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SOCIAL PROTECTION INSIGHT

ISWC2025 INTERNATIONAL SOCIAL WELLBEING CONFERENCE 2025

LIVING TO A HUNDRED
ARE WE PREPARED?

KWSP | EPF ®

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ARE WE PREPARED?

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ISWC2025 INTERNATIONAL SOCIAL WELLBEING CONFERENCE 2025

LIVING TO A HUNDRED
ARE WE PREPARED?

Employees Provident Fund
Malaysia
2025

Editorial Committee

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CEO FOREWORD

Social Protection Insight 2025
Living To A Hundred: Are We Prepared?

Ahmad Zulqarnain Onn
Chief Executive Officer,
Employees Provident Fund

It is my pleasure to present the Social Protection Insight (SPI) 2025, an annual publication that has been central in fostering informed discourse on social protection and wellbeing since its inception in 2016. Published in conjunction with the International Social Wellbeing Conference (ISWC), Social Protection Insight continues to serve as a platform where scholars, practitioners, and policymakers converge to address critical societal challenges and propose evidence-based solutions that shape effective public policies.

This year's conference theme—"Living To A Hundred: Are We Prepared?"—highlights the significant demographic changes shaping Malaysia's future. As the country approaches the status of an aged society, we must carefully consider the implications of longer life expectancy and declining fertility rates. By 2045, 14% of Malaysia's population is projected to be 65 and older. Life expectancy exceeds 75 years, while fertility rates have decreased significantly, from 4.9 children per woman in 1970 to 1.6 in 2023, well below the replacement level of 2.1. Additionally, the old-age dependency ratio—representing individuals aged 65 and over per 100 working-age population—has risen from 5.4 to 10.6 during the same period. These demographic trends pose significant challenges but also present opportunities for transformation.

In this context, Social Protection Insight 2025 offers a timely and multifaceted examination of the structural shifts that are taking place. This edition explores critical issues shaping Malaysia’s future, including retirement income adequacy, labour market transformation, social protection reform, and the economic implications of an ageing population. It also examines financial literacy, mental health, gender inclusion, and innovations such as AgeTech and assistive technology, complemented by global perspectives on transition finance and asset ownership. Each contribution is grounded in rigorous analysis and offers practical policy recommendations aimed at supporting Malaysia's ageing population with security and dignity.

As we navigate these complexities, the need for cross-sector collaboration and sustained knowledge exchange has never been greater. I encourage readers to engage with this publication's insights and participate in the broader discourse to shape the future social protection policies. On behalf of the Employees Provident Fund, I sincerely appreciate all contributors, collaborators, and stakeholders whose expertise and commitment have made this edition of Social Protection Insight possible. Let us continue to drive positive change and shape a future where every generation can thrive.

Editorial Notes

As longevity increases and demographic landscapes shift, Malaysia faces significant questions regarding the sustainability and inclusiveness of its social protection schemes. However, these challenges also provide opportunities to envision the future and develop policies that effectively support the needs of an ageing population. This 8th edition of the Social Protection Insight explores a crucial theme: **Living To A Hundred – Are We Prepared?** Through various policy perspectives, this collection examines how the nation can adapt its economic, social, and institutional frameworks to support a longer, healthier, and more meaningful life for Malaysians.

The briefs are organised around four key themes:

Retirement Security and Social Protection, which addresses issues such as inadequate savings, behavioural strategies to enhance retirement savings, the impact of the gig economy on retirement, and the integration of long-term care into social security;

Labour Market Trends and Workforce Integration, which explores job mismatch issues, the evolving nature of jobs and industries, the connection between employment and mental health, and workforce planning for economic development;

Gender and Inclusion in Economic Participation, underscoring the necessity for inclusive policies to promote the women's empowerment agenda, acknowledge women's contributions in unpaid care work, and tackle structural inequalities and vulnerabilities; and

Poverty, Ageing, and Broader Well-being, examining urban poverty, the economic implications of ageing, and the potential for technological innovations to aid ageing-in-place and enhance overall well-being. Furthermore, this volume incorporates global perspectives on transition finance and asset owner innovation to guide sustainable financial and economic responses to demographic changes.

These briefs encourage stakeholders to adopt a forward-looking, evidence-based approach to policy design. Preparing for a century-long life expectancy requires more than reactive adjustments; it necessitates cohesive strategies that integrate social protection, labour resilience, mental wellbeing, and inclusive economic growth policies.

We hope this publication serves as both a reflection and a catalyst for meaningful dialogue and action among policymakers, thought leaders, and practitioners dedicated to laying the essential building blocks for Malaysia's smooth transition into an ageing nation soon.

Introducing EPF's Retirement Income Adequacy (RIA) Framework

HELPING YOU VISUALISE AND ACHIEVE THE RETIREMENT YOU DESERVE

In December 2024, the Employees Provident Fund (EPF) introduced the Retirement Income Adequacy (RIA) Framework — a refreshed and expanded approach to retirement planning. Building on the foundation of the Basic Savings concept introduced in 2008, the RIA Framework offers a more comprehensive benchmark to help members visualise and plan for different levels of retirement lifestyles based on income needs.

The framework introduces a three-tiered savings and income benchmark — Basic, Adequate, and Enhanced — each tailored to support different standards of living in retirement. These tiers serve as practical targets to guide members in making informed decisions about their savings and investments throughout their working life.

The RIA Framework will come into effect in January 2026, with a phased transition for implementation. As part of the framework, the RIA benchmarks will be reviewed and updated every five years to reflect changes in the cost of living and evolving retirement needs.

According to the Belanjawanku 2024/25 study, a Senior Single household in Klang Valley needs at least RM2,690 to cover the basic necessities for a dignified life.

These categories reflect the essential monthly living expenses for a Senior Single household:

SENIOR SINGLE RM2,690					
Food	RM660	Transportation	RM500	Ad hoc/one-off	RM190
Housing	RM700	Utilities	RM160	Social Participation	RM180
Healthcare	RM70	Personal Care	RM80	Discretionary Expenses	RM150

Consequently, an Adequate Savings and Income threshold is estimated to be around **RM650,000** that would be able to last for 20 years of retirement period.

RM2,690 x 12 months x 20 years ≈RM650,000*

*The benchmark for the Adequate Savings and Income is rounded to the nearest RM10,000

ENHANCED SAVINGS AND INCOME

A level that can provide financial freedom
and flexibility during retirement

RM1.3 million

2x Adequate Savings and Income

How RIA is determined

Anchored on Belanjawanku's estimation
for a Senior Single in Klang Valley

ADEQUATE SAVINGS AND INCOME

A comfortable amount to allow for
a modest but decent retirement lifestyle

RM650 thousand

0.6x Adequate Savings and Income

BASIC SAVINGS AND INCOME

An amount to allow for a modest
but decent retirement lifestyle

RM390 thousand

ENHANCED SAVINGS AND INCOME

- This tier will inform the **threshold for the Above RM1 million Withdrawal** to better reflect real value and preserve purchasing power in retirement.
- A phased transition is applicable for this policy:

+RM100K +RM100K +RM100K

2025
RM1.0M
*reflects the above RM1 Million Withdrawal Policy

2026
RM1.1M

2027
RM1.2M

2028-2030
RM1.3M

ADEQUATE SAVINGS AND INCOME

This benchmark is applicable beginning **January 2026**

BASIC SAVINGS AND INCOME

- This tier will also influence the **threshold applicable for the Members' Investment Scheme (MIS).**
- A phased transition is applicable for this policy:

+RM30K +RM30K +RM30K +RM30K +RM30K

2025
RM240K

2026
RM270K
At age 60

2027
RM300K
At age 60

2028
RM330K
At age 60

2029
RM360K
At age 60

2030
RM390K
At age 60

RIA SAVINGS THRESHOLDS BY AGE

AGE	***BASIC SAVINGS** *in 2030* **RM390,000** *at age 60*	**ADEQUATE SAVINGS** *in 2030* **RM650,000** *at age 60*	**ENHANCED SAVINGS** *in 2030* **RM 1,300,000** *at age 60*
18	1,400	1,500	**2,500**
19	1,700	1,800	**3,100**
20	2,200	2,300	**3,900**
21	2,800	3,000	**5,100**
22	5,800	6,400	**10,800**
23	9,000	10,100	**17,200**
24	12,300	14,100	**24,300**
25	15,900	18,500	**32,200**
26	19,800	23,400	**40,900**
27	23,900	38,700	**50,600**
28	28,300	34,500	**61,200**
29	33,000	40,700	**72,800**
30	38,000	47,500	**85,400**
31	43,400	54,800	**99,100**
32	49,100	62,700	**114,000**
33	55,100	71,200	**130,000**
34	61,400	80,300	**147,000**
35	68,100	90,000	**165,000**
36	75,100	100,000	**185,000**
37	82,600	111,000	**206,000**
38	90,400	123,000	**229,000**
39	98,600	136,600	**253,000**
40	107,000	149,000	**279,000**

RIA SAVINGS THRESHOLDS BY AGE

AGE	***BASIC SAVINGS** *in 2030* **RM390,000** *at age 60*	**ADEQUATE SAVINGS** *in 2030* **RM650,000** *at age 60*	**ENHANCED SAVINGS** *in 2030* **RM 1,300,000** *at age 60*
41	116,000	164,000	**307,000**
42	125,000	179,000	**336,000**
43	135,000	195,000	**368,000**
44	145,000	213,000	**402,000**
45	156,000	231,000	**438,000**
46	167,000	250,000	**476,000**
47	179,000	271,000	**516,000**
48	191,000	292,000	**559,000**
49	204,000	315,000	**604,000**
50	217,000	339,000	**652,000**
51	231,000	364,000	**703,000**
52	246,000	390,000	**757,000**
53	261,000	417,000	**813,000**
54	277,000	446,000	**873,000**
55	294,000	476,000	**935,000**
56	312,000	508,000	**1,000,000**
57	330,000	541,000	**1,070,000**
58	349,000	576,000	**1,140,000**
59	369,000	612,000	**1,220,000**
60	390,000	650,000	**1,300,000**

*These thresholds will apply starting in 2028. For details on the transition timeline for the Basic and Enhanced Savings tiers, please refer to the EPF website.

The Gig Trap: Malaysia's Retirement Crisis Looms

Ameerul Izudin Noor Haslan & Dr Nurhuda Othman
ISRA Institute, INCEIF University

ABSTRACT

The burgeoning gig economy in Malaysia presents a complex challenge for the Employees Provident Fund (EPF). While the expanding gig workforce theoretically broadens the potential contributor base, voluntary participation hinders realisation. Gig workers, often prioritising immediate income, are less inclined towards long-term financial planning through EPF contributions. Furthermore, low barriers to entry, coupled with uncertain graduate employment prospects, divert many towards gig work. This diminishes the future pool of formal sector EPF contributors. Financial vulnerability and a lack of social insurance by gig workers worsen the situation. Consequently, the EPF faces a dual challenge: capturing contributions from the existing gig workforce and mitigating the long-term impact of reduced formal sector participation. These factors raise sustainability concerns, threaten fund viability and amplify retirement insecurity, necessitating policy interventions to strengthen social protection.

INTRODUCTION

The total number of individuals employed in Malaysia grew at an average annual growth of 2.66% from 1995 to 2023 (DOSM 2024a), along with the contributions to the Employees Provident Fund (EPF). There are two sectors of employment, formal and informal employment. Malaysia adopts the International Labour Organisation's definition of informal employment, which is based on a worker-based concept (ILO, 2023). Informal employment refers to jobs where workers are not entitled to legally mandated benefits such as paid leave, sick leave and other social protection schemes (Tumin, 2020). The non-mandatory EPF contributions from informal workers, including gig workers, underscore the vast potential of expanding retirement savings within this segment. Enhancing participation would strengthen the financial security of informal workers and contribute to the sustainability of EPF and the nation as a whole.

According to the Malaysia Centre for the Fourth Industrial Revolution & Ipsos (2024), the gig economy is part of the informal sector, commonly characterised by three main features: self-employed workers completing specific jobs, consumers requiring the services, and companies facilitating the interaction between the two. Gig work encapsulates a spectrum of temporary and flexible tasks and services, often mediated by digital platforms.

Figure 1: Number of Gig Platforms by Type, 2016-2021

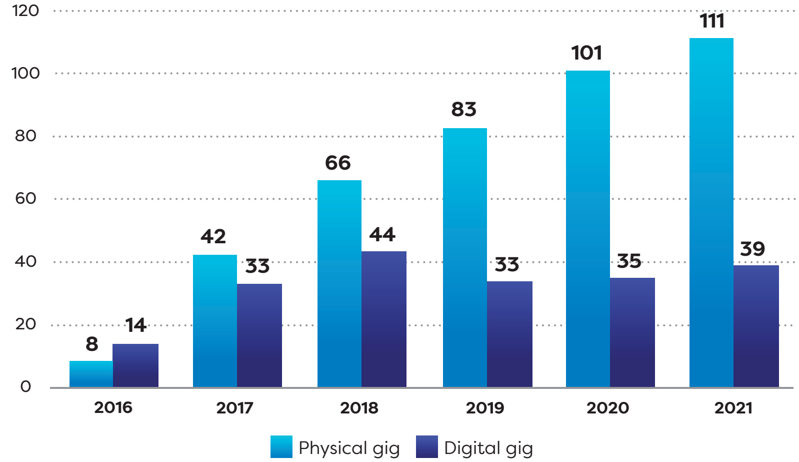
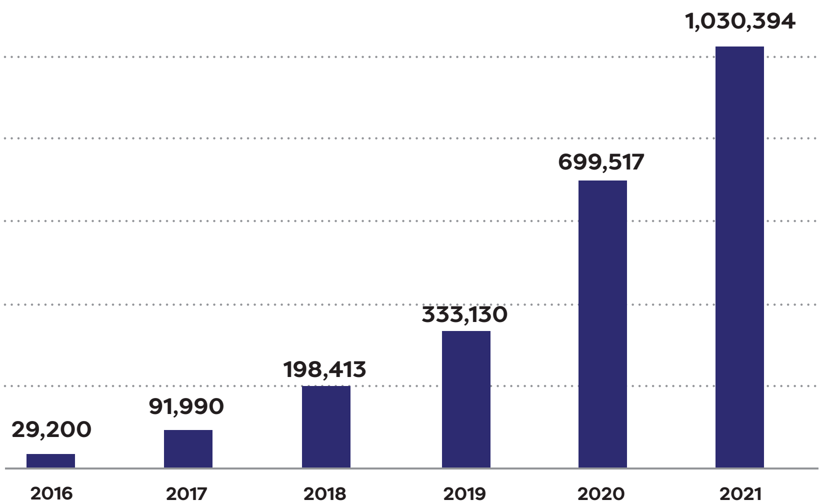


Figure 2: Number of Gig Workers, 2016-2021



Source: Nawawi et al., (2023)

The gig economy grew with the rising number of digital labour platforms, from 22 platforms in 2016 to 150 in 2021. Over the same period, the number of gig workers grew 35-fold, from 29,200 in 2016 to over a million in 2021 (Nawawi et al., 2023). Despite tremendous growth, challenges that are not commonly encountered in the formal sector persist, including a lack of social insurance and income volatility (MC4IR & Ipsos, 2024).

ISSUES FACED BY GIG WORKERS

According to Daud et al. (2024), a pressing issue in the gig economy is financial resilience and the ability to withstand and recover from economic shocks. Many workers in the gig economy suffer from financial vulnerability due to income instability and the absence of social insurance. The study found that 89% of their respondents lack unemployment insurance, 70% lack insurance/takaful, and 85% have no retirement savings. A survey by MC4IR & Ipsos (2024) found similar results, where 39% of their full-time gig worker respondents had no retirement planning.

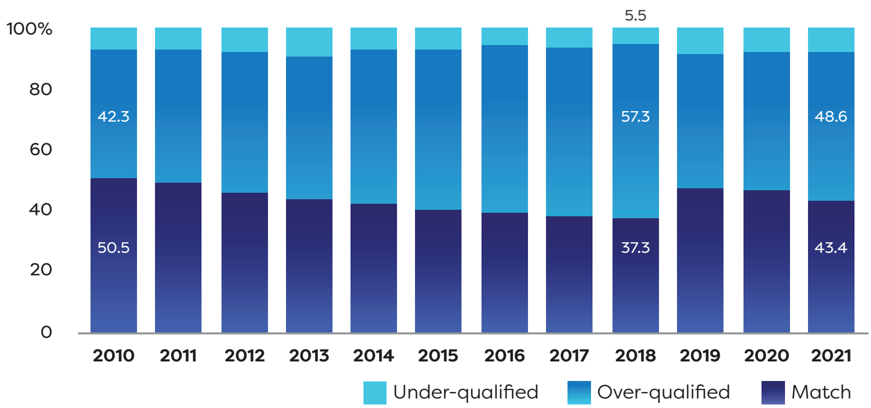
In traditional employment arrangements, contributions to the EPF and Social Security Organisation (SOCSO) are mandatory, whereas for gig workers, these contributions are voluntary (Abdullah et al., 2024). This intensifies the financial vulnerability of gig workers, forcing them to work longer hours to secure their livelihood, as social support is unavailable (EPF, 2023, as cited in Yusof et al., 2024). The issue of financial resilience among workers in the gig economy has been mentioned in many studies, underscoring the pressing need for a more inclusive economic system for gig workers.

DRIVERS OF THE GIG WORKERS

Despite the challenges, several factors are driving the gig economy's growth. Regarding employment conditions, Herrmann et al. (2023) note that gig workers are not required to present educational certificates; their performance is assessed through reviews from gig requesters. Additionally, Muhyi et al. (2023) found that 90% of their respondents cited the low barrier to entry as a key factor attracting them to the gig economy. Furthermore, MC4IR & Ipsos (2024) indicated that accessibility is a significant factor in gig employment, as individuals from various backgrounds are welcomed.

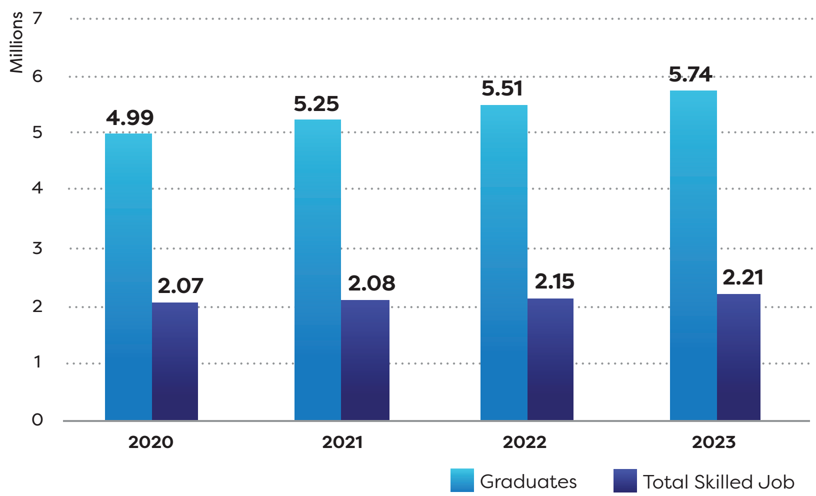
Moreover, the scarcity of job opportunities drives many into the gig economy. According to Jumbri et al. (2024), 50% of respondents cited limited job opportunities as the reason for joining the gig economy. Similarly, MC4IR & Ipsos (2024) found that 31% of full-time gig workers entered the gig economy due to a lack of job prospects, with 34% holding tertiary education qualifications.

Figure 3: Breakdown of Graduates, by Qualification-Job Mismatch, 2010-2021



Source: Suhaimi (2024)

Figure 4: Number of Graduates and Entirely Skilled Jobs, 2020-2023



Source: DOSM (2024b)

Moreover, Khazanah Research Institute (KRI, 2024) found that 48.6% of employed graduates are over-qualified for their current jobs. Accordingly, DOSM (2024b) found that skill-related underemployment grew from 1.195 million in 2020 to 1.540 million graduates in 2023—an increase of 29% in 4 years. Additionally, the total number of skilled jobs has remained around two million from 2020 to 2023, while the number of graduates has far exceeded two million and continues to grow, approaching six million by 2023. This highlights a mismatch between available jobs and the number of graduates entering the market.

IMPACT OF THE GIG ECONOMY ON EPF

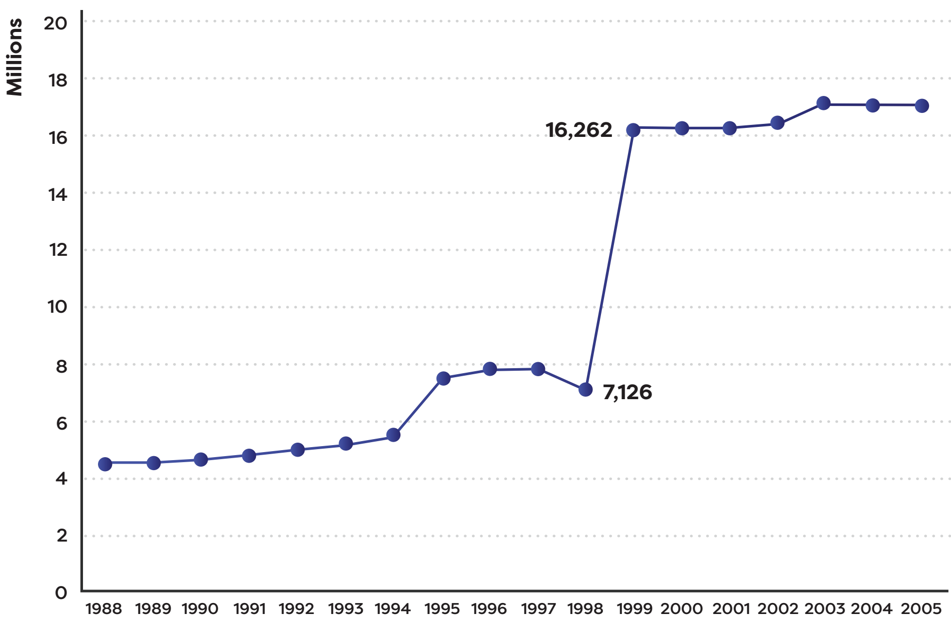
The rapid growth of the gig economy, along with the factors driving this expansion, presents significant potential for further development. Despite this growth, the EPF has yet to capitalise on the gig economy's opportunities fully. This opportunity extends beyond EPF itself; society benefits from the potential contributions, particularly from gig workers. As noted earlier, RM240,000 is the minimum savings expected in the EPF by age 55. However, many individuals under 30 may not be on track to meet this threshold (Suhaimi, 2024). Under the EPF's Retirement Income Adequacy (RIA) Framework, the threshold has been raised to RM390,000, with gradual implementation set to occur by 2028 in response to rising living costs and inflation (EPF, 2024). Many contributors still cannot reach the previously established threshold, despite working in the formal sector, let alone those in the informal sector. This is further corroborated by EPF (2023), which found that 48% of their 37,000 respondents, gathered through EPF's i-Akaun and social media platforms, have not considered any retirement plans.

With the rapid growth of the informal sector, EPF introduced i-Saraan, a voluntary contribution scheme. However, the scheme has experienced low participation, with an average savings of only RM1,560.48 among 922,791 contributors (EPF, 2024; EPF, 2023). Additionally, the active-to-inactive membership ratio in EPF stands at 53:47, highlighting a lack of consistent contributions for various reasons. Given this, it is unrealistic to anticipate the same participation rates of gig workers, where income varies, and contributions are voluntary.

RECOMMENDATIONS

According to Ghorpade et al. (2023), most gig workers are willing to allocate a portion of their income towards social insurance, including coverage for unemployment, workplace injuries, and retirement funds. Despite the availability of EPF's i-Saraan and SOCSO's Self-Employment Social Security Scheme (SESSS), many individuals have yet to opt into these programmes. Given this context, we propose an opt-out system, rather than an opt-in model, with automatic enrolment for EPF contributions or social insurance in general. In 1999, South Korea introduced auto-enrolment for citizens aged 18 to 59 in the National Pension System, significantly increasing participation rates (Jung et al., 2016). Similarly, studies in the United States have demonstrated that auto-enrolment led to a rapid rise in participation in defined-contribution retirement plans (Hung et al., 2019).

Figure 5: Number of National Pension Service Contributors, 1988-2005



Source: Jung, H., Pirog, M., & Lee, S.K. (2016)

However, while the participation rate is significant, the contribution and opt-out rates are equally crucial. According to Beshears et al. (2023), their review of the relevant literature concluded that employees tend to accept auto-enrolment passively and are less likely to opt out when the default contribution rates are low to medium, ranging from 1% to 6%. Over two to five years, participation rates remained between 22% and 64%. Their findings also showed that a higher default contribution rate, specifically 12%, led to increased opt-out rates, reaching 75% after 12 months. A similar study by Clark & Pelletier (2020) found that the opt-out rate for the Supplemental Retirement Savings Plan (SRP), a voluntary retirement plan in the US, remained low over time, even though the default contribution rate was only 1%.

A step further in auto-enrolment would be a per-gig contribution system, where each completed gig payment is allocated a cut for EPF contributions. A normal rate of 11%, similar to traditional standard employment, may be too high; therefore, the literature recommends a low default and flexible contribution rate. According to MC4IR & Ipsos (2024), GoGet currently implements this method of approach, albeit voluntarily. Further study on their model and implementation should be undertaken to increase their effectiveness.

CONCLUSION

The gig economy's growth could put EPF in a double-edged position. While it may reduce the formal contribution base, it also offers a chance to expand coverage through gig workers. To seize this opportunity, EPF could consider shifting from the current opt-in model to an opt-out system.

A carefully designed contribution structure should support this approach, as workers are more likely to remain enrolled when default rates are modest, typically between 1% and 6%. Crucially, this strategy must be complemented with targeted education and awareness efforts to ensure gig workers understand the long-term value of EPF contributions and are less likely to opt out.

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Should Malaysia Expand Its Social Pension?

Philip O'Keefe
The World Bank

ABSTRACT

This paper evaluates the expansion of social pension coverage in Malaysia, drawing on global and local experiences. It defines social pensions and their international objectives, examines coverage patterns, adequacy, and spending, and discusses their impacts on poverty, health, wellbeing, labour markets, and non-beneficiary households. Design considerations for expanding social pensions are reviewed. The paper concludes with reform suggestions for Malaysia's social pension, advocating for substantial expansion while balancing welfare impacts with fiscal and other considerations.

INTRODUCTION

There has been a proliferation of social pension programmes across emerging economies in recent decades, though their scale and forms vary. Malaysia also has a social pension for older people, Bantuan Warga Emas (BWE), but its coverage is very low, adequacy is modest, and fiscal allocation is very low. This note summarises a paper by O'Keefe and Rongen (forthcoming), which assesses the regional and global social pension landscape and makes a case for expanding social pension coverage in Malaysia.

