

ASEAN in the World's 100 Top-Ranked Pension Funds: Lessons for Indonesia

Sri Milawati Asshagab^{1*} and Asia Micolayati Hasanah²

^{1,2}The National Agency for Research and Innovation

asshagab@gmail.com; asiamiscola@gmail.com

*Corresponding author

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Abstract

The research explored the pension funds of Singapore, Malaysia, and Vietnam, which had managed to exceed Indonesia's total pension fund assets under management despite having smaller populations and workforces. With Indonesia aiming to increase its pension funds to 60% of its GDP by 2045, the research aimed to extract lessons from the investment strategies, governance structures, and other key indicators of the pension funds in these three ASEAN countries to aid in achieving Indonesia's target. This research utilized a document analysis method to gather data on top-ranking pension funds in ASEAN countries, including the Central Provident Fund (Singapore), Employees Provident Fund (Malaysia), Social Insurance Funds (Vietnam), and BPJS Ketenagakerjaan (Indonesia), with qualitative and descriptive statistics methods employed for data analysis. This research has found that Singapore and Malaysia excel in managing their pension fund accounts by offering innovative services tailored to meet the needs of their citizens. Singapore has special home ownership and asset management accounts with a strong social media presence. Malaysia offers both conventional and Sharia-based services, including services for the hajj, which cater to the religious needs of its Muslim population. Meanwhile, Vietnam has a more inclusive system that covers foreign workers, similar to Indonesia's, but demands that foreign workers join the program should align with available program information in English.

Keywords: ASEAN studies, government policy and regulation, insurance, pension fund, retirement.

Introduction

In recent years, policymakers have come to appreciate the significant potential of a well-established pension system in promoting economic growth and capital market development (Dibal et al., 2024; Eğrican & Kayhan, 2022; Morina & Grima, 2022; Yakubu et al., 2023), with pension reform recognized as a vital policy measure for achieving economic development (Kajwang, 2022; Kibet & Simiyu, 2016). Various studies have demonstrated a positive correlation between economic growth and pension funds, suggesting that such funds may fuel economic growth by offering additional investment funds (Bijlsma et al., 2018; Castañeda et al., 2021; Choi, Lee, & Kim, 2021). The provision of funded pensions may lead to a more profound development of private capital markets by enabling a more effective distribution of capital, ultimately resulting in improved efficiency across various sectors. Institutional investors' role in long-term investment commitment could be strengthened by accumulating more enormous pension savings, as García-Sánchez et al. (2022) noted. This could result in institutional investors' ability to act as large shareholders, thus increasing firm efficiency and enhancing governance (Lewellen & Lewellen, 2022; Sakawa & Watanabel, 2020; Thomas & Spataro, 2016). Furthermore, it is commonly understood that pension fund assets have a long-term orientation, implying that more significant pension funds may provide financial benefits and a sustainable economy. Pension fund managers allocate pension funds into various financial instruments, including government infrastructural bonds, commercial papers, fixed deposits, corporate bonds, treasury bills, and other investment vehicles. As a result, these investments should be available to investors in the real sector, leading to an overall increase in investment levels in the economy (Sanusi & Kapingura, 2021).

Visual Capitalist recently published a list of the world's top 100 pension funds, which includes only three ASEAN countries: Singapore (ranked 9th), Malaysia (ranked 15th), and Vietnam (ranked 98th) (Ross, 2022). This information is intriguing and warrants further exploration, particularly because these three countries, despite having considerably smaller populations and workforces than Indonesia (as shown in Figure 1), have exceeded Indonesia's total pension fund assets under management. The Director General of State Assets at the Ministry of Finance of the Republic of Indonesia has made an audacious declaration: to achieve the status of a prosperous and advanced nation by 2045, Indonesia must increase its accumulated pension funds to an astonishing 60% of its gross domestic product (GDP), from the current contribution of less than 7% (Huda, 2023). While this target may appear ambitious, research has demonstrated a direct connection between pension funds and economic growth, implying that Indonesia's future economic success depends on its capacity to increase its pension funds. This is a critical moment for Indonesia, and it is essential to safeguard the country's financial future.

In this sense, it is important to understand how the world's top pension funds are crucial for strategic planning and decision-making within Indonesia's financial sector. Lestari et al. (2022) and White (2020) highlight the benefits policymakers gain from international benchmarking and learning from worldwide experiences to enhance domestic decision-making. Numerous studies have also underscored the value of benchmarking in boosting

organizational performance (Erdil & Erbiyik, 2019; Horváthová, Mokrišová, & Vrábliková, 2021; Sutia et al., 2020; Wulandari, Arfidh, & Utama, 2020). Insights garnered from this research can inform policymakers and stakeholders about the current state of Indonesia's pension funds and provide direction for further reforms. Indonesia's performance in the context of global pension fund rankings can also reflect its competitiveness and attractiveness as an investment destination. Therefore, benchmarking and/or assessing allows for informed comparisons in this research, facilitating the identification of best practices and areas requiring improvement.

When compared with previous research conducted by Hadi, Bruder, & Setioningtyas (2022), which focuses on Iceland and the Netherlands as exemplars of the world's best pension systems, serving as a lesson for Indonesia, this research adopts an ASEAN perspective, encompassing countries ranking among the top 100 pension funds globally. This approach is justified by ASEAN's perceived capacity to comprehend the regional context and unique challenges associated with pension fund management, particularly amidst rapidly evolving demographic dynamics and socio-economic variations across its member nations. Moreover, research indicates that Singapore, Malaysia, and Indonesia share similar sociocultural characteristics (Sukamdani, 2023), influencing attitudes toward savings and retirement, which are crucial for the effectiveness of pension schemes. Meanwhile, Vietnam and Indonesia face shared challenges in their economic growth trajectories (Raeskyesa, 2020), impacting pension funds through factors like sustainable returns, inflation management, demographic shifts, investment opportunities, and long-term planning considerations. This research anticipates yielding deeper and more pertinent insights conducive to the development of pension policies within the ASEAN region.

As it is delved into the comparative analysis of pension fund data among the selected ASEAN countries, the focus inevitably shifts towards Indonesia's unique position within this framework. While Singapore and Malaysia boast longstanding pension systems, Indonesia emerges as a focal point due to its distinct socio-economic landscape and the evolving nature of its pension fund management practices. By juxtaposing the performance metrics, investment strategies, governance structures, and other key indicators of these countries' pension funds, this research aims to discern patterns, identify best practices, and extract valuable lessons that could inform policy decisions in Indonesia. Through this comparative lens, it seeks to offer comprehensive insights into the strengths and weaknesses of pension systems across the region, with a keen focus on Indonesia's trajectory towards enhancing retirement security and financial stability for its citizens.

The novelty of this research lies in its focus on examining the representation of ASEAN countries within the world's top 100 ranked pension funds and extracting lessons specifically tailored to Indonesia's pension fund system, while there have been studies examining pension funds globally or focusing on specific countries. Analyzing ASEAN countries collectively provides a comprehensive regional perspective on their presence and performance within the world's top pension funds. The context of ASEAN is a closer comparison of Indonesia's natural characteristics compared to lessons drawn from other countries within the world's top pension funds. By emphasizing lessons for Indonesia, this research addresses the specific

needs and challenges of Indonesia’s pension fund system. This direct relevance makes the findings more actionable for policymakers and stakeholders in Indonesia. Overall, this research stands out for its regional focus, direct relevance to Indonesia, comparative analysis, and broader economic insights, thereby contributing significantly to the existing literature on pension fund management and economic development in ASEAN countries.

