Sustainable Financing for Ageing Populations: Demographic Changes Affect Tax Revenues and Public Spending in Indonesia

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Abstract

The global demographic landscape is rapidly changing due to an aging population, posing significant challenges for governments in sustaining economic growth and social welfare. This paper explores the impact of demographic shifts on tax revenues and public spending, focusing on the fiscal pressures that arise from an increasing elderly population in Indonesia. As the proportion of working-age individuals declines and life expectancy rises, governments face reduced tax bases and heightened demands for healthcare, pensions, and other social services. This study examines key factors driving these changes, including labor force participation, productivity, and the shifting dependency ratio. Drawing on case studies from various countries, it identifies potential the best policy solutions to ensure sustainable financing, such as pension reforms, tax adjustments, and investment in age-friendly labor markets in Indonesia. By addressing the fiscal challenges posed by aging populations, this paper provides a comprehensive framework for policymakers to secure economic stability and social welfare in the face of demographic change.

Keywords: aging populations, tax revenues, public spending, demographic shifts, pension reform, labor market, fiscal sustainability, healthcare, long-term care, policy reform, Indonesia

JEL code: • **H55** (Social Security and Public Pensions), • **I18** (Health: Government Policy; Regulation; Public Health), • **H75**: State and Local Government: Health, Education, and Welfare; • **I38**: Welfare, Well-Being, and Poverty: Government Programs; Provision and Effects of Welfare Programs; • **J14**: Economics of the Elderly; Economics of the Handicapped; Non-labor Market Discrimination

1. Introduction

The demographic shift towards aging populations is one of the most significant socio-economic transformations of the 21st century, with far-reaching implications for both advanced and emerging economies. Driven by declining fertility rates and rising life expectancies, many nations are witnessing a dramatic alteration in their population structures. By 2050, the global population of individuals aged 60 and above is projected to double to over 2 billion (United Nations, 2022). While this shift is a testament to human

progress in healthcare and social development, it also poses significant economic challenges, particularly for fiscal sustainability. Aging populations place increasing strain on public services—especially pensions, healthcare, and long-term care—at the same time as the number of working-age individuals contributing to tax revenues is dwindling.

This demographic evolution is not restricted to high-income countries such as Japan and Germany but is also beginning to affect middle-income nations like China, Brazil, and Indonesia. For these countries, the transition toward older societies represents a crucial test for economic policy. Governments must contend with the dual pressure of maintaining social protection for aging citizens while safeguarding fiscal stability. Without urgent reforms, the looming fiscal gap between shrinking tax revenues and increasing public expenditures may undermine both economic growth and the social contract (Lee & Mason, 2017). In this context, understanding the fiscal ramifications of aging populations is no longer a niche concern but a global imperative.

From an economist-demographer's perspective, demographic shifts—particularly population aging—have profound implications for both macroeconomic stability and public finance. The life-cycle hypothesis (Modigliani & Brumberg, 1954) suggests that individuals save during their working years and dissave during retirement. As populations age, this results in increased public expenditure on pensions and healthcare, and a simultaneous reduction in the working-age population that supports these systems through taxation. This creates a structural imbalance between revenue generation and public spending, potentially leading to unsustainable fiscal deficits if left unchecked (Bloom, Canning, & Fink, 2010).

A key metric in understanding these dynamics is the dependency ratio, which measures the proportion of non-working individuals (children and the elderly) relative to the working-age population. In many countries, this ratio is rising sharply, further magnifying the fiscal pressures of aging populations. As the number of retirees grows relative to the shrinking workforce, governments face the dual challenge of financing increasing social services while collecting fewer taxes (Weil, 1997). Economist-demographic models emphasize that countries with pay-as-you-go pension systems—where current workers fund retiree benefits—are particularly vulnerable. Without proactive reforms to both the labor market and public finance systems, the rising dependency ratio will erode the financial viability of many welfare states (Diamond, 1965).

Governments around the world are grappling with an increasingly complex fiscal challenge: as populations age, tax revenues are shrinking just as public spending demands skyrocket. Aging populations contribute less in income taxes due to lower earnings during retirement and, correspondingly, consume less, which reduces consumption tax revenues (Weil, 1997). This phenomenon is especially acute in countries that rely heavily on payroll taxes to fund social security and healthcare systems. As fewer individuals remain in the workforce, the revenue base for these systems contracts, exacerbating fiscal deficits.

On the expenditure side, the growing number of retirees exerts considerable pressure on pension systems, while the healthcare costs of an aging population escalate due to the prevalence of chronic diseases and the increasing need for long-term care (Scholz, Seshadri, & Khitatrakun, 2006). Without significant reforms to public finance and social security systems, the widening gap between revenue and spending will become untenable, threatening not only national economies but also social cohesion. Countries such as Japan, where the population is rapidly aging, provide stark examples of the fiscal and social challenges that lie ahead for much of the world (Kinsella & He, 2009).