DEFINING SOCIAL PENSIONS AND GLOBAL PATTERNS

Social pensions are non-contributory transfers funded by general revenues and provided to eligible older citizens. They may be granted solely based on an age eligibility criterion or involve targeting based on means or other factors. Within this broad definition, they demonstrate significant global variation in primary policy objectives, coverage, adequacy, fiscal sustainability, and impacts. Their role in the wider social protection system also differs. There are three potential goals of social pension programmes, which countries prioritise in various ways, although these policy goals are not mutually exclusive:

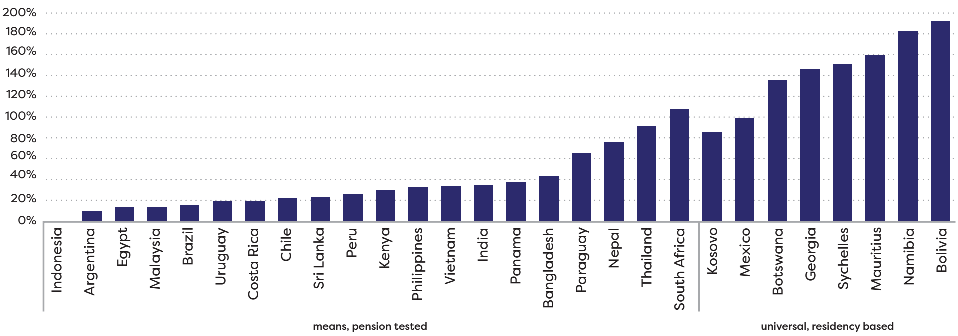
Old age poverty programmes: Prioritise poverty relief for disadvantaged older individuals (e.g., Malaysia, Bangladesh, India, Algeria, Kenya, Vietnam, Western Europe, Argentina, Colombia, Central Asia).

The foundation of the broader pension system: Serves as the central pension system with extensive coverage (e.g., Australia, New Zealand, Mauritius, South Africa, Bolivia, Kosovo, Timor-Leste).

Addressing gaps in contributory systems: Address coverage or adequacy gaps in both mature and immature contributory schemes (e.g., China, Chile, Mexico, South Korea).

Social pension programmes exhibit highly variable coverage rates worldwide (Figure 1). Using a standard age threshold of 65+, coverage ranges from well below 1% in Indonesia to as high as 180% in Bolivia (due to a low eligibility age). This variation in coverage is influenced by a combination of targeting choices and eligibility age. In countries that target their social pensions, the strictness of targeting varies significantly, from extremely tight in nations such as Indonesia, Malaysia, and Egypt to more inclusive approaches like affluence testing.

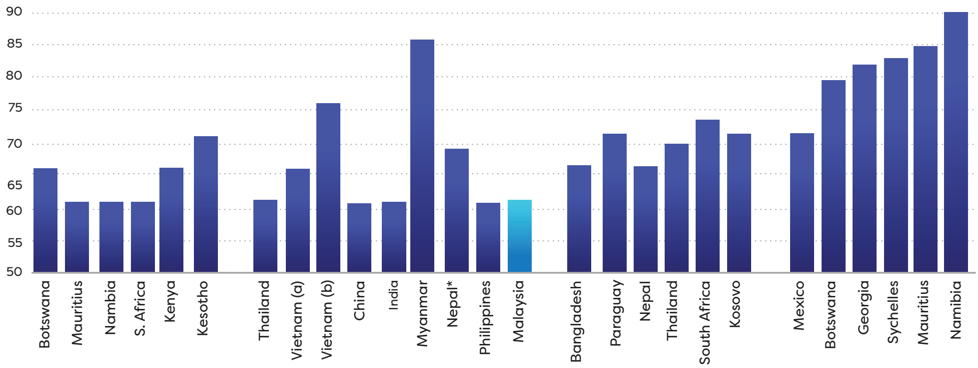
Figure 1: Coverage of social pensions as % of 60+ population, by selected countries



Source: World Bank (2023)

There is also variation in eligibility ages (Figure 2). While most countries have eligibility between the ages of 60 and 65, several adopt higher ages to manage fiscal costs and concentrate on those with limited work capacity. Generally, the social pension eligibility age is aligned with or near the retirement age in the contributory pension system. Nevertheless, there are exceptions with a higher social pension age (e.g., Argentina, Nepal, Vietnam), and fewer cases with a lower social pension age, such as in the Philippines.

Figure 2: Social pension eligibility age, by various countries, latest year

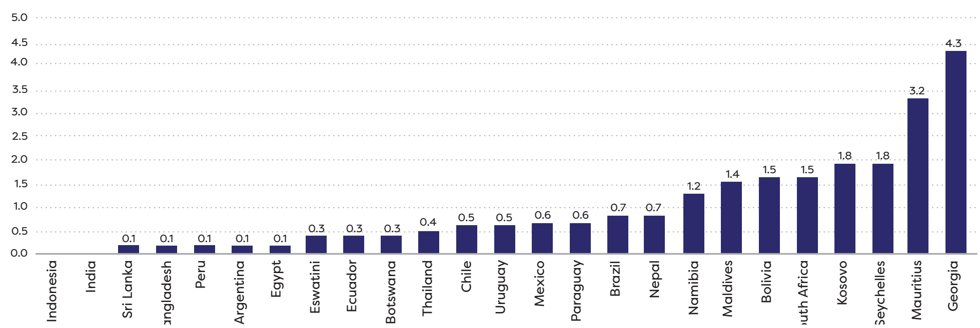


Source: World Bank (2023)

Another design feature that distinguishes social pensions is their adequacy. The global variation in benefit generosity is vast, ranging from as low as 2% of per capita GDP in India to approximately 38% in the Maldives. Numerous Asian countries exhibit low coverage and modest benefits, with much of the region significantly below the global average adequacy of around 16% of per capita GDP, and even further below the OECD average of roughly 22%.

Variations in coverage and adequacy lead to differing public spending on social pensions (Figure 3). Countries like Georgia and Mauritius, where the social pension is fundamental to the pension system, allocate significant shares of GDP, whereas nations from Indonesia to India, Malaysia, and Egypt spend negligible amounts. Meanwhile, several countries with relatively extensive coverage, such as Thailand and Mexico, spend half a per cent of GDP or less on social pensions, indicating that wide coverage can be achieved sustainably, albeit with modest benefits.

Figure 3: Public spending on social pensions as a share of GDP, various countries, latest year



Source: World Bank (2023)

THE EFFECTS OF SOCIAL PENSIONS

There is a growing body of literature from emerging economies regarding the socio-economic impacts of social pensions, encompassing poverty, labour market behaviour, health and well-being, and spillover effects within households. Overall, the evidence is quite positive (O'Keefe & Rongen, forthcoming), including:

Poverty Reduction: Social pensions reduce old-age poverty rates in most countries, although impacts vary. The effect on poverty depends on several factors, including coverage, benefit levels, and targeting errors in targeted programmes. In Asia, social pensions have lessened poverty and/or improved household consumption in China, India, and Korea, although the impact in Thailand remains less clear.

Health and Wellbeing: Positive effects on physical and mental health, subjective wellbeing, and mortality are observed in countries like China, Korea, Singapore, India, Mexico, and South Africa.

Labour Supply: Some reduction in older worker labour supply is noted in China, Thailand, Brazil, Argentina, India, and Mexico, though not dramatic

Spillover Effects: Positive impacts on extended family members, including child nutrition, education, and child labour, are seen in China, India, Thailand, Kenya, Brazil, South Africa, and Uganda

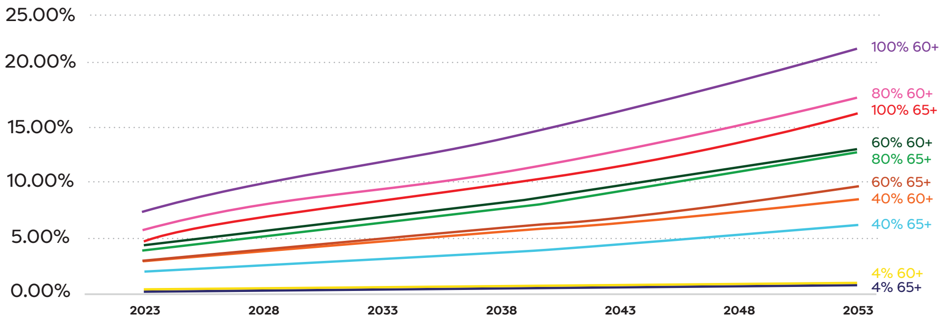
MALAYSIA'S SOCIAL PENSION

Several observations can be made regarding Malaysia's social pension based on global benchmarks. First, coverage is very low, at around 4% of the population aged 60 and above. The partial coverage of the Employees Provident Fund (EPF), which stands at approximately 36% of the working-age population when only active EPF members are considered, highlights a significant shortfall in financial protection for older people. Although the Social Assistance Programme (STR) enjoys broader coverage among older individuals, at roughly 60%, this does not compensate for the extremely low level of STR benefits. Second, the eligibility age 60 is at the lower end of global practices and falls well short of what one might anticipate in light of Malaysia's life expectancy. Third, the Basic Welfare Scheme (BWE) benefit level is relatively low by global standards, accounting for about 11% of GDP per capita, compared to a global average of around 16% and an OECD average of approximately 22%. Fourth, public spending on social pensions is exceedingly low, at about 0.06% of GDP, or around 0.4% of public revenues in 2024, which stand at 14.9% of GDP—a low figure for Malaysia's income level. Lastly, due to the limited coverage and benefit levels, Malaysia's social pension has a very modest impact on alleviating old-age poverty.

SCOPE FOR REFORM

The argument for expanding coverage of Malaysia's social pension appears compelling. However, limited fiscal resources and rapid societal ageing are also crucial factors to consider when assessing the sustainability of an expanded programme. Figure 4 projects the cost of a social pension at current real benefit levels over the coming decades, as Malaysia transitions to an aged society (around 2043) and a super-aged society (around 2053). Under any scenario, the projected cost of social pensions at existing coverage and benefit rates roughly triples during this period due to societal ageing. At current coverage levels, the programme remains easily sustainable over time, costing only around 0.85% of total revenues by 2053, or 0.13% of GDP at current revenue/GDP ratios. However, its welfare impacts would remain limited as the number of older individuals grows rapidly. Conversely, expanding to a universal social pension at current benefit levels is expensive in the short term (around 8% of 2024 revenues) and prohibitively costly in the long run if the public revenue ratio remains constant (around 22% of revenue by 2053).

Figure 4: Projected social pension spending at different coverage rates, 2023-2053



Source: O'Keefe & Rongen (forthcoming). Assumes a fixed monthly benefit of RM500 in 2024.

The question is whether a combination of reforms to the social pension could effectively balance higher coverage with fiscal sustainability. Much depends on the trajectory of public revenues, and Malaysia will need to enhance its revenue performance over time. Fiscal space will also rely on its ability to reform consumer fuel subsidies, with IMF projections suggesting that at least 0.5% of GDP could be released (IMF, 2024). Design considerations surrounding social pensions require careful thought and include setting programme eligibility thresholds and adjustment mechanisms, determining the access age, and establishing the sustainable coverage rate.

A combination of measures could be considered:

Adjust the income eligibility threshold for social pension receipt, assuming some targeting in addition to age remains. Using the PLI, the current social pension eligibility threshold appears overly restrictive for a country at Malaysia's income level. It does not align with social protection practices in high-income countries (HICs). A clear alternative for the eligibility threshold would be the Department of Statistics' Perbelanjaan Asas Kehidupan Wajar (DOSM PAKW). PAKW measures basic subsistence standards and the minimum amount for a household to "live decently," factoring in household size, location, and other variables. Estimates based on the 2022 Household Income and Expenditure Survey (HIES) indicate that approximately 32.5% of households would fall below the national PAKW threshold. Regardless of the eligibility threshold established, it would also be beneficial to explicitly index it, i.e., implement an automatic rule-based adjustment (Umapathi et al., 2013).

Expand social pension coverage based on the revised eligibility threshold. Considering the current coverage of the EPF and the low median accumulations, an expanded social pension could encompass older individuals residing in the bottom 40% of households (B40). The case for a universal social pension is less compelling when fiscal constraints are considered; however, given the existing inclusion and exclusion errors, there is a need for investment in information systems to enhance eligibility assessments.

Gradually increase the access age for the social pension over time. The current eligibility age of 60 is low compared to the trajectory of healthy life expectancy at that age since the introduction of the social pension in 1982, to global comparators, and the pace of Malaysia's demographic transition. In the medium term, aiming for an access age between 65 and 70 years appears to align more with Malaysia's demographics. For instance, this higher age could be phased in gradually by 3 to 6 months per year. Subsequently, it could be indexed to future changes in life expectancy at the age of access.

Benefit levels in light of the target coverage level to balance welfare and fiscal considerations. While the relative level of BWE is higher than some Asian neighbours, it remains below the global and OECD average adequacy. In the short to medium term, however, the policy priority of expanding coverage probably outweighs the need to increase benefit levels. Whatever the benefit level, indexing it over time using a rule-based approach rather than relying on ad hoc adjustments is vital. Rules-based indexation approaches employed in OECD countries can guide Malaysia's adopted approach, although at a minimum, the aim should be to keep pace with inflation.

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Retirement Literacy Among Gen Z in Malaysia: A Baseline Study on Financial Knowledge, Savings Behaviour, and Investment Preferences

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ABSTRACT

This baseline study investigates the retirement literacy of Gen Z in Malaysia, emphasising their financial knowledge, saving behaviours, and investment preferences. A survey was conducted among 76 respondents, revealing that while many are familiar with retirement planning concepts, a significant portion lacks formal financial education. The findings indicate that 42.1% of respondents save inconsistently, while 35.5% do not save but plan to start shortly. Financial constraints and short-term priorities were identified as significant barriers, with 71.1% citing insufficient funds as a key reason. Most respondents believe that government retirement funds will not be adequate, and concerns about inflation and healthcare costs were significant. Investment preferences leaned towards safer options, such as the Employees Provident Fund (EPF) (92.1%) and fixed deposits (32.9%). The study suggests introducing mandatory financial education in schools and universities could improve retirement literacy. As a foundational investigation, this study offers insights for policymakers and financial educators to develop targeted interventions to enhance Gen Z's long-term financial security.

INTRODUCTION

Retirement literacy is vital to financial well-being, especially for younger generations navigating an evolving economic landscape. In Malaysia, Generation Z—individuals born between 1995 and 2010—are entering the workforce with varying financial knowledge and preparedness for retirement. Previous research suggests that financial literacy is essential for long-term financial security, influencing savings habits and investment decisions (Lusardi & Mitchell, 2011b). Many young Malaysians lack sufficient savings to manage unexpected expenses, underscoring a broader problem of inadequate retirement planning among this demographic (Nurul Sima Mohamad Shariff & Isah, 2019). This challenge is further compounded by the perception that retirement is a distant concern, leading to procrastination in planning and preparation, particularly due to the complexities associated with long-term financial strategies (Nurul Sima Mohamad Shariff & Isah, 2019). This research serves as a baseline study to establish foundational insights into Gen Z’s current financial awareness, saving behaviours, and investment tendencies, ultimately assessing their readiness for retirement planning.

RESEARCH OVERVIEW

A structured survey was conducted with 76 Gen Z respondents, focusing on demographic information, financial literacy levels, retirement saving habits, and investment preferences. The majority of those surveyed held bachelor's degrees and were employed full-time. The questionnaire included Likert-scale ratings, multiple-choice questions, and open-ended responses. The data were analysed to identify trends and correlations.

The findings provide an initial reference point for future research to enhance younger generations' financial literacy and retirement preparedness. The relationship between financial literacy and retirement planning indicates that individuals with greater financial knowledge are more likely to engage in proactive retirement planning (Lusardi & Mitchell, 2011a). Recognising the importance of financial literacy for retirement security, initiatives to improve financial knowledge have become increasingly vital (Lusardi & Mitchell, 2011a; Lusardi & Mitchell, 2007).

ANALYSIS OF RESEARCH FINDING

Financial Literacy & Retirement Knowledge

Respondents rated their financial knowledge at an average of 4 out of 5, with 50% rating their knowledge as 4 and 39.5% rating it as 5. Understanding of retirement planning was similarly high, with 47.4% of respondents rating their knowledge at 4 and 18.4% at 5. However, only 25% reported receiving financial education in school or university, while 32.9% had no formal financial education. Financial literacy, particularly in the context of retirement planning, remains low among younger generations (Lusardi & Mitchelli, 2007). Many individuals struggle to plan effectively for retirement due to inadequate financial knowledge and literacy (Amar Imran Mohd Nahar et al., 2022).

Retirement Savings & Confidence

Findings reveal that 42.1% of respondents save inconsistently, while only 18.4% consistently save. Additionally, 35.5% do not currently save but plan to start soon. Financial constraints are a significant barrier, with 71.1% of respondents citing insufficient funds and prioritising short-term financial needs. Confidence regarding retirement is notably low, with 46.1% feeling somewhat confident and 30.3% remaining neutral about their ability to retire comfortably. Furthermore, 39.5% of respondents consider government retirement funds insufficient, while 31.6% believe they are adequate. Establishing this baseline provides a foundation for tracking future financial attitudes and behaviour changes. A lack of understanding of basic financial concepts is closely tied to insufficient retirement planning and wealth accumulation, ultimately impacting individuals' ability to save and secure a comfortable retirement (Lusardi, 2008).

Investment Preferences

Investment preferences indicated a strong tendency towards lower-risk options. The Employees Provident Fund (EPF) scheme emerged as the most popular retirement savings plan, with 92.1% of respondents favouring it. Fixed deposits followed this at 32.9% and stocks/mutual funds at 22.4%. More volatile investments, such as cryptocurrency, were less favoured, with only 3.9% expressing interest. Research has demonstrated that retirement planning is a complex issue influenced by various socio-demographic factors, significantly impacting an individual's savings approach (Ahmad & Mohamed Zabri, 2023; Dewi, 2022). Understanding these influences is crucial for developing effective financial education programs (Nurul Sima Mohamad Shariff & Isah).

Recommendations for Improving Retirement Literacy

The top recommendation is mandatory financial education, with 77.6% of respondents supporting its inclusion in schools and universities. Other suggestions include making financial planning resources more accessible (68.4%), implementing employer-sponsored programs (56.6%), and providing better government incentives for early retirement savings (56.6%). These findings are consistent with previous studies, which indicate that structured financial literacy programs significantly enhance financial behaviours (OECD, 2016). By examining these factors, we can better understand the disparities in retirement preparedness and develop strategies to promote more equitable retirement outcomes, particularly for younger individuals just starting their financial journeys.

CONCLUSIONS

This baseline study highlights the crucial need to improve retirement literacy among Generation Z in Malaysia. While there is some awareness of retirement issues, structured financial education and better savings habits are essential for ensuring long-term financial security. Policy-makers and educators should prioritise the integration of financial literacy programs, starting with primary education, to adequately prepare the younger generation for retirement planning. Moreover, developing more creative methods to engage this target group effectively is essential.

Future research should examine the long-term effects of financial literacy initiatives on retirement outcomes (Lusardi & Mitchell, 2011a). Comparative studies among different income groups could also shed light on the specific challenges faced by various segments of Generation Z. By establishing an initial benchmark, this study allows for future comparisons and policy enhancements to improve retirement preparedness. A collaborative effort involving the government, educational institutions, employers, and financial service providers will be essential to ensuring a financially secure future for the younger generation.

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Nudging Employees to Save More for Retirement: A Behavioural Insights Perspective

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ABSTRACT

Insufficient retirement savings among EPF members negatively impact their well-being in old age. This study, which involved 295 individuals with EPF accounts, examined their saving habits, spending behaviours, and lifestyle choices. The results revealed that 85.3% of respondents save monthly outside their EPF accounts, while 72.6% support an increase in EPF contributions by 1% whenever they receive a pay raise. These findings suggest that behavioural interventions, such as nudges and default options with automatic enrolment, could potentially enhance retirement savings in Malaysia.

INTRODUCTION

The adequacy of retirement savings among members of the Employees Provident Fund (EPF) is concerning, as it significantly impacts their financial security in old age. Data from September 2023 reveals a troubling trend: nearly half (48%) of EPF members under 55 have accumulated less than RM10,000 in their retirement accounts (Ministry of Finance, 2023). This precarious situation highlights the urgent need for effective strategies to address the issue.

This study investigates the financial behaviours of EPF members to identify opportunities for intervention. The primary objective is to understand their saving habits, spending patterns, lifestyle choices, and factors such as income, age, job type, education, and the duration of EPF membership. The research explores how behavioural insights can be used to design interventions that encourage EPF members to save more for retirement, including assessing the feasibility of implementing a default option to increase EPF contributions when salary increments occur automatically.

RESEARCH OVERVIEW

The conceptual framework of this paper is built on the following premises:

The influence of behaviour on saving and spending decisions, contrasting the rational actor model with behavioural economics concepts such as automatic decision-making and social norms.

[1]This paper is based on the unpublished policy casebook by the same author.

Potential differences in saving and spending behaviours across generations emphasise the need to consider these variations when designing policy interventions.

This paper utilised a mixed-method research design that included surveys and expert interviews. Survey questionnaires were distributed to individuals with EPF accounts to collect data on their demographic and socioeconomic backgrounds, attitudes toward retirement savings, and spending behaviours. The demographic data aimed to establish relationships between relevant variables and retirement savings.

The study examined the amount saved, reasons for saving, types of savings institutions used, total EPF savings, willingness to save more, preferred methods for saving campaigns, and potential increases in contributions to EPF accounts upon receiving pay raises. Regarding spending, the research focused on monthly household expenditures, major components of expenditure, and the frequency of dining out and taking holidays. An online self-administered survey yielded 295 usable responses from EPF members through a convenience sampling technique.

DISCUSSION

The survey findings highlighted a concern regarding retirement savings among EPF members. A significant portion, 55.6%, had EPF savings of RM60,000 or less. Among those in the crucial 51-55 age group, only 33.3% had savings exceeding RM240,000. This means that the majority, 66.7%, nearing retirement do not have sufficient funds based on this benchmark. These results are consistent with national data, which shows that inadequate retirement savings are prevalent.

Furthermore, the analysis demonstrated the impact of various factors on EPF savings:

Job type and highest qualification: Professionals and managers comprised the majority (87.9%) of individuals with savings exceeding RM240,000. Additionally, those with a first degree or higher qualification accounted for 82.8% of this high-saving group. These findings indicate that job stability and higher earning potential are closely linked to these factors and play a significant role in retirement savings.

Duration as EPF member: While having a more extended membership often leads to greater savings, it is not the sole factor to consider. Interestingly, 19.7% of respondents with over 20 years of membership reported savings of RM60,000 or less. This low savings figure suggests that income levels and withdrawal patterns are essential for assessing savings adequacy.

Age bracket: As expected, older members typically have higher savings due to more extended contribution periods, wage growth, and accumulated dividends. However, even among those aged 51-55, a significant number have inadequate savings, as indicated above.

Before-tax monthly income: There is a clear correlation between income levels and EPF (Employees Provident Fund) savings. Lower-income groups tend to have lower savings. Notably, 62.2% of respondents with savings of RM60,000 or less reported earning RM3,000 or less monthly. Conversely, 93.1% of those with savings exceeding RM60,000 were in the highest income bracket, earning above RM5,000 monthly.

RECOMMENDATIONS

The analysis reveals that insufficient retirement savings among EPF members is a significant public policy issue. Survey data indicate that many members, particularly those nearing retirement and in lower-income brackets, do not have enough savings to support themselves in old age. Although traditional predictors of retirement savings are relevant, they do not fully account for the observed outcomes. This suggests that behavioural factors play a crucial role in financial decision-making. The risk of low-income earners falling into poverty during retirement is particularly concerning. To effectively address the problem of inadequate retirement savings among EPF members, the following strategies, informed by insights from this study, are recommended:

Implement a default option for automatic increases in EPF contributions upon salary raises. Employee contributions are recommended to be automatically increased by 1% whenever a member receives a pay raise, while employer contributions remain the same. Members should retain the option to opt-out, but this process should require deliberate action, leveraging the tendency of individuals to stick with default options.

Develop and implement attractive campaigns to nudge EPF members to allocate a portion of their savings outside EPF towards retirement. These campaigns should primarily utilise social media, given its high preference among respondents ("Attractive" and "Social" principles in the EAST framework). Campaigns should be tailored to different demographic groups to be impactful.

Employ social media campaigns to encourage lifestyle changes that optimise spending and increase potential savings. By highlighting the saving habits of the majority (e.g., those who take fewer holidays), members can be socially nudged to reconsider discretionary spending. These campaigns should be strategically timed to coincide with financial planning periods or major spending decisions, such as early holiday bookings and local travel.

Establish a regular national survey on retirement and health as a crucial enabler for evidence-based policymaking. The survey should collect standardised data relevant to retirement studies, similar to the US Health and Retirement Study (HRS) adopted in countries such as Mexico, Thailand, Indonesia, Brazil, England and Japan (Sonnega et al., 2014).

With a robust monitoring and evaluation mechanism, the effectiveness of the recommended interventions can be regularly evaluated and adjusted. This policy brief highlights that behavioural insights are an innovative approach that can effectively pivot intervention strategies to enhance retirement savings among EPF members.

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The Price of Peace: Retirement Savings, Income Security and Mental Health in Ageing Societies

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ABSTRACT

As life expectancy increases and fertility rates decline, ensuring retirement savings adequacy and income security has become a pressing challenge, especially in ageing societies like Malaysia. While financial stability is critical for retirees, the psychological effects of financial insecurity, including stress, anxiety and depression, are often overlooked. This paper explores the intersection of retirement savings, income security and mental health, highlighting the risk retirees face with insufficient financial resources. Despite Malaysia's existing pension landscape, a significant proportion of retirees remain financially vulnerable, with limited access to mental health support. Drawing on international best practices, this study underscores the importance of integrating mental health support into retirement planning, promoting financial literacy and strengthening a whole-of-nation approach to social protection. Addressing these challenges holistically will be crucial for Malaysia as it transitions from an ageing society to an aged society, ensuring that future retirees can maintain financial security and psychological wellbeing.

INTRODUCTION

As life expectancy rises and fertility rates decline, many countries face the financial and social implications of a rapidly ageing population, and Malaysia is no exception. By 2050, individuals aged 65 and over will comprise more than 16% of the global population (United Nations, 2024). In Malaysia, this demographic shift is occurring swiftly, with the country anticipated to become a super-aged society by 2050, when over 20% of its population will be aged 60 and over (Malay Mail, 2024). While ageing is a triumph of development, it presents significant challenges for retirement security. The proportion of working-age individuals supporting older dependents is decreasing, with Malaysia's old-age dependency ratio expected to fall from 9:1 in 2022 to 3:1 by 2060 (World Bank, 2023). Simultaneously, economic pressures such as diminished labour productivity and escalating healthcare expenditure may further strain the nation's fiscal capacity (Ministry of Finance Malaysia, 2023; Ministry of Health Malaysia, 2023). Despite some progress in policy alignment, Malaysia has yet to ratify the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102), which delineates minimum benchmarks for comprehensive social protection (International Labour Organisatiom, 1952).