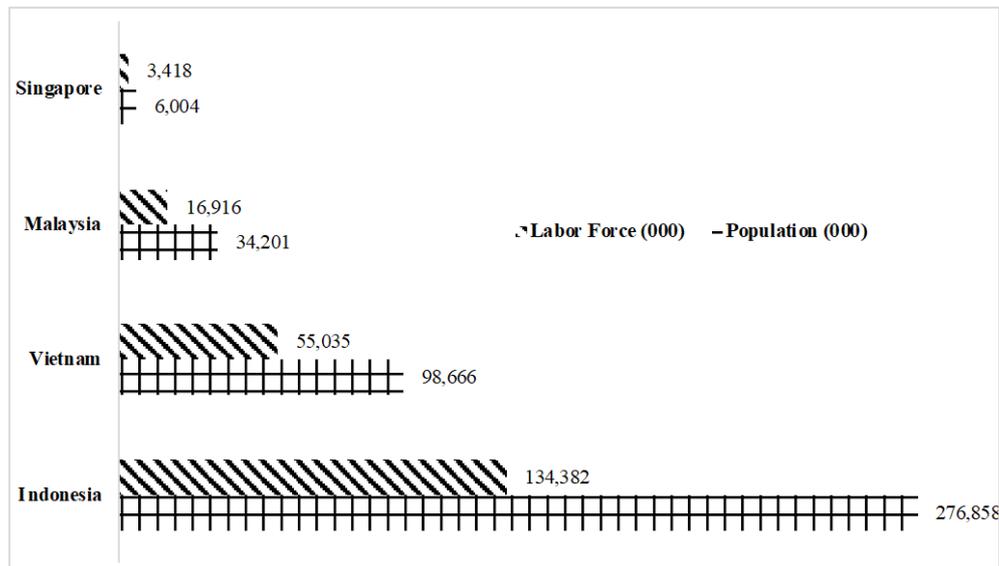


Figure 1 Population and Labour Force in Four ASEAN Countries
(World Bank, 2022a; World Population Review, 2023b)

Research Method

The research will analyze and compare factors influencing pension fund growth in the top-ranking pension funds in ASEAN countries, including the Central Provident Fund (CPF) in Singapore, the Employees Provident Fund (EPF) in Malaysia, and Social Insurance Funds (SIF) in Vietnam. The researchers will also examine pension funds in Indonesia, namely BPJS Ketenagakerjaan, which is comparable to CPF, EPF, and SIF. To gather data, the researchers will use a document analysis method, which involves analyzing existing documents, such as financial statements, annual reports, journals, and other open data on financial literacy, life expectancy, education, minimum wage, and Old-Age Dependency Ratio (OADR) which all are deemed to influence the participation rate and amount of pension funds. The research aims to provide useful insights into the best practices for managing pension funds, which can benefit policymakers, fund managers, financial planners, and other stakeholders in Indonesia.

For comparison purposes, the researchers apply a framework derived from Mercer CFA Institute (2021), integrating three core elements: adequacy (encompassing benefits, system design, savings, government support, home ownership, and growth assets), sustainability (covering pension coverage, total assets, demography, public expenditure, government debt, and economic growth), and integrity (including regulation, governance, protection,

communication, and operating costs). Based on this framework, researchers collect information from various open data sources, including the websites of pension funds in the compared countries, the World Bank, the World Population Review, Worldometer, the Wage Centre, and online news or publications from the year 2022-2023 with limitation of data availability.

This research employs a cross-sectional design (Maier et al., 2023) using secondary data analysis that involves gathering, verifying, and synthesizing evidence from various past sources to achieve the objective of this research. However, the main challenge is ensuring the information sources are reliable and valid, which the researchers attempt to overcome. To ensure the reliability and validity of the data, researchers cross-reference multiple sources, conduct data triangulation, and utilize statistical analysis techniques where applicable. Quality control measures are implemented throughout the data collection and analysis process to uphold the integrity of the research findings. Finally, qualitative and descriptive statistics methods will be employed to analyze the data. Qualitative data analysis involves carefully examining the data and identifying key themes and patterns. Descriptive statistics, on the other hand, incorporate numerical measures to depict the distribution and proportions of key variables within the dataset (Lesko, Fox, & Edwards, 2022). This facilitates a clear representation of the quantitative aspects of the research findings, enhancing their accessibility and comprehensibility to a broader audience.

Analysis

Country Overview

Of the world's 100 top-ranked pension funds, only Singapore, a developed country with a GDP of USD 423.6 billion (Koop, 2022), has a pension fund contribution of 89% of its total GDP. This count only includes the total assets of CPF, which is a private pension fund managed by the Singaporean government. In contrast, Malaysia, Vietnam, and Indonesia are classified as developing countries with respective GDPs of USD 434.1 billion, USD 413.8 billion, and USD 1,289.4 billion (Koop, 2022). Their pension fund contributions to GDP are 56%, 13%, and 0.08%, respectively (It only considers the total assets of government-managed pension funds, namely EFP, SIF, and BPJS Ketenagakerjaan). These percentages are considerably lower than the total pension fund assets in the Organization for Economic Cooperation and Development (OECD) area, which amounted to 105% of the total GDP (OECD, 2023).

At the individual level, external factors such as income, education (Kaniki & Ntuli, 2011; Kanime, Mukong, & Kaulihowa, 2021; Sembiring & Leon, 2021), financial literacy (Bongini & Cucinelli, 2019; Kanime, Mukong, & Kaulihowa, 2021; Yeh, 2022), as well as internal motivators such as policy reinforcement, trustworthiness, perceived advantages, and family responsibilities (Long, Niu, & Yi, 2024) strongly determine whether a person participates in a pension fund or not. Available data shows that Indonesia outperforms Vietnam in these three factors, with a minimum wage of USD 173, tertiary education percentages of 36%, and a

financial literacy rate of 32%. In contrast, Vietnam's corresponding figures are USD 162, 35%, and 24%. Meanwhile, Singapore and Malaysia outperform Indonesia in all three factors, with a minimum wage of USD 1,020 (known as the base salary) and USD 289, tertiary education percentages of 93% and 43%, and financial literacy rates of 59% and 36%, respectively (Klapper, Lusardi, & van Oudheusden, 2015; Wage Centre, 2022; World Bank, 2022c). Singapore has no official minimum wage; the National Wage Council of Singapore (NWSC) recommends a base salary of at least USD 1,020 for local employers (Wage Centre, 2022).

Regarding the other two categories, namely the old-age dependency ratio (OADR) and life expectancy, Indonesia has the lowest percentage among the four countries. Singapore recorded 19.46%, Malaysia 10.75%, Vietnam 11.96%, and Indonesia 6% (World Population Review, 2023a). A relatively low OADR percentage indicates that the productive age population in Indonesia is significant, and if they register for a pension fund as early as possible, they can receive the maximum benefits when they retire. It is an opportune moment for the Indonesian government to increase the value of pension fund contributions.

In terms of life expectancy, as of 2023, Indonesia has reached 72.32 years, while Singapore, Malaysia, and Vietnam have reached 84.07 years, 76.65 years, and 75.77 years, respectively (Worldometer, 2020). The World Bank (2022b) notes that life expectancy in these four countries has increased over the years due to improvements in healthcare, nutrition, and living standards. However, with the current average pension age in Indonesia being 58 years, there is a gap of about 14 years where workers do not have a fixed source of income. Typically, people would have set aside money from their pensions, but certain upbringing circumstances in specific countries prevent them from having that privilege (Xu & Islam, 2019). Therefore, government efforts are needed to provide pension scheme literacy early, enabling individuals to have a steady income source post-retirement to sustain their living standards. By offering a guaranteed stream of income for life, pension schemes can assist individuals in mitigating the risk of outliving their savings. Joining a pension scheme is vital in ensuring a secure and comfortable retirement, particularly in light of the escalating trend of life expectancies. As a result, it is crucial to prepare for retirement and enroll in a pension scheme to secure a comfortable and safe retirement.