Research Questions and Objectives

This study seeks to address several critical questions central to the intersection of demographic aging and fiscal sustainability: How do demographic shifts toward aging populations impact tax revenues and public expenditures? What policy interventions can mitigate the economic risks posed by aging societies? How can pension and healthcare systems adapt to the demographic pressures of aging populations, and what structural reforms are most effective?

The objective of this research is to provide a comprehensive analysis of the fiscal implications of aging populations and to identify pragmatic policy solutions that balance economic efficiency with social protection. By analyzing the erosion of tax revenues and the surge in public spending, the study offers a robust framework for addressing the fiscal challenges posed by demographic shifts. The findings will aim to inform policymakers about sustainable solutions that support long-term economic stability while safeguarding social equity.

Literature Review

The current academic discourse on the fiscal impacts of aging populations presents both optimistic and cautionary perspectives. On one side, scholars such as Brynjolfsson and McAfee (2014) argue that technological innovations and increased productivity from older workers may help mitigate the economic effects of an aging workforce. By leveraging automation and artificial intelligence (AI), economies may be able to compensate for the declining labor supply. However, such innovations are not a panacea. Technological advances are largely concentrated in high-income nations, leaving middle- and low-income countries vulnerable to the full force of aging-related fiscal pressures.

Conversely, much of the literature highlights the severe fiscal risks posed by aging populations, particularly for public pension and healthcare systems. Studies such as those by Gustman, Steinmeier, and Tabatabai (2014) underscore the unsustainable nature of current social security structures in many countries, particularly as the number of retirees grows. These studies call for urgent reforms, but the implementation of such reforms is often fraught with political and social challenges. Raising retirement ages, for instance, faces resistance from labor unions and voters, especially in countries where the expectation of early retirement is culturally entrenched (Diamond, 1965).

Many studies focus primarily on high-income countries, leaving the unique challenges faced by emerging economies underexplored. These nations are likely to experience rapid aging without the benefit of well-established social safety nets, creating a potentially catastrophic fiscal situation. Moreover, while economists have proposed various solutions—such as increasing the retirement age or raising taxes—there is limited consensus on the most effective strategies to balance fiscal sustainability with social equity.

Additionally, while technological advancements are frequently touted as a solution to declining workforces, little research examines the feasibility of widespread adoption of such technologies in lower-income countries, where financial and infrastructural barriers are significant. Furthermore, much of the literature overlooks the ethical considerations surrounding aging policies, particularly the impact of reform measures on lower-income workers who may not be able to extend their working years due to the physical demands of their jobs (Bloom et al., 2010).

The ageing population in Indonesia has been growing rapidly in recent years. According to the World Bank report (2021), the proportion of the population aged 65 and over is expected to increase from 5.1% in 2020 to 11.8% in 2050. This demographic shift has significant implications for businesses in Indonesia, particularly in terms of workforce productivity and healthcare costs. In further, this affects to the country's social security system and the long-term care sector. Indonesia's social security system is fragmented and inadequate, with many elderly individuals relying on informal family care. However, the increasing number of nuclear families, migration, and changing social norms have made informal care less available, leading to a greater demand for formal long-term care services. Despite this, the availability of formal long-term care services in Indonesia remains limited, with only 43 nursing homes and 6,000 home care providers serving a population of over 22 million elderly individuals (BPS Statistics Indonesia, 2020). Furthermore, the cost of long-term care is high and often unaffordable for many elderly individuals, leading to financial hardship and inadequate care.

The literature review suggests that there are various models for financing long-term care for the ageing population. In some countries, such as Japan and Germany, long-term care insurance schemes have been established to provide financial support for long-term care services. In other countries, such as the United Kingdom and Australia, a combination of public and private financing is used to support long-term care services. However, these models may not be directly applicable to the Indonesian context, as they have different socio-economic and cultural factors.

The ageing workforce in Indonesia is associated with a decrease in labor productivity found by Haryanto et al. (2018). The study suggests that businesses should implement measures such as job redesign and training programs to help older workers maintain their productivity levels. Another study by Kurniawan et al. (2020) found that the increasing demand for healthcare services due to ageing population in Indonesia can lead to significant cost increases for businesses. A study by Dharmawan et al. (2016) projects that Indonesia's elderly population will reach 40 million by 2050, posing a significant challenge for long-term

care. Social security financing for the elderly is also lacking, with only a small portion covered by government insurance programs. Most elderly rely on family support, and nursing homes and care facilities are uncommon (Nurhayati and Rahmawati, 2017). Fauziah et al. (2018) note that demand for long-term care in Indonesia will increase due to an ageing population and changing family structures.

Indonesia has made efforts to improve its social security system with the introduction of the National Social Security System (SJSN) in 2014. However, challenges remain in terms of funding and access to long-term care services. Wahyuningsih et al. (2015) recommends the establishment of a national long-term care insurance program funded by government subsidies and contributions from individuals and businesses. Nugroho et al. (2019) suggests promoting the use of technology in healthcare services.