RETIREMENT SAVINGS, FINANCIAL SECURITY AND MENTAL WELLBEING

The adequacy of retirement savings remains a significant concern in Malaysia. In 2024, only 37% of active formal sector EPF members reached the Basic Savings threshold by age (EPF, 2024). Among all EPF members, merely 23% met this standard, leaving the remaining 77% vulnerable to financial insecurity and a greater risk of poverty in old age. This financial vulnerability is closely linked to mental health outcomes. Studies have demonstrated that financial stress in later life correlates with increased psychological distress, anxiety, and depression (ADB, 2024; Gorry et al., 2018). A national poll in the United States revealed that over 50% of older adults reported stress from personal finances, with 16% experiencing high levels of stress (Institute for Healthcare Policy and Innovation, 2024).

Behavioural and empirical evidence further strengthens the link between financial stress and mental health outcomes. Financial literacy, retirement planning, and saving behaviour are pivotal in securing post-retirement wellbeing (Thaler & Benartzi, 2004). However, Malaysian research reveals persistent literacy gaps, particularly among low-income groups (Abdullah et al., 2019). In addition, research conducted by Muhammad Aizat Zainal Alam, Yong, and Norma Mansor (2022) employed machine learning techniques on the Malaysian Ageing and Retirement Survey (MARS), offering new insights into predicting retirement savings adequacy. The study revealed that asset accumulation and luxury spending patterns were more robust predictors of financial preparedness than income alone. These findings challenge traditional assumptions about saving behaviour and suggest that integrating behavioural finance principles, such as mental accounting, should be considered in policy design.

INTERNATIONAL BEST PRACTICES: LINKING RETIREMENT SECURITY WITH MENTAL HEALTH

Other countries have addressed the dual challenge of financial insecurity and psychological wellbeing in old age by adopting integrated service approaches that combine retirement planning with mental health support. Figure 1 summarises selected best practices from various nations that successfully embed mental health considerations and retirement planning into their holistic systems.

Figure 1: Global Top Practices

Country	Programme description
Japan	Integrates mental health into long-term care insurance; addresses stigma and ageing stress (Momose et al., 2021)
Denmark	Combines pensions with access to psychological counselling and support groups (Nielson et al., 2012).
Singapore	CPF Life guarantees income for life and includes financial literacy initiatives (CPF Board, n.d.).
New Zealand	Superannuation offers income, while the 'Better Life' programme combats loneliness and depression (Office for Seniors, 2019).
Finland	The Finnish pension system includes regular mental health check-ups in community-based care (Karolaakso et al., 2024).
Belgium	Awareness campaigns on anxiety and pension reforms enhance mental wellbeing (blue2purple, 2025).
Ireland	The Health Service Executive provides tailored mental health services for retirees (Health Service Executive, n.d.).
United States of America	Older Americans Act funds senior-focused mental health and outreach (Colello & Napili, 2024)

These examples underscore that safeguarding retirement security and promoting psychological resilience are not mutually exclusive goals; they must be addressed together.

MALAYSIA'S PENSION LANDSCAPE: GAPS AND OPPORTUNITIES

Malaysia's current pension framework mainly comprises the Employees Provident Fund Scheme, the Public Service Pension Scheme, and the social assistance programme (Bantuan Warga Emas). While these mechanisms cater to formal and public sector employees, informal sector workers remain largely underserved. Fragmentation among schemes leads to uneven access and varying degrees of adequacy. The EPF, a defined contribution scheme, is vulnerable to premature withdrawals and inadequate savings. Public sector pensions, although generous, are fiscally unsustainable in the long term due to rising life expectancy and long-term liabilities. Meanwhile, social assistance provides only modest support (currently RM600 per month for those with earnings below the Poverty Line Index), which is insufficient to meet even basic needs in old age. Importantly, none of these programmes systematically incorporates mental health support. This gap is concerning, as older adults facing financial strain often lack the psychological resources necessary to cope with the emotional toll of ageing and social isolation.

POLICY RECOMMENDATION

Malaysia must pivot towards a more integrated model of retirement security that includes mental health support. Building on the lessons from our research and global case studies, the following policy pathways are proposed:

Integrate mental health into retirement planning
Psychological preparedness should be integral to retirement advisory services. The EPF's Relationship and Advisory Services could be enhanced to include mental wellbeing modules. Pre-retirement seminars might cover stress management, cognitive health, and emotional adaptation to post-employment. Furthermore, community-based centres at hospitals and NGOs could provide comprehensive support that integrates financial advice with mental health services for older citizens.

Strengthen financial literacy and mental resilience
Financial education must begin early and be tailored to a real-life decision-making context. Schools' curricula should include integrated modules on budgeting, savings, foundational concepts such as compound interest, alongside lessons on emotional decision-making. Drawing from the findings of Muhammad Aizat Zainal Alam et al. (2022), financial tools should not only guide rational planning but also address psychological factors like overconfidence and fear of investing. Mobile apps and AI-driven financial counselling platforms can be developed to deliver personalised advice based on savings behaviour, risk profiles, and even stress indicators. This dual focus on financial and psychological readiness enhances retirement outcomes and builds resilience.

Whole-of-nation approach to social protection
A coordinated, whole-of-nation strategy involving engagement with government ministries, private sector insurers, NGOs, religious organisations, and grassroots groups is crucial to expanding access to mental health support and raising awareness of retirement savings. Cross-sector cooperation can enhance community-based mental health services and outreach while promoting retirement savings awareness. Malaysia could also incentivise private insurers to provide retirement-linked products that combine annuity payouts with mental health coverage. Such schemes could emulate Japan's long-term care insurance or Singapore's CPF Life (Central Provident Fund Board, n.d).

CONCLUSION

Ageing with dignity demands more than just adequate financial security; it also requires mental well-being, emotional stability, and meaningful social inclusion. As Malaysia transitions into a super-aged nation, the relevant stakeholders must invest in evidence-based, integrative pension reforms that reflect economic and psychosocial realities. Recent research employing predictive models on Malaysian retirement data (Muhammad Aizat Zainal Alam et al., 2022) highlights the importance of data-driven policymaking in enhancing retirement outcomes.

Predictive analytics can be crucial in identifying at-risk groups, guiding targeted interventions, and improving retirees' financial and mental well-being. Ultimately, the cost of peace in retirement is not measured solely in Ringgit, but in the assurance that Malaysians can age with stability, dignity, and emotional resilience. With systemic reform and integrated planning, Malaysia can cultivate a retirement landscape that underpins economic security and psychological well-being.

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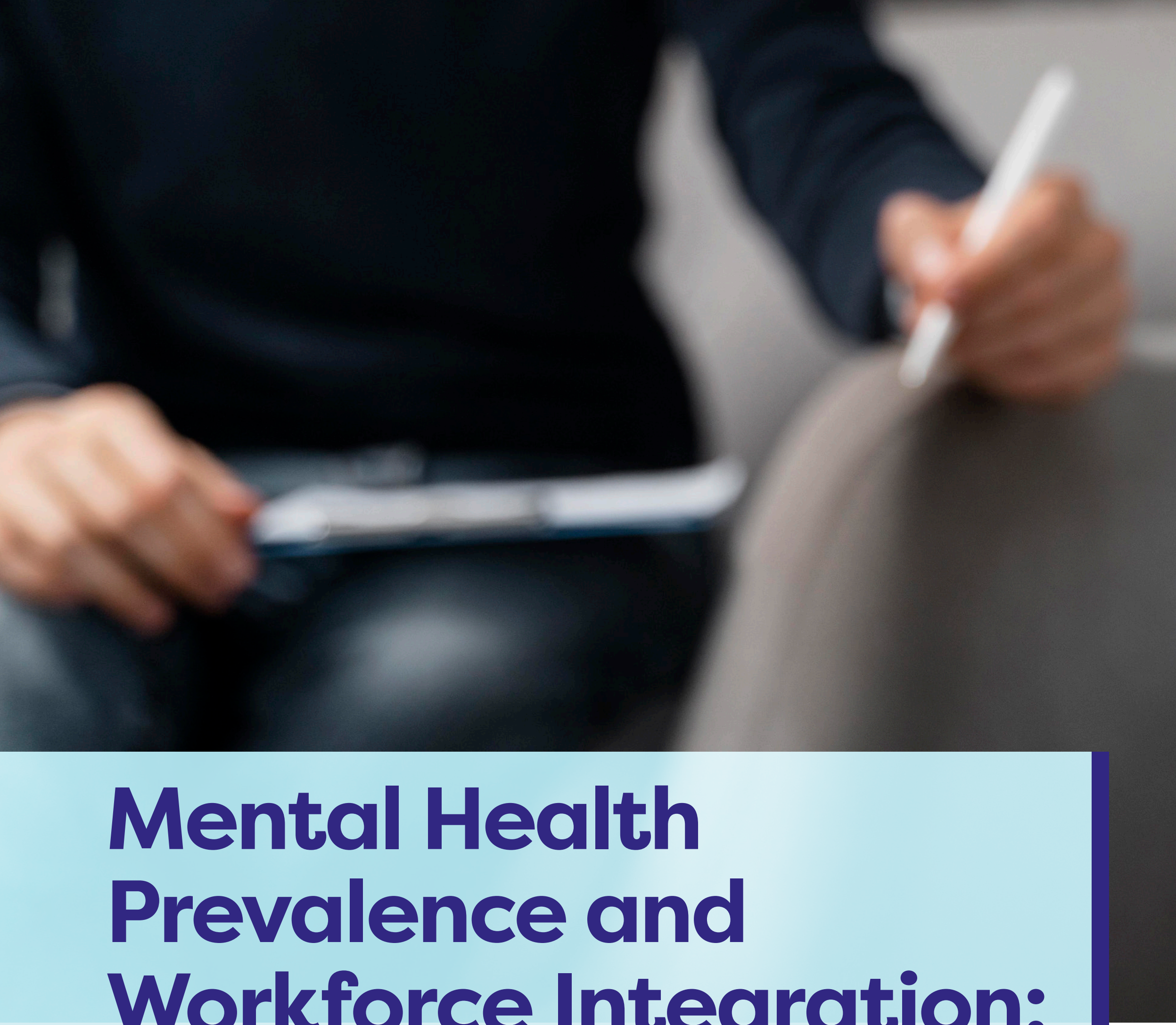

Mental Health Prevalence and Workforce Integration: Bridging Employment and Well-Being

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ABSTRACT

Mental health disorders are increasingly common in Malaysia, particularly among adolescents and young adults. The National Strategic Plan for Mental Health 2020-2025 highlights workplace mental health, while PERKESO's RESTART Programme aids insured individuals with mental illnesses in rejoining the workforce. Analysis of 973 records from 2023 to 2024 found a 12% prevalence rate, mainly among males, with 32% successfully returning to work. This underscores the need for comprehensive support beyond medical care, including community and workplace initiatives. PERKESO's approach, emphasising skills development, is vital for sustaining employment for those affected. A structured framework is essential for improving reintegration for individuals with mental health conditions.

INTRODUCTION

Mental health disorders are increasingly common in Malaysia, especially among working-age adults. The National Health and Morbidity Survey (NHMS) reports a rise in depression and anxiety since 2020, with around 1 million people aged 16 and above affected (Institute for Public Health, 2022; UNICEF East Asia and Pacific Regional Office, 2022). Addressing mental health in the workforce is crucial, particularly for those facing employment barriers. Globally, 15% of working-age adults had a mental disorder in 2019, resulting in an estimated 12 billion workdays lost annually due to depression and anxiety. Alarmingly, 29% of Malaysian employees report experiencing symptoms like persistent sadness and anxiety at work (Nasib et al., 2023).

The Ministry of Health (MOH) has launched the National Strategic Plan for Mental Health 2020-2025 to reduce depression rates in Malaysia (Ng et al., 2024). Mental health in the workplace is also a priority, with the Social Security Organisation (PERKESO) implementing initiatives such as the RESTART Programme, which assists in reintegrating insured individuals with mental health conditions into the workforce. PERKESO provides compensation for insured individuals with conditions like schizophrenia and major depression, while also offering comprehensive rehabilitation through its return-to-work programme.

This study provides valuable insights into the impact of existing interventions, notably the RESTART Programme, in addressing mental health challenges and improving workforce reintegration among affected individuals. This study also aims to explore the prevalence rate of mental health conditions among RESTART programme participants and identify the success rate of insured persons in reintegrating into the workforce through interventions carried out within this programme.

METHODOLOGY

This study employs a retrospective cohort design, analysing data from insured individuals who participated in employment services and the RESTART Programme between 2023 and 2024. The inclusion criteria focused on individuals with specified mental health conditions and their current employment status. Data were extracted from PERKESO's administrative records, ensuring a comprehensive assessment of workforce reintegration outcomes. Inferential analysis was conducted to examine demographic trends, prevalence rates, and employment reintegration success, providing valuable insights into the effectiveness of intervention programmes. This methodological approach enables a robust evaluation of factors influencing Return to Work and Employment Services outcomes, emphasising the role of structured support systems in facilitating sustainable employment for individuals with mental health conditions.

KEY FINDINGS AND ANALYSIS

According to the data, 973 records met the inclusion criteria. Inferential analysis indicated that 63% (613) of the participants were male, while 37% (360) were female, with an age range from 18 to 60 years. The prevalence of mental health conditions within the study population constituted 12% of the total claims registered with PERKESO, with a higher incidence noted among males compared to females. This finding aligns with the overall trend observed in PERKESO's claims database, where males account for the majority of total claims at 73%, compared to 27% for females. Furthermore, this trend is consistent with the gender distribution of active contributors to PERKESO, where 59% are male and 36% are female.

Despite this significant prevalence, the reintegration rate of insured individuals returning to the workforce stood at 32%, highlighting a noteworthy achievement given the complex interventions required for individuals facing mental health challenges. Compared to reintegration rates in previous years, which ranged from 20% to 27% (2021–2022), this upward trend reflects the effectiveness of enhanced, holistic interventions. These strategies have been progressively refined and tailored, accounting for specific focus areas and demographic insights. A key component of this success has been integrating a multidisciplinary approach, including inter-agency collaboration focused on workforce planning. Notable interventions encompass job coaching and the involvement of Return-to-Work Coordinators within companies, who are pivotal in monitoring progress and facilitating workplace adaptations during reintegration.

These findings underscore the importance of targeted support strategies, gender-responsive programming, and cross-sector collaboration to enhance sustainable employment outcomes for individuals with mental health conditions. Moreover, this highlights that successful reintegration extends beyond medical treatment and rehabilitation, emphasising the critical role of structured community and workplace support programmes, such as those implemented in the RESTART Programme. PERKESO actively supports individuals with mental health conditions through targeted skills development initiatives, ensuring their return to work and their long-term sustainability in employment. This holistic approach reinforces the significance of a comprehensive support system in fostering resilience and workforce reintegration. The framework for this approach is illustrated in Figure 1 below.

Figure 1: Framework model based on the holistic approach of work integration by PERKESO

Key Pillars	Strategic Components	Implementation Strategies
Policy Objectives	• Strengthen workforce capacity & accessibility • Promote interdisciplinary collaboration • Ensure equitable distribution • Enhance training & development • Foster supportive work environments	• National policies aligning with mental health needs • Stakeholder engagement in policy formulation
Workforce Planning & Development	• Needs assessment • Workforce supply strategy • Education & training • Specialisation & upskilling	• Identify workforce gaps • Increase recruitment and retention • Develop standardised training programmes • Encourage specialisation (e.g., workplace mental health)
Interdisciplinary & Sectoral Collaboration	• Healthcare sector integration • Workplace mental health programmes • Social security & rehabilitation, Community-based mental health • Digital & telehealth expansion	• Embed mental health in primary healthcare • Strengthen partnerships with NGOs & social services • Promote rehabilitation and return-to-work intervention
Policy & Regulatory Framework	• Accreditation & Licensing • Workforce standards & ethics • Legal protections & rights • Data privacy & confidentiality	• Establish licensing guidelines • Implement ethical codes of conduct • Ensure fair wages & job security • Strengthen mental health records protection
Sustainable Financing & Incentives	• Government & private sector funding • Incentives for underserved areas, Insurance & reimbursement policies	• Secure funding for workforce expansion • Provide grants & salary incentives for rural areas • Integrate mental health into insurance schemes
Monitoring & Evaluation	• Performance indicators • Feedback mechanisms • Continuous improvement	• Measure workforce effectiveness • Conduct stakeholder engagement • Adapt policies based on emerging needs

EFFECTIVE WORKFORCE INTEGRATION STRATEGIES

The Re-employment Support, Treatment, and Rehabilitation Teamwork Programme (RESTART) by PERKESO is a crucial initiative to assist individuals facing mental health challenges in returning to work. It follows a structured four-phase approach: referral and screening, treatment, rehabilitation, and skills training, culminating in job placement through the MyFutureJobs portal. The programme concludes with ongoing monitoring and support to ensure job sustainability. A multidisciplinary team of medical professionals, therapists, case managers, and employment officers deliver RESTART personalised care throughout the recovery and reintegration process.

The programme's success is enhanced by advancements in interventions that tackle external factors, particularly employer engagement. As employers become increasingly aware of and recognise their role in supporting individuals with mental health conditions, outcomes have significantly improved. Employer involvement has proven essential in fostering inclusive work environments that accommodate and empower returning employees. Equally important is the need to address the psychological and emotional challenges often accompanying workforce reintegration. Given the physically and mentally demanding nature of this transition, targeted interventions such as structured job placements, workplace accommodations, continuous support systems, and mental health programmes play a crucial role in helping individuals rebuild confidence and achieve lasting reintegration.

A holistic approach that combines rehabilitation, skills development, and employer engagement ensures smoother transitions back into employment and enhances overall quality of life. Effective employment services use personalised career counselling, job coaching, and skills assessments for tailored guidance, while vocational training provides relevant competencies. Inclusive hiring practices and employer partnerships promote diversity and equal opportunity. Financial incentives, awareness campaigns, innovative employment models, and supported work programmes have contributed to the programme's success. Additionally, a robust policy framework and inter-agency collaboration align job seekers' abilities with market demands. Empowering self-employment through microfinance and gig economy support also creates alternative pathways for workforce participation.

By prioritising these comprehensive strategies, workforce integration initiatives can cultivate a dynamic and inclusive labour market where individuals, particularly those facing mental health-related employment barriers, are empowered to secure, retain, and flourish in meaningful work. Ultimately, these efforts contribute to a more resilient, productive, and sustainable workforce.

RECOMMENDATION

Although this study primarily serves as a preliminary exploration based on the analysis of observational data, it establishes essential groundwork for future research. Subsequent phases of the study will examine subgroup differences, such as disparities related to gender and age, in reintegration outcomes. This will incorporate comparative benchmarking and baseline assessments to achieve a more comprehensive understanding of the factors influencing workforce reintegration for individuals with mental health conditions.

CONCLUSION

Overall, these findings underscore the vital role of PERKESO's holistic approach in empowering individuals with mental health conditions to reintegrate successfully into the workforce. The impressive reintegration rate highlights PERKESO's steadfast commitment to implementing targeted interventions and fostering an inclusive labour market. Given the increasing prevalence of mental health conditions, there is a pressing need for a comprehensive framework that not only tackles the complexities of workforce reintegration but also guarantees a structured, supportive, and sustainable transition back into employment. This framework should encompass personalised career guidance, workplace accommodations, ongoing mental health support, and strategic employer engagement to improve job retention and overall well-being. By prioritising a multi-faceted approach, PERKESO can further enhance its impact, ensuring that individuals facing mental health challenges have the essential resources to achieve long-term employment success and an improved quality of life.

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Introducing Long-Term Care Benefits in the Malaysian Social Security System

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ABSTRACT

Malaysia's rapidly ageing population and rising chronic health conditions underscore the urgent need for a sustainable long-term care (LTC) system. This paper examines the growing demand for LTC, the financial and health vulnerabilities of older adults, and the limitations of current social protection mechanisms. It proposes integrating LTC benefits into Malaysia's social security framework through a contributory or hybrid social insurance model. Drawing on international examples and local institutional strengths, the paper outlines key design principles for financing, eligibility, and delivery. A coordinated, multi-agency approach is recommended to ensure operational efficiency and long-term sustainability, enabling older Malaysians to age with dignity and security.

INTRODUCTION

Universal social protection for older persons is part of the United Nations (UN) 2030 Agenda for Sustainable Development. SDG 1.3 calls for national systems to establish social protection systems and measures for all, including floors, and by 2030, achieve substantial coverage of people experiencing poverty and the vulnerable. In light of Malaysia's rapid ageing phenomenon and the government's fiscal constraints, implementing a robust and comprehensive social protection floor for older persons remains a challenge. Meanwhile, contributory retirement savings schemes, such as the Employee Provident Fund (EPF), continue to struggle with coverage and adequacy issues, casting doubt on their capacity to sustain retirees amid increasing longevity.

Financial insecurity in old age is already a pressing concern, and the gap in providing long-term care services further exacerbates vulnerabilities. Long-term care for older persons encompasses health support and assistance with daily living for those unable to live independently. Systemic shortcomings in accessibility, equity, and reliability of long-term care services will leave many older Malaysians, particularly those with limited resources, without the support they need.

LONG TERM CARE TRIGGERS

The need for long-term care depends on various unpredictable factors such as genetic predisposition, health conditions, cognitive decline, disability, accidents, social support, and the ability to afford care. While ageing increases the likelihood of requiring care, not every older person will need extensive or prolonged support. Given its uncertainty, long-term care falls into the category of contingencies, chance occurrences, or uncertain outcomes.

However, due to long-term care's potential physical, emotional, and financial toll on the individual and their families, planning and preparing for this unpredictable but significant risk is prudent.

Long-term care aims to maintain or enhance the quality of life, independence, and safety of individuals with prolonged physical or cognitive limitations. People in need of care are those with a reduced degree of functional capacity—whether physical or cognitive—who, as a result, depend on assistance with basic activities of daily living (ADLs) for an extended period.

Basic ADLS (BADLs) include personal hygiene (bathing, grooming, oral care, and dressing), mobility (walking, transferring (e.g., from bed to chair), using stairs, eating (feeding oneself), and toileting (using the toilet and maintaining continence).

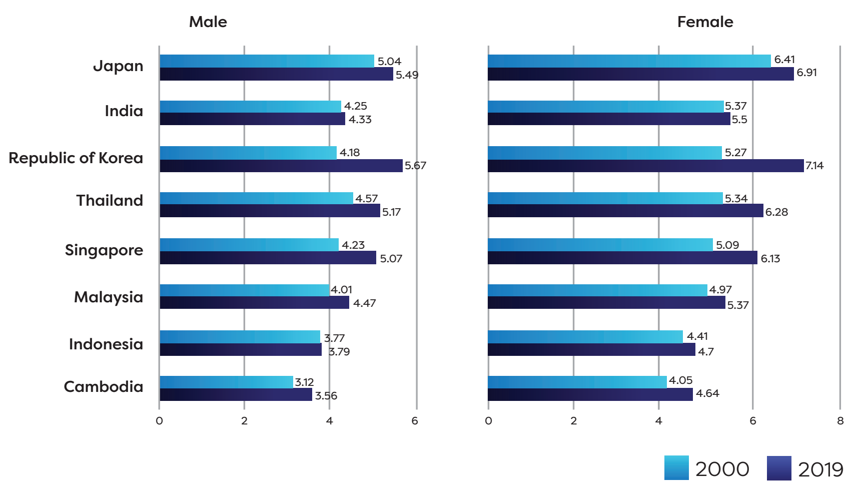
Instrumental ADLs (IADLs) include household tasks (cooking, cleaning, and laundry), managing finances (paying bills and managing money), shopping (buying groceries and running errands), transportation (driving and using public transport), and communication (using the phone or computer). Functional impairment, measured by difficulty in performing IADLS, limits independence and undermines quality of life.

RISK FACTORS FOR LONG-TERM CARE

Longer life expectancy in Ill health

While life expectancy has risen, the difference between average life expectancy (ALE) and healthy life expectancy (HALE) has also widened. This gap represents the number of years spent in less-than-optimal health. In Malaysia, that gap has increased from 4.01 years in 2000 to 4.47 years in 2019 for males, implying a longer duration of care needs (Figure 1).

Figure 1: Difference between Average Life Expectancy and Healthy Life Expectancy at Age 60, by Sex, 2000 and 2019



Source: Based on data from WHO's Global Health Observatory

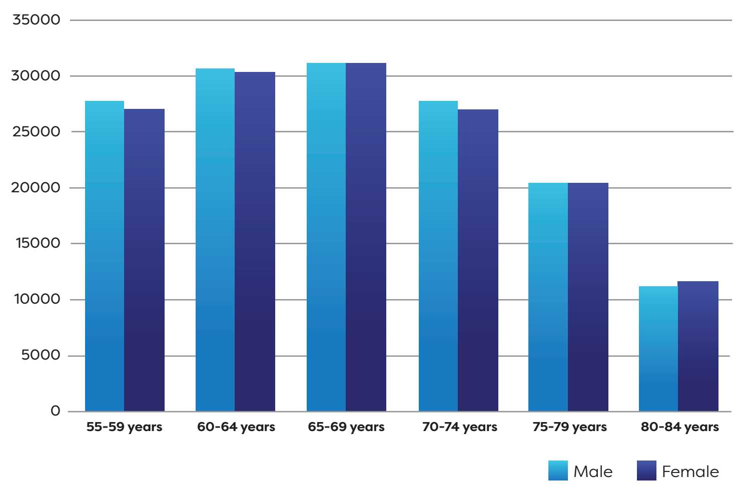
Years lost due to disability

Years lost due to disability (YLD), expressed per 100,000 population, represents the non-fatal burden of disease and injury on individuals. Examples of illness, injuries, or medical treatments that can cause loss of BADL or IADL functionalities are:

- Stroke, which can lead to paralysis, speech difficulties, or cognitive impairment
- Diabetes, which can lead to vision loss, kidney failure, or neuropathy
- Traumatic Brain Injury (TBI), which can lead to memory loss, mood disorders, or motor dysfunction
- Having multiple co-morbidities, which is often the case for older adults, affects various functional abilities and requires chronic disease management.

The share of the noncommunicable disease (NCD) burden on older people (e.g., YLD from coronary heart disease, stroke, and diabetes) in Malaysia is already alarming—91.2% of all YLD for males and 87.4% for females (latest estimate 2021), aged 55 and above (Figure 2). Specific types of diseases and their effect on the number of YLDs are shown in Figures 3a to 3d.

Figure 2: YLD Per 100,000 Population Caused by Noncommunicable Diseases, by Sex, 2021



Source: Based on data from the 2021 Global Burden of Disease study, Institute of Health Metrics and Evaluation (IHME).