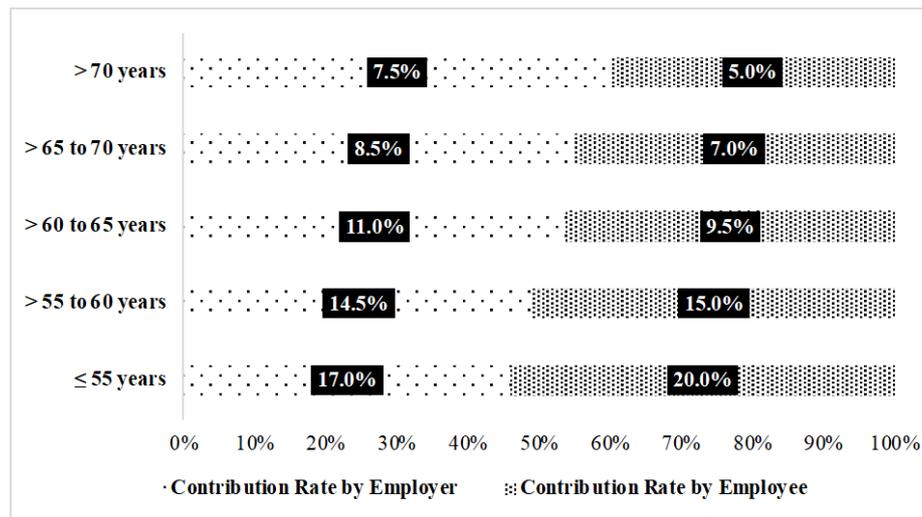
Pension Funds

Central Provident Fund in Singapore

Singapore's Central Provident Fund (CPF) has a long history, with its inception in 1953 and implementation in 1955 (Hidayah, 2020; Twomey, 2023). The CPF is a comprehensive social security system that serves the purpose of enabling Singaporean working citizens and permanent residents to allocate funds for various objectives such as education, property acquisition, family safety, wealth growth, healthcare, and retirement (Chia & Tsui, 2019; Greener & Yeo, 2022). Under the Ministry of Manpower, the CPF is managed by the Central Provident Fund Board (CPF Board), which is a statutory board. This mandatory savings scheme mandates both employers and employees to contribute a specific percentage of the employee's

gross monthly salary to the provident fund, with contributions ranging from 7.5% to 17% for employers and 5% to 20% for employees (Figure 2). The contributions are then allocated into four categories, namely the Ordinary Account (OA), MediSave Account (MA), Special Account (SA), and Retirement Account (RA). The OA is intended for retirement, housing, insurance, and investment purposes. Meanwhile, the MA is designated for hospitalization, medical expenses, and approved medical insurance. The SA aims to facilitate investment in retirement-related financial products and old-age provisions, and the RA provides a monthly payout to the members when they reach the age of 55 years and above. This account is automatically opened for the member upon reaching the stipulated age, and the allocation is sourced from the OA and MA until the minimum amount required to start the monthly payout is reached. As younger members join the CPF, a greater percentage of their contributions are directed toward the OA to assist in purchasing homes. Conversely, as they age, a larger portion of their contributions are channeled toward the SA and MA to meet their growing retirement and healthcare requirements. All CPF contributions are invested in various types of investments, including fixed income, equity, real estate and infrastructure, money market, government securities, and advance deposits, with a minimum Return on Investment (RoI) of 2.5% for the OA and 4% for the other accounts (Central Provident Fund Board, 2022b). The total assets of CPF currently stand at USD 375.0 billion (Ross, 2022).

CPF membership generally comprises various types of employees, including self-employed individuals, and the available account options are limited to conventional accounts (Central Provident Fund Board, 2022a). As an exclusive state-managed savings scheme established to cater to the retirement needs of its members, the high level of CPF participation is attributed to easy access to program information, particularly financial reports and investment options, as well as the extensive advocacy carried out through various channels and activities, such as the website, mobile app, microsite, service centers, contact center, social media, direct mail, podcast, community outreach, and student outreach. CPF extensively utilizes social media platforms, such as Facebook, Instagram, Telegram, YouTube, and TikTok, and has recorded 13.5 million engagements with the public (Central Provident Fund Board, 2022a). This shows that CPF recognizes the importance of providing adequate financial education and better access to financial information for both students and consumers, as they play a significant role in influencing participation and returns on pension products (Kim, 2022). Moreover, CPF has implemented a risk management framework based on the ISO 31000 Risk Management Standard to manage risks (Central Provident Fund Board, 2022a). Nevertheless, CPF is currently grappling with certain challenges that need to be addressed, particularly concerning demographic changes (Malhotra et al., 2018; Xue, Bai, & Bian, 2022), as Singapore is experiencing more accelerated aging compared to other countries. Consequently, this has led to its pension fund's financial and demographic starting point ranking occupying 53rd, whereas its sustainability rank is 62nd among 70 countries (Allianz, 2020). Financial and demographic starting point establishes the basis for any pension reform by combining demographic changes and public financial conditions. Emerging countries with young populations and low public deficits tend to score well, while European countries with aged populations and high debts rank poorly. The sustainability index assesses the ability of pension systems to adapt to demographic shifts.



Note: Contribution rate for employees with monthly wages exceeding \$750

Figure 2 Employer-Employee Contribution Rate by Age Category
(Central Provident Fund Board, 2022b)

Employee Provident Fund in Malaysia

In Malaysia, pension funds are also centralized under the Employees Provident Fund (EPF), managed by the Ministry of Finance. EPF is a mandatory pension fund for citizens, permanent residents, and non-Malaysians registered as EPF members before August 1, 1998 (Shuhadawati, Mohamed, & Torla, 2021). EPF, founded in 1951, is among the most well-established and extensive retirement funds globally, boasting assets valued at USD 242.6 billion (Ross, 2022). The fund's membership comes from private sector employees, non-pensionable public sector employees, and voluntary contributors (Shuhadawati, Mohamed, & Torla, 2021). The management of EPF accounts is divided into three types: Account 1, Account 2, and Gold Account (GA). Account 1 serves as a reservoir for 70% of the member's monthly contribution, specifically intended for retirement purposes, and is only withdrawable at 55 years old (Shah et al., 2023). The remaining 30% is allocated to Account 2, which can be utilized for various objectives, such as education, housing acquisition, health, and hajj. If the member continues to work after attaining 55 years, any subsequent contributions will be deposited into their GA, only attainable when they reach 60 (Employees Provident Fund, 2022).

Like Indonesia, which has a majority Muslim population, the EPF offers two types of accounts: conventional accounts, where savings are managed and invested conventionally, and sharia accounts, where savings are managed and invested according to Sharia principles. The benefits offered are quite diverse, ranging from Account 1 savings top-up, hajj registration, retirement, incapacitation, and death to annual tax exemption. Meanwhile, the employer's obligation is relatively lower than in Singapore, ranging from 6% to 13%, while the employee's contribution ranges from 5.5% to 11% (Figure 3). All funds collected are

invested in various investment schemes listed in the annual report, including fixed income (45%), equity (44%), real estate and infrastructure (6%), and money market (5%), which can provide a minimum RoI guarantee of 2.5% (Employees Provident Fund, 2023b; Employees Provident Fund Board, 2022a).

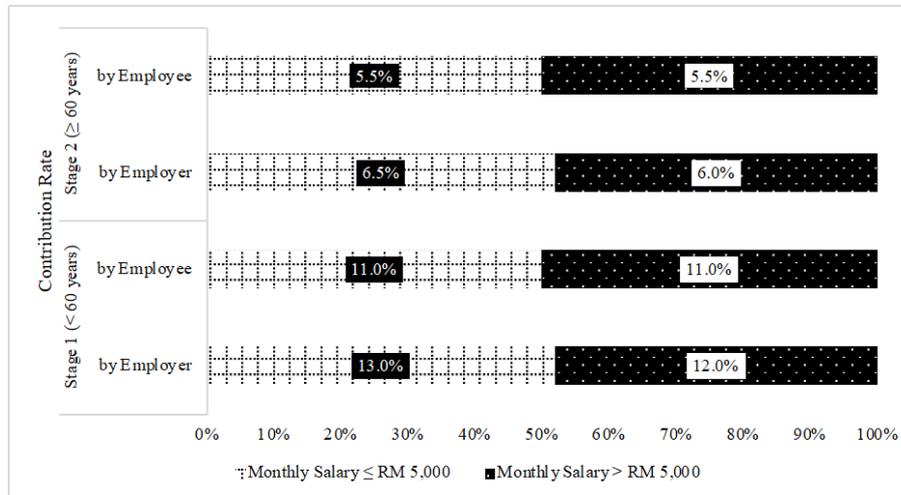


Figure 3 Employer-Employee Contribution Rate by Age Stage
(Employees Provident Fund, 2023a)

EPF has adopted various international standards, including ISO 31000, ISO 27001 (information security management), ISO 9001 (quality management system), ISO 45001 (health and safety management), and ISO 14001 (environmental management systems). These standards not only provide evidence of the institution’s commitment to quality but also serve as a competitive advantage, enhancing the pension fund’s appeal to investors and stakeholders. Additionally, EPF utilizes a range of media and methods such as the Protégé program, surveys, virtual media and radio engagements, and streaming on social media and private platforms. The aim is to provide local communities with easy access to EPF and its services, promote adequacy of Malaysians’ savings, increase financial literacy and inclusion, raise awareness of retirement planning, and empower local communities economically. EPF members have access to bilingual virtual assistance, advisory support, a contact management center, an online appointment platform, surveys, and polls, initiatives announced via media sources (website and news outlets), as well as inquiry and complaint handling through the website (Employees Provident Fund Board, 2022b, 2022c). Despite this, the EPF faces a major issue as many workers have inadequate retirement savings, with 9 out of 10 contributors earning a monthly salary lower than RM5,000 (Mokal et al., 2023). As a result, the pension fund’s sustainability rank is at the lowest position, and its adequacy ranking is 51st out of 70 countries (Allianz, 2020). This information highlights the need to re-evaluate the current model to ensure members’ financial independence after retirement.