Referring to the facts stated above, conducting a study on sustainable financing for the health scheme of the ageing demographic and businesses is crucial and in demand during the current crisis. The study is offering a nuanced analysis that incorporates the fiscal challenges of developing economies, while also considering the broader socio-economic implications of policy reforms. It argues that sustainable solutions must strike a balance between fiscal pragmatism and social justice, ensuring that vulnerable populations are not disproportionately burdened by the inevitable demographic transitions. Moreover, the previous year's pandemic crisis has shown the importance of public health services being fairly accessible to all, but in reality, they have been left behind for the elderly and impoverished population. However, studies focusing on exploring the challenges faced by Indonesia's social security system in providing sustainable financing for long-term care for the ageing population and providing policy recommendations for addressing these challenges are rare. Therefore, it is pivotal to study this topic accordingly.

2. Analytical Framework

As the world's population ages, governments face significant challenges in providing social security and sustainable financing for the elderly population. This condition is also happened in Indonesia. The ageing population in Indonesia is a growing concern for policymakers and researchers due to its implications for social, economic, and health sectors. This literature review will focus on the current state of research on social security and sustainable financing for ageing population, including relevant studies and researches.

2.1. Overview of ageing population

This literature review on overview ageing population aims to provide an overview of the ageing population in Indonesia, including its demographics, trends, and challenges.

Demographics: According to the World Population Review (2021), Indonesia is the fourth most populous country in the world, with an estimated population of 276.5 million in

2021. The ageing population in Indonesia is also growing rapidly, with those aged 65 years and older projected to reach 19.4 million by 2035 (United Nations, 2021). Furthermore, the proportion of the ageing population is expected to increase from 6.9% in 2020 to 13.7% in 2050 (World Bank, 2021).

Trends: The ageing population in Indonesia is facing several challenges related to health, economic, and social sectors. A study by Ananta et al. (2019) revealed that the ageing population in Indonesia faces challenges related to the availability and accessibility of healthcare services, lack of financial security, and social isolation. Furthermore, the same study found that the ageing population in Indonesia is at higher risk of poverty, with around 35% of those aged 60 years and older living in poverty.

The ageing population in Indonesia is also facing challenges related to labour market participation, with a significant number of older adults in informal and low-paying jobs (Kementerian Ketenagakerjaan, 2021). The COVID-19 pandemic has further exacerbated the challenges faced by the ageing population in Indonesia, particularly in terms of health and social protection (World Health Organization, 2020).

The ageing population in Indonesia is a growing concern, with implications for health, social, and economic sectors. Policymakers and researchers must address the challenges faced by the ageing population in Indonesia, including healthcare services, financial security, social isolation, and labour market participation.

2.2. Social security system

The ageing population is a global phenomenon that has significant implications for social security systems around the world. In recent years, there has been a growing body of literature on the topic of social security and ageing population. This literature review aims to provide an overview of some of the relevant studies and researches on social security and ageing population.

According to a study by Lee and Mason (2014), the ageing population poses significant challenges to social security systems around the world. The study emphasizes the need for policies and programs that promote active ageing and increase the participation of older workers in the labor force. The study also highlights the importance of addressing the gender gap in pension coverage, as women are more likely to experience poverty in old age.

Another study by O'Donnell et al. (2017) focuses on the financing of long-term care for the ageing population. The study finds that social insurance programs can play an important role in financing long-term care, but that there is a need for greater public awareness and education on the issue. The study also emphasizes the importance of developing new models of care that focus on prevention and early intervention.

In terms of health care, a study by He and Sun (2021) highlights the challenges of providing health care services for the ageing population in China. The study finds that the ageing population in China is more likely to suffer from chronic diseases, which require

long-term care and management. The study emphasizes the need for policies and programs that promote healthy ageing and increase access to health care services.

The ageing population presents significant challenges for social security systems in many countries, including Indonesia (Arifin & Ananta, 2019; Suryahadi et al., 2021). Social security systems must provide income support and healthcare for the elderly population while remaining financially sustainable (Tangcharoensathien et al., 2018). Some studies suggest that social security systems may need to be reformed to address the needs of the elderly population, such as increasing retirement age, promoting active ageing, and improving social protection programs (Hakim & Aripin, 2020; Lee, 2020).

The literature on social security and ageing population highlights the need for comprehensive policies and programs that address the challenges posed by the ageing population. These policies and programs should focus on promoting active ageing, increasing access to health care and social services, and developing new models of care that focus on prevention and early intervention.

2.3. Long-term care for the elderly

The aging population has become a global phenomenon, and with it comes the need for long-term care services. Long-term care (LTC) is defined as a range of services and support to help people with functional or cognitive limitations meet their daily living needs for an extended period. It includes both medical and non-medical services such as personal care, assistance with daily activities, and medication management.