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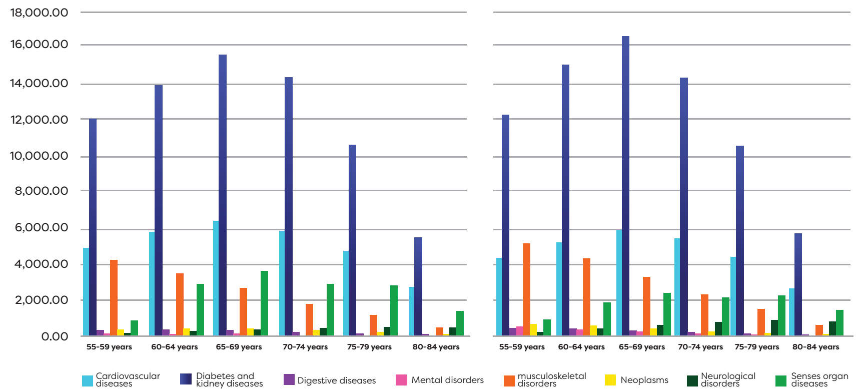
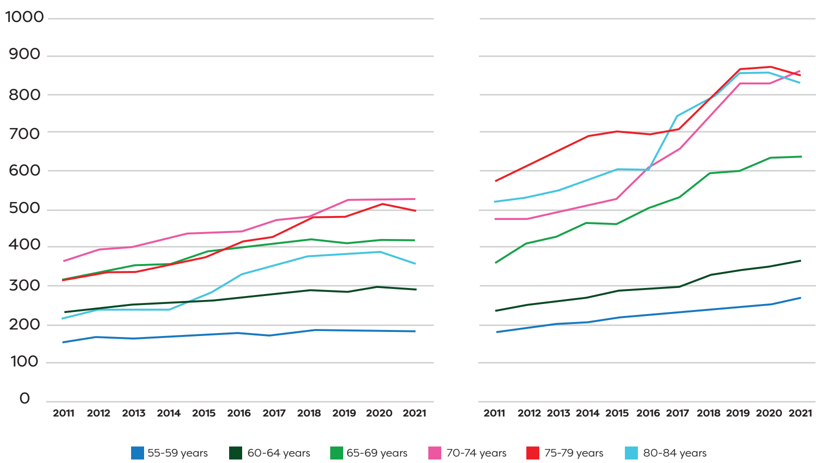
[1]Year Lost due to Disability (YLD) is calculated by multiplying the prevalence of a disease's primary sources of health loss (sequelae) by its disability weight, adjusted for age group and sex. One YLD represents one full year of healthy life lost due to disability or ill-health

Figure 3: YLD Per 100,000 Population Associated with Different Types of Noncommunicable Diseases, by Sex, 2021



Source: World Health Organisation. Global Health Estimates 2021

Figure 4: YLD due to Dementia, by Sex, 2011 - 2021



Source: World Health Organisation. Global Health Estimates 2021

CHALLENGES IN FINANCING LONG-TERM CARE

Private insurance: A Limited Solution

People can purchase long-term care insurance (LTC-i) to protect themselves and their families from the high costs of long-term care (LTC-i) and ensure access to quality care without depleting savings or burdening loved ones. LTC-i is available as a separate insurance product from medical and health insurance for two main reasons. Firstly, medical insurance does not cover long-term care needs at home or in care facilities. Secondly, medical insurance does not cover medical or care needs once the policy's eligibility ceiling age is reached, which is generally rarely set beyond 60.

Currently, private LTC-i is not available here in Malaysia. Its insurance market primarily focuses on medical, critical illness, and disability coverage. While some health insurance policies may pay for short-term skilled nursing care at home after a hospital stay, they generally do not cover the costs of nursing homes, assisted living facilities, and long-term in-home care. Understandably, insurance companies could be wary of introducing LTC-i in a market where it is less viable to underwrite or maintain coverage for an age group with a high incidence of hospitalisation or care needs.

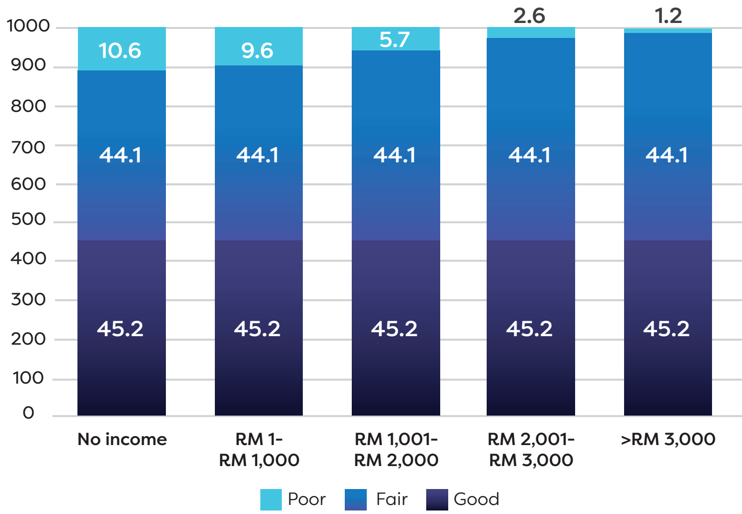
The situation leaves long-term care costs if incurred, predominantly funded through out-of-pocket expenses or, in some cases, paid for via government assistance, zakat, and non-government charity channels.

The link between health and income inequality

Generally, individuals from lower socio-economic backgrounds often experience poorer health outcomes due to limited access to quality healthcare, nutrition, and social engagement. For example, the Malaysian Ageing and Retirement Survey (MARS) Wave 2 (SWRC, 2023) found that only 45.2% of respondents with no income rated their health as "good", compared to 68.6% of those earning over RM3,000 monthly.

This disparity in health outcomes raises a critical question: Can individuals

Figure 5: Self-rated Health Status, by Income Group, 2023



Source: Malaysia Ageing and Retirement Survey Wave 2, 2023

rely on their old-age savings or social transfers if they require long-term care? The answer is no if the individual is already experiencing inadequate financial security due to factors such as being outside the labour force, working in the informal economy, or lacking consistent savings.

In the absence of robust social assistance systems, elderly individuals, particularly those lacking family support or personal savings, face heightened risks of poverty, neglect, and a diminished quality of life. Malaysia's primary social aid program for seniors, Bantuan Warga Emas (BWE, or Elderly Citizens' Aid), already accounts for over one-third of the Department of Social Welfare's budget. Yet, even when combined with larger-scale cash transfers like Sumbangan Tunai Rahmah, these provisions fail to bridge the gap between available support and the soaring costs of even basic long-term care services.

Incorporating long-term care benefits within Malaysia's social protection system

Integrating long-term care benefits into the existing social protection system should be an essential policy consideration. In this context, a social insurance scheme that provides benefits or grants for care services can be introduced to supplement old-age income (pensions) and help cover care costs, as pension income is often insufficient beyond basic living expenses. In doing so, key design principles include:

Financing mechanism:
How will the programme be financed? Will it be contributory (funded through payroll tax or salary deductions) or non-contributory (tax-funded or some other dedicated revenue source)? Will it be financed on a pay-as-you-go (PAYGO) or prefunded basis?

Northern European countries such as Sweden and Denmark employ the traditional tax-funded model to fund a universal long-term care system for elderly citizens. In contrast, Japan is a well-known example of the long-term care insurance model.

Eligibility and coverage:
Should benefits be universal or means-tested? While Denmark, Sweden and Finland provide universal coverage, countries like the United States (Medicaid) and the United Kingdom apply means-testing in their tax-funded systems.

Pre-funding for sustainability:
Funded systems require sufficient funds to be accumulated before paying out benefits. The accumulated reserve funds can help smooth demographic pressures and reduce the burden on future generations.

Many PAYGO-based social insurance systems incorporate pre-funding mechanisms, although the reserves often cover only a small fraction of total expenditure.

Building a viable social insurance framework in Malaysia

Universal health coverage (already provided through the public health system) and long-term care serve different needs, and most national systems treat them separately due to differences in costs, scope, and policy challenges. However, as populations age, the lack of integrated LTC in UHC risks leaving millions without affordable care. Addressing this gap requires rethinking how societies fund and prioritise care for chronic, non-medical needs.

For a long-term care social insurance program to succeed in Malaysia, it must be financially sustainable, operationally efficient, and structured to garner broad public support not just at the beginning of its implementation but over the long term. A multi-agency approach, leveraging their institutional expertise and existing infrastructures, would be most viable to achieve this.

Employees Provident Fund (EPF) and Kumpulan Wang Persaraan's (Diperbadankan) (KWAP) are well-respected in the effective management of beneficiaries. Their expertise in managing assets and liquidity and preserving the long-term value of retirees' savings is crucial to ensuring the sustainability of the proposed social insurance programme.

The Social Security Organisation (SOCSO) has a well-established coordination system and networks, including approved panel clinics, the Medical Board, the Special Medical Board, and the Appellate Medical Board, for determining eligibility for Permanent Invalidity grants/pension and Constant Attendance Allowance. This existing framework aligns well with the objective of the new elderly long-term care social insurance program. It spares the government from creating a separate network of facilities and assessment systems, which will be costly and redundant.

CONCLUSION

A tripartite institutional arrangement, founded on thorough operational and delivery efficiency considerations, can serve as a viable path forward. This approach paves the way for adopting a sustainable long-term care social insurance model that reflects our society's commitment to intergenerational equity and human rights, ensuring that ageing populations can live with dignity and security.

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Assistive Technology for Ageing-In-Place: Benefits and Challenges

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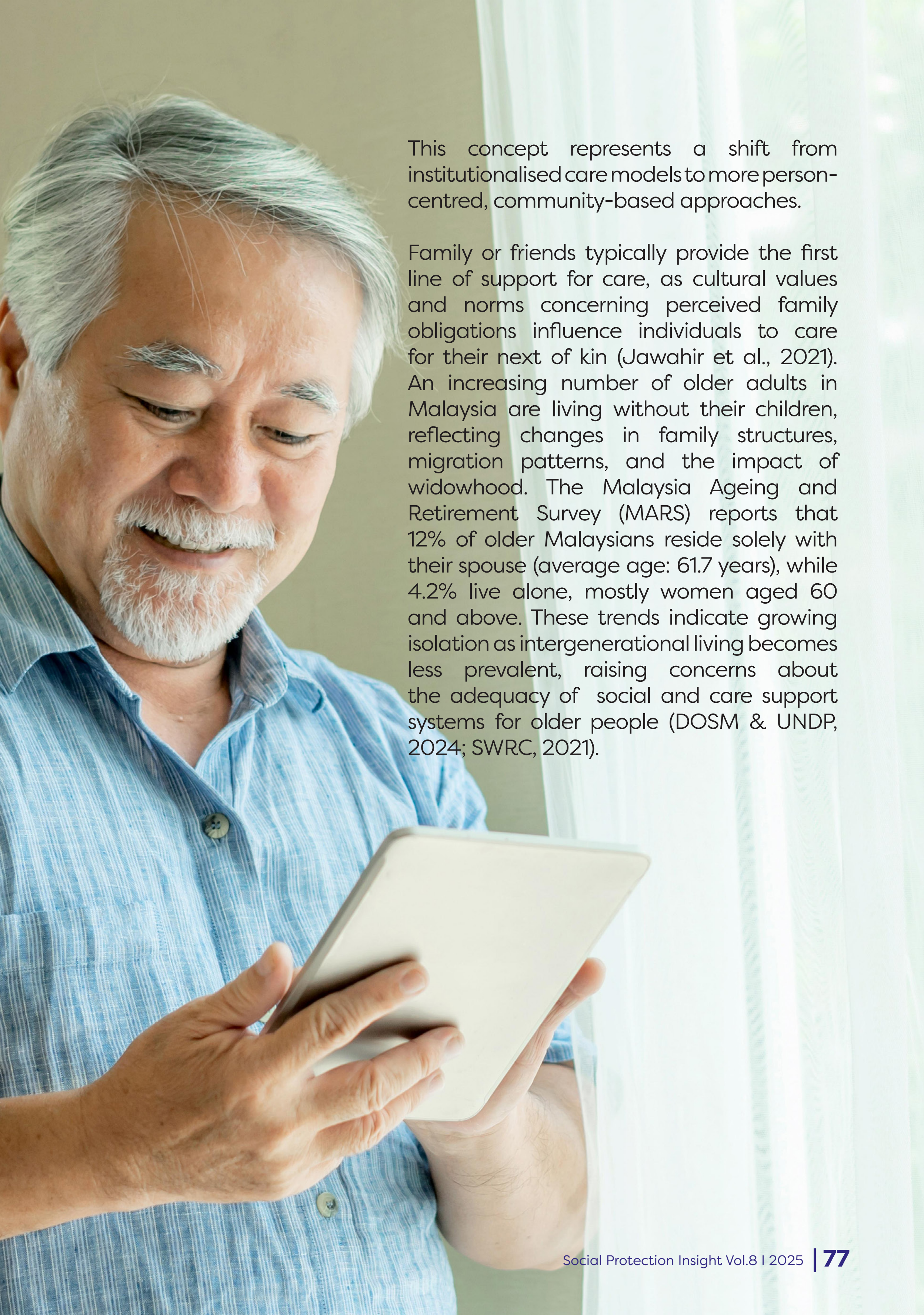
ABSTRACT

As the population ages, the demand for solutions supporting older adults living independently at home is becoming increasingly critical. Assistive technology holds great promise in facilitating ageing in place by enhancing mobility, safety, and overall quality of life. However, widespread adoption remains limited due to challenges such as affordability, accessibility, and user acceptability. This article examines the role of assistive technology in promoting independent living for older adults, highlighting key benefits and challenges associated with its integration. Addressing these challenges will better position assistive technology as a tool to support national ageing strategies, empowering older individuals to maintain dignity, autonomy, and well-being in their later years.

ROLE OF ASSISTIVE TECHNOLOGY IN ENABLING OLDER ADULTS TO AGE AT HOME

As Malaysia's population ages, the concept of ageing in place has become increasingly relevant in national ageing and healthcare strategies, particularly given that 75% of older adults are not prepared to live in assisted living facilities such as nursing homes or retirement villages (Social Wellbeing Research Centre, 2021). Ageing in place refers to the ability of older adults to live safely, independently, and with dignity in their own homes and communities, regardless of age, income, or physical ability.



This concept represents a shift from institutionalised care models to more person-centred, community-based approaches.

Family or friends typically provide the first line of support for care, as cultural values and norms concerning perceived family obligations influence individuals to care for their next of kin (Jawahir et al., 2021). An increasing number of older adults in Malaysia are living without their children, reflecting changes in family structures, migration patterns, and the impact of widowhood. The Malaysia Ageing and Retirement Survey (MARS) reports that 12% of older Malaysians reside solely with their spouse (average age: 61.7 years), while 4.2% live alone, mostly women aged 60 and above. These trends indicate growing isolation as intergenerational living becomes less prevalent, raising concerns about the adequacy of social and care support systems for older people (DOSM & UNDP, 2024; SWRC, 2021).

Assistive technology plays a vital role in facilitating this transition. It bridges the gap between increasing care needs and limited human resources by empowering older individuals to manage daily tasks, monitor their health, and maintain social connections with greater autonomy. Furthermore, assistive technology reduces dependence on formal caregiving services, alleviating pressure on healthcare systems and families. From basic tools such as walking aids and hearing devices to more advanced technologies like smart home systems, fall detection sensors, and AI-powered digital assistants, assistive technology creates a supportive living environment tailored to older people's physical, cognitive, and emotional needs.

Moreover, the role of assistive technology extends beyond individual users. It contributes to a broader ecosystem encompassing caregivers, healthcare providers, policymakers, and technology developers, all of whom engage

with and benefit from the data, feedback, and efficiencies generated by these tools. In this way, assistive technology acts as a means of personal support and a crucial enabler of policy objectives related to ageing, health system sustainability, and inclusive development.

HOW ASSISTIVE TECHNOLOGY SUPPORTS AGEING IN PLACE STRATEGIES

A tripartite institutional arrangement, founded on thorough operational and delivery efficiency considerations, can serve as a viable path forward. This approach paves the way for adopting a sustainable long-term care social insurance model that reflects our society's commitment to intergenerational equity and human rights, ensuring that ageing populations can live with dignity and security.

Supporting Safety and Independence: Assistive technology aids older adults in living independently by enhancing safety and facilitating movement. This encompasses basic aids such as walking sticks, grab bars, walkers, and advanced tools like health trackers, fall detectors, and smart home systems. Collectively, these technologies enable real-time monitoring, emergency alerts, and increased comfort, thereby reducing risks and fostering autonomy at home (WHO & UNICEF, 2022; Perez et al., 2023).

Enabling Better Health Monitoring and Management: Digital health platforms and wearable devices enable remote consultations and the early detection of health issues, decreasing travel, minimising hospital visits, and allowing for timely medical interventions (UNDP, 2024).

Alleviating Caregiver Responsibilities: Assistive technology supports caregivers by helping older adults manage daily activities. This includes basic tools such as pill organisers, mobility aids, and reminder charts, advanced solutions like virtual assistants, medication management apps, and robotics (Bardaro et al., 2022), and more. These technologies enhance autonomy, reduce dependence on constant supervision, and ease caregivers' physical and emotional strain (Aldawsari & Chen, 2024).

Savings through Delayed Institutionalisation: Integrating Internet of Things (IoT) devices, such as fall detectors, wearable health monitors, and automated medication reminders, can lower long-term care costs by enabling remote health management and postponing the need for residential care. This supports autonomy for older adults while easing pressure on caregivers and health systems (Perez et al., 2023). By facilitating early intervention and deferring institutionalisation, these solutions contribute to a more efficient allocation of resources and long-term healthcare cost savings for families and the healthcare system.

Expanding Access and Flexibility: In-home monitoring systems and digital health platforms allow caregivers to remotely track the health and safety of older adults remotely, offering greater flexibility in care delivery (Perez et al., 2023). These technologies also enhance access to essential services, contributing to the closure of care gaps, particularly in rural or underserved areas.

Promoting Social Well-being: Technologies that support active ageing, such as digital platforms and social connectivity tools, enhance overall well-being by mitigating isolation and facilitating communication with family, friends, and support networks (Sen et al., 2021).

KEY CHALLENGES AND BARRIERS TO ADOPTION

While the benefits of assistive technology devices are well documented, several interrelated barriers continue to limit their adoption in Malaysian households and care systems. These barriers can be broadly categorised into affordability, accessibility, and user acceptability.

Affordability: Financial constraints and policy gaps
The high cost of assistive technology remains a significant barrier, particularly for older adults in low-income households. According to the World Health Organisation (WHO & UNICEF, 2022), only 10% of individuals in low- and middle-income countries have access to essential assistive products, despite over 2.5 billion people worldwide needing at least one such device. As few as 3% of individuals in some low-income countries have reported access to the assistive products they require, compared to 90% in certain high-income countries. Devices featuring advanced functionalities, such as fall detection or intelligent monitoring, are often unaffordable without public support. Furthermore, the lack of integration of assistive technology into national health, ageing, or social protection frameworks results in fragmented funding and limited policy attention, rendering access uneven and unsustainable.

Accessibility: Infrastructure and design limitations
Technological and connectivity barriers disproportionately affect rural and underserved communities. Marasinghe et al. (2015) observe that poor internet infrastructure in Malaysia's rural regions limits the adoption of IoT-based assistive devices, leaving 40% of older people without reliable access (Koh & Mustapa, 2021). Furthermore, many assistive technology products are not designed to cater to the cultural, environmental, or ergonomic needs of Malaysia's diverse elderly populations. Ethical concerns regarding data privacy and surveillance further complicate adoption, particularly without clear regulations and user protection.

User Acceptability: Limit awareness & digital literacy, cultural resistance and stigma

Low digital literacy and limited awareness among older adults significantly contribute to the underutilisation of assistive technology. Many are unfamiliar with the available technologies or lack the confidence to use them. Cultural preferences for traditional caregiving and the social stigma surrounding reliance on technology may also lead to resistance from both seniors and their families, especially in multigenerational households (Koh & Mustapa, 2021).

CONCLUSION

Assistive technology holds significant promise in transforming how Malaysia supports its ageing population. Enabling older adults to live safely and independently within their homes and communities promotes active ageing, enhances quality of life, and alleviates strain on caregivers and institutional care systems. However, realising the full potential of assistive technology requires more than innovation; it demands an inclusive and enabling ecosystem. Addressing affordability, strengthening infrastructure and access, and fostering digital literacy are essential. Equally crucial is cultivating a cultural shift that embraces technology in elder care while upholding ethical standards and personal dignity. Looking ahead, Malaysia must integrate assistive technology into its broader ageing, healthcare, and social protection frameworks. With the right investments, cross-sector collaboration, and supportive policy measures, assistive technology can be repositioned not as a luxury but as a public good, central to building an age-friendly, resilient, and inclusive society.

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Silver Years to Golden Opportunities: the Rise of Agetech in Malaysia

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ABSTRACT

As Malaysia transitions into an ageing nation, the Silver Economy is emerging as a critical driver of economic and social development. This paper explores the vital role of innovation and technology in advancing the Silver Economy, focusing on AgeTech. From innovative healthcare systems and assistive devices to financial tools and lifelong learning platforms, AgeTech possesses significant potential to enhance quality of

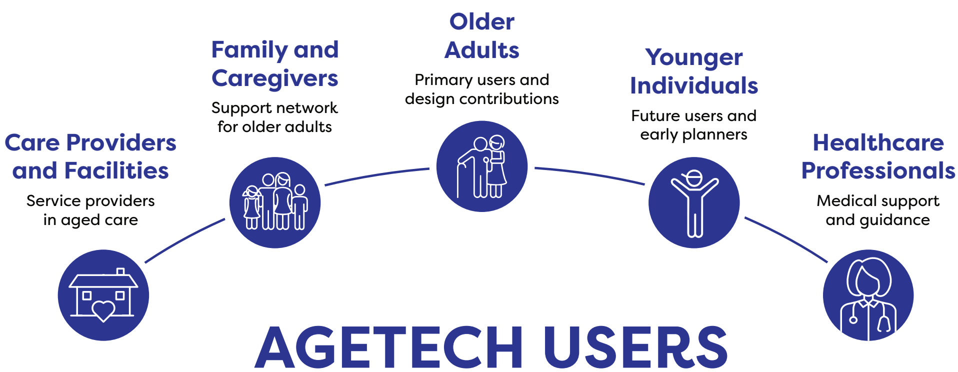
life, encourage active ageing, and support independent living. This paper reviews Malaysia's current AgeTech landscape and proposes strategies to finance and stimulate a robust AgeTech ecosystem, fostering a resilient, age-inclusive society equipped for the demographic transition.

INTRODUCTION

AgeTech is a dynamic and innovative field at the intersection of ageing and technology. It seeks to address older adults' unique needs and aspirations while actively involving them in the design process. Whether termed ElderTech, Gerontech, or SilverTech, the objective remains unchanged — enhancing the quality of life for older adults and empowering them to live with autonomy, safety, comfort, and purpose. Through a wide range of products and services across various sectors, AgeTech has significant potential to redefine the ageing experience (Etkin, n.d.).

Globally, AgeTech is extending beyond physical health to include emotional, social, and financial well-being. In the UK, the 50+ demographic spent over USD140 billion on technology in 2018, which is projected to rise to USD623 billion by 2050 (AARP, 2019). Furthermore, studies indicate that, contrary to stereotypes, seniors' adoption of smartphones, tablets, and wearables is now on par with younger groups (AARP, 2024).

Figure 1: Different User Groups of AgeTech



Source: ICMR

While older adults are the primary users, family members, caregivers, healthcare providers, and aged-care facilities are vital stakeholders. Involving older adults in product design, such as the Longevity Explorers community model in the US, is crucial for user-centric innovation (Tech-enhanced Life, n.d.). AgeTech is also pertinent for younger individuals, assisting them in preparing for future ageing or supporting older family members.

It is crucial to understand that older adults are not a homogeneous group. As their needs and aspirations evolve through various stages of life, the strategies and solutions devised to support them must adapt accordingly. AgeTech facilitates this adaptability by providing innovative approaches that empower older adults at each stage of their journey.

Figure 2: AgeTech to Support the Ageing Experience

Care service navigation apps
Tools to help older adults or their families research, compare, and select care providers and services

Preventive health monitoring
Smartwatches, fitness trackers, early diagnostic tools

Remote/Flexible work enablement
Platforms that facilitate continued productivity en.g. monitoring, volunteering, part-time opportunities

Social connectivity apps
Tailored social media platforms for older adults, or lifelong learning tools

Financial planning tools
Retirement planning, micro-investments, and scam prevention technology

Maintaining vitality, fiannical autonomy, and social engagment

Smart Home adaptations
Voice-controlled systems, automated lighting, fall-detection sensors

Telehealth and virtual care
Home diagnostic kits, remote nurse visits, mental health telepathy

Cognitive assistance tools
Early-stage dementia support apps (memomry prompts, navigation aids)

Mobility and accessibility tech
Robotics for assisted walking, autonomous wheelchairs, smart walkers, GPS trackers for safe exploration

Extending independent living and maintaining cognitive health

Assistive robotics
Robots for companionship, daily task assistance, and physical therapy

End-of-life care innovations
Palliative care platforms, advanced directive management apps

Family and caregiver support tech
Platforms that coordinate multi-person caregiving teams and allow-real time health monitoring

Ensuring dignity, comfort, and meaningful end-of-life experiences

Source: ICMR

By enhancing social connectedness, improving the quality of life, and making healthcare delivery more efficient and accessible, AgeTech emerges as a vital force in promoting social and economic development. As an ageing population rapidly reshapes societal and economic structures, embracing and investing in AgeTech is crucial for driving sustainable and inclusive progress for the country.

RISE OF AGETECH IN MALAYSIA

Malaysia is at a pivotal moment in harnessing AgeTech to address its ageing population and engage with the global silver economy. As the first demographic dividend ends by 2027, it presents an opportunity to tap into the expanding market (LPPKN, 2023). In 2024, Prime Minister Anwar Ibrahim highlighted Malaysia's potential within the Silver Economy, calling for increased investments in AI and robotics to develop products and services for older adults (Anwar Ibrahim, 2024).

An increasing number of technology providers, ranging from global industry leaders to emerging start-ups, are harnessing the vast potential of AgeTech. The examples below illustrate only a small fraction of the broad spectrum of AgeTech currently available in the global market.

Wearables and Health Trackers
Apple, Google Pixel, Samsung Watch, and specialised devices monitor health status with features suitable for seniors, including fall detection.

Smart Home Solutions
Amazon's Alexa Together and Echo enable family members and caregivers to exchange care information and access online support. Evondos, a Finnish company, provides automated pill dispensers that notify the elderly or care providers about medication timings.

Robotic Caregivers
Companion robots like Paro and ElliQ help mitigate cognitive decline, while assistive robots such as Care-O-bot support daily tasks.