In contrast to pension funds in Singapore and Malaysia, which are exclusively mandatory for citizens and permanent residents, the Social Insurance Fund (SIF) is a mandatory program under the Vietnam Social Security (VSS) that applies to all workers, including foreign workers under labor contracts lasting over one month or with indefinite terms (Vietnam Briefing, 2022). As a centralized entity, SIF provides individuals with the means to save for retirement, and it tackles problems linked to an aging population, which encompasses retirement, survivorship, disability, maternity/paternity, sickness, work-related injuries, occupational diseases, social insurance (such as weather and disaster risk insurance), and health insurance (Long, Thu, & Phong, 2021). Notably, participants who opt for voluntary registration with SIF are only offered two types of benefits: retirement and survivorship. Details concerning contribution rates and frequencies for both mandatory and voluntary schemes are presented in Table 1.

Table 1 Compulsory-Voluntary Scheme Contribution Rate

Contribution	Compulsory Scheme	Voluntary Scheme
Rate	26% of monthly salary, consists of: 1) Employer: 18% (14% for pension and survivorship, 3% for sickness and maternity, and 1% for occupational disease) 2) Employee: 8% for survivorship and pension	22% of monthly income for pension and survivorship with subsidized as follows: 1) Poor: 30% 2) Near-poor: 25% 3) Others: 10% (maximum 10 years)
Frequency	Monthly	Monthly, quarterly, biannually, annually, a lump sum for multiple years, or a catch-up contribution for missed years

Note: The compulsory scheme is intended for employees in formal sectors, whereas the voluntary scheme is tailored for those in informal sectors. Source: (Long, Thu, & Phong, 2021)

The origins of SIF can be traced back to the establishment of Vietnam Health Insurance (VHI) under the Ministry of Health in 1992, followed by the formation of VSS in 1995 directly under the government. The two were subsequently merged in 2002 (Vietnam Social Security, 2020b). As a result, SIF is under the management of three ministries with different functions: (1) for social and unemployment insurance (Ministry of Labour, War Invalids and Social Affairs) and (2) for the financial mechanism of social insurance, unemployment insurance, and health insurance funds (Ministry of Health and the Ministry of Finance) (Vietnam Social Security, 2020a). Currently, the total assets of SIF have reached USD 55.7 billion (Ross, 2022). Vietnam's pension fund is encountering significant challenges in expanding social insurance coverage and ensuring the sustainability of the country's social security fund (Kuhlmann & Nullmeier, 2022), partly due to a lack of worker interest (Giang, 2023). According to Allianz (2020), Vietnam's pension system is ranked 32nd out of 70 countries surveyed regarding sustainability, while Indonesia remarkably tops the list. Vietnam's rapid aging rates present

sustainability challenges for its social security and pension system, given the rising dependency burden from a growing elderly population (Dinh et al., 2022).

Furthermore, the sustainability of SIF is heavily influenced by the transparency and accountability of its financial management. Per the 2014 Law on Social Insurance, SIF must undergo a triennial audit by the State Audit, and the audit results must be reported to the National Assembly. However, this means that the public is only informed of SIF's financial status through state media at that time, and the audit report is not accessible to the public (Giang, 2023). Research has consistently shown that transparency and compliance play significant roles in achieving pension reform goals, particularly ensuring sustainability (Aliu et al., 2023). These qualities promote accountability, enable the fund to contribute meaningfully to public discourse, and enhance its ability to mitigate future economic and financial crises. SIF's commitment to transparency and disclosure is vital for promoting financial stability and ensuring market participants can gather and analyze relevant information, thereby building trust in the entire system.

SIF also faces challenges related to its stringent regulations on investment forms, which mainly focus on long-term investments with fixed interest rates, such as bank deposits, government and state-owned commercial bank bonds, and investments in national key projects. While these investment structures ensure the safety of the fund's activities, they do not yield high returns, which affects the fund's investment efficiency (Vietnam Social Security, 2018). Furthermore, SIF is hindered by its restricted means of communicating with stakeholders, particularly prospective members, which are currently limited to its website, hotline, and email. The lack of alternative avenues for engagement is a limitation that could potentially hamper the fund's effectiveness. As emphasized by Nguyen, Nguyen, and Nguyen (2019), educating individuals about Vietnam's social security system is essential to guaranteeing social security for Vietnamese employees as they approach retirement age.

Lesson Learned for Pension Funds in Indonesia

The pension fund system in Indonesia operates through a complex institutional mechanism, where pension fund providers consist of Employer Pension Funds (DPPK) and Financial Institution Pension Funds (DPLK), totaling 200 institutions (195 institutions operate conventional pension funds, while only five institutions provide sharia-compliant pension funds) (Otoritas Jasa Keuangan, 2023). Of these, three institutions have been specifically established by the government under the law to provide national social security programs, namely BPJS Ketenagakerjaan (for all types of workers), TASPEN (for civil servants), and ASABRI (for armed forces personnel). This research focuses only on BPJS Ketenagakerjaan, which is more general and can reach a broader public audience. BPJS Ketenagakerjaan falls under the DPLK category. Generally, this institution operates conventionally, but BPJS Ketenagakerjaan has specifically implemented sharia services in Aceh Province (the sole Indonesian province officially implementing sharia law). In the future, this service option will be offered more widely throughout Indonesia. This plan could be a strategic step, especially

if the sharia services provided can offer benefits such as the opportunity for hajj, as practiced in Malaysia.

In its history, before being renamed BPJS Ketenagakerjaan in 2014, the institution was called Perum AsteK, established in 1977, and later changed its name to PT Jamsostek in 1995. BPJS Ketenagakerjaan's total assets amount to USD 1.07 billion (Badan Penyelenggara Jaminan Sosial Ketenagakerjaan, 2022). The institution's membership comprises both formal and informal sector workers (Badikenita, 2023). Similar to the pension fund in Vietnam, BPJS Ketenagakerjaan is mandatory for Indonesian and foreign workers who work for at least six months in Indonesia. However, the challenge is the lack of trust in financial institutions and the government. Previous experience with financial scams, fraud, and corruption (Fadhilah & Yusuf, 2023; Gautama et al., 2023; Sutrisno, Panuntun, & Adristi, 2021) has made many people skeptical of investing their money in any financial product, including pension funds. Therefore, financial institutions and the government must work hard to build trust with consumers and provide reassurance that their hard-earned money will be managed responsibly.

From a benefits perspective, BPJS Ketenagakerjaan provides at least five insurances: work accidents, death, old age, pension, and job loss. These benefits are provided from the contributions of employers, workers, and the government, with the percentages being 6.24-7.74% (employers), 3% (employees), and 0.22% (government) (see Table 2 for details). The challenge is that the percentage of contribution to each insurance offered by this institution is governed by several different regulations, which may lead to confusion and inefficiencies in policy implementation. Additionally, inadequate public awareness of the institution's programs has resulted in many companies failing to register their employees as program participants. Therefore, addressing these challenges will necessitate a combination of regulatory reform and effective communication strategies to raise awareness and understanding of the benefits of pension funds. The government could potentially introduce tax incentives, as implemented in Malaysia, to encourage a higher level of employee participation. This aligns with the findings of Kim (2022), indicating that tax advantages and financial assistance offered to employers and employees can substantially boost the adoption of pension products.