The ageing population is increasing worldwide, and with it comes the challenge of providing long-term care for this demographic. Several studies have been conducted to explore the various aspects of long-term care for the ageing population. In a study by Y. L. Chou and colleagues (2020), they examined the current situation of long-term care in Asia, including Indonesia. The study found that there is a lack of comprehensive long-term care services for the ageing population in Asia, including Indonesia. The study suggested that there is a need to develop long-term care policies that are specific to the needs of the ageing population and to invest in long-term care services.

Another study by P. W. Newbury and colleagues (2021) focused on the importance of social capital in long-term care for the ageing population. The study suggested that social capital can help to reduce the burden of long-term care on families and communities. The study recommended the development of policies and programs that promote social capital and social networks to support the ageing population.

A study by P. Mehta and colleagues (2020) explored the challenges and opportunities for providing long-term care in low and middle-income countries, including Indonesia. The study found that there is a lack of resources and infrastructure to support long-term care in these countries. The study recommended the development of policies and programs that promote the integration of long-term care into existing health systems and the development of community-based care models.

There is a growing trend of businesses collaborating with LTC providers to meet the increasing demand for LTC services. This collaboration can take various forms, such as partnerships, joint ventures, or mergers and acquisitions. According to a study by Lin and Chen (2021), business collaboration can improve the quality and efficiency of LTC services by providing better resources and expertise.

The study also found that collaboration between businesses and LTC providers can lead to improved financial performance and increased profitability for both parties. By working together, businesses can tap into a new market and expand their customer base while LTC providers can benefit from the business's resources and expertise.

However, the study also identified several challenges to business-LTC collaboration, such as cultural differences and the need for effective communication and coordination. Additionally, regulatory and policy issues can also hinder collaboration, such as licensing and reimbursement requirements. To overcome these challenges, Lin and Chen (2021) recommend establishing a clear understanding of the goals and expectations of each party, building trust and communication, and developing a shared vision and mission.

Overall, these studies highlight the importance of developing policies and programs that are specific to the needs of the ageing population in Indonesia and investing in long-term care services. The integration of long-term care into existing health systems and the promotion of social capital and community-based care models are also important considerations for policymakers. Whilst, business-LTC collaboration has the potential to address the increasing demand for LTC services and improve the quality and efficiency of care. However, careful consideration of the challenges and effective management of the collaboration is necessary for its success.

2.4. Sustainable financing for social security system

Financing for long-term care for the ageing population is a significant concern for governments around the world. In many countries, the costs of providing long-term care are expected to increase significantly in the coming years (Wittenberg et al., 2019). Some studies suggest that social insurance programs may be a solution to provide sustainable financing for long-term care (Kreling et al., 2020; Wang et al., 2021). However, the effectiveness of social insurance programs in providing sustainable financing for long-term care may depend on various factors, such as the level of benefits, funding sources, and the characteristics of the ageing population.

Limited access to quality care is also a significant issue faced by the elderly population in Indonesia. According to a report by the United Nations Population Fund (UNFPA), the quality of care provided to the elderly population in Indonesia is often inadequate (UNFPA, 2014). The report highlights that the elderly population's access to health care is limited due to the shortage of health care facilities and medical professionals. Additionally, the report found that the elderly population in rural areas has limited access to health care facilities, which exacerbates the issue of inadequate care.

To improve social security and long-term care for the elderly population in Indonesia, several recommendations have been proposed. The study recommends improving the quality of care, expanding social security coverage, enhancing funding mechanisms, and increasing public awareness. These recommendations are in line with the recommendations provided by the World Bank and the UNFPA to address the challenges faced by the elderly population in Indonesia (World Bank, 2016; UNFPA, 2014).

This literature review highlights the importance of social security and sustainable financing for ageing population. The studies reviewed suggest that governments may need to reform social security systems and explore new financing mechanisms to address the challenges of the ageing population. Further research is needed to determine the most effective policies and programs for promoting sustainable financing for the ageing population.

3. Research Method

This research paper applies a qualitative research approach, drawing on secondary sources such as academic literature, regulations, and government reports. The analysis also involves analyzing government policies and conducting exploration of experts' opinions, businesses actors' opinion and individuals' opinion. While secondary data quantitative as supporting evidence base obtaining from BPS Statistics Indonesia via National Survey (Susenas 2022) and Census result (2020), and derives from Health Ministry. All data collected will be gathered and analysed using a thematic approach, focusing on key themes related to the challenges facing Indonesia's social security system and potential policy options.

This Susenas data is thus far the main data source used to define the model of social security programs in Indonesia through estimation based on implemented cases, linked to the limited amount of state budget. The data collection methodology refers to the National Socio-Economic Survey (Susenas 2022) conducted by BPS Statistics Indonesia in March 2022. The March 2022 Susenas had a sample size of 345,000 households, spread across 34 provinces and 514 districts/cities throughout Indonesia, which were divided into census blocks. For each selected census block, a sample of 10 households was chosen, resulting in a total of 34,500 census block samples for the March 2022 Susenas. The 2020 census block was used as the 1st sample frame, which is a list of census blocks selected as the Master Sampling Frame. The 2nd sample frame consists of household populations, and the selection of a number of household samples is carried out by Probability Proportional to Size (PPS) based on the Census Block and households. The Susenas is an annual National Socio-Economic Survey conducted by BPS Statistics Indonesia, with a sample size of over 345,000 households, to provide estimations up to the city/regency level for publication and this representation connected directly to the local programs development and policy actions.