Digital Elder Care Platforms
Services such as Honor and Konnekt provide support and communication for elder care.

Malaysians are familiar with the AgeTech scene; several players within our ecosystem are addressing the challenges of enhancing ageing through technology. Key players in our current AgeTech landscape include:

Figure 3: Examples of AgeTech Players in Malaysia

Source: ICMR
(Note: The list of stakeholders may cross-cut and is not exhaustive.)

In addition to the thriving startup scene, Malaysia is also making positive strides in the Research and Development (R&D) of AgeTech, as follows:

Monash University's Gerontechnology Laboratory
This laboratory is dedicated to designing technology and environments that improve older adults' independence, health, and safety. Their work also involves older adults in the research and prototyping stages.

Universiti Putra Malaysia's MyAgeing
This programme offers a postgraduate qualification in Gerontechnology. It adopts a multidisciplinary approach to the medical, social, and technological research related to ageing.

According to the founder of Monash's Gerontechnology laboratory, Malaysian seniors are receptive to learning and adopting new technology and services, provided that training and support are accessible. The founder of Care Concierge, an Agetech service offering elderly care solutions, also reflects this sentiment. He observes that senior clients embrace new technology if it is user-friendly and they comprehend the significance of the service (Tan, 2020). Although still in its early stages, AgeTech presents tremendous growth opportunities in Malaysia. With strategic investments and strong policy support, Malaysia has the potential to establish itself as a leading regional hub within the emerging Silver Economy. To realise this vision, a comprehensive effort is necessary from all key stakeholders, including the government, investors, government-linked investment companies, and the private sector.

A clear example of an initiative supporting AgeTech is Khazanah's Impact Innovation Challenge in 2021. The challenge theme was Enhancing Ageing Services for Malaysians, and each winner received a RM300,000 grant. One of the winners, Care Concierge, secured funding from Gobi Partners through their Gobi Dana Impak Fund (Gobi Partners, 2023). This example underscores the tangible steps that key players in Malaysia can adopt to foster innovation and develop a vibrant AgeTech ecosystem.

CAPITAL MARKET SOLUTIONS FOR AGETECH

To unlock Malaysia's AgeTech potential, the government plays a vital role in establishing a national directive for a flourishing ageing ecosystem. Supporting this role, the private sector and capital market possess a unique ability to provide essential financing, which can further accelerate the growth of the Silver Economy and promote the advancement of AgeTech.

Proposed capital market strategies for AgeTech development		
1	**Bridging Financing Gap**	• Boost investments in early and growth stages by utilising angel investors, venture capital (VC), and private equity (PE), with a greater risk tolerance for new and innovative products. • Alongside funding, numerous VC and PE firms can provide strategic guidance and mentorship from industry experts. • The potential to establish Malaysia as a regional hub for AgeTech startups aligns with initiatives such as the KL20 Action Plan. • In line with the Malaysia Venture Capital Roadmap 2024-2030, this initiative aims to foster the growth of corporate venture capital (CVCs) that offer start-ups access to established corporations' expertise, networks, and resources. Corporate investors can benefit from early exposure to innovative ideas, disruptive technologies, and emerging market opportunities.
2	**Social Impact Investments**	• There is a role for patient capital that values longer investment horizons and prioritises social outcomes as well as sustainable growth alongside financial returns. • Utilising models such as Khazanah's Dana Impak and KWAP's Dana Pemacu to finance AgeTech startups, both of which have already started to establish a foundation within the Silver Economy. • Malaysia's Social Exchange, currently in its development stages, can channel market-based financing into Silver Economy projects.
3	**Tapping Retail Investors via Equity Crowdfunding (ECF)**	• Enable AgeTech startups to secure funding through ECF, while offering retail investors a way to invest their money in a product they believe in from an early stage. • Recent ECF fundraising successes, such as aged-care facilities like Sukha Golden Sanctuary and Oretha's Senior Care, indicate a growing appetite among retail investors to engage in the Silver Economy. • Expand the Malaysia Co-investment Fund (MyCIF) schemes to explicitly encompass Silver Economy sectors, including AgeTech, thereby catalysing MSME participation.
4	**Financing for Silver Infrastructure**	• In developing Smart Homes, AgeTech startups can collaborate with retirement villages and other senior living facilities to enhance the living experience • The capital market can fund these senior living facilities through Silver-specific Real Estate Investment Trusts (REITs) and retail bonds. • A blended financing model involving public-private co-investments could assist in funding the development of facilities with specific requirements, such as pricing caps. At the same time, the private sector contributes expertise and AgeTech to enhance efficiency.

CONCLUSION

Malaysia's ageing population is not a looming crisis but an unprecedented opportunity. The Silver Economy—enabled by a dynamic and thriving AgeTech ecosystem—has the potential to drive sustainable growth, unlock new economic opportunities, and foster greater social inclusion in the country. With clear national directives, strategic investments, active market participation, and a spirit of collaboration among all stakeholders, Malaysia can transform its Silver Years into Golden Opportunities—setting a regional and global benchmark for an inclusive and resilient demographic shift.

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Addressing Labour Market Mismatches in Malaysia: The Role of MyCOL in Workforce Planning and Economic Development

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ABSTRACT

Over the past decade, the Malaysia Critical Occupation List (MyCOL) has been consistently reviewed and refined to identify ongoing skill shortages and address labour market mismatches. As Malaysia transitions towards a knowledge-driven and technology-intensive economy, aligning workforce supply with industry demand remains a national priority. MyCOL is a strategic workforce planning tool highlighting skilled, in-demand, and essential occupations crucial for economic growth. This policy brief examines how MyCOL provides data-driven insights into key occupational gaps by employing top-down and bottom-up methodologies to identify shortages across various sectors. The study analyses workforce trends, the structural challenges in filling critical roles, and the impact of technological transformations on emerging jobs. Moreover, it assesses the role of MyMAHIR in addressing Malaysia's national talent development goals by facilitating real-time labour market solutions. This initiative focuses on specific roles and skills in key sub-sectors and guides targeted upskilling initiatives. The findings emphasise the need for evidence-based policy

interventions, including stronger collaboration between industry and academia, sector-specific reskilling programmes, and improved utilisation of MyCOL insights. As Malaysia moves forward, incorporating MyCOL's decade-long labour market intelligence into workforce planning will ensure a resilient, competitive, and future-ready labour market.

Malaysia's labour market has experienced notable structural and cyclical changes over the past decade. These transformations have been propelled by globalisation, demographic shifts, technological advancements, and the nation's strategic aim of becoming a high-income, knowledge-based economy. Consequently, there is an increasing necessity for precise and dynamic labour market information.

The Malaysia Critical Occupations List (MyCOL), introduced in 2015, has emerged as a crucial tool for identifying labour market mismatches and shaping human capital policies. With employment in high-skilled sectors, such as Information and Communications Technology (ICT), rising by 20% from 2015 to 2022, while traditional manufacturing witnessed a decline of 12%, the significance of MyCOL in workforce planning has only intensified.

This paper assesses MyCOL's development, methodology, key findings, and the policy implications for Malaysia's economic transformation.

EVOLUTION AND STRATEGIC IMPORTANCE OF MyCOL

Historical development and integration with national planning

MyCOL was launched as part of the Eleventh Malaysia Plan (11MP) to tackle emerging skill imbalances in key economic sectors across Malaysia. Initially developed as a pilot initiative, it centred on 42 critical occupations identified within the National Key Economic Areas (NKEAs) outlined in the Tenth Malaysia Plan (10MP). MyCOL has since developed into an evidence-based workforce planning tool vital for Malaysia's human capital development strategy. Its methodology has been refined through multiple cycles to mirror changes in industrial structure, technology adoption, and labour market needsThe tool now encompasses skilled and semi-skilled occupations classified by the Malaysia Standard

Classification of Occupations (MASCO).It spans 18 economic sectors based on the Malaysian Standard Industrial Classification (MSIC), aligning with national economic priorities.

Alignment with national economic priorities

Under the Twelfth Malaysia Plan (12MP) for 2021–2025, MyCOL has expanded its analytical focus to encompass state and regional occupational shortages and developed a skills taxonomy through the National Skills Registry (MyNSR). This transition indicates a move towards targeted, subnational labour market solutions tailored to the specific skills required for each occupation.

MyCOL supports the implementation of national initiatives, including the National Investment Aspirations (NIA), the National Fourth Industrial Revolution Policy (4IR), and the Shared Prosperity Vision 2030. It identifies workforce bottlenecks in key and emerging industries and has become essential for guiding workforce reskilling, reforming academic curricula, and developing strategies to attract talent.

Drawing on insights gained from MyCOL, educational institutions have begun to align their courses with industry requirements. Universities and industry partners have collaborated to develop programmes that equip graduates with skills relevant to key vocations identified by MyCOL. These programmes have arisen from cooperative efforts, enabling the education system to produce a workforce that meets the current and future demands of the labour market.

Additionally, MyCOL has impacted talent acquisition strategies, including the Returning Expert Programme (REP) under TalentCorp, which encourages Malaysian professionals abroad to return and fill critical positions in high-demand sectors. Identifying regional skill shortages has also prompted initiatives to attract talent to underserved areas, fostering balanced economic growth across the country.

Institutional framework

The Critical Skills Monitoring Committee (CSC), chaired by the Ministry of Human Resources and guided by TalentCorp, is responsible for the annual development and validation of MyCOL. The CSC comprises representatives from prominent government agencies, employer associations, academia, and industry stakeholders. This governance model ensures input from diverse sectors, thus guaranteeing institutional legitimacy and policy coherence within Malaysia's human capital ecosystem.

METHODOLOGICAL FRAMEWORK OF MyCOL

Mixed-methods approach using top-down and bottom-up analysis

MyCOL employs a comprehensive mixed-methods framework that combines macroeconomic labour market indicators (top-down) with qualitative feedback from employers (bottom-up). This approach ensures that the list is grounded in both empirical labour market dynamics and the genuine needs of businesses. Malaysia's strategy aligns with global best practices, including Australia's Skilled Occupation List and the UK's Shortage Occupation List. However, MyCOL sets itself apart by concentrating on national workforce development goals rather than migration policy.

Top-down: Quantitative labour market analysis

The quantitative analysis utilises data from the National Labour Force Surveys, wage trends, job vacancy statistics, and online job postings. Occupations are identified as potentially critical when they demonstrate consistent patterns of demand-supply mismatch, high vacancy rates, rising wages, and increasing employment levels. This approach provides a robust statistical foundation for identifying occupational imbalances across various sectors.

Bottom-up: Industry consultations and call-for-evidence

The bottom-up component enhances data analytics by integrating industry validation. MyCOL gathers insights from employers, industry associations, and regulators through the Call for Evidence survey and organised consultations with stakeholders. This process ensures that the final list accurately reflects real-world hiring challenges, emerging skill requirements, and occupation-specific nuances that may not be apparent in macro data.

Dovetailing: Final list consolidation

MyCOL's validation process, known as dovetailing, merges top-down indicators with bottom-up feedback. Only occupations with robust evidence from both perspectives are included. This approach strengthens the credibility and relevance of the findings, enabling policymakers to focus their interventions on well-defined workforce gaps.

KEY FINDINGS AND LABOUR MARKET ANALYSIS

Occupational shortage trends

Over successive editions, MyCOL has evolved alongside Malaysia's economic transition. The 2015/2016 pilot identified shortages in manufacturing, construction, and ICT. By 2019/2020, these shortages had shifted towards roles in the digital economy, including software developers, cybersecurity analysts, and data scientists. The 2022/2023 list features 37 occupations, signalling ongoing shortages in STEM-related fields, managerial roles in project execution, and technical trades. This demonstrates MyCOL's ability to monitor dynamic labour market signals.

Technological disruption and emerging skills

The wave of digitalisation brought on by Industry 4.0 has heightened the demand for new skill sets. Automation has displaced specific traditional roles while accelerating the need for data analytics, AI, and cloud infrastructure skills. TalentCorp estimates that over 90,000 ICT professionals will be required by 2025. However, the pace of upskilling has not kept up with technological advancement, thus widening the gap between the current workforce's capabilities and future economic requirements.

Sectoral and regional disparities

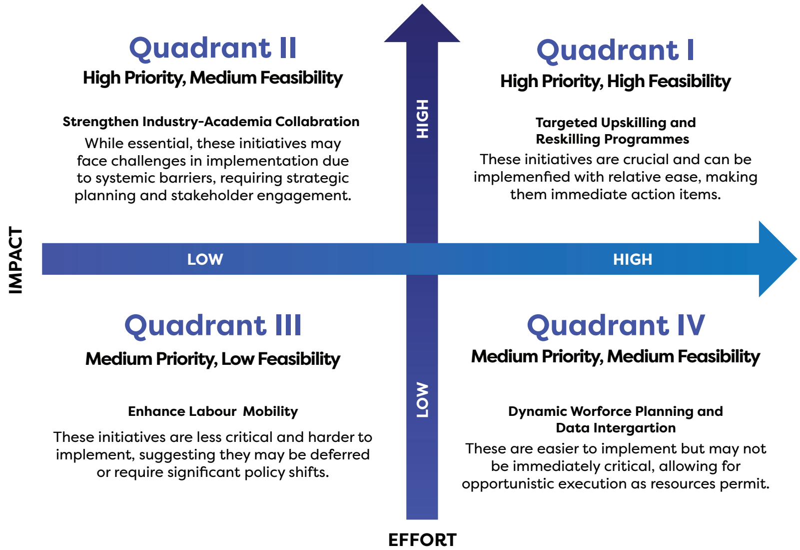
MyCOL reveals ongoing shortages in priority sectors such as aerospace, electrical and electronics, and food manufacturing. The construction industry continues to experience shortages of civil engineers, quantity surveyors, and skilled tradespeople. With the inclusion of regional analysis, recent MyCOL editions highlight disparities between states—urban areas demonstrate shortages in technology roles, while rural regions encounter deficits in healthcare and logistics occupations.

Structural labour market paradoxes

Malaysia's labour market is characterised by three central paradoxes: low median wages despite low unemployment, widespread skills mismatches, and limited quality employment opportunities in high-growth sectors. These challenges persist due to the underutilisation of skilled labour, a lack of alignment between industry and education, and inflexibility in workforce mobility. MyCOL offers a diagnostic tool to explore these contradictions and inform policy responses.

POLICY RECOMMENDATIONS

Figure 1: Policy Prioritisation Matrix, Balancing Impact and Feasibility



Targeted upskilling and reskilling programmes (High Priority, High Feasibility): Utilise MyCOL to prioritise funding and implement national training initiatives, such as HRD Corp programmes and digital boot camps. Encourage employers to invest in ongoing learning, particularly in ICT and sectors vulnerable to automation.

Enhance collaboration between industry and academia (High Priority, Medium Feasibility): Align higher education curricula with MyCOL findings by redesigning courses, co-developing syllabi, and expanding internship opportunities. Establish sector councils to provide ongoing labour market intelligence to academic institutions.

Dynamic workforce planning and data integration (Medium Priority, Medium Feasibility): Integrate MyCOL with other labour market platforms to establish a centralised system. Utilise predictive analytics and real-time dashboards to proactively identify and address skill shortages.

Enhance labour mobility (Medium Priority, Lower Feasibility): Formulate policies for regional labour incentives, flexible work arrangements, and transferable upskilling credentials. Consider broadening the approach with targeted immigration for high-demand occupations.

CONCLUSION

MyCOL has matured into a cornerstone of Malaysia's human capital policy framework. It has evolved from a diagnostic tool into a strategic enabler of targeted workforce interventions. Its robust methodology, dual validation process, and institutional credibility make it a replicable model for other emerging economies. However, rapid technological change, demographic pressures, and structural rigidities continue to strain Malaysia's labour market. Addressing these issues requires continuous refinement of MyCOL—expanding its analytical depth, regional granularity, and integration with broader economic planning tools. As Malaysia navigates the complex transition to a digital and sustainable economy, MyCOL can help ensure that workforce capabilities are not just aligned with but ahead of economic demands. Its evolution must continue, supported by political will, institutional coordination, and data-driven execution.

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Sunrise and Sunset Occupation Group: Forecasting Labour Market Trends in Malaysia

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ABSTRACT

Malaysia's labour market rapidly evolves due to technology, economic shifts, and changing industry demands. In 2024, the economy grew by 5.1%, driven by strong domestic demand and a recovery in exports. Job trends are crucial for national development, aligning with the Shared Prosperity Vision 2030. This study employs Holt's time-series forecasting to predict emerging and declining jobs over the next year, providing insights for workforce planning and reskilling. Based on World Economic Forum classifications, it identifies growing demand in agriculture (3.91%), aircraft maintenance (2.39%), and construction (1.64%), while public relations jobs decline (-1.31%) due to automation. High-skilled roles command higher wages, but sectors like agriculture may face retention challenges. These insights aim to guide policymakers and employers effectively.

INTRODUCTION

The Malaysian job market is undergoing significant transformation in today's rapidly evolving economic landscape, driven by technological advancements, economic shifts, and changing industry demands. The Malaysian economy recorded stronger growth of 5.1% in 2024, propelled by heightened domestic demand and a rebound in exports. Looking ahead, despite external uncertainties, the robustness of economic activity is expected to be maintained in 2025, supported by domestic demand (Bank Negara Malaysia, 2025). Malaysia’s labour market is shifting in tandem with expanding industries and supportive policies. In spite of global uncertainties, export growth fueled by the tech upcycle, both non-electrical and electrical sectors, and increasing tourism, along with higher wages and household spending, is boosting demand in key sectors. Consequently, understanding the dynamics of the labour market has become increasingly vital, especially when assessing job supply and demand across various sectors to enhance Malaysia's economic growth and labour market. This initiative coincides with the Malaysian Government's goal of building a prosperous, inclusive, and sustainable nation, as the ‘Shared Prosperity Vision 2030 outlines. An effective approach to understanding labour market dynamics is through forecasting sunrise and sunset jobs, which provides valuable insights into which sectors are expanding and which are becoming obsolete (Mohd Nadzri Mohd Nasir et al., 2008).

This study, focusing on forecasting emerging and declining job types across industries, plays a crucial role in effective workforce planning. As SOCSO continues to explore and research Active Labour Market Policies (ALMPs), the findings bolster efforts to drive workforce adaptation in response to evolving industry needs. The results of this study not only facilitate the formulation of targeted policies but also support the implementation of reskilling and upskilling initiatives and the attraction of strategic investments. By aligning workforce capabilities with shifting market demands, Malaysia can strengthen its economic resilience, secure sustainable employment opportunities, and advance its long-term national development goals. Moving forward, this study offers valuable insights into the future landscape of the labour market by identifying both emerging and declining job types across various industries.

METHODOLOGY

This study employs a mixed-method approach to forecast future job trends, primarily using Holt's Damped Model for 12-month projections of job demand. Key occupational groups are identified based on the World Economic Forum's Future of Jobs Report 2023. SOCSO utilises AI-powered Natural Language Processing (NLP) to analyse employer data and map business activities through keyword identification. A comprehensive employer list from SOCSO's data warehouse helps classify over 1,000 occupations into 107 key roles and 65 job clusters, aligned with WEF insights. The methodology identifies sunrise (emerging) and sunset (declining) jobs by analysing monthly contribution records for employee movement and salary averages. PERKESO monitors over 3 million employees across core business groups, and job placement data from MYFutureJobs enhances the accuracy of the forecasts by reflecting real-time market activity. This approach provides insights for workforce planning, policy formulation, and reskilling strategies.

Figure 1: Sunset Sunrise Methodological Framework

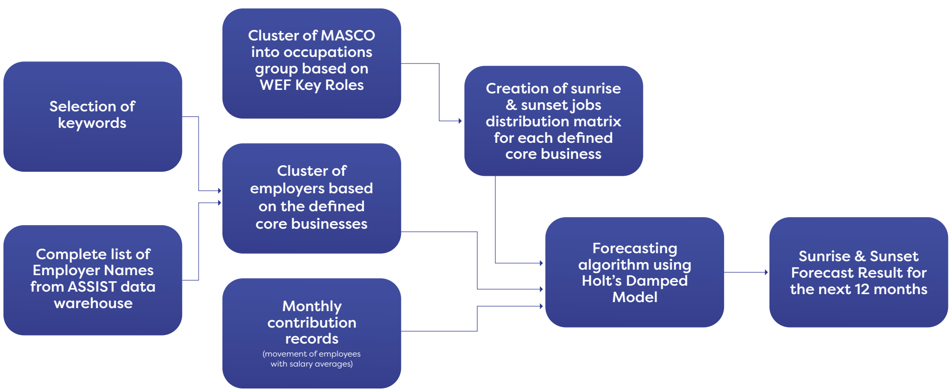


Figure 2: Job Description Matrix by WEF

Sunrise and Sunset Job Clusters based on the key roles suggested in the World Economic Forum Future of Jobs										
Keywords to define core business group activities searched from Employer Names	tax, finance, accounting, audit, actuary									
	Accountants, Auditors & Actuaries	Advertising and Public Relations Professionals	Banking, Financial and Insurance Specialists	Business Administration Specialists	Client Information and Customer Service Workers	Data Science, AI and Internet of Things	Financial Advisers and Stock Brokers	Product, General and Operations Managers	Regulatory and Government Associates	Technical Specialists
%	40%	2%	10%	8%	5%	5%	15%	3%	9%	3%

Sunrise and Sunset Job Clusters based on the key roles suggested in the World Economic Forum Future of Jobs report										
Keywords to define core business group activities searched from Employer Names	supply, shipping, logistic, transport, cargo									
	Assembly Factory Workers	Crane, Hoist & plant Operators	Front-counter Clerks	Heavy Truck and Bus Drivers	Product, General and Operations Managers	Stock-Keeping Clerks	Supply Chain and Logistics Specialists	Taxi and Limousine Drivers	Vehicle Rental Operators	Technical Specialists
%	5%	10%	5%	30%	2%	10%	25%	5%	3%	5%

KEY DISCOVERIES AND INSIGHTS

Based on the analysis of over 3 million data points, the findings reveal an apparent emergence of high-growth occupations called ‘sunrise’ jobs, driven by increasing demand for specialised skills, digital integration, and sustainability-focused practices, as presented in Figure 3. Travel and Tour Agents top the list with a 4.4% growth rate, propelled by the revival of the tourism industry and national initiatives such as the Visit Malaysia 2026 campaign. Following closely, Agricultural Operators and Specialists demonstrate a 3.9% increase, reflecting Malaysia’s intensified efforts in modernising agriculture and ensuring food security by adopting innovative and sustainable farming technologies. With a 2.8% growth rate, CNC Machine Operators are benefiting from the accelerating adoption of

Industry 4.0 technologies, particularly in precision-driven sectors such as automotive, aerospace, and electronics. Meanwhile, Aircraft Maintenance Specialists (2.4%) are in growing demand as the aviation industry rebounds post-pandemic, emphasising the need for certified personnel to meet stringent safety and maintenance standards. Similarly, Healthcare Support and Technicians (2.2%) are expanding with the nation's ageing demographic, the rise of digital health solutions, and increased government focus on healthcare accessibility. These trends highlight the strategic shifts within Malaysia's labour market

Other steady growth areas include Architectural, Civil, and Construction Professionals (1.64%), and the Finance and Legal sectors, such as Accountants, Auditors, and Actuaries (1.16%), which remain resilient due to ongoing infrastructure projects and financial governance needs. These emerging roles indicate where job demand is headed and highlight the increasing reliance on technology, precision skills, and sectoral modernisation. However, wage distribution varies across these roles. For instance, while Aircraft Maintenance Specialists and Construction Professionals earn RM 10,430 and RM 11,473 respectively, their technical expertise contrasts with agriculture roles, which, despite notable growth, offer lower wages (RM 4,908), posing potential challenges in workforce attraction and retention.

In contrast, 'sunset' jobs, characterised by negative growth rates, face declining relevance due to automation, outsourcing, and AI adoption. For example, advertising and Public Relations professionals exhibit a decline of -1.31%, driven by the transition to AI-powered marketing tools. These changes emphasise the urgent need for targeted reskilling and upskilling initiatives to maintain workforce relevance. The analysis highlights the importance of aligning national workforce strategies with industry evolution to ensure sustainable, inclusive economic development.