Table 2 shows that Indonesia's pension fund contributions percentage is relatively lower compared to the other three countries. Account management is currently benefit-based and lacks focus on basic needs (e.g., housing and education) and asset development for the future. BPJS Ketenagakerjaan can adopt best practices from Malaysia and Singapore for more innovative and varied account management, including the utilization of social media platforms (Facebook, Twitter, Instagram, and YouTube) and the channels currently used by BPJS Ketenagakerjaan (website, call, chat, mobile, and mail) to raise awareness and knowledge of the benefits of participating in the program, ultimately increasing voluntary participation rates.

Table 2 Benefit-Based Contributions in BPJS Ketenagakerjaan

Types of Insurance				
Work Accidents	Death	Old Age	Pension	Job Loss
The contributions are categorized into five groups based on the level of occupational environmental risk: 1) Very low-risk level: 0.24% 2) Low-risk level: 0.54% 3) Medium-risk level: 0.89% 4) High-risk level: 1.27% 5) Very high-risk level: 1.74%	The contribution of 0.30% is paid by the employer only	The contribution of 5.7% is paid by: 1) Employee: 2% 2) Employer: 3.7%	The contribution of 3% is paid by: 1) Employee: 1% 2) Employer: 2%	The contribution of 0.46% is paid by: 1) The central government (0.22%) 2) Recomposition of the contribution for work accident insurance (0.14%) 3) Recomposition of the contribution for death insurance (0.10%)
Note: The contributions are paid by employers, and the evaluation of the occupational environmental risk level is conducted at least every two years.				
BPJS ketenagakerjaan's total contribution rate for its five benefits ranges from 9.46% to 10.96%				

Source: Indonesian Government Regulations (No. 44/2015 on the Implementation of the Occupational Accident Insurance and Death Insurance Program, No. 46/2015 on the Implementation of the Old Age Insurance Program, No. 45/2015 on the Implementation of the Pension Insurance Program; and No. 37/2021 on the Implementation of the Unemployment Insurance Program).

As a government agency accountable directly to the President of the Republic of Indonesia, BPJS Ketenagakerjaan has implemented good governance principles, as evidenced by several international certifications, such as ISO 20000 (IT Service Management), ISO 27001, and ISO 31000. In its annual report, BPJS Ketenagakerjaan states that monthly contributions from its members are invested in several instruments, including deposits (10.89%), equities (11.94%), bonds (74.68%), mutual funds (2.08%), direct participation (0.02%), and property (0.39%). However, there is currently no information available on the minimum RoI members are entitled to receive to ensure transparency and accountability of the system. Additionally, the fact that the report is not available in English is concerning, especially considering that foreign workers are also obligated to become members of the program. BPJS Ketenagakerjaan must recognize that providing access to information and addressing its members' changing needs and complaints is essential. Openness and transparency in BPJS Ketenagakerjaan will build trust with individuals who are still skeptical about investing in financial products. Therefore, program engagement and advocacy with various stakeholders through digital technology will be critical, especially in promoting special outreach initiatives for target groups (such as youth or women). Communication campaigns will also be key to educating individuals on the importance and benefits of retirement savings. These campaigns must be tailored to make them accessible and relevant to different target audiences. A summary of the pension fund systems for the four countries is provided in Table 3.

Table 3 Pension Funds System in Singapore, Malaysia, Vietnam, and Indonesia

Category	Singapore	Malaysia	Vietnam	Indonesia
Institution Name	Central Provident Fund	Employees Provident Fund	Social Insurance Fund	BPJS Ketenagakerjaan
Establishment Year	1955	1951	1992	1977
Rank in the World (Based on Total Assets)	9 th	15 th	98 th	Not available
Main Challenge	Singapore's accelerated aging has resulted in its pension fund ranking 53rd in the financial and demographic starting point and 62nd in sustainability among 70 countries	A considerable proportion of EPF contributors have insufficient retirement savings, as 9/10 earn less than RM 5,000/month, leading to the fund's low ranking in both sustainability and adequacy (at 70 th and 51 st positions, respectively, out of 70 countries)	Lack of interest from workers as well as the program's lack of transparency and accountability	The presence of several separate regulations on national social security can result in confusion and inefficiencies in policy implementation, and inadequate public awareness and understanding of the institution's programs has led to many companies failing to register their employees as program participants
Adequacy				
Benefit	Housing, healthcare, education, long-term investment, retirement, and family protection	Account 1 savings top-up, hajj registration, retirement, incapacitation, death, and annual tax exemption	Sickness, work injury and occupational diseases, maternity/paternity, pension, survivorship, social insurance, and health insurance	Work accidents, death, old age, pension, and unemployment
Account Management	Ordinary, MediSave, Special, Retirement	Account 1, Account 2, Gold Account	Three accounts: 1) pension and survivorship, 2) sickness and maternity, 3) occupational disease	Benefit-based
Account Option	Conventional	Conventional and sharia	Conventional	Conventional and sharia services
Contribution Ratio (%)	Employer: 7.5 - 17 Employee: 5 - 20	Employer: 6 - 13 Employee: 5.5 - 11	Employer: 18 Employee: 8	Employer: 6.24 - 7.74 Employee: 3 Government: 0.22
Investment	Fixed income, equity, real estate and infrastructure, money market, government securities, and advance deposits	Fixed income, equity, real estate and infrastructure, and money market	Bonds of the government and state-owned commercial banks, bank deposits, and national key projects	Deposits, equities, bonds, mutual funds, direct participation, and property
Return on Investment (%)	Ordinary account: minimum 2.5 Other accounts: minimum 4%	Minimum 2.5%	No information	Not available
Sustainability				
Population (000)	6,004	34,201	98,666	276,858
Labour Force (000)	3,418.16	16,915.83	55,034.92	134,381.72
GDP (USD billion)	423.6	434.1	413.8	1,289.4
Pension Fund	89	56	13	0.08
Contribution to GDP (%)				
Minimum Wage (USD)	1,020 (base salary)	289	162	173
Education (%)	93	43	35	36
Financial Literacy (%)	59	36	24	32
Old-Age Dependency Ratio (%)	19.46	10.75	11.96	9.6
Life Expectancy (year)	84.07	76.65	75.77	72.32
Total Assets (USD billion)	375.0	242.6	55.7	1.07

Compulsory Imposition (Based on Employee's Status)	Citizens and permanent residents	Citizens, permanent residents, and Non-Malaysians (registered as EPF members before 1 August 1998)	Citizens and foreigners	Citizens and foreigners
Current Membership	Different types of employees, including self-employed persons	Private sector employees, non-pensionable public sector employees, and voluntary contributors	Formal and informal workers	Formal and informal workers
Integrity				
Governing Body	Central Provident Fund Board under the Ministry of Manpower	Ministry of Finance	Ministry of Labour, War Invalids and Social Affairs, Ministry of Health, and the Ministry of Finance	Indonesian Government
Structure	Centralized	Centralized	Centralized	Decentralized
Financial Reporting	Available	Available	Not available	Available
International Standardization	ISO 31000	ISO 31000, ISO 27001, ISO 9001, ISO 14001, ISO 45001	No information	ISO 31000, ISO 20000, ISO 27001
Method of Advocacy and Engagement	Website, mobile, microsite, service centres, contact centre, social media, direct mail, podcast, community outreach, and student outreach	Website, protégé program, surveys, polls, radio, social media, virtual assistance, advisory support, contact management centre, and online appointment platform	Website, hotline, and email	Website, call, chat, mobile, mail, and social media

The examination of pension fund systems in these four countries, as provided in Table 3, reveals a nuanced landscape of similarities and differences, reflecting each country's unique socio-economic context and policy priorities. Despite shared objectives of providing retirement benefits and financial security, each nation faces distinct challenges and adopts diverse approaches to managing its pension funds.

While Malaysia's EPF and Singapore's CPF stand as the oldest among the four, having been established in the mid-20th century, Indonesia's BPJS Ketenagakerjaan and Vietnam's SIF were established in the late 20th century. The main challenges vary from aging populations to insufficient retirement savings and issues of transparency and accountability. Across these pension systems, a multi-account structure is employed to manage contributions, encompassing various needs such as retirement, healthcare, and family protection. However, contribution ratios, investment portfolios, and sustainability indicators diverge significantly, reflecting the unique circumstances of each country.

