61

4.2 Expected Monthly Retirement Income in Both Funds

Once the accumulated values are projected, the monthly retirement income of EPF and PRS funds for both male and female can be calculated using M1115 Table. Table 5 below shows that the overall retirement incomes for both genders are quite close, however females are expected to receive slightly lower individual income compared to males as they have longer life expectancy. This is because the total accumulated amount will be distributed over a potentially longer lifespan for females, resulting in fewer monthly payment amounts when compared to males.

According to Table 5, the projected monthly incomes of both male and female for Employee Provident Funds are the highest among other funds in the respective gender. This align with findings in Table 5, where the highest accumulated savings amount is also from Employee Provident Funds. The monthly retirement income of EPF for male is RM1,903.34, while the monthly retirement income of EPF for female is RM1,807.05.

For Private Retirement Scheme funds, the highest monthly retirement income is by Public Mutual PRS Islamic at RM1,881.92 for male and RM1,786.71 for female. The difference between EPF fund and the highest PRS fund is 21.42 for male and RM20.34 for female. The next highest monthly income is at RM1,866.82 for male and RM1,772.37 for female by Principal Islamic PRS. The third highest monthly retirement income for PRS is by Manulife Shariah PRS at RM1,860.09 for male, while the amount for female is RM1,765.99. The fourth highest amount for PRS funds is RM1,856.47 for male and RM1,762.55 for female, by the fund Kenanga Shariah OnePRS. The lowest amount of retirement income among the PRS funds are RM1,848.74 for male and RM1,755.20 by AHAM Aiiman PRS.

Table 5
Monthly income during retirement for EPF and PRS funds

Funds	Monthly Income During Retirement	
	Male	Female
Employee Provident Fund	RM1,903.34	RM1,807.05
AHAM Aiiman PRS	RM1,848.74	RM1,755.20
Kenanga Shariah OnePRS	RM1,856.47	RM1,762.55
Manulife Shariah PRS	RM1,860.09	RM1,765.99
Principal Islamic PRS	RM1,866.82	RM1,772.37
Public Mutual PRS Islamic	RM1,881.92	RM1,786.71

4.3 Replacement Rates Analysis

Retirement income achieving a 70% replacement rate is generally considered the adequate amount. Replacement ratio below 70% are deemed to be not adequate enough to retain the same living standards as when they are still working. Among the funds, Employee Provident Funds yields the highest replacement rates at 12.55% for male and 11.91% for female. This is due to the fund having the highest monthly retirement income when compared to other funds. However, this is still far from achieving the 70% replacement ratio, this would mean that the retirees will not be in the same living standard during retirement when compared to when they were working.

Saidi *et al.,* [15] reported that Employee Provident Fund has a replacement ratio of less than 70% under multiple scenarios that was calculated. The highest replacement ratio among the PRS funds is Public Mutual PRS Islamic at 12.41% for male, and 11.78% for female. The next fund with highest replacement ratio is Principal Islamic PRS with 12.31% with male, while female is 11.68%. After that, Manulife Shariah PRS is the third highest within the PRS fund at the amount of 12.26% for male and 11.64% for female, while the fourth highest replacement ratio fund is Kenanga Shariah OnePRS with 12.24% for male and 11.62% for female. The fund with the lowest replacement ratio among the PRS funds is AHAM Aiiman PRS at 12.19% for male and 11.57% for female.

Table 6
Replacement rates for EPF and PRS funds

Funds	Replacement Rates (%)	
	Male	Female
Employee Provident Funds	12.55	11.91
AHAM Aiiman PRS	12.19	11.57
Kenanga Shariah OnePRS	12.24	11.62
Manulife Shariah PRS	12.26	11.64
Principal Islamic PRS	12.31	11.68
Public Mutual PRS Islamic	12.41	11.78

5. Conclusions

Based on the findings from the simulation done, Employee Provident Fund resulted to the best fund to invest among other Private Retirement Scheme funds that was compared. Employee Provident Fund are estimated to have the highest savings amount of RM367,019.57, while the highest savings amount for Private Retirement Scheme is by Public Mutual PRS Islamic fund at RM362,889.61. This is because Employee Provident Fund has a rate of return at 5.5% across all the working years, while Public Mutual PRS Islamic only have the highest rate of return for growth fund which is at 6.6% for age below 44, but the rates plummet down to 3.43% by age 45 to 54 and only increased by little to 3.67% by age 55 and above. This has caused Public Mutual PRS Islamic fund to perform worse as compared to Employee Provident Fund.

This trend continues into monthly retirement income where Employee Provident Fund has the highest retirement income at RM1,903.34 for male and RM1,807.05 for female. The highest monthly retirement income for Private Retirement Scheme is also by Public Mutual PRS Islamic at RM1,881.92 for male, while for female is RM1,786.71. Lastly, the replacement rates that was calculated also shows that Employee Provident Fund has the highest replacement rates for both male and female at 12.55% and 11.91% respectively. Public Mutual PRS Islamic is also the highest among all PRS funds at 12.41% for male, and 11.78% for female. The difference between the two replacement ratios however is not very far, only 0.22% for male, and 0.21% for female.