4. Result and Analysis

4.1. Current Ageing Situation in Indonesia

Indonesia is one of the world's most populous countries, with an estimated 273 million inhabitants in 2021 (BPS Statistics Indonesia, 2022). The country is also experiencing a rapidly ageing population, which is a major demographic and social challenge. According to the World Population Prospects 2019, the number of older persons (aged 60 years or above) in Indonesia was 28 million, accounting for around 10.4% of the total population. By 2050, this number is projected to reach 107 million or 34.7% of the total population.

The ageing population in Indonesia is facing a number of challenges, including inadequate social protection, limited access to healthcare and long-term care, and inadequate income security. In terms of social protection, only a small proportion of older persons receive social assistance or pension benefits from the government, and these benefits are often inadequate to cover their basic needs. Access to healthcare and long-term care is also limited, particularly in rural areas, where there is a shortage of healthcare facilities and trained healthcare professionals. In addition, older persons in Indonesia often face discrimination and stigmatization, which can affect their access to healthcare and social services.

To address these challenges, the Indonesian government has developed a number of policies and programs aimed at improving the welfare of older persons. These include the National Social Security System, which provides social assistance and pension benefits to eligible citizens, including older persons, and the National Health Insurance Scheme, which provides access to basic healthcare services for all Indonesian citizens, including older persons. The government has also launched a number of programs aimed at improving the quality of care for older persons, including the establishment of geriatric care units in hospitals and the development of training programs for healthcare professionals.

Despite these efforts, there is still a significant gap between the needs of the ageing population in Indonesia and the availability of social protection, healthcare, and long-term care services. Business collaboration could play a key role in bridging this gap, particularly in the provision of long-term care services. However, there are several challenges to be addressed, including regulatory barriers, limited access to financing, and a lack of awareness among businesses about the opportunities and benefits of investing in long-term care for older persons.

The ageing population in Indonesia is facing significant challenges in terms of social protection, healthcare, and long-term care. While the government has developed a number of policies and programs aimed at improving the welfare of older persons, there is still a significant gap between the needs of the ageing population and the availability of services. Business collaboration could play an important role in addressing these challenges, but there are several barriers that need to be overcome to fully realize the potential of this approach.

4.2. Social Security Budget Scheme for Ageing

It has been identified that one of the primary challenges related to social security for the elderly population in Indonesia is inadequate funding. According to a research report by the World Bank (2016), Indonesia's social security system has limited resources, which affects the quality of care provided to the elderly population. This study also found that social security schemes in Indonesia are fragmented and do not adequately cover the elderly population's needs. Furthermore, social security schemes are often designed for formal workers, leaving informal workers and those without jobs vulnerable to social and economic risks (World Bank, 2016; BPS Statistics Indonesia, 2022).

Another challenge related to social security for the elderly population in Indonesia is the lack of public awareness. According to a study by Kusumawardani et al. (2018), the lack of public awareness of the importance of social security schemes has resulted in a low level of participation in social security programs. This lack of awareness affects the elderly population's access to social security benefits, resulting in a lack of financial protection during retirement. The previous some studies have similarities to the finding of budget allocation data analysis of social protection, referring to Financial Note in 2023 (Figure 1.) below.