Figure 3: Overview of 'Sunset' and 'Sunrise' Occupations in Malaysia

'Sunrise' Jobs	Growth Rate	Observations
Travel and Tour Agents	4.4%	• Tourism campaigns predominantly drive growth, particularly the Visit Malaysia 2026 initiative. This initiative aims to enhance international and domestic tourism, thereby increasing the demand for travel-related services. • As tourism recovers in the post-pandemic era, government support, heightened travel expenditure, and improved connectivity contribute to greater employment in this sector. (Bank Negara Malaysia, 2024; MIDF Research, 2025)
Agricultural Operators and Specialists	3.9%	• Growing concerns about food security and the drive for agricultural modernisation are generating a demand for skilled agricultural workers. • The adoption of smart farming, automation, and sustainable agricultural practices boosts efficiency and fosters job creation in this sector. (Devadoss, 2012); Mohd Nahar Mohd Arshad, 2024)
CNC Machine Operators	2.8%	• The growth of manufacturing and industrial automation has increased demand for skilled CNC machine operators capable of handling precision engineering tasks. As Industry 4.0 technologies evolve, industries seek more CNC specialists to oversee computer-controlled production processes, particularly in the automotive, aerospace, and electronics sectors. (Noorasiah Sulaiman et al., 2021; Bank Negara Malaysia, 2024)
Aircraft and Maintenance Specialists	2.4%	• The aviation industry is recovering from pandemic-related slowdowns, with increased air travel and fleet expansions generating demand for maintenance personnel. • Regulatory requirements for aircraft maintenance and the necessity for skilled professionals to uphold safety standards propel job growth in this sector. (International Labour Organisation, 2025; MIDF Research, 2025).
Healthcare Support and Technicians	2.2%	• Malaysia's ageing population and the growing demand for healthcare services drive job growth in this sector. • The emergence of digital health technologies, enhanced healthcare infrastructure, and government initiatives to improve healthcare accessibility have heightened the need for technicians and support staff. (Hao & Da, 2023; Bank Negara Malaysia, 2024)

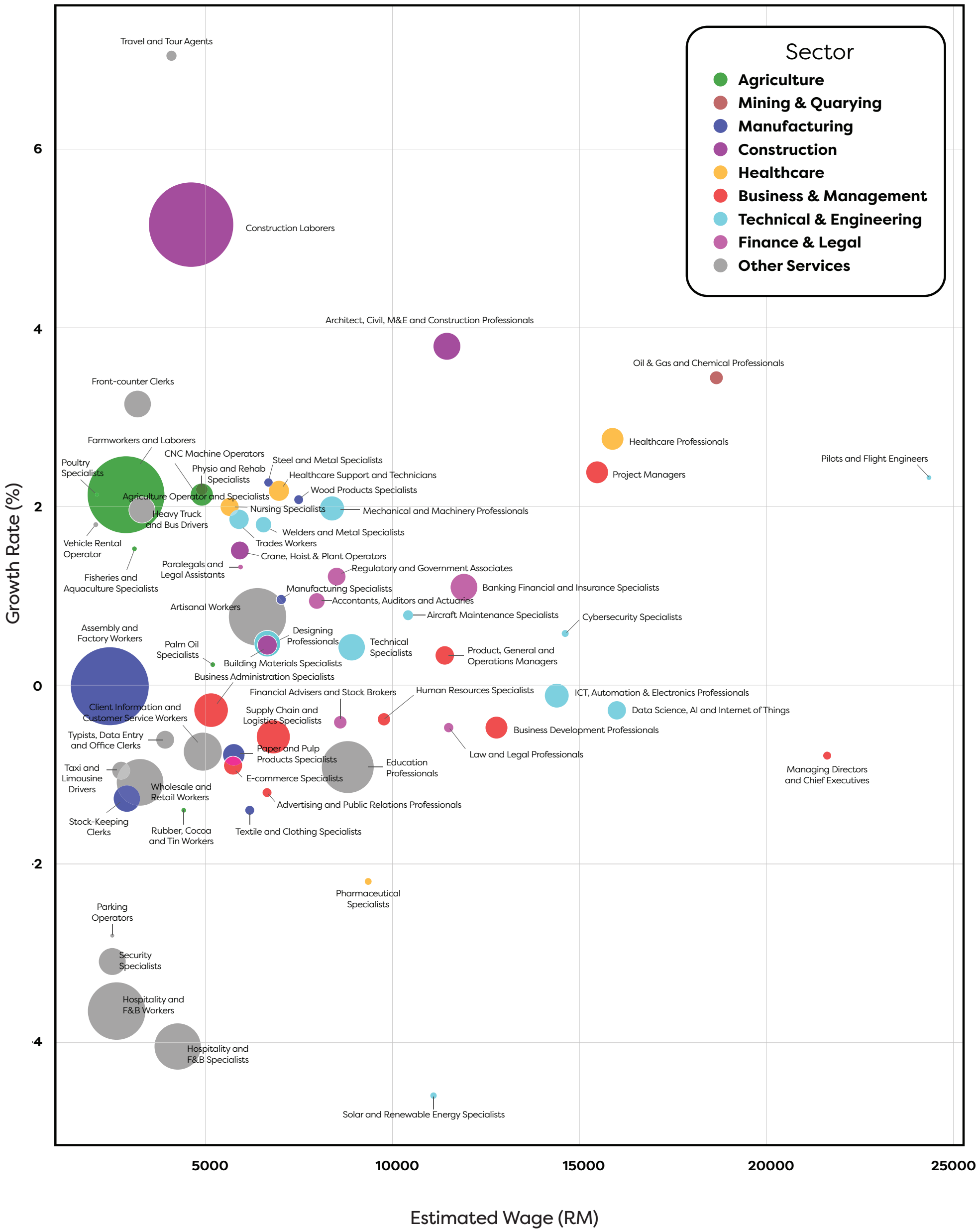
TRENDS OF OCCUPATIONAL GROUPS BASED ON ECONOMIC VARIABLES

Figure 4 provides critical insights into Malaysia's evolving labour market, particularly in aligning workforce strategies with policy initiatives such as the Minimum Wage Order and broader labour market transformation policies under the 12th Malaysia Plan. Occupations are mapped by growth rate and estimated wage, with bubble size indicating workforce distribution and colour-coded by sector. This visualisation highlights the urgent need to tailor policies to address wage disparities and shifts in sectoral demand, especially for specific industries mentioned above. A key observation is the presence of several 'sunrise' occupations, such as Travel and Tour and Agricultural Operators, which are experiencing notable growth compared to the previous year. However, despite this high growth, these occupations often remain below the RM2,000–RM3,000 wage threshold, bordering on the minimum wage (RM1,500 as of 2024). This reveals a mismatch where high growth does not necessarily equate to high income, raising concerns about the quality of employment and prompting a need for sector-specific wage subsidies or productivity-linked wage incentives, in line with Malaysia's aspirations for a progressive wage model.

Conversely, sectors such as Hospitality and Food Services, Textiles, and Parking Services are experiencing negative growth and offer wages that barely meet or fall below the national minimum wage. These trends suggest a structural shift away from low-skilled, labour-intensive jobs due to automation, changes in consumer behaviour, and economic restructuring. In response, labour market policies must prioritise reskilling and transition support, ensuring these vulnerable segments are not left behind. This aligns with Active Labour Market Programmes (ALMPs) and the government's commitment to social safety nets and employment services, particularly under SOCSO's Employment Insurance System (EIS) and MYFutureJobs initiatives. In contrast, high-skilled roles such as Oil & Gas Engineers, Pilots, Data Scientists, and Aircraft Maintenance Specialists command premium wages, with some exceeding RM 20,000, and experience moderate growth within Malaysia's economy and workforce. These occupations embody Malaysia's shift towards a high-income, knowledge-based economy. Policies must therefore focus on strengthening Technical and Vocational Education and Training (TVET) and STEM education pipelines to cultivate a future-ready workforce. Incentivising high-value skills acquisition through grants, tax relief, and public-private partnerships will be pivotal in sustaining this trajectory.

In ensuring targeted workforce development, this model can be refined by localising it to address the unique demographic and economic needs of each Malaysian state for the Bahagian Perancangan Ekonomi Negeri (BPEN) and Unit Perancangan Ekonomi Negeri (UPEN). This approach would enable more precise labour and wage policies that balance growth, fair compensation, and inclusivity. At the national level, tools such as the Wage Guide and Wage Forecast provide a data-driven framework to support Malaysia's goals of building an equitable, adaptive, and sustainable employment ecosystem, which are key priorities under the Shared Prosperity Vision 2030 and the 12th Malaysia Plan. Furthermore, the model assists in forecasting emerging job trends, allowing educational institutions to align their programmes with future workforce demands. By integrating localised insights with broader policy reforms, Malaysia can create a more responsive and inclusive labour market that meets regional and national economic objectives.

Figure 4: Occupation Groups Based on Growth Rate and Estimated Wage for the Year 2025



CONCLUSION

SOCSO is pivotal in facilitating career transitions, integral to Malaysia's Active Labour Market Policies (ALMPs). Through its provision of data-driven insights, tailored job-matching services, and comprehensive employment support, SOCSO aids Malaysians in navigating the evolving labour market landscape. Initiatives like the Employment Insurance System (EIS) provide financial assistance and career guidance to those affected by job losses, easing their path toward new opportunities. As job trends evolve rapidly, shifting every six to twelve months, especially within specific sectors, remaining competitive requires continuous learning, mastery of digital skills, and adaptability. With SOCSO's sustained initiatives, Malaysia's workforce is well-equipped to meet these challenges and foster a more resilient, future-ready job market.

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Advancing Women's Economic Participation: Strengthening Inclusive Policies for a Sustainable Future

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ABSTRACT

This paper explores the persistent barriers to women's economic participation in Malaysia, including occupational segregation, caregiving responsibilities, and limited access to social protection. Drawing on national data, it highlights the economic vulnerabilities faced by women, especially in informal sectors. The study proposes targeted policy interventions—such as expanding social security, promoting inclusive leadership, and supporting women entrepreneurs—to foster equitable and sustainable economic growth.

INTRODUCTION

Malaysia has made progress in promoting gender equality; however, significant economic disparities still exist. The Malaysia Gender Gap Index (MGGI) 2023 reported an economic participation sub-index score of 0.698 (69.8%), which indicates slow advancement in women's workforce engagement. Structural barriers, including occupational segregation and unequal representation in leadership roles, continue to hinder women's full economic inclusion, particularly for vulnerable groups such as female-headed households (United Nations Children's Fund, 2024). To address these challenges, it is essential to implement targeted, gender-responsive policies that encourage sustainable economic participation.

CHALLENGES TO WOMEN'S ECONOMIC PARTICIPATION

Although women's educational attainment has improved globally, significant gaps in workforce participation remain. The World Economic Forum (2023) reported a global economic participation gap of 60.1%, indicating persistent barriers. Cultural expectations and caregiving responsibilities significantly affect women's ability to enter and remain in the workforce. According to the Malaysia Ageing and Retirement Survey (MARS) Wave 2, 40% of women aged 40 and above cited family commitments as their primary reason for not working, compared to only 3% of men (Social Wellbeing Research Centre, 2022). Women in the informal sector encounter additional vulnerabilities. According to the Implementation Coordination Unit (ICU), in 2024, there were 1,867 single mothers categorised as hardcore poor, along with 125,098 individuals classified as poor. While initiatives such as Amanah Ikhtiar Malaysia (AIM) and TEKUN Nasional offer financial support, access to these resources is often limited due to eligibility criteria and barriers related to financial literacy.

ADDRESSING THE GENDER GAP IN EMPLOYMENT AND LEADERSHIP

Women continue to be underrepresented in high-growth sectors like technology and finance. Implementing gender-balanced hiring practices, leadership development programmes, and education focused on STEM (Science, Technology, Engineering, and Mathematics) can help close this gap (UNDP, 2022). Workplace cultures that favour men in decision-making roles present additional challenges, emphasising the need for mentorship programmes and organisational shifts towards inclusive leadership.

INDUSTRY CONCENTRATION AND ECONOMIC PRECARITY

Data from the MARS Wave 2 report highlights significant gender divisions in the labour market (Social Wellbeing Research Centre, 2022). Women are particularly overrepresented in informal caregiving and domestic work. These positions often come with limited legal protections and lower wages, which increases women's economic dependency. According to the Department of Statistics Malaysia (DOSM), a persistent gender wage gap exists, with median monthly wages reported as RM2,782 for men and RM2,700 for women in 2024.

In addition, informal employment increases economic insecurity for women. Those engaged in informal work often lack formal contracts, social security benefits, and opportunities for career advancement. To address these systemic inequalities and improve economic security, targeted interventions are essential for women in precarious employment.

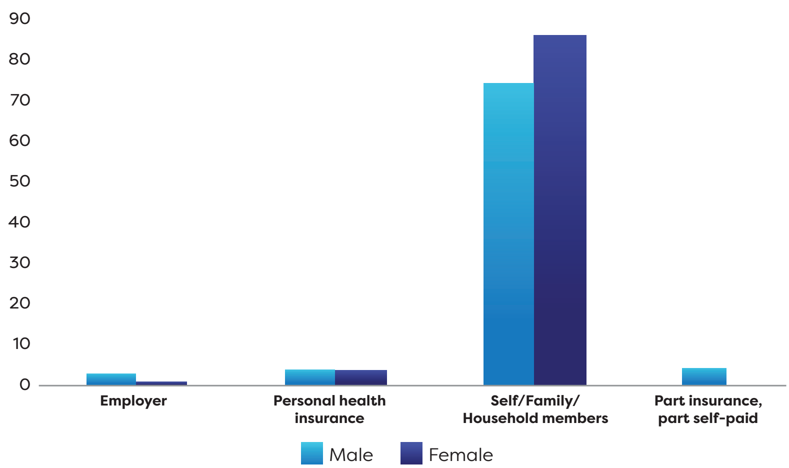
Figure 1: Number of Representatives in Industries, by Gender

Source: Social Wellbeing Research Centre (2022).

HEALTHCARE PAYMENT AND POTENTIAL FINANCIAL STRAIN

Findings from MARS Wave 2 indicate that women tend to rely more on family financial support for medical care than men. The lack of employer-based healthcare financing options disproportionately affects women due to their lower earnings and greater economic dependency. Expanding social health insurance and enhancing employer-provided healthcare support are essential to address these vulnerabilities.

Figure 2: Sources of Payment for Hospitalisation, by Gender



Source: Social Wellbeing Research Centre (2022).

INTERGENERATIONAL SUPPORT AND POTENTIAL BURDEN

Women tend to receive more financial support from their children in later life than men (RM307 vs. RM232), mainly due to the economic disadvantages they face from lower lifetime earnings and career interruptions. While familial support serves as an essential safety net, it also raises concerns about the financial burden on the younger generation. Therefore, it is essential to implement policies that enhance women's financial independence in old age to reduce intergenerational dependency.

Figure 3: Money Received from Children, by Gender

Gender	The average amount of support received from children (MYR)
Male	232.34
Female	307.36

Source: Social Wellbeing Research Centre (2022).

POLICY RECOMMENDATIONS

Strengthening Social Protection for Informal Workers: Expanding programmes like EPF i-Suri, which provide retirement savings for homemakers and informal workers, can enhance long-term financial security. Government incentives and employer-matching contributions should be introduced to bolster participation in formal social security schemes.

Reducing the Double Burden of Unpaid Care Work: Policies such as paid caregiver allowances, flexible work arrangements, and expanded childcare support can facilitate women's participation in the workforce. Countries like Sweden and Germany offer caregiver pension credits, a model Malaysia could adopt.

Enhancing Financial Inclusion and Entrepreneurship: Gender-responsive microfinance programmes with reduced collateral requirements and financial literacy training can empower women entrepreneurs. Digital platforms and e-commerce initiatives should also be expanded to enable broader market access.

Wage Transparency and Equal Pay Policies: Strengthening the enforcement of gender pay audits and mandating salary transparency can address wage disparities. Establishing guidelines for equitable pay practices is essential to fostering economic fairness.

Promoting Women in Leadership and Decision-Making Roles: Implementing diversity targets, mentorship programmes, and leadership training can encourage female representation in executive positions. Public-private partnerships should be leveraged to advance gender-inclusive policies.

Community-Led Approaches to Shifting Societal Norms: Advocacy from religious and community leaders can contest traditional gender norms and encourage greater participation of women in the workforce. Educational programmes should incorporate gender-sensitive curricula to reshape societal attitudes early on.

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Recognising the Contributions of Housewives to the Malaysian Economy

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ABSTRACT

This study highlights the significant contributions of housewives to Malaysia's GDP, particularly through unpaid care work, and their exclusion from national policy formulation. It emphasises the importance of skills training to boost self-confidence, reduce societal stigma, and empower housewives. The research aims to recognise care work as a legitimate career, demonstrate the economic value of skilled housewives, and advocate for policies that support their well-being and elevate their social status. Employing a mixed-methods approach—including systematic reviews, surveys, and interviews—the study provides evidence of housewives' vital role in economic development and the need for inclusive, supportive national policies.

INTRODUCTION

Housewives have long been the backbone of society, performing essential caregiving and domestic tasks that contribute significantly to the well-being of families and communities. Despite their crucial role, their contributions remain largely unrecognised in national economic and policy frameworks. This paper addresses this oversight by advocating for the recognition of housewives as integral contributors to the care economy. The discussion will highlight the importance of acknowledging housework and caregiving as valuable economic activities, the need for skill development programmes to empower housewives, and the broader implications of such recognition on national economic planning.

OBJECTIVES

This policy paper aims to:

- Recognise housewives as active contributors to the care economy and Malaysia's GDP.
- Elevate the status of housewives by advocating for their inclusion in national policy frameworks.
- Promote skill enhancement programmes to empower housewives and challenge societal stigma surrounding unpaid care work.
- Demonstrate the economic impact of trained and skilled housewives.
- Advocate for policies that improve housewives' well-being and social standing.

HOUSEWIVES' ECONOMIC CONTRIBUTION

Numerous studies emphasise the economic value of unpaid care work. The International Labour Organisation (ILO) reports that unpaid care work accounts for approximately 9% of global GDP when monetised. In Malaysia, the value is estimated at RM379 billion (ISIS). Studies in developed nations, including those by the Organisation for Economic Co-operation and Development (OECD), suggest that acknowledging and integrating unpaid care work into national accounts could assist policymakers in formulating more inclusive policies that better reflect the total value of labour in the economy.

In Malaysia, existing policies have yet to recognise housewives as economic contributors fully. The Eleventh Malaysia Plan (2016–2020) acknowledged the need for gender-responsive policies but did not specifically address the contributions of housewives. Comparative analyses of countries such as Sweden and Canada highlight progressive policies that provide pensions and social security benefits to housewives, thereby ensuring economic security for caregivers. The lack of such measures in Malaysia underscores the urgency for policy interventions.

Skill development programmes tailored for housewives have proven beneficial in other countries. In Japan, reskilling programmes for homemakers facilitate their transition into the workforce while recognising their prior caregiving experience.

Focus group discussions (FGDs) were held on 24th and 25th February 2025 by Persatuan Suri Rumah Rahmah (SRR) in collaboration with Khazanah Research Institute (KRI) to gather insights from housewives regarding their contributions to education, health, social welfare, and the economy, with particular emphasis on care work. The FGDs, which involved 50 respondents, aimed to comprehend the role of housewives in strengthening the care economy.

FINDINGS

Housewives and Economic Contribution:
A key finding of this research is the substantial economic contribution of housewives. Their unpaid labour, if quantified, would significantly contribute to Malaysia's GDP. Tasks such as childcare, elder care, and household management reduce government spending on social services, yet remain unaccounted for in economic calculations. According to Khazanah Research Institute (KRI), women represent 65% of the total care workforce in Malaysia, mirroring the global trend of women's overrepresentation in care work. This is particularly evident in the Social Care Work sector, where women comprise 95.3% of the workforce.

Societal Stigma and the Lack of Formal Recognition:
Housewives often face social stigma, being perceived as financially dependent and unproductive members of society. This perception undermines their self-confidence and limits their access to financial security and social benefits. The lack of formal recognition within economic and policy frameworks exacerbates these issues, preventing housewives from receiving the support they need.

The Need for Skill Enhancement Programmes:
Findings from interviews and surveys indicate that housewives are eager to develop new skills. Training programmers in financial literacy, caregiving certification, and digital competency can boost their economic participation through improved household management or enabling potential workforce integration. SRR's FGDs revealed that approximately 90% of respondents believe that upskilling and reskilling opportunities are essential to enhance their capabilities as home care providers. SRR on 13th March 2025 once again conducted a Focus Group Discussion with 12 SRR activists to gain deeper insights into their experiences participating in the association's programmes, the necessity for a dedicated policy for housewives, and the need for skills training for their empowerment. The findings revealed that 100% of the participants expressed a desire for a specific policy to be presented and discussed by the relevant stakeholders for the welfare of housewives. The

respondents also acknowledged the importance of skills for housewives in carrying out their daily tasks more efficiently and systematically and their ability to contribute more to the community through caregiving work.

International Policy Comparisons and Recommendations:
Countries that recognise unpaid care work have implemented policies such as caregiver allowances, pension credits, and flexible work arrangements. Malaysia can adopt a similar approach by:

- Establishing a recognition framework for housewives, including financial incentives.
- Introducing caregiver training programs with certifications.
- Developing pension and social security schemes for full-time housewives.
- Integrating housewives into workforce reskilling programmes.

CONCLUSION

The recognition of housewives as key contributors to the care economy is long overdue. Their labour sustains families and reduces government spending on social services, yet it remains unaccounted for in national policies. This paper outlines the economic significance of housewives, the challenges they face, and the potential benefits of policy interventions. By implementing structured recognition programmes, skills enhancement initiatives, and financial support, Malaysia can improve the well-being and status of housewives, fostering a more inclusive and thriving economy. The government must proactively integrate housewives into economic policymaking, ensuring their contributions are valued and supported.

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Intervention Mechanisms to Curb "Popcorn Brain" Generation in Malaysia

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ABSTRACT

The increasing consumption of short-form digital content has led to a phenomenon known as "popcorn brain," where individuals struggle with sustained attention and deep thinking. This issue is particularly relevant in Malaysia, where digital engagement is high, impacting cognitive development, productivity, and mental well-being. This research aims to explore intervention mechanisms to mitigate the effects of popcorn brain and promote a healthier digital environment for the young generation.

Keywords: Popcorn brain, mental state, social media usage, adolescent

INTRODUCTION

More than 20 years ago, a longitudinal study found that children with excessive television exposure below the age of 3 would struggle with attention deficit by age 7 (Christakis et. al, 2004). The study, which included 1,278 children based on the National Longitudinal Survey of Youth (NLSY) data, also suggested that for each additional hour of television watched per day at the age of one, there was a 9% increase in the risk of developing attentional issues. Another study conducted in 2010 also found that both television and video game exposures are linked to attention problems in children, reinforcing the need for limits on recreational screen time (Swing et. al, 2010).

DISCUSSION

Fast forward to 2025; we now have ultra-advanced touchscreen televisions and a wide array of customisable devices – phones, tablets, and laptops – tailored to various needs and age groups. It is undeniable that the sleek and visually appealing designs of modern gadgets are captivating the younger generation, drawing them into extended screen time filled with fast-paced content and social media engagement. The constant notifications, phone calls, messages, and continuous scrolling result in spending long hours staring at screens, bombarding the brains with an overload of digital stimulation, leading to the popcorn brain phenomenon.

In 2011, Professor David Levy of the University of Washington Information School described a popcorn brain as a mental state in which constant digital simulation significantly shortens a person's attention span. The rapid popping of the corn kernels on the stove or in the microwave provides the evocative image of how our thinking and focus jump quickly from one thing to another. Arising from this situation, studies have shown that excessive use of digital technology can negatively affect children's mental well-being and social relationships, impacting cognitive development, productivity and that higher screen time is also associated with increased rates of anxiety, depression as well as attention problems in adolescents (Winther, 2017; Santos et. al, 2023)

While digital technology was found to be useful for Malaysian adolescents to get through the pandemic in 2019 and 2020, it also triggered risks such as behavioural and psychological problems (Rose et. al, 2022). A more recent study conducted in 2024 in the Malaysian states of Johor and Sarawak showed that out of the 384 respondents, 72% recorded high levels of social media addiction, while 33% were associated with depression, calling for urgent interventions to address excessive social media usage among the younger generation.

POLICY RECOMMENDATIONS

Several intervention mechanisms can be considered to manage the popcorn brain issue in Malaysia. One of the most crucial interventions is educating parents on managing screen time. In today's fast-paced world with many parents working, it is common for young parents to use gadgets to occupy and soothe their children, often without realising their long-term impact. Educating the parents about the effects of excessive screen time on children's attention and learning abilities would make them more vigilant in providing access to social media. In addition to that, parents should also lead by example by limiting their own screen time and encouraging their children to adopt healthier digital habits. Supporting this intervention, a study undertaken in 2010 revealed that parental rules and involvement significantly reduce children's screen time and improve media habits (Rideout et. al, 2010).

The second intervention should be to develop a holistic educational framework. Given the rapid pace of technological advancement, educators have little choice but to thoughtfully integrate technology into teaching and learning experiences. Selecting appropriate social media content, promoting limited screen time through physical activity, and encouraging group work and discussions can help young minds build valuable soft skills and critical thinking.

Thirdly, the government's involvement through regulation and policies on the social media content and access to children of different ages. For example, the policy guide on children and digital connectivity by UNICEF highlighted some of the regulators' efforts such as no screen time for children under two and a two-hour limit for older children by the American Academy of Paediatrics (AAP) introduced in 1999, and a law banning children under 16 from playing online games between midnight and 6:00 a.m. by South Korea in 2011. UNICEF (2018) further emphasised that policies and standards related to the digital environment should be appropriately integrated and that children's needs and rights should be considered.

CONCLUSION

Over the past two decades, the growing body of research has made it increasingly clear that excessive screen time, especially at a young age, poses significant risks to children's cognitive development, attention span, and mental well-being. From early warnings about television's exposure in the 2000s to present-day concerns surrounding social media addiction and the popcorn brain phenomenon, the trend is consistent: over-simulation from digital devices disrupts healthy brain function and social development.

To counter this, a multifaceted approach is needed, one that begins at home. Educating parents on the impact of screen time and equipping them with strategies to manage it is essential. Parents must also model responsible digital behaviour so their children can adopt it. Schools, universities, and educators also have a crucial role to play. By thoughtfully integrating technology into teaching and learning, promoting physical activities, and encouraging collaborative discussions, the young generation can be steered towards developing soft and analytical skills. Last but not least, the predominant role of the government is to shape policies to protect children in the digital space. Ultimately, addressing the popcorn brain issues in Malaysia requires a collective action by families, schools, and policymakers to create a balanced and mindful digital environment for the next generation.

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The Dual-Edged Impact of Migrant Labour on Malaysia's Economy: Labour Market Distortions and EPF Challenges

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ABSTRACT

Malaysia's reliance on migrant workers, initially intended to fill labour shortages in 3D sectors (dirty, dangerous, and difficult), has contributed to wage suppression, socioeconomic inequality, and long-term risk to the Employees Provident Fund (EPF). This paper examines how weak labour governance facilitates the displacement of B40 locals from higher-value jobs, stagnates productivity, and intensifies competition with informal migrant labour, including undocumented workers. This paper advocates for a three-pronged reform strategy: prioritising the upskilling of the B40 group, implementing innovative migration governance, and aligning social protection systems with productivity initiatives. These integrated policies are necessary to protect the EPF's viability and promote equitable growth aligned with the Sustainable Development Goals (SDGs).

Keywords: Migrant workers, EPF sustainability, labour market distortions, wage suppression, socioeconomic inequality, Malaysia.

INTRODUCTION

Malaysia's economic growth model has long relied on the steady influx of low-skilled migrant labour, initially intended to fill critical labour shortages in the so-called "3D" (dirty, dangerous, difficult) sectors. Since the mid-1980s, policies have been liberalised to accommodate large numbers of foreign workers, particularly in agriculture, construction, and manufacturing. While this strategy addressed labour shortages and supported export-led growth, it has also entrenched structural weaknesses in the labour market, suppressed wage growth, and contributed to socioeconomic inequality (Bank Negara Malaysia, 2018).

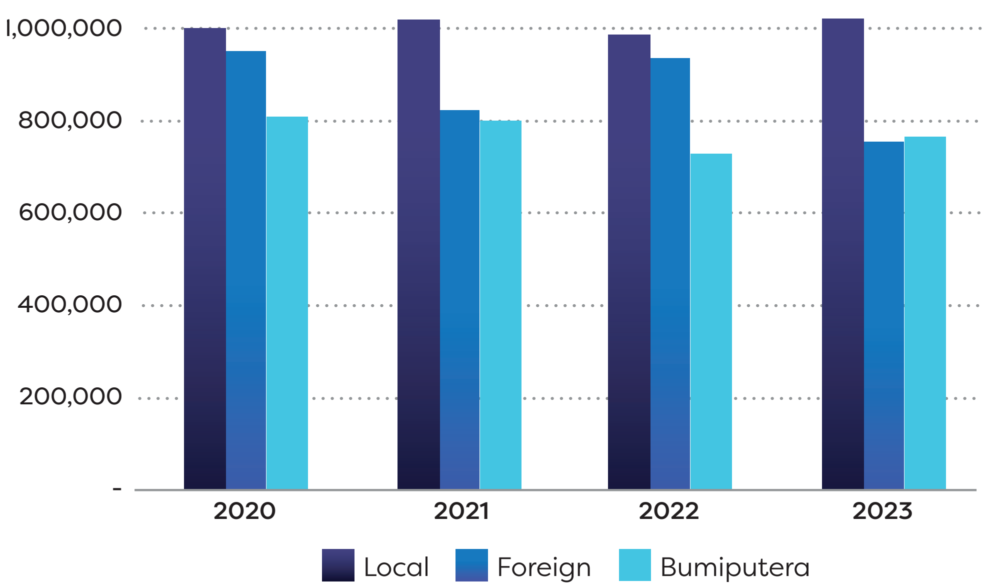
Malaysia's reliance on migrant workers intersects critically with its demographic transition. As the population ages and life expectancy rises, concerns about the long-term sustainability of the Employees Provident Fund (EPF)—the country's primary retirement savings scheme—have intensified (Hassan & Giri, 2021; World Bank, 2018). The EPF's viability faces multiple pressures, including erratic contributions, capital flight through wage repatriation by foreign workers, and a shrinking base of formal-sector contributors due to rising informal employment (Ahmad & Ismail, 2019; Khazanah Research Institute, 2020). Without structural reforms, these challenges threaten the adequacy of retirement savings for Malaysia's ageing workforce (Tan et al., 2022).