Despite both amount of monthly retirement income for both Employee Provident Fund and Public Mutual PRS Islamic being the highest among the funds, both are still below the poverty line income amount that was stated by EPF (2024), which is at RM2,690.00 monthly. Thus, relying solely with only one fund are not recommended with the current assumptions. By having additional savings for retirement apart from EPF or PRS, the amount above poverty line income can be overcome. An example of this is Unit Trusts or Mutual Funds which is investment funds that are managed by professional fund managers. This may also boost the replacement ratio to be closer to the 70% replacement ratio.

Lastly, as this study uses a deterministic modelling that uses fixed assumptions for contribution rates, interest rates, and the rate of returns, this may cause inaccuracy for the results as those assumptions may change from time to time for real world applications. Due to this, a more precise result can be achieved by using stochastic modelling as it incorporates randomness within the assumptions such as the rate of return, interest rates, and other economic variables. This will then produce a wide range of results that can be applied to multiple scenarios and more applicable for real-world process.

Acknowledgement
This research was not funded by any grant

References

[1] Ponggot, Salmiah, Informal Sector in Malaysia, 2024.

[2] Shah, Nurin Athirah Mohd Alam, Muhammad Amrullah Nasrul, Siti Fatimah Binti Abd Rahman, and Devi Seviyana. "Comparative analysis of Malaysian and Indonesian retirement plan." *Lex Scientia Law Review* 7, no. 2 (2023): 659-708. https://doi.org/10.15294/lesrev.v7i2.69847

[3] Padrón, Thais Guerrero. "Social protection of the self-employed in old age in the EU." *Stanovnistvo* 61, no. 2 (2023): 11-30. https://doi.org/10.59954/stnv.524

[4] Ramli, Nur Illiya Shaira, and Nurul Sima Mohamad Shariff. "A study on retirement preparedness and confidence among private sector employees in Malaysia." *Malaysian Journal of Science Health & Technology* 9, no. 2 (2023): 153-163. https://doi.org/10.33102/mjosht.v9i2.328

[5] Zabri, Shafie Mohamed, Kamilah Ahmad, and Angelina Ann Loy Hui Lian. "The awareness of private retirement scheme and the retirement planning practices among private sector employees in Malaysia." *International Journal of Economics and Financial Issues* 6, no. 6 (2016): 120-124.

[6] Lin, Kok Leong, Aye Aye Khin, Siew Peng Lee, and Peck Ling Tee. "FACTORS INFLUENCING THE CONSUMERS'ATTITUDE TOWARDS PRIVATE RETIREMENT SCHEME IN MALAYSIA: SOCIAL, MARKETING & PERSONAL ASPECTS." *VoluDle10* 10, no. 1: 149.

[7] Abdullahi, U. A., G. O. Obadare, and O. L. Anifowose. "Contributory pension scheme on Nigeria economic growth." *KIU Interdisciplinary Journal of Humanities and Social Sciences* 3, no. 1 (2022): 264-283. https://doi.org/10.59568/KIJHUS-2022-3-1-16

[8] Ali, Azlin Namili Mohd, Asmah Laili Yeon, and Mohammad Azam Hussain. "Private retirement scheme in Malaysia: Legal analysis." *International Journal of Economics and Financial Issues* 6, no. 7 (2016): 290-295.

[9] Joulfaian, David. "Saving for retirement by the self-employed." *Journal of Pension Economics & Finance* 17, no. 3 (2018): 316-334. https://doi.org/10.1017/S1474747217000245

[10] Clark, Robert, Annamaria Lusardi, and Olivia S. Mitchell. "Employee financial literacy and retirement plan behavior: a case study." *Economic Inquiry* 55, no. 1 (2017): 248-259. https://doi.org/10.1111/ecin.12389

[11] Gutura, Rudo, and Joseph Chisasa. "The relationship between financial literacy and retirement planning among informal sector workers in Randburg, South Africa." *Folia Oeconomica Stetinensia* 24, no. 1 (2024): 56-74. https://doi.org/10.2478/foli-2024-0004

[12] Kim, Jin H. "ASSESSING THE ADEQUACY OF SOCIAL SECURITY RETIREMENT BENEFITS ACROSS RACE-ETHNICITY, GENDER, AND AGE OF RETIREMENT." *Innovation in Aging* 3, no. Suppl 1 (2019): S890. https://doi.org/10.1093/geroni/igz038.3257

[13] Employee Provident Fund, Belajawanku 2024/2025, 2024 https://www.kwsp.gov.my/en/w/epfreleases-belanjawanku-2024/2025-and-retirement-income-adequacy-framework

[14] Private Retirement Scheme, All PRS Fund, accessed January 2025 All-PRS-Funds.pdf

[15] Saidi, Nurul Athirah Nabila, Mazlynda Md Yusuf, and Mohamad Yazis Ali Basah. "Assessing the adequacy of contribution rates towards employees' provident fund in Malaysia." In *AIP Conference Proceedings*, vol. 1830, no. 1, p. 040006. AIP Publishing LLC, 2017. https://doi.org/10.1063/1.4980934