Singapore and Malaysia exhibit higher pension fund contribution to GDP ratios compared to Vietnam and Indonesia, indicative of more robust pension systems. Furthermore, the scope of compulsory imposition varies, with some countries mandating contributions from citizens and permanent residents while others include both citizens and foreigners. While Indonesia's pension system presents unique challenges, including its decentralized structure and fragmented regulations, it also offers opportunities for reform and improvement. With its large population and growing economy, Indonesia has the potential to

strengthen its pension system through greater transparency, regulatory coherence, and public awareness initiatives. Addressing these issues is critical to ensuring the long-term sustainability and effectiveness of Indonesia's pension fund, as well as enhancing social security for its citizens.

Conclusions

Low enrollment in pension plans threatens long-term financial stability and overall economic well-being by negatively impacting savings, consumption, and investment despite rising life expectancy and falling mortality rates. This research advances the literature by focusing on the pension fund systems of three ASEAN countries, Singapore, Malaysia, and Vietnam, and extracting lessons specifically tailored to improve Indonesia's pension system. Employing a cross-sectional design and secondary data from diverse sources, the research highlights the strengths and unique features of each country's pension management.

Singapore and Malaysia generally excel in managing their pension fund accounts, with Singapore having special accounts for home ownership and asset management, while Malaysia offers both conventional and Sharia-based services, including services for hajj. Singapore also stands out for its extensive social media reach, with over 13 million engagements. Vietnam's more inclusive system covers foreign workers, a practice similar to Indonesia's. However, the demands from foreign workers to be part of the national social security program must align with the availability of program information and its benefits, which must be accessible in English, particularly regarding annual reports and financial statements.

This research focuses on the ASEAN context within the world's top 100 ranked pension funds, a perspective often overlooked in the existing literature that tends to emphasize global comparisons or single-country analyses. By examining ASEAN countries collectively, which share socio-economic similarities with Indonesia, this research provides a nuanced regional perspective. This approach enriches the literature by offering targeted insights into how Indonesia can adapt and implement best practices from neighboring countries to enhance its pension system. The direct relevance of these findings enhances their applicability for policymakers and stakeholders in Indonesia. By addressing Indonesia's specific challenges and needs in pension fund management, this research contributes actionable insights to foster financial security and social welfare in the country.

Based on the research's findings, three policy recommendations are aimed at the Golden Indonesian Vision 2045, specifically in the two pillars of sustainable economic development and equitable development, by increasing society's participation in the pension fund program. These recommendations can be grouped into three categories (3Ps): programs, promotion, and policy.

First, expand the pension fund through a flagship program that addresses basic human needs (such as shelter/housing and education) by integrating the process of home ownership

and access to quality education into the pension fund system (nexus between pension funds, housing, and education needs). Such an approach would strengthen the Indonesian economy and improve the quality of human resources in Indonesia through better living conditions and education. To achieve this, there must be transparency and clear allocation for each purpose, and pension fund participants should be able to access and utilize the program practically through an online or mobile system. In addition, providing facilities for hajj and umrah can be an attractive package for the public, given that most Indonesians are Muslim.

Second, utilize digital media to promote membership benefits programs to increase public awareness and financial literacy, particularly among young workers aged between 15-34, who make up a noticeable part of the Indonesian workforce. The goal is to encourage them to be more oriented towards “saving for the future”, which will ultimately improve the rate of pension fund participation. Promotions can be achieved by collaborating with influencers through social media platforms such as TikTok, YouTube, Instagram, and Facebook.

Third, issue a policy designed to provide tax incentives and financial support to both employers and employees who enroll in pension funds. This policy should seamlessly integrate with existing administrative mechanisms, like the tax reporting system, ensuring smooth usability and effective monitoring. Additionally, it is crucial to establish clear eligibility requirements for foreign workers applying for work permits in Indonesia for durations exceeding six months. This eligibility framework must be tightly integrated with the work permit issuance process, guaranteeing the automatic enrollment of foreign workers in the Social Security program upon obtaining their Indonesian work permit. To achieve this, BPJS Ketenagakerjaan needs to strengthen collaboration with relevant technical ministries and upgrade its infrastructure, particularly by providing comprehensive program information and bilingual customer support services.

About The Authors

Sri Milawati Asshagab, a researcher at the National Research and Innovation Agency of the Republic of Indonesia, specifically in the Research Centre for Economics of Industry, Services, and Trade. She is also pursuing an advanced master’s in Globalization and Development at the University of Antwerp. With a diverse background in law, management, globalization, and development, she explores interconnected research areas, including public policy, economics, marketing, tourism, and international comparisons. Her latest portfolio includes studies such as “Tourism Marketing Strategies in Europe, America, and the Middle East” and “Driving Progress from the Bottom Up: Assessing Local Government SDG Reporting to Inspire Action”.

Asia Miscolayati Hasanah, a Researcher at the National Research and Innovation Agency of the Republic of Indonesia within the Research Center of Macroeconomics and Finance. She holds a Magister of Economics in Planning and Public Policy from the University of Indonesia (UI). Her focused research pursuits primarily encompass the domains of macroeconomics, exchange rates, monetary economics, SMEs, and public policy.

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References

- Aliu, O. A., Abdul-Hamid, M. A., Suleiman, S., & Olanrewaju, S. M. (2023). Transparency, compliance, and sustainability of contributory pension scheme in Nigeria. *Gusau Journal of Accounting and Finance*, 4(1), 135-150. <https://doi.org/10.57233/gujaf.v4i1.204>.
- Allianz. (2020). *Allianz Pension Report 2020 - The Silver Swan*. Retrieved from https://www.allianz.com/en/economic_research/insights/publications/specials_fmo/28052020_Pension_Report.html.
- Badan Penyelenggara Jaminan Sosial Ketenagakerjaan. (2022). *Laporan keuangan BPJS ketenagakerjaan tahun 2021*. Retrieved from https://www.bpjsketenagakerjaan.go.id/assets/uploads/laporan_tahunan/IR_BPJAMSOSTEK_2021_IND.pdf.
- Badikenita, R. S. (2023). Expansion of BPJS ketenagakerjaan BPU membership through marketing mix strategy and regulation. *Jurnal Jamsostek*, 1(1), 87-104. <https://doi.org/10.61626/jamsostek.v1i1.9>.
- Bijlsma, M., Bonekamp, J., van Ewijk, C., & Haaijen, F. (2018). Funded pensions and economic growth. *De Economist*, 166(3), 337-362. <https://doi.org/10.1007/s10645-018-9325-z>.
- Bongini, P., & Cucinelli, D. (2019). University students and retirement planning: Never too early. *International Journal of Bank Marketing*, 37(3), 775-797. <https://doi.org/10.1108/IJBM-03-2018-0066>.
- Castañeda, P., Castro, R., Fajnzylber, E., Medina, J. P., & Villatoro, F. (2021). Saving for the future: Evaluating the sustainability and design of pension reserve funds. *Pacific-Basin Finance Journal*, 68, 101335. <https://doi.org/10.1016/j.pacfin.2020.101335>.
- Central Provident Fund Board. (2022a). *Annual report 2021*. Retrieved from https://www.cpf.gov.sg/content/dam/web/member/infohub/documents/CPF_AnnualReport2021_Part1.pdf.
- Central Provident Fund Board. (2022b). *Increase in CPF contribution rates from 1 January 2023*. Retrieved from <https://www.cpf.gov.sg/employer/infohub/news/cpf-related-announcements/increase-in-cpf-contribution-rates-from-1-january-2023>.
- Chia, N. C., & Tsui, A. K. C. (2019). Nexus between housing and pension policies in Singapore: Measuring retirement adequacy of the central provident fund. *Journal of Pension Economics and Finance*, 18(2), 304-330. <https://doi.org/10.1017/S1474747217000506>.