WAGE SUPRESSION AND LABOUR MARKET DISTORTIONS

Malaysia's labour market has developed a structural dependence on low-cost migrant workers, who now constitute 15-20% of the workforce, with concentrations reaching 80% in plantations and 25-40% in construction and manufacturing (Department of Statistics Malaysia [DOSM], 2021; Bank Negara Malaysia [BNM], 2018). This reliance has created a self-reinforcing cycle: sectors traditionally avoided by locals due to harsh conditions and low pay have become permanently dependent on migrant labour. At the same time, weak wage policy enforcement allows employers to prioritise short-term cost savings over productivity investments (World Bank, 2020). The consequences are visible across three dimensions:

First, wage growth disparities have become entrenched. Between 2010 and 2020, while local workers saw annual wage increases of 4%, migrant wages stagnated at 1-2% (BNM, 2018). This divergence reflects how the ready availability of cheap foreign labour enables firms to suppress compensation rather than improve operational efficiency (Abdullah & Kea, 2019).

Figure 1: Foreign and Local Low-Skilled Workforce Composition, by Ethnicity, 2020 - 2023



Source: Ministry of Human Resources Malaysia. (2024).

The workforce composition data from Malaysia's Ministry of Human Resources (2024) reveals a significant shift: foreign low-skilled workers now account for nearly half of this labour segment, overtaking Bumiputera worker participation in recent years. This trend, clearly illustrated in the official statistics graph, raises critical questions about the underlying dynamics. While the numerical dominance of migrant workers is evident, the more fundamental issue concerns the causal mechanisms – are local workers voluntarily transitioning to other sectors due to better opportunities, or are they being systematically displaced by migrant labour willing to accept substantially lower wages?

Second, productivity growth has stagnated. Comparative analysis reveals that Thailand's stricter migration policies and higher minimum wages drove 3.1% annual productivity growth versus Malaysia's 1.2% (ILO, 2019). Malaysian manufacturers, insulated by access to cheap labour, invest 30% less in automation than regional peers (Khazanah Research Institute, 2019). The World Bank (2020) identifies this as a key factor in Malaysia's middle-income trap, with manufacturing productivity growth lagging behind Singapore's 2.8% rate. Productivity, too, suffers from this cycle. The continued availability of low-cost labour reduces firms' incentives to upgrade processes or invest in automation. Many small and medium-sized enterprises (SMEs) persist with outdated production methods, weakening Malaysia's competitive edge, even within ASEAN. Compared to more technology-oriented economies such as Vietnam and Thailand, Malaysia's failure to modernise poses long-term risks to innovation and industrial advancement (OECD, 2019; World Bank, 2020).

Third, local workers face systemic disadvantages. B40 employees in migrant-intensive sectors earn 18% less than those in capital-intensive industries (Ng & Tan, 2019). The problem compounds in informal sectors where locals compete with undocumented migrants operating outside labour protections, creating downward pressure on wages (Rasiah & Shahrin, 2020). This three-tiered dynamic—suppressed wages, stagnant productivity, and marginalised local workers—illustrates how labour market distortions constrain Malaysia's economic advancement.

HOW LABOUR MARKET DISTORTIONS UNDERMINE EPF SUSTAIINABILITY

Malaysia's economic reliance on low-cost migrant labour has created systemic pressures that threaten both workforce stability and the long-term viability of the Employees Provident Fund (EPF). This dual crisis stems from interconnected labour market distortions that demand urgent policy attention.

Structural Weaknesses in the Labour-EPF Nexus

The foundation of the problem lies in Malaysia's labour composition. Migrant workers constitute 15-20% of the workforce, with concentrations reaching 80% in plantations and 25-40% in construction and manufacturing (DOSM, 2021; BNM, 2018). This dependence has created a paradox: sectors traditionally avoided by locals due to harsh conditions have become permanently reliant on migrant labour. Law enforcement allows employers to prioritise short-term cost savings over productivity investments (World Bank, 2020).

The EPF suffers direct impacts through multiple leakage channels. Only 1 in 7 migrant workers participate in the EPF system, most withdrawing their entire savings upon repatriation (Mohamad & Hassim, 2023). This repatriation drains resources that could otherwise support long-term investment returns. Compounding this issue, stagnant wage growth for migrant workers (1-2% annually) and suppressed wages for local B40 workers in migrant-dominated sectors further reduce EPF contributions (BNM, 2018; Ng & Tan, 2019).

The Informalisation Spiral

The labour market's gradual informalisation presents the most severe threat to EPF sustainability. Many firms, particularly in construction and manufacturing, increasingly rely on undocumented or contract workers to avoid mandatory EPF contributions. Estimates suggest that 25-40% of workers in these sectors lack formal retirement savings coverage (DOSM, 2021). This trend has been accelerated by wage stagnation, which makes formal employment less attractive to locals, pushing them toward gig economy jobs that typically lack EPF benefits.

The consequences are stark: Active EPF contributors have declined from 52% of the workforce in 2015 to just 46% in 2023 (Ministry of Finance, 2023). This shrinking contributor base coincides with Malaysia's rapid demographic transition, creating a perfect storm for the retirement fund. By 2030, 15% of Malaysians will be over 60, yet only 27% of current EPF members aged 55 have sufficient savings for retirement (EPF, 2023).

Productivity and Investment Consequences

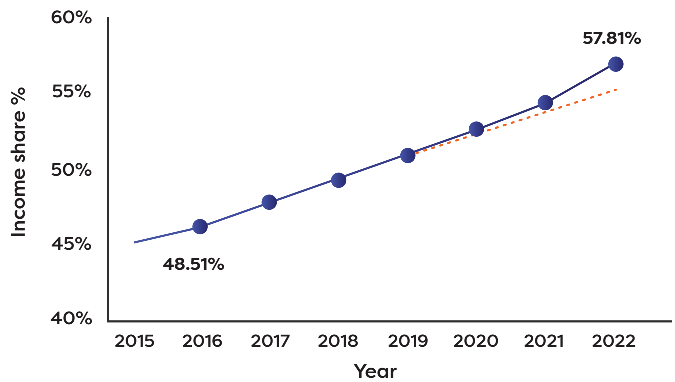
The labour market's structural flaws extend beyond direct contribution shortfalls. Malaysia's reliance on cheap labour has led to sluggish productivity growth at 1.2% annually, less than half of Thailand's 3.1% rate (World Bank, 2020). While the Employees Provident Fund (EPF) has maintained consistent dividend payouts (ranging between 5.15% and 6.90% over the past decade), its long-term resilience faces structural pressures. Malaysia's labour productivity growth, which fell to 1.8% in 2023 (BNM Annual Report, 2024, p. 118), reflects systemic challenges exacerbated by reliance on low-skilled migrant labour, a cohort constituting nearly 25% of the workforce (DOSM Labour Force Survey, 2023). Most migrant workers are excluded from mandatory EPF participation, depriving the fund of an estimated RM2.4 billion annually in potential contributions, based on median wages and statutory contribution rates (EPF Act 1991; DOSM Salaries & Wages Survey, 2023). This shortfall limits domestic investment capacity amid rising retirement insecurity, as 54% of EPF members aged 54 have savings below RM50,000 (EPF, 2024). Although global diversification strategies (overseas investments generated 50.3% of 2024 income) mitigate risks, stagnant productivity and underutilised contribution from migrant workers threaten the EPF's ability to sustain high returns without reforms to broaden contribution pools or incentivise upskilling.

The Vicious Cycle of Dependency

The situation represents a classic case of institutional lock-in. Recent employment data shows that foreign low-skilled workers comprise nearly half of Malaysia's low-skilled workforce, surpassing Bumiputera's participation in some sectors (Ministry of Human Resources, 2024). In agriculture, foreign workers' share of income rose from 48.51% in 2015 (Department of Statistics Malaysia, 2016) to 57.81% in 2022 (Department of Statistics Malaysia, 2023), demonstrating their growing economic footprint.

This displacement effect extends beyond 3D jobs. Many migrants now fill semi-skilled or skilled roles in retail, food services, and small-scale enterprises (ILO, 2019), directly competing with local workers. Perhaps more damaging is the growth of informal migrant businesses—from street stalls to unlicensed services—that operate outside regulatory frameworks. These shadow operations not only marginalise local entrepreneurs but also create an undocumented labour force that evades EPF contributions while occupying jobs that could support Malaysian workers (UN DESA, 2022).

Figure 2: Foreign Workers' Share of Agricultural Income, 2015 - 2022



Source: Author's illustration.

Converging risks

The combined effect of these factors—leakage from migrant withdrawals, a shrinking formal workforce, declining productivity, and demographic pressures—creates unsustainable strain on the EPF. Projections suggest a 22% coverage gap by 2035 (Ng & Tan, 2019), potentially leaving millions without adequate retirement security just as Malaysia transitions to an aged society.

POLICY RECOMMENDATIONS

Malaysia must adopt integrated reforms to address labour market imbalances and strengthen social protection.

Upskilling the B40 should be a national priority. Revenues from migrant levies can fund "Skills Transition Pathways" to prepare locals for mid-skill jobs in green construction, digital logistics, and smart agriculture. Employers in migrant-dependent sectors should be required to train local apprentices alongside hiring foreign workers. Expanding industry-aligned TVET through public-private partnerships is essential to support this transition.

Migration governance must return to its core objective—filling genuine 3D jobs. This includes enforcing sectoral limits on migrant hires, linking permits to skills transfer, and requiring employers to upskill a local worker for each migrant employed. Introducing a three-year EPF vesting period for migrants can reduce early capital outflows and enhance fund sustainability.

Social protection should reward productivity. A tiered EPF contribution model and targeted tax incentives can encourage firms to automate responsibly and retain reskilled local workers.

While South Korea's Employment Permit System (EPS) illustrates how migration can support national workforce development through regulated quotas and training (OECD, 2021, pp. 178–180), Malaysia's structural reliance on low-skilled migrant labour requires a calibrated and long-term reform. A centralised permit system, modelled on EPS but adapted to local priorities, could help manage migrant inflows while encouraging firms to invest in building a more skilled domestic workforce. For example, linking migrant permit renewals to employer commitments to train Malaysian workers for supervisory or skilled roles would ensure that migrants continue to take on essential 3D jobs, while locals gradually transition to higher-value employment. This approach supports national efforts to reduce dependency on low-wage labour, elevate workforce capabilities, and ensure inclusive productivity gains.

CONCLUSION

Malaysia can reframe migrant labour not as a stopgap solution but as a strategic asset in building a high-value, future-ready economy. Rather than relying on low-cost labour to drive short-term gains, the country can take a long-term, value-driven approach that views migrant workers as partners in national development. By synchronising labour migration, skills development, and social protection strategies, Malaysia can reduce inequality, protect the EPF's long-term viability, and enhance national resilience.

Inter-ministerial coordination, data transparency, and industry accountability will be key to unlocking this transition. In doing so, Malaysia can turn a dual-edged challenge into a foundation for inclusive and sustainable growth.

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Expanded Multidimensional Poverty Index (MPI) For Urban Poor: A Case Study in Kuala Lumpur and Selangor

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ABSTRACT

Poverty remains a significant concern in Malaysia, particularly with an emphasis on eradicating hardcore poverty. This paper examines urban poverty in Kuala Lumpur and Selangor from a multidimensional perspective. Based on a survey of 434 heads of households across 71 residential areas, the study enhances the Multidimensional Poverty Index (MPI) by incorporating human, social, physical, and financial capital elements. The revised MPI includes 19 indicators; some are from the existing MPI for Malaysia, while new indicators address areas such as social capital, social protection, and financial burden. The findings reveal that the highest poverty incidence scores are associated with social security, household income, and economic burden indicators. This study highlights the importance of understanding the complexities of urban poverty to tailor policy solutions for specific target groups.

INTRODUCTION

Poverty remains a significant problem in Malaysia, particularly in addressing hardcore poverty. This policy paper analyses urban poverty in Kuala Lumpur and Selangor from a multidimensional perspective, providing a comprehensive understanding to inform effective policy-making.

OBJECTIVE

The main objective is to reassess the current Multidimensional Poverty Index (MPI) and propose an improved version that includes additional dimensions such as human capital, social capital, physical capital, and financial capital. This comprehensive approach identifies the subtle factors contributing to urban poverty.

RESEARCH OVERVIEW

The study surveyed 434 heads of households across 71 residential areas in Kuala Lumpur and Selangor, which borders Kuala Lumpur. By expanding the Multidimensional Poverty Index (MPI) to include 19 indicators—some taken from the existing MPI for Malaysia and others newly introduced—the research provides a comprehensive assessment of the various factors influencing poverty. These indicators are categorised into different aspects: human capital (45% weight), including education (25%) and health (20%); social capital (10%); physical capital (20%); and financial capital (25%).

Social capital includes three new indicators: social capital, integration social capital, and connection social capital. This highlights the importance of social linkages in addressing personal challenges. Our study revealed that individuals with higher social capital scores are better equipped to navigate life's difficulties than those lacking strong social connections.

The improved Multidimensional Poverty Index (MPI) now incorporates several significant factors beyond household income, particularly from a financial capital perspective. These factors include social protection, savings, and economic burdens such as debts, which are newly introduced indicators. The impact of these elements became especially evident during the COVID-19 pandemic and the related movement control order (MCO). Individuals with some savings and no debts were better able to cope with the loss of regular income due to work restrictions. This resilience was also apparent when people could withdraw their Employees Provident Fund (EPF) savings to cover essential household expenses during the crisis.

In the Health Dimension, two new indicators have been introduced: the presence of household members with disabilities or chronic illnesses and the adequacy of food intake. The presence of disabilities in household members is often an overlooked factor contributing to deprivation. This situation limits the household's ability to achieve better living standards; not only may the disabled member be unable to earn an income, but other members may also need to provide care.

Nutritious food intake is another significant indicator of individual well-being included in this study. If a household cannot provide three substantial meals daily, it is classified as poor. Additionally, the study assigns different weightings to various indicators, moving away from the equal weightings used in previous MPI methodologies. This enables an evaluation of each indicator's importance concerning the demographic being studied based on the scores attributed to it.

By identifying which indicators impact overall score values, more targeted interventions can be designed to address poverty more effectively within the studied community.

KEY FINDINGS

Figure 1: Indence of Poverty Scores

DIMENSION	INDICATOR	DEPRIVATION FACTOR	INCIDENCE OF DEPRIVATION, (D) [%]	WEIGHTAGE (W)	SCORE VALUE (Q)
Education (25%)	Schooling years	Presence of a household member aged 18-60 with less than 9 years of education	21.66	0.125	2.71
	School attendance	Children aged 6-16 years not attending school	0.92	0.125	0.12
Health (20%)	Access to health facilities	Distance more than 5 km from health facilities, and no mobile health facilities	3.69	0.067	0.25
	Disability or chronic illness	Any household member with a disability (physical/mental) or with a chronic illness	65.44	0.067	4.36
	Food intake	Less than three times a day	27.42	0.067	1.83
Social relationships (10%)	Ties of social capital	Does not have good relations with family members or neighbours	7.37	0.033	0.25
	Integration of social capital	Does not have good relations with the head or members of the residents' committee or NGOs	16.36	0.033	0.54
	Connection social capital	Does not have good relations with the authorities or political figures	32.26	0.033	1.07
Accommodation facilities (16%)	House ownership status	The house is not under hire-purchase, ownership, or inheritance	62.90	0.010	0.63
	Condition of floor, walls, and roof	Bad or deteriorating	45.39	0.030	1.36
	Room density	More than two household members per room	24.88	0.040	1.00
	Toilet acilities	Aside from flushed cistern toilets	13.59	0.020	0.27
	Garbage collection	No garbage collection	0.00	0.030	0.00
	Clean water supply	Without a treated water supply in the house or public	2.07	0.030	0.06
Communications and internet facilities (4%)	Basic communication device	Does not have landline or mobile telephone facilities	1.15	0.020	0.02
	Access to the internet	No access to internet facilities	4.61	0.020	0.09
Financial Capital (25%)	Household gross monthly income	Household gross monthly income is less than half the median income	69.35	0.083	5.76
	Social protection and savings	Does not have any savings or social protection (such as EPF)	81.80	0.083	6.79
	Financial burdens and debts	Experiencing difficulties in settling monthly commitments during the last 12 months	66.13	0.083	5.49
Incidence of Poverty Score					32.60

These findings list the indicators with the six highest score values in **Figure 2** below.

Figure 2: Indicators with the Six Highest Score Values

NO.	INDICATOR	SCORE VALUE Q
1	Social protection and savings	6.79
2	Household gross monthly income	5.76
3	Financial burdens and debts	5.49
4	Disability or chronic illness	4.36
5	Schooling years	2.71
6	Food intake	1.83
Total		**26.94**

These six indicators contribute 26.94 scores out of 32.60 for the entire set, representing 82.83%.

DISCUSSION

The analysis reveals the complex nature of urban poverty, which goes beyond just a household's income and incorporates other essential factors not addressed in the previous methodology. While the three highest scores were linked to financial aspects, it is necessary to recognise that these also include elements of social protection. This encompasses a household's savings, deposits in funds like the EPF, and financial burdens such as debts and household income.

These findings suggest that poverty alleviation strategies should be tailored to address these multiple dimensions. Policies promoting savings and enforcing mandatory deposits into funds like the EPF must be developed. Financial literacy campaigns should also be expanded to help reduce unnecessary lifestyle debts.

The study emphasises the need to consider various aspects beyond traditional economic measures, including human, social, physical, and financial capital. By broadening the definition of financial capital to include social protection and financial burdens, we gain a more meaningful and nuanced understanding of a household's economic status.

The indicators for social protection, household income, and financial burden recorded the highest poverty incidence scores, highlighting critical areas that require intervention. These score values indicate the significance of each factor in contributing to poverty levels, with higher values reflecting a greater level of poverty and lower values indicating lesser importance.

POLICY RECOMMENDATIONS

Enhanced social protection programmes
Strengthen social protection initiatives to support vulnerable households, ensuring accessibility and comprehensive coverage. This includes strict enforcement of EPF contributions and educational programmes on financial literacy, particularly aimed at discouraging unnecessary lifestyle debts.

Economic empowerment
Implement programmes to enhance household incomes through skills development, employment opportunities, and microfinance support.

Financial burden alleviation
Develop targeted financial assistance programmes to alleviate the financial burdens that urban poor households face.

Holistic approach
Adopt a multidimensional strategy integrating human, social, physical, and financial resources in policy design and implementation. For example, financial assistance could be linked to regular healthcare visits and children's school attendance requirements.

Community-based interventions
Involve local communities in the development and execution of poverty alleviation programs to ensure they effectively address the specific needs of different groups.

CONCLUSION

This policy paper argues for a comprehensive understanding of Kuala Lumpur and Selangor's urban poverty using the expanded Multidimensional Poverty Index (MPI) framework. By examining the various dimensions of poverty, policy-makers can create more effective and targeted interventions, ultimately promoting stronger and more empowered urban communities.

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Development of Transition Finance in Japan and Future Challenges[1]

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PROMOTION OF FINANCE FOR A DECARBONISED SOCIETY IN 2050

A global movement to realise a decarbonised society has been accelerating since the 2015 international agreements on Sustainable Development Goals (SDGs) and the Paris Agreement. In Japan, then-Prime Minister Yoshihide Suga declared in October 2020 that Japan would aim to become a decarbonised society by 2050 by reducing greenhouse gas (GHG) emissions to virtually zero and achieving carbon neutrality.

Realising a decarbonised society will require the expansion of industries and businesses that do not emit GHG. However, some industries and businesses emit large amounts of greenhouse gases, and it is technically difficult to decarbonise them in a short period of time. In order to achieve a decarbonised society, it is necessary to support a broader transition, including energy conservation and fuel conversion, in addition to addressing already decarbonised businesses.

A smooth transition to a decarbonised society is expected to require significant financial resources. In the case of Japan, the government estimates that in order to achieve the 2050 carbon neutrality target as well as to strengthen industrial competitiveness and achieve economic growth at the same time, public and private investment in green transformation (GX) will need to exceed JPY150 trillion over the next ten years. Against this background, the government has taken various measures to promote transition finance toward the realisation of a decarbonised society since the beginning of the 2020s. Transition financing has also been growing steadily since then.

This paper examines the development of transition finance and the financing situation in Japan and discusses the challenges for realising a decarbonised society.

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DEVELOPMENT OF TRANSITION FINANCE

The history of transition finance started with the issuance of the world's first transition bond in July 2017 by Castle Peak Power Finance Company Limited, a subsidiary of a Hong Kong electric power company. In December 2020, the International Capital Market Association (ICMA) published its first Climate Transition Finance Handbook (CTFH), contributing to greater global awareness of transition finance.

In Japan, the Financial Services Agency (FSA), the Ministry of Economy, Trade and Industry (METI), and the Ministry of the Environment (MOE) published Japan's Basic Guidelines for Climate Transition Finance (the Basic Guidelines) in May 2021. Based on the four elements outlined in the ICMA's CTFH (issuer's climate transition strategy and governance, business model environmental materiality, climate transition strategy and targets to be science-based, and implementation transparency), the Basic Guidelines describe issues related to disclosure, matters to be disclosed and supplementary information, and issues related to independent reviews.

In addition, METI has developed technology roadmaps that provide concrete directions for eight GHG-intensive industries (iron and steel, chemicals, electric power, gas, oil refining, cement, pulp and paper, and automobiles) to follow from FY2021 as they seek to transition to carbon neutrality in 2050. The roadmap is intended to be referenced by companies as they consider climate change measures funded by transition finance. It is also designed as a reference for financial institutions to determine whether companies' strategies and initiatives toward decarbonisation qualify them to use transition finance when procuring funds. In addition to METI's roadmap, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has developed a roadmap for the shipping and aviation industries. These two roadmaps cover approximately 80% of Japan's carbon dioxide (CO2) emissions.

METI has also been implementing its Transition Finance Model Project and Subsidy for Global Warming Countermeasures Promotion Project since FY2021 to accumulate and disseminate information about projects considered to be good examples of transition finance. Model projects and subsidised projects receive government support to cover the costs of external assessments of the project's eligibility for transition finance. In June 2023, the FSA, METI, and MOE formulated guidance for fixed-income investors that summarises the key points to follow up on after providing funds through transition finance.

In addition to the government's measures, the Funds-Supplying Operations to Support Financing for Climate Change Responses (Climate Response Financing Operations) launched by the Bank of Japan (BOJ) in December 2021 may have helped to stimulate demand for investment in and financing of transition finance projects. The BOJ's Climate Response Financing Operations provide long-term funds at 0%[2] interest to financial institutions that invest in and lend to climate-change related projects, including projects qualifying for transition finance.

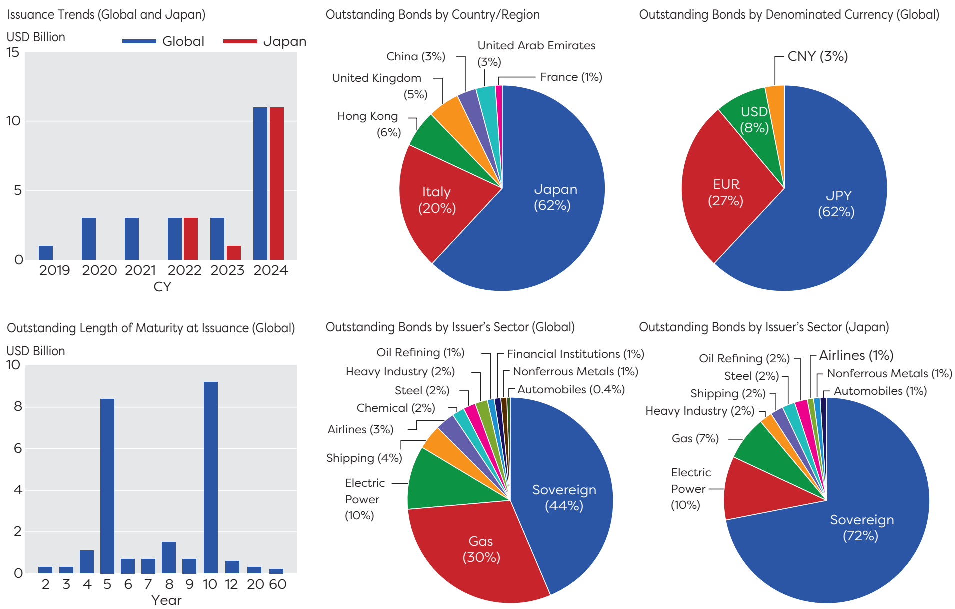
In February 2024, the Japanese government issued the world's first sovereign climate transition bonds under its GX Economy Transition Bond program. The bonds issued in February were climate transition interest-bearing government bonds (JGBs)[3] with a total issuance amount of approximately JPY1.6 trillion. The Japanese government plans to issue JPY20 trillion worth of GX economy transition bonds over the next ten years from FY2023 to support upfront investment in promoting its green transformation. The proceeds will support the development of innovative technologies and capital investment that will contribute to the decarbonisation of energy and raw materials and enhance the profitability of companies.

[2] The interest rate was revised from 0% to 0.1% in March 2024.
[3] GX Economy Transition Bonds are a type of Japanese government bond to be redeemed by FY2050 using fossil fuel levies and specific business operator contributions. GX Economic Transition Bonds can be issued separately under the name CT government.

CURRENT STATE OF TRANSITION BOND ISSUANCE

Transition bonds have been issued around the world since 2017. The first issuance in Japan was in July 2021, and since then, the number of Japanese issuers and total issuance amount have increased steadily. The Japanese government's first sovereign climate transition bond, issued in February 2024, increased the outstanding issuance of transition bonds by Japanese issuers as of the end of March 2024 to USD15 billion, accounting for about 62% of total global issuance (USD24 billion, Figure 1). With the issuance of its first climate transition bond, the Japanese government is now the largest issuer of transition bonds in Japan. However, other major issuers include companies in industries with relatively large GHG emission levels, including electric power, gas, and oil refining.