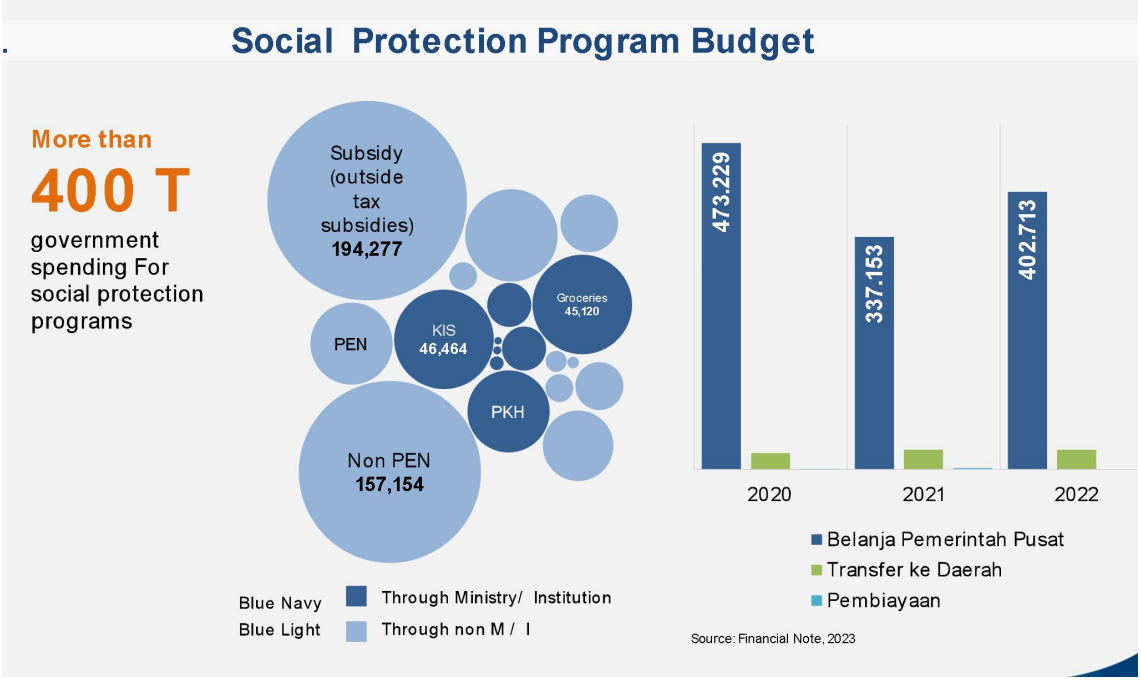


Figure 1. Budget Allocation for Social Security by Programs in 2020-2022, Indonesia

The social protection budget to overcome expenditure burdens and economic empowerment is currently quite high, reaching IDR 400 trillion, according to the Financial Note (2023). Of this amount, non-tax subsidy programs receive a high budget allocation, reaching IDR 194.27 trillion. Meanwhile, the largest social protection program managed by the ministry is the rice for the poor program, which reaches IDR 45.12 trillion. Although the

allocation of social assistance budget is high, the amount of assistance received by extreme poor households is still inadequate to lift them out of extreme poverty. The amount of social assistance provided by the government currently only equals 24 percent of the total per capita expenditure of extreme poor households (IDR 73,843) and has not yet included households and elderly members as the targeted recipients. This assistance amount is still far from the amount needed to meet basic needs adequately.

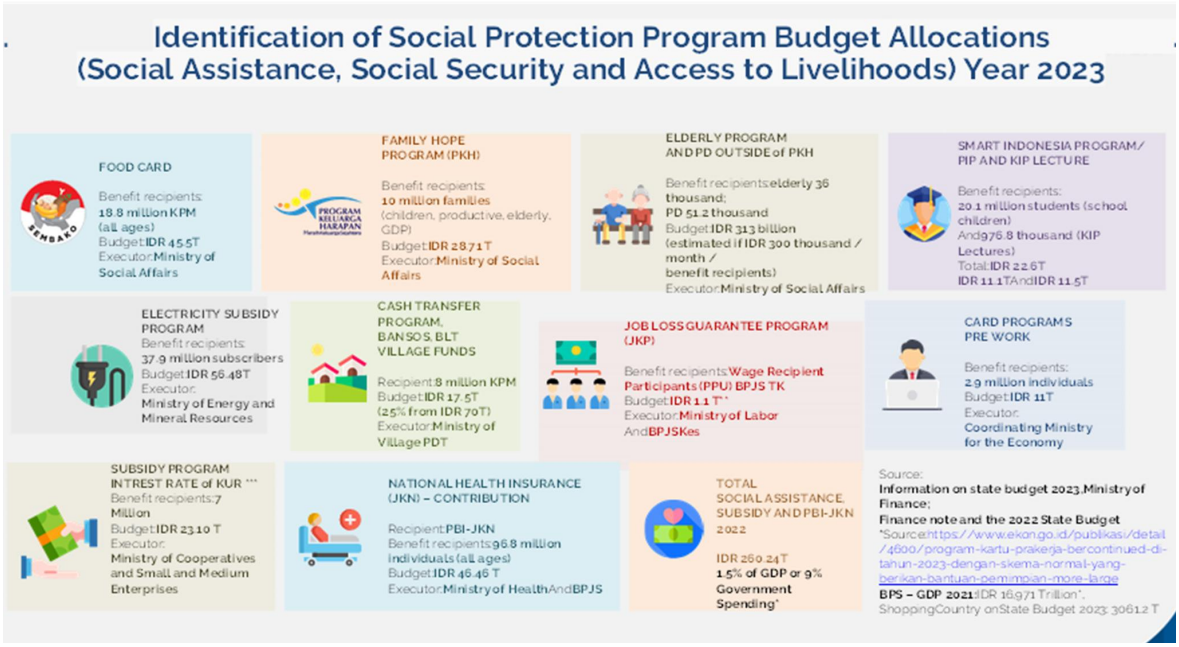


Figure 2. Mapping of Social Protection Programs Budget Allocation in 2023, Indonesia

The Indonesia government has allocated a budget for social protection programs to provide support for the elderly population. This budget is divided into three main categories: social assistance, social security, and access to livelihoods.