- Choi, W. B., Lee, D., & Kim, W. C. (2021). Extending the scope of ALM to social investment: Investing in population growth to enhance sustainability of the Korean national pension service. *Sustainability*, 13(1), 401. <https://doi.org/10.3390/su13010401>.
- Dibal, H. S., Haruna, H. A., Onyejiaku, C. C., Ogbole, O. F., & Onwumere, J. U. J. (2024). Pension fund investments and capital market development in Nigeria: The moderating role of inflation. *Global Journal of Emerging Market Economies*, 16(2), 248-269. <https://doi.org/10.1177/09749101231194194>.
- Dinh, V. T. T., Pham, T. H. T., Bui, T. M., & Ho, T. N. (2022). The Vietnamese pension system and aging population. In: Lee, H., Nicolini, G., Cho, M. (eds) *International Comparison of Pension Systems. Contributions to Management Science*. Singapore: Springer. https://doi.org/10.1007/978-981-19-6446-6_12.
- Eğrican, A. T., & Kayhan, F. (2022). Voluntary Private Pension Funds and Capital Market Development. *Asian Academy of Management Journal of Accounting and Finance*, 18(2), 195-240. <https://doi.org/10.21315/aamjaf2022.18.2.9>.
- Employees Provident Fund. (2022). *Member withdrawals*. Retrieved from <https://www.kwsp.gov.my/member/withdrawals>.
- Employees Provident Fund. (2023a). *Know Your Responsibility as an Employer*.
- Employees Provident Fund. (2023b). *Member overview*. Retrieved from <https://www.kwsp.gov.my/member/overview>.
- Employees Provident Fund Board. (2022a). *Integrated annual report 2021 - About the EPF*. Retrieved from https://www.kwsp.gov.my/documents/20126/2139511/4+ABOUT+THE+EPF_28092022.pdf/290cbf71-461a-6e5d-90ca-1e0df124cce9?t=1665076899044.
- Employees Provident Fund Board. (2022b). *Integrated annual report 2021 - Governance*. Retrieved https://www.kwsp.gov.my/documents/20126/2139511/7+GOVERNANCE_28092022.pdf/0755ddc8-e90b-e428-48fa-d6ecd52452da?t=1665076901240.
- Employees Provident Fund Board. (2022c). *Integrated annual report 2021 - Strategy and business outlook*.
- Erdil, A., & Erbiyik, H. (2019). The importance of benchmarking for the management of the firm: Evaluating the relation between total quality management and benchmarking. *Procedia Computer Science*, 158, 705-714. <https://doi.org/10.1016/j.procs.2019.09.106>.
- Fadhilah, F. N., & Yusuf, P. S. (2023). The effect of transparency and accountability on the prevention of pension fund fraud: A case study of a BUMD in Jawa Barat. *Gema Wiralodra*, 14(2), 669-680. <https://doi.org/10.31943/gw.v14i2.439>.
- García-Sánchez, I., Aibar-Guzmán, C., Núñez-Torrado, M., & Aibar-Guzmán, B. (2022). Are institutional investors “In Love” with the sustainable development goals? Understanding the Idyll in the case of governments and pension funds. *Sustainable Development*, 30(5), 1099-1116. <https://doi.org/10.1002/sd.2305>.

- Gautama, B. H., Putri, D. C., Haris, F. A., & Subagio. (2023). Corruption case analysis on PT. ASABRI: Ethical problem or governance failure? *Ulil Albab: Jurnal Ilmiah Multidisiplin*, 2(3), 1062-1073.
- Giang, N. K. (2023). *An ageing Vietnam struggles for a reliable social insurance system*. Retrieved from <https://fulcrum.sg/an-ageing-vietnam-struggles-for-a-reliable-social-insurance-system/>.
- Greener, J., & Yeo, E. (2022). Reproduction, discipline, inequality: Critiquing East-Asian developmentalism through a strategic-relational examination of Singapore's central provident fund. *Global Social Policy*, 22(3), 483-502. <https://doi.org/10.1177/146801812111059971>.
- Hadi, A., Bruder, E., & Setioningtyas, W. P. (2022). Comparison of the world's best pension systems: The lesson for Indonesia. *Social Sciences*, 11(10), 435. <https://doi.org/10.3390/socsci11100435>.
- Hidayah, P. N. (2020). Comparative study of legal protection for migrant workers in participation of social security programs in Indonesia and Singapore. *Legality: Jurnal Ilmiah Hukum*, 28(1), 47-59. <https://doi.org/10.22219/ljih.v28i1.11786>.
- Horváthová, J., Mokrišová, M., & Vrábliková, M. (2021). Benchmarking - A way of finding risk factors in business performance. *Journal of Risk and Financial Management*, 14(5), 221. <https://doi.org/10.3390/jrfm14050221>.
- Huda, F. A. (2023). Rectifying the Downsides Pension Fund with the Critical Analysis of Triangle Justice Ecosystem: A Comparative Case Study in Indonesia and Malaysia. In Mansour, N., Bujosa Vadell, L.M. (eds), *Islamic Sustainable Finance, Law and Innovation. Contributions to Management Science* (pp. 185-195). Springer, Cham. https://doi.org/10.1007/978-3-031-27860-0_17.
- Kajwang, B. (2022). Role of pension management on economic growth: A review of literature. *International Journal of Research in Business and Social Science* (2147- 4478), 11(6), 635-641. <https://doi.org/10.20525/ijrbs.v11i6.1948>.
- Kaniki, S., & Ntuli, M. (2011). Determinants of participation in occupational pension funds by private sector workers in South Africa. *African Finance Journal*, 13(2), 54-79.
- Kibet, A. K., & Simiyu, R. S. (2016). The role of pension schemes in economic development: Comparing Kenya and Singapore. *Research Journal of Finance and Accounting*, 7(16), 161-176.
- Kim, S. (2022). *Role of the private pension programs* (pp. 415-428). https://doi.org/10.1007/978-981-19-6446-6_13.
- Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). *Financial literacy around the world: Insights from the standard & poor's ratings services global financial literacy survey*. Retrieved from https://gflec.org/wp-content/uploads/2015/11/Finlit_paper_16_F2_singles.pdf.

- Koop, A. (2022). *Top heavy: Countries by share of the global economy*. Retrieved from <https://www.visualcapitalist.com/countries-by-share-of-global-economy/>.
- Kuhlmann, J., & Nullmeier, F. (2022). Causal mechanisms in the development of contribution-based pension systems in South Korea, Vietnam, Sri Lanka, and Malaysia. In: Kuhlmann, J., Nullmeier, F. (eds), *Causal Mechanisms in the Global Development of Social Policies. Global Dynamics of Social Policy*. Palgrave Macmillan, Cham (pp. 67-102). https://doi.org/10.1007/978-3-030-91088-4_3.
- Lesko, C. R., Fox, M. P., & Edwards, J. K. (2022). Descriptive studies and descriptive statistics. *American Journal of Epidemiology*, 191(12), 2073-2074. <https://doi.org/10.1093/aje/kwac152>.
- Lestari, N., Keban, Y. T., Kusumasari, B., & Susanto, E. (2022). Conceptualization of policy adoption in public policy areas. *KnE Social Sciences*, 153-170. <https://doi.org/10.18502/kss.v7i5.10547>.
- Lewellen, J., & Lewellen, K. (2022). Institutional investors and corporate governance: The incentive to be engaged. *The Journal of Finance*, 77(1), 213-264. <https://doi.org/10.1111/jofi.13085>.
- Long, G. T., Thu, D. T., & Phong, P. M. (2021). *Overview of the social insurance system in Vietnam*.
- Long, Z., Niu, J., & Yi, F. (2024). Driving factors and micro-mechanism of residents' participation intention in individual pension system. *Heliyon*, 10(2), e24488. <https://doi.org/10.1016/j.heliyon.2024.e24488>.
- Maier, C., Thatcher, J. B., Grover, V., & Dwivedi, Y. K. (2023). Cross-sectional research: A critical perspective, use cases, and recommendations for IS research. *International Journal of Information Management*, 70, 102625. <https://doi.org/10.1016/j.ijinfomgt.2023.102625>.
- Malhotra, R., Bautista, M. A. C., Müller, A. M., Aw, S., Koh, G. C. H., Theng, Y.-L., Hoskins, S. J., Wong, C. H., Miao, C., Lim, W.-S., Malhotra, C., & Chan, A. (2018). The aging of a young nation: Population aging in Singapore. *The Gerontologist*, 59(3), 401-410. <https://doi.org/10.1093/geront/gny160>.
- Kanime, M. M., Mukong, A. K., & Kaulihowa, T. (2021). The determinants of retirement planning behaviour: Evidence from the Ministry of Home Affairs and Immigration in Namibia. *African Journal of Business and Economic Research*, 16(4), 31-51. <https://doi.org/10.31920/1750-4562/2021/v16n4a2>.
- Mercer CFA Institute. (2021). *Mercer CFA institute global pension index 2021: Pension reform in challenging times*. Retrieved from https://www.lifeyrismal.is/static/files/images/Manadarpostar/2021-global-pension-index-report_web.pdf.
- Mokal, M. N., Ahmad, Z., Yusof, M. F. Bin, & Mafaz, M. N. A. (2023). Issues of an ageing population: A comparative study in Malaysia, Singapore, Maldives, and Pakistan. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 8(9), e002521. <https://doi.org/10.47405/mjssh.v8i9.2521>.