Figure 1: Issuance of Transition Bonds



Note: Issuance amount as of the end of March 2024 is based on transition bonds as defined by Bloomberg. Value is on a USD basis. The outstanding balance at the end of March 2024 was approximately USD 24 billion (global) and USD 15 billion (Japan).

Source: Bloomberg, Nomura Institute of Capital Markets Research

Issuance of transition bonds in countries and regions other than Japan has not expanded steadily. The main reason seems to be that the ICMA's CTFH is simply a guideline for disclosures when implementing transition finance and does not provide information on the eligibility of projects, unlike the Green Bond Principles (GBP). For this reason, financing that expresses the transition strategy of issuers outside Japan tends to be conducted through sustainability-linked bonds (SLB), which are already widespread in financial markets and designed as general-purpose corporate instruments. As of the end of March 2024, transition bonds have a shorter history than green bonds and other sustainable finance debt instruments, and their total issuance to date is smaller. The number of countries, regions, and industries represented by transition bond issuers is also limited. However, in the near future, with the support of various promotional measures, the issuance of transition bonds may increase and become more widespread.

CHALLENGES FOR REALISING A DECARBONISED SOCIETY

In Japan, transition finance has increased steadily, thanks partly to the government's multi-layered measures promoting its use for financing the transition to a decarbonised society. As a result, Japan has established a presence as a global leader in transition finance. That said, Japan needs to address three main issues to ensure its use of transition finance contributes to the realisation of a decarbonised society.

First, Japan needs to create a positive image of transition finance in international financial markets. Many countries have a negative image of transition finance due to concerns that it may extend the life of industries with high GHG emissions. In order to dispel this negative image, it is essential to show the validity of the transition strategy. Furthermore, it is needed to take measures such as enhancing information disclosure by issuers and continuing to explain, through dialogue with investors and other stakeholders, that transition finance truly contributes to the transition to a decarbonised society and to gaining credibility in international financial markets.

Second is the need for greater international cooperation. Many countries are implementing measures to increase the credibility and transparency of transition finance. In particular, the Association of Southeast Asian Nations (ASEAN), which needs to use transition finance to move to a decarbonised society, has followed the European Union (EU) and created a classification for transition activities in its ASEAN Taxonomy for Sustainable Finance.

Although Japan has not formulated such a taxonomy, it may be meaningful for Japan to cooperate with other countries' systems in order to spread the use of transition finance globally.

Third, Japan needs to promote measures to ensure the smooth acceptance of its climate transition government bonds by the financial markets. Climate transition government bonds account for the largest share of Japan's transition bond market and may, therefore, significantly impact financial markets. Therefore, the Japanese government needs to constantly ensure its bonds are smoothly adopted by investors, including efforts to improve the reliability of impact reporting through external audit/verification. Furthermore, it may need to consider expanding the investor base by issuing climate transition bonds to individual and institutional investors.

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SPORTS
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Eurozone Pension Systems: A Health Check

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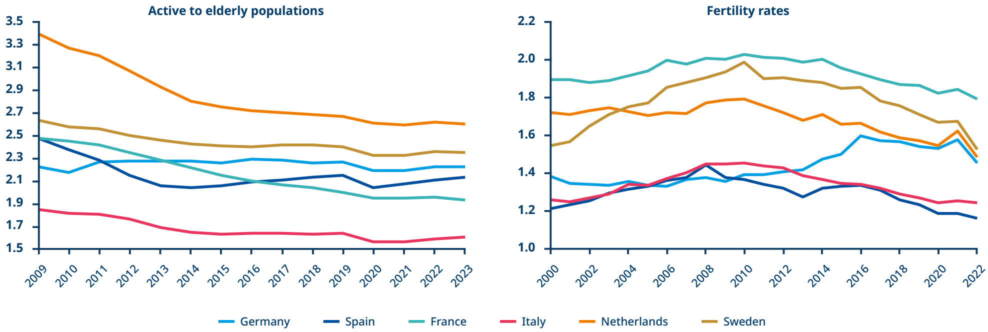
Post-war Second World War pension fund were developed on the basis of two different logics: the Bismarckian (defined contributions) in Germany and the Beveridgean system (defined benefits) in England. Today, there are hybrids of these systems but all have established minimum pension levels or social minimums.

Reforms have led to the development of funded pension systems alongside the pay-as-you-go (PAYG) systems, where active workers' contributions pay for pensions of retirees, as seen in France, and funded systems, where contributions are accumulated in pension funds that invest in financial securities for future benefits. There is no longer a typical pension system as each country has its own specific features and various degree of complexity.

Since 1980, the Eurozone has been grappling with **significant demographic challenges** due to an aging population, which has increased the financial demands on pension systems, particularly in countries using PAYG models. This demographic shift is primarily driven by declining birth rates and rising life expectancy (Figure 1). Additionally, the COVID-19 crisis has further exacerbated fiscal deficits and public debt, leading to increased pension expenditures across the region.

Figure 1: Ageing populations and declining fertility rates are weighing on pension systems



Source: Amundi Investment Institute on Eurostat data as of April 2024. Active population is between 15 and 64, elderly population is above 65 years old.

Historically, countries such as Germany, France, Italy, Spain, the Netherlands, and Sweden have faced significant demographic challenges and implemented various reforms to stabilize their pension systems. Key reforms include:

Raising the Official Retirement Age:
Sweden has gradually increased the retirement age to 66, while Germany is raising it to 67 to align with rising life expectancy.

Extending the Contribution Period:
Spain has lengthened the required contribution period from 35 to 37 years, requiring workers to contribute longer for full pension benefits.

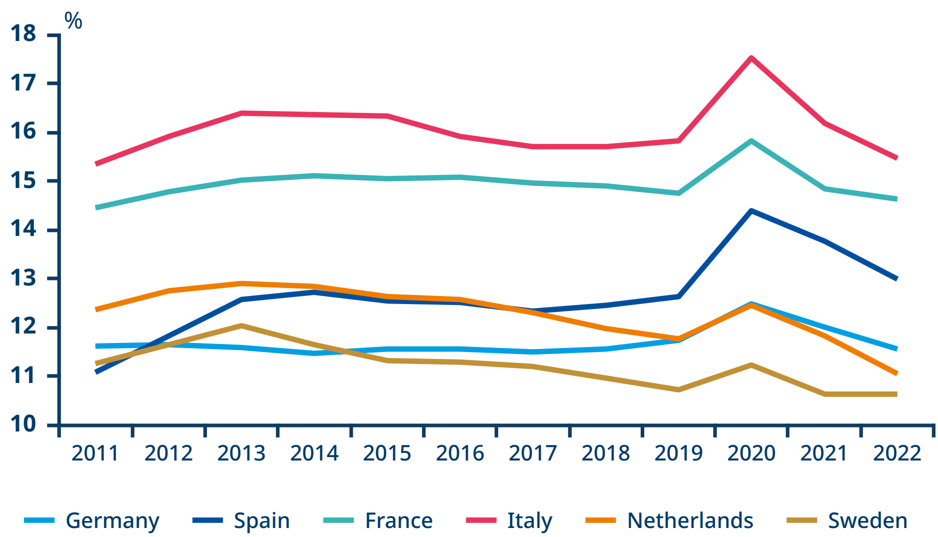
Adjusting Pension Calculations:
Countries like Sweden, Germany, and the Netherlands have incorporated demographic factors into pension calculations, recalibrating benefits based on the worker-to-retiree ratio, which may lead to lower pensions as the population ages.

Increasing Contribution Rates:
Spain has raised contribution rates from both workers and employers to enhance the pension system's financial sustainability amid a growing retiree population.

To enhance retirement security, several countries have encouraged private pension savings through **tax incentives** and **employer-sponsored plans**, thereby reducing reliance on PAYG systems. In hybrid models, where PAYG pensions may fall short, individuals are motivated to invest in employer-sponsored plans and personal savings. Overall, these measures aim to adapt pension systems to the realities of an aging population by creating a more **hybrid approach** that combines PAYG with additional investments from employer plans and personal savings. This strategy seeks to ensure **longterm sustainability** and provide adequate support for retirees.

Pension spending on PAYG systems constitutes a significant portion of government expenditure, particularly in France and Italy, where it accounts for 14.7% and 15.5% of GDP respectively, compared to an overall European average of 12% (Figure 2). Sweden and the Netherlands have lower proportions at 10.7% of GDP. The sustainability of these systems is a concern, as they rely on intergenerational solidarity, requiring a sufficient number of workers to maintain the balance.

Figure 2: Pension expenditures are a growing proportion of countries' GDPs



Sources: Amundi Investment Institute on Eurostat data as of November 2024.

A decline in the working population or real wages can disrupt this equilibrium, leading to deficits. PAYG systems are rarely 'pure,' meaning contributions and benefits often do not balance. Pensions may be adjusted for social reasons, and these systems typically depend on taxes and subsidies. An increasing dependency ratio—where retirees outnumber workers—can strain financial sustainability, resulting in lower replacement rates or higher contribution rates. Currently, the Netherlands and Sweden have the **lowest deficits** at 0% (Figure 3), followed by Germany at 2%. In contrast, France, Spain, and Italy face **higher deficits** of 3%, 5%, and 7%, respectively. Countries like the Netherlands, Germany, and Sweden are noted for their **effective pension management**.

Figure 3: Retirement deficits and labour costs are two dimensions of pension systems' sustainability

Deficit in retirement in GDP	2023
Netherlands	0%
Sweden	0%
Germany	2%
France*	3%
Spain	5%
Italy	7%

Annual labour costs in EUR thousands**	2020	2021	2022	2023
Spain	23.0	22.9	23.3	24.6
Italy	29.3	28.7	29.4	29.8
Eurozone-20	32.1	32.4	34.0	35.6
Eurozone-19	32.4	32.6	34.2	35.9
Sweden	38.0	40.8	40.2	38.9
Germany	36.8	37.2	39.4	41.3
France	38.8	39.3	40.8	42.3
Netherlands	37.7	38.1	40.5	43.3

Source: Amundi Investment Institute on Eurostat data as of April 2024.
* For France, the deficit reported by the COR is -1%. By convention, the COR only displays the private system deficit. According to IFRAP, the deficit would be much higher if civil servants' pensions were taken into account: an additional EUR 26 bn, bringing the total deficit to 3% of GDP.
** Labour costs are measured as employees compen sation plus taxes loss subsidies, for industry, construction and services, except public administration, defence, and social security.

A 2023 study by the Centre for Economic Policy Research (CEPR) assessed the fiscal capacity of governments to finance pensions, revealing that France and Italy have the **least fiscal leeway** to counter rapid declines in pension levels, while Germany and Spain are in a slightly less critical position. To alleviate the fiscal burden of first-pillar pensions, the German government has proposed a state-funded pension plan aimed at reaching EUR 200 billion by 2036, financed through government loans and additional federal assets. Meanwhile, Sweden, despite having a balanced pension system, faces **poverty issues among retirees**, particularly affecting women, who receive pensions that are, on average, **30% lower than those of men**, highlighting the intersection of income inequality and pension replacement rates.

The room for manoeuvre to finance public pensions varies significantly between countries. Finland, Germany, Netherlands, Portugal and Spain pension space ranged between 10 and 25% while Belgium, Austria, France and Italy have less than 10% pension space. France and Italy especially are expected to have **no pension space by 2030**. While pension sustainability based on funding is one way to approach the subject, to take complete generational equity into account, it is also important to consider **life expectancy** and years remaining in **good health** in determining the sustainability and fairness of pension systems (Figure 4).

Figure 4: Ranking countries by their Sustainability Indicator

	Public Deficit	Retirement Deficit	Replacement Rate	Labour Cost	Active to Elderly	Fertility Rate	Years in good health	No. of criteria in critical situation	Average	Rank Synthesis
Germany	3	3	6	4	3	4	4	2	4.14	3
Spain	5	5	1	1	4	6	5	3	4.29	4
France	4	4	3	5	5	1	2	4	4.00	3
Italy	6	6	2	2	6	5	1	4	4.57	5
Netherlands	2	2	5	6	1	3	6	2	3.86	2
Sweden	1	1	4	3	2	2	3	1	2.43	1

Source: Amundi Investment Institute
The following thresholds were considered critical (red shaded areas): A deficit in excess of 3%; A replacement rate below 50%; Less than 2 working people per elderly person; A fertility rate below 2.1 (renewal threshold); A retirement age lower than the perceived healthy age. As the cost of labour has a dual effect on retirement, qualification/wage level and taxe level, it has not been taken into account as a critical factor. The average rank includes a penality according to the number of critical indicators, and is not significant if the difference is less than 0.14 by construction.

The emergence of hybrid pension systems in the Eurozone highlights the necessity for individuals to find **alternative ways** to finance their retirement alongside the traditional PAYG model. While PAYG systems provide **essential support** for retirees, the increasing financial demands due to demographic changes, such as an aging population and declining birth rates, make it clear that **relying solely on PAYG is not sufficient**. Countries are starting to recognise the importance of integrating funded pension schemes and **encouraging private savings** to create a more sustainable retirement framework. This hybrid approach not only complements the existing PAYG systems but also empowers individuals to take control of their financial futures.

Motivating people to invest and save for their retirement is a major challenge and has significant implications for both individual outcomes as well as economies at large. Although pension systems vary significantly across Europe, challenges faced are similar and solutions are not clearcut. Across all 3 pillars of the pension system, increasing awareness of the importance of investing for retirement will be key.

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Key Findings from the 2024 Global Financial Inclusion Index and Policy Recommendations for Malaysia

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ABSTRACT

Financial inclusion is crucial for investors when evaluating a market's economic resilience and growth potential. The Global Financial Inclusion Index (GFII) ranks Malaysia 20th out of the 41 markets analysed. This ranking reflects Malaysia's status as a maturing economy evolving with a balanced approach to state-led initiatives. The country has made notable progress in digital finance, financial literacy, and workplace initiatives. Additionally, global financial inclusion has improved for the second consecutive year, with advancements observed across all regions. Of the 41 markets reviewed, 32 (78%) experienced increased financial inclusion scores year-over-year.

INTRODUCTION

Global Financial Inclusion Index (GFII) ranks 41 markets based on three key pillars of financial inclusion namely: (1) government support, (2) the financial system, and (3) employer support. These pillars represent the primary stakeholders for enhancing financial inclusion within the population. The Index was developed in collaboration with the Centre for Economics and

Business Research (CEBR), and its methodology combines various public and survey-based data sources into a unified measure of financial inclusion at the market level.

FINANCIAL INCLUSION IN MALAYSIA

According to the 2024 GFII, Malaysia ranks 20th out of 41 markets analysed globally—down two places from the previous year. This ranking reflects a maturing economy evolving with a measured reliance on state-led initiatives, showcasing advancements in digital finance, financial literacy, and workplace programmes.

In terms of government-supported financial inclusion, Malaysia dropped one position to 24th. The country experienced a decline in the availability of government-provided financial education, dropping 11 places to 16th. Additionally, Malaysia increased its ranking in education levels by one place to 28th and in financial literacy levels by four places to 26th. Malaysia maintained its position at 16th in the rankings for the support provided by its financial system. However, the country has made significant strides in digitised finance, notably boosting its scores in real-time financial transaction volume and the quality and presence of its fintech companies. Additionally, there has been an improvement in the score for online connectivity. However, Malaysia's ranking in the employer-supported financial inclusion pillar declined by eight places to 13th, due in part to relatively weaker growth in employer-led initiatives despite ongoing pension contributions and pay-related efforts.

KEY REGIONAL AND GLOBAL FINDINGS

Developing Southeast Asian markets may be approaching a tipping point for financial inclusion. After experiencing significant growth in fintech and online services over the past few years, progress in Thailand, Malaysia, Indonesia, and Vietnam appears to be slowing. This slowdown could be attributed to challenges in responding swiftly to changing economic conditions. However, it may also indicate that these markets have attained a level of financial maturity, where further progress is incremental but still moving in the right direction.

Singapore holds the top ranking for the third consecutive year in the GFII. It has secured first place in areas like government and employment support and ranks fourth in support from the financial system. Singapore's leading position results from effective collaboration between the government, financial institutions, and employers.

Financial inclusion has improved worldwide for the second consecutive year, with all regions experiencing progress. Despite global economic challenges making it more difficult for businesses and households to access loans, both the public and private sectors have taken action to support communities during declining financial conditions. Notably, 32 out of 41 markets (78%) reported an increase in their financial inclusion scores compared to the previous year.

Advancements in the financial system are a key driver of global improvements in financial inclusion. Overall, support for financial systems worldwide increased by 5.9 points, slightly lower than the 8.1-point rise observed in 2023. Markets experiencing rapid fintech growth tend to cultivate a stronger savings culture. Approximately 74% of the markets for which data is available have gross domestic savings as a percentage of GDP that exceeds the global median. Among these markets, 79% reported improvements in their fintech sectors. In contrast, 25% of markets have gross domestic savings below the global median, and only 60% of these markets saw increases in their fintech quality scores. The observed correlation between higher household savings rates and improvements in fintech sectors indicates that economies with rapidly developing fintech industries benefit from greater household resilience during economic downturns and build a stronger foundation for future growth through investments.

POLICY RECOMMENDATIONS

Strengthen Government-Supported Financial Inclusion Initiatives

- Enhance the availability and effectiveness of government-provided financial education programmes.
- Introduce more targeted policies to bridge the remaining gaps in financial literacy, especially for underserved populations.

Accelerate Digital Finance Adoption

- Continue investing in digital infrastructure to ensure seamless real-time financial transactions nationwide.
- Support the growth and innovation of fintech companies through regulatory sandboxes and partnerships with traditional financial institutions.

Enhance Employer-Supported Financial Inclusion

- Encourage more robust employer initiatives, such as payroll savings schemes, financial wellness programs, and greater employer contributions to pension funds.
- Provide incentives for companies to offer financial education and advisory services to employees.

Foster Financial System Resilience

- Promote policies that increase household savings rates to improve financial resilience during economic downturns.
- Facilitate better access to affordable credit and insurance for small businesses and lower-income groups.

Benchmark Against Regional Leaders

- Learn from Singapore's integrated approach, where the government, financial systems, and employers collaborate effectively to drive inclusion.
- Adapt successful practices to Malaysia's socio-economic context.

CONCLUSION

Malaysia's financial inclusion is progressing steadily, reflecting the country's maturing economy. Although there has been a slight decline in its global ranking, improvements in digital finance, financial literacy, and workplace initiatives indicate positive developments. To maintain this momentum and address the slowing progress, Malaysia must strengthen efforts from the government, financial institutions, and employers. By implementing focused strategies and fostering collaborative engagement among stakeholders, Malaysia can enhance financial resilience and unlock new growth opportunities, contributing to greater economic stability and inclusivity.

Driving Asset Owner Innovation and Excellence: Insights From the World's Leading Asset Owners

Contributed by BNY in collaboration with Dr. Ashby Monk

ABSTRACT

This thought leadership paper, developed in partnership with Ashby Monk, Executive and Research Director, Stanford Research Initiative on Long-Term Investing (SLTI), examines global asset owners' evolving priorities, highlighting key strategies for operational excellence amidst rising complexities. Based on insights from the 2024 BNY Asset Owner Innovation Summit and supporting survey data, the paper identifies three strategic imperatives: (1) optimising operational efficiency, (2) advancing data management and governance, and (3) harnessing emerging technologies. Asset owners face mounting cost pressures, data challenges, and shifting market dynamics that demand scalable, innovative solutions. The recommendations emphasise adopting standardised KPIs, investing in data governance, and fostering responsible technology adoption. Collaboration and continuous transformation are essential to navigate the complexities of private markets and enhance portfolio resilience.

INTRODUCTION

A survey was conducted to understand client trends and challenges facing asset owners and benchmark operational excellence across the Asia-Pacific, Europe/United Kingdom, the Middle East, and North America regions.[1] The survey involved central banks, corporate and public pensions, sovereign wealth funds, and superannuation funds. It was also conducted in 2023 and aimed to highlight shifts in priorities, challenges, and trends in operating model transformation. The survey results revealed that clients increasingly prioritise investments in data management, governance models and technology. This focus is driven by balancing cost pressures with execution priorities, particularly in outsourcing technology development. Integrating new technologies and associated processes, as well as data integration and analytics were identified as key priorities.

THREE STRATEGIES FOR OPERATIONAL EXCELLENCE

As asset owners look to the future, the focus on data management, technology investment and operational efficiency becomes even more acute to adapt to evolving market demands and achieving operational excellence. Through the synthesis of insights from the summit and survey, three key areas emerged as crucial for asset owners achieving long-term success.

1. Optimising Operational Efficiency Across Public and Private Markets

Transformation is ongoing. Eighty-five per cent of survey respondents are undergoing or seeking operating model transformations, a 22% increase since 2022.[2]

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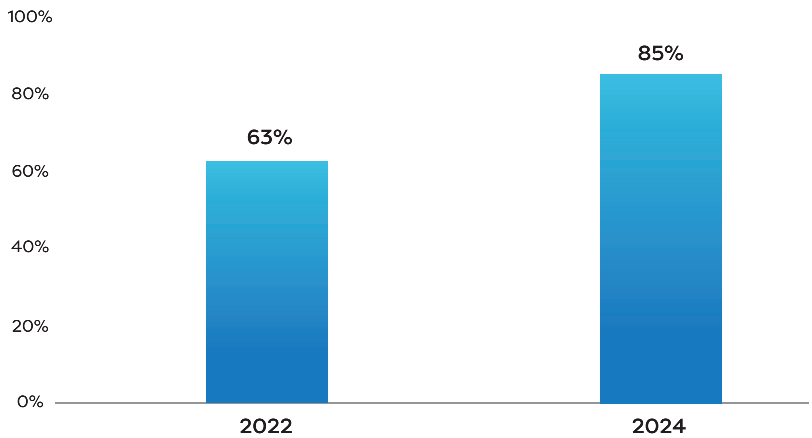
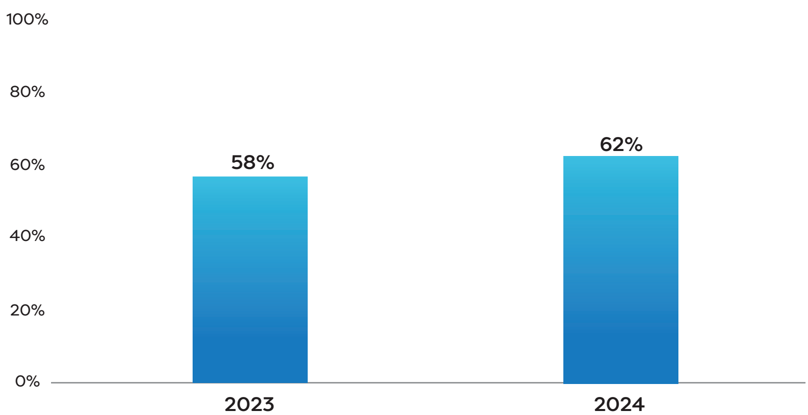
[1] BNY Survey, July 2024
[2] This data was captured in both the 2022 and 2024 BNY Asset Owner Survey and reflects the increase between 2022 and 2024.

Figure 1: Undergoing or seeking to undergo operating model transformation



Specifically, as asset owners' private markets allocations continue to grow, inherent operational challenges such as data availability, total portfolio reporting across public and private markets, and separate front office systems are becoming more acute.

Figure 2: Intend to invest more or prioritise in creating/enhancing data management, governance model or technology



Survey Insights:

Operating Efficiency: Close to two-thirds (62%) of survey respondents rated their organisation's current operating efficiency as "efficient" or "very efficient."

KPI: A majority (70%) of respondents have no leading KPIs to assess operational efficiency.

Operating Model Transformation: A significant portion of the respondents (85%) are currently undergoing or seeking to undergo an operating model transformation.

Key takeaway

Maintaining a set of leading operational efficiency KPIs and an annual operating budget as a percentage of assets under management (AUM) is arguably crucial to making informed decisions, allocating resources effectively, ensuring compliance and supporting long-term sustainability. Outsourcing certain in-house functions can also enhance efficiency with private markets as a growing area of focus given the inherent complexities.

2. Advancing Data Management, Governance, and Analytics

Data management plays a vital role in driving investment strategies and running effective operations. Our survey shows that asset owners have prioritized investments in technology over the past two years, with a balanced approach to data governance. Despite this, there is a need for better talent and training to fully leverage advancements in data solutions.

Survey Insights:

Third-Party Data Governance Platform
Close to two-thirds of the respondents (62%) use a third-party data governance platform.

Internal Data Platform
The same percentage of respondents (62%) have built an internal data platform.

Operating Model Challenge
Data integration and analytics (35%) are the main challenges asset owners face within their current operating models.

Key takeaway

Prioritising the integration of vendors, partners and service providers helps to streamline data flow. Investing in robust data governance platforms, whether third-party or internally built, can help manage and analyse data more effectively.

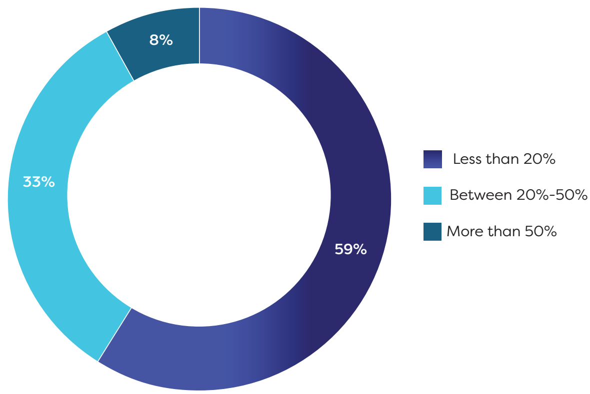
3. Harnessing Emerging Technologies

Embracing innovation and identifying the right use cases for new technologies can significantly improve investment outcomes and operational efficiency. Attendees of the 2024 BNY Asset Owner Innovation Summit agree that emerging technologies should be prioritized but caution that innovation without compliance and proper processes can be risky. Attendees also believe collaboration with peers can expedite decisions on using modern technology. In the pension sector, attendees expressed some concerns that start-ups focus too much on mass-consumer technology, rather than solutions targeting asset owners. While acknowledging the value of fintechs, they note that engagement processes are inconsistent but can reap benefits to improve efficiency.

Survey Insights:

What percentage of your internal technology budget is allocated to "build" (e.g., new user tools, emerging technologies) vs "run"?

Figure 3: Percentage of technology budget allocated to "build" vs "run"



Key takeaway

Technology is playing an increasingly important role in improving operational efficiency and investment outcomes for asset owners. For example, technology can help firms automate routine tasks to focus on high-value activities. Additionally, leveraging advanced analytics with real-time insights can help to better inform investment decisions and manage risk. However, embracing technology must be balanced by identifying the right use case and ensuring proper due diligence and data governance to mitigate risk.

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