Social assistance programs aim to provide immediate support to the elderly who are in need, such as cash transfers and food assistance. Social security programs, on the other hand, provide long-term financial support, such as pension and health insurance. Access to livelihoods programs focus on creating opportunities for the elderly to engage in income-generating activities, such as entrepreneurship and skills training.

The Indonesian government has implemented several policies to improve the allocation of this budget and ensure the effectiveness of these programs. One of the key policies is the establishment of the Social Protection Information System (SISPROTEK), which aims to improve the targeting and delivery of social protection programs to the elderly population. The system collects and analyzes data on the socioeconomic status of the elderly, their access to services, and their participation in social protection programs. This information is used to improve the design and implementation of these programs. Another

policy intervention is the development of the National Social Protection Strategy (SPPN), which outlines the government's vision and priorities for social protection programs. The strategy aims to improve the coverage and effectiveness of social protection programs, including those targeting the elderly population.

The allocation of budget for social protection programs has resulted in several positive effects for the elderly population in Indonesia. For example, the national health insurance program has provided access to healthcare services for millions of elderly citizens who previously lacked coverage. The cash transfer program has provided financial support to those in need, enabling them to meet their basic needs and improve their quality of life. The access to livelihoods programs has also created opportunities for elderly citizens to engage in income-generating activities, improving their economic well-being.

However, there are also several challenges that need to be addressed to ensure the sustainability and effectiveness of these programs. One of the challenges is the limited budget allocation for social protection programs, which may restrict the coverage and scope of these programs. Additionally, the targeting of social protection programs may not be accurate, leading to potential exclusion of those in need.

The allocation of budget for social protection programs targeting the elderly population in Indonesia has resulted in several positive effects. However, there are also challenges that need to be addressed to ensure the sustainability and effectiveness of these programs, including improving targeting and increasing budget allocation. The government's policies and interventions, such as the establishment of SISPROTEK and the development of SPPN, are steps towards addressing these challenges and improving the delivery of social protection programs.

3.3. Challenges identified related to sustainable financing and long-term care of social security.

Indonesia's ageing population poses both challenges and opportunities for businesses in providing long-term care services. The challenges include a lack of government support and funding, limited public awareness and understanding of long-term care services, and a shortage of skilled caregivers. However, there are also opportunities for businesses to tap into the growing demand for long-term care services and to innovate in providing quality care.

One of the main challenges for businesses in providing long-term care services in Indonesia is the lack of government support and funding. The government's social security programs and long-term care services are limited and underfunded, leaving a gap in services that businesses can potentially fill. Furthermore, there is a lack of regulation and standards in the long-term care industry, making it difficult for businesses to establish themselves as reputable and trustworthy providers of care.

Another challenge is the limited public awareness and understanding of long-term care services in Indonesia. Many families may not realize the importance of long-term care until it is too late and may not have the financial resources to pay for such services. This

presents an opportunity for businesses to educate the public about the benefits of long-term care and to offer affordable and accessible services.

A shortage of skilled caregivers is also a challenge for businesses in providing long-term care services in Indonesia. Many caregivers lack formal training or qualifications, which can lead to inconsistencies in the quality of care provided. This presents an opportunity for businesses to invest in training programs and to attract skilled and qualified caregivers to their organizations.

Despite these challenges, there are also opportunities for businesses to innovate in providing long-term care services in Indonesia. As the demand for long-term care services continues to grow, there is a need for businesses to offer a range of services that cater to the diverse needs of the ageing population. This includes services such as home healthcare, assisted living, and memory care.

Furthermore, the use of technology can be leveraged to improve the quality and efficiency of long-term care services. For example, telehealth services can be used to monitor patients remotely and to provide virtual consultations with healthcare providers. This can help to address the shortage of skilled caregivers and to reduce costs associated with in-person care.

To address these challenges, the government has developed strategies to improve the quality of care, expand social security coverage, and enhance funding mechanisms for social security and long-term care.

3.3.1. Improving the Quality of Care

To improve the quality of care, the Indonesian government has developed several programs and initiatives. The government has developed a roadmap for improving the quality of care for the elderly, which includes increasing the number of caregivers and improving their skills and training. Additionally, the government has established a national certification system for caregivers to ensure that they meet minimum competency standards. These initiatives aim to ensure that the elderly receive high-quality care that meets their needs.

3.3.2. Expanding Social Security Coverage

The Indonesian government has also implemented various programs to expand social security coverage for the elderly population. The government has established a national health insurance program, which provides coverage for basic health services to all Indonesian citizens, including the elderly. Additionally, the government has developed a social security program for the elderly, which provides cash benefits to those who are eligible. The government aims to expand the coverage of these programs to reach more elderly citizens and provide them with financial support.