- Morina, F., & Grima, S. (2022). The impact of pension fund assets on economic growth in transition countries, emerging economies, and developed countries. *Quantitative Finance and Economics*, 6(3), 459-504. <https://doi.org/10.3934/QFE.2022020>.
- Nguyen, H. H., Nguyen, T. T., & Nguyen, P. T. (2019). The factors affecting the decision to participate in voluntary social insurance of Vietnamese employees: The case of Tra Vinh province. *Research in World Economy*, 10(3), 431-437. <https://doi.org/10.5430/rwe.v10n3p431>.
- Organization for Economic Cooperation and Development (OECD). (2023). *Pension markets in focus 2022*. Retrieved from https://www.oecd-ilibrary.org/finance-and-investment/pensions-market-in-focus-2022_b8fd9171-en.
- Otoritas Jasa Keuangan. (2023). *Indonesia pension statistics*. Retrieved from <https://www.ojk.go.id/id/kanal/iknb/data-dan-statistik/dana-pensiun/Documents/Pages/Buku-Statistik-Dana-Pensiun-2022/Buku%20Statistik%20Dana%20Pensiun%202022.pdf>.
- Raeskyesa, D. G. S. (2020). Sectoral growth and income inequality in ASEAN-5 Countries: Case of low-middle income economies. *JAS (Journal of ASEAN Studies)*, 8(1), 1-13. <https://doi.org/10.21512/jas.v8i1.6435>.
- Ross, J. (2022). *Ranked: The world's 100 biggest pension funds*. Retrieved from <https://www.visualcapitalist.com/worlds-100-biggest-pension-funds/>.
- Sakawa, H., & Watanabel, N. (2020). Institutional ownership and firm performance under stakeholder-oriented corporate governance. *Sustainability*, 12(3), 1021. <https://doi.org/10.3390/su12031021>.
- Sanusi, K. A., & Kapingura, F. M. (2021). Pension funds as fuel for overall investment level and economic growth: An empirical insight from South African economy. *Cogent Business & Management*, 8(1), 1935661. <https://doi.org/10.1080/23311975.2021.1935661>.
- Sembiring, M. R. P., & Leon, F. M. (2021). The influence of demographics factor on pension planning and financial literacy of private employee. *Business and Entrepreneurial Review*, 21(1), 131-152. <https://doi.org/10.25105/ber.v21i1.9230>.
- Shah, N. A. M. A., Nasrul, M. A., Fatimah, S., & Seviyana, D. (2023). Comparative analysis of Malaysian and Indonesian retirement plan. *Lex Scientia Law Review*, 7(2), 659-708. <https://doi.org/10.15294/lesrev.v7i2.69847>.
- Shuhadawati, N., Mohamed, A. A., & Torla, A. (2021). Retirement benefit in Malaysia: Understanding the legal framework and its challenges to the migrant workers. *IIUM Law Journal*, 29(2), 199-220. <https://doi.org/10.31436/iiumlj.v29i2.573>.
- Sukamdani, N. (2023). Family business dynamics in Southeast Asia: A comparative study of Indonesia, Malaysia, Singapore, and Thailand. *JAS (Journal of ASEAN Studies)*, 11(1), 197-218. <https://doi.org/10.21512/jas.v11i1.9518>.

- Sutia, S., Riadi, R., Fahlevi, M., Istan, M., Juhara, S., Pramono, R., Purwanto, A., Purba, J. T., Munthe, A. P., & Juliana. (2020). Benefit of Benchmarking Methods in Several Industries: A Systematic Literature Review. *Sys Rev Pharm*, 11(8), 508-518.
- Sutrisno, Panuntun, B., & Adristi, F. I. (2021). The Jiwasraya and Asabri scandal: A description analysis & prevention solutions from investment political economic perspective. *International Journal of Economics, Business and Management Research*, 5(10), 71-99.
- Thomas, A., & Spataro, L. (2016). The effect of pension funds on markets performance: A review. *Journal of Economic Surveys*, 30(1), 1-33. <https://doi.org/10.1111/joes.12085>.
- Twomey, C. (2023). Amah activism: Domestic servants and decolonization in 1960s Malaysia and Singapore. *International Labor and Working-Class History*, 103, 312-327. <https://doi.org/10.1017/S014754792300008X>.
- Vietnam Briefing. (2022). *Social insurance in Vietnam*. Retrieved from <https://www.vietnam-briefing.com/doing-business-guide/vietnam/human-resources-and-payroll/social-insurance>.
- Vietnam Social Security. (2018). *VSS fund investment: Opportunities, challenges and prospects*. Retrieved from <https://vss.gov.vn/english/news/Pages/vietnam-social-security.aspx?CateID=0&ItemID=8607>.
- Vietnam Social Security. (2020a). *Function & tasks*. Retrieved from <https://vss.gov.vn/english/aboutus/Pages/function-and-tasks.aspx>.
- Vietnam Social Security. (2020b). *History development*. Retrieved from <https://vss.gov.vn/english/aboutus/Pages/history-development.aspx>.
- Wage Centre. (2022). *Minimum and average salary in Singapore*. Retrieved from <https://wagecentre.com/work/work-in-asia-and-oceania/salary-in-singapore>.
- White, L. A. (2020). Do international organizations influence domestic policy outcomes in OECD countries? In *The Palgrave Handbook of Family Policy* (pp. 69-86). New York, US: Springer International Publishing. https://doi.org/10.1007/978-3-030-54618-2_4
- World Bank. (2022a). *Labor Force*. Retrieved from <https://data.worldbank.org/indicator/SL.TLF.TOTL.IN>.
- World Bank. (2022b). *Life expectancy at birth, total (years)*. Retrieved from <https://data.worldbank.org/indicator/SP.DYN.LE00.IN>.
- World Bank. (2022c). *School enrollment, tertiary (% gross)*. Retrieved from <https://data.worldbank.org/indicator/SE.TER.ENRR>.
- World Population Review. (2023a). *Age dependency ratio by country 2023*. Retrieved from <https://worldpopulationreview.com/country-rankings/age-dependency-ratio-by-country>.
- World Population Review. (2023b). *Total population by country 2023*. Retrieved from <https://worldpopulationreview.com/countries>.

- Worldometer. (2020). *Life expectancy of the world population*. Retrieved from <https://www.worldometers.info/demographics/life-expectancy/>.
- Wulandari, S., Arfidh, M., & Utama, A. C. (2020). Selecting benchmarking partners using analytical hierarchy process approach. *International Journal of Innovation in Enterprise System*, 4(2), 23-33. <https://doi.org/10.25124/ijies.v4i02.66>.
- Xu, W., & Islam, S. (2019). What does ASEAN economic community bring to older workers? Examining inequality in old age in Thailand's fast-ageing society. *JAS (Journal of ASEAN Studies)*, 7(1), 86-97. <https://doi.org/10.21512/jas.v7i1.5590>.
- Xue, D., Bai, Q., & Bian, Y. (2022). How working-age population education and health of older people shape the burden of population aging: A comparative study of Macau, Hong Kong, and Singapore. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.1031229>.
- Yakubu, S., Muritala, T. A., Abubakar, H. L., Bakare, A. A., Yusuf, W. A., & Afolabi, H. O. (2023). How does pension funds impact stock market development? An empirical analysis from Nigeria using ARDL technique. *Open Journal of Social Sciences*, 11(9), 575-600. <https://doi.org/10.4236/jss.2023.119036>.
- Yeh, T. (2022). An empirical study on how financial literacy contributes to preparation for retirement. *Journal of Pension Economics and Finance*, 21(2), 237-259. <https://doi.org/10.1017/S1474747220000281>.