3.3.3. Enhancing Funding Mechanisms

Funding mechanisms for social security and long-term care for the elderly population are a significant concern for the Indonesian government. To address this issue, the government

has developed several initiatives to enhance funding mechanisms. The government has established a national trust fund for social security and long-term care, which aims to provide sustainable funding for these programs. Additionally, the government has implemented a public-private partnership program to encourage private sector investment in social security and long-term care. These initiatives aim to provide sustainable funding for social security and long-term care programs, ensuring that the elderly population receives the care and support they need.

3.4. Business opportunities in the ageing demographic

There are several successful businesses in Indonesia that have targeted the ageing population. Here are some found and been interviewed as sources:

PT Tiga Pilar Sejahtera Food Tbk is a food and beverage company that produces a range of products including rice, noodles, and snacks. One of their successful products is the "Nasi Sehat" or healthy rice, which is specifically designed for elderly consumers. The rice is fortified with vitamins and minerals that are essential for the elderly. This product has been well-received by the ageing population in Indonesia as it helps them to maintain a healthy diet. "Tiga Pilar Sejahtera launches healthy rice for elderly Indonesians", (Source: Indonesia Investments).

PT Mitra Keluarga Karyasehat Tbk is a healthcare company that provides medical services, including hospitals, clinics, and pharmacies. The company has several hospitals that are specifically designed to cater to the needs of the ageing population. The hospitals have facilities such as geriatric wards, rehabilitation canters, and specialized medical equipment for the elderly. The company has been successful in targeting the ageing population in Indonesia by providing them with high-quality medical care. "Mitra Keluarga targets Indonesia's ageing population", (Source: MarketScreener).

PT Great Giant Livestock is an agriculture company that specializes in the production of livestock, including cattle, poultry, and fish. The company has developed a range of products specifically for the ageing population, such as chicken broth and fish soup. These products are designed to meet the nutritional needs of the elderly and are easy to digest. The company has been successful in targeting the ageing population in Indonesia by providing them with healthy and nutritious food products. "Great Giant Livestock: Loyal to Quality and Innovation", (Source: Indonesia Investments)

These businesses have been successful in targeting the ageing population in Indonesia by developing products and services that cater to their specific needs. These businesses have recognized the potential of the ageing population as a market and have developed innovative solutions to cater to their needs. This shows that there is a growing demand for products and services that are specifically designed for the ageing population in Indonesia.

3.5. Current policies and practices analysis for ageing development

The integration and connection of implementation between national and local program development for ageing towards achieving SDGs targets, and aligning with regulations and laws, is a key factor in successfully supporting the appropriateness of the ageing social security scheme. Referring to the Table 1. can be seen that mapping policy implementation on ageing social security scheme portrays the lack of coordination between local and national program development for ageing scheme in Indonesia. Among the 5 (five) of ageing security program developments been implemented in Indonesia, there is only one program called 'Food Assistance Program for the Elderly' in lining at local-national level. Whilst the rest of four ageing social security scheme programs are mismatch. The mismatch of policies on ageing social security schemes between local and national levels in Indonesia can be attributed to several factors. One of the reasons is the difference in understanding and interpretation of the relevant regulations and laws by local and national authorities. Another reason is the lack of coordination and communication between local and national authorities, which often leads to confusion and conflicting policies.

Table 1. An Ageing Social Security Mapping for Program Actions Development in Indonesia

Name of Program Actions	National Program	Local Program	SDGs Target	In lining Regulation and Law
1. Program Jaminan Kesehatan Lanjut Usia (Jamkeslanjut) or Elderly Health Insurance Program	✔	✘	DG 3: Ensure healthy ves and promote well-eing for all at all ages	Law No. 13/1998 on Social Welfare, Government Regulation No. 53/2007 on Social Welfare for Elderly
2. Program Jaminan Sosial Pensiunan (Jamsostek Pensiunan) or Social Security Program for Retirees	✔	✘	SDG 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all	Law No. 11/1969 on Social Security for Retirees, Presidential Regulation No. 55/2015 on Jamsostek Pensiunan
3. Program Bantuan Pangan Lanjut Usia (BP-LU) or Food Assistance Program for the Elderly	✔	✔	SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Ministry of Social Affairs Regulation No. 14/2018 on BP-LU
4. Program Jaminan Pemeliharaan Kesehatan Lanjut Usia (JPK-LU) or Health Maintenance Program for the Elderly	✔	✘	SDG 3: Ensure healthy lives and promote well-being for all at all ages	Ministry of Health Regulation No. 28/2019 on JPK-LU
5. Program Asuransi Jiwa Lanjut Usia (AJ-LU) or Life Insurance Program for the Elderly	✔	✘	SDG 3: Ensure healthy lives and promote well-being for all at all ages	Ministry of Social Affairs Regulation No. 5/2019 on AJ-LU

Note: ✔ indicates that the program is implemented at the national level, ✘ indicates that the program is not implemented at the local level, and SDGs (Sustainable Development Goals) are the targets set by the United Nations to achieve sustainable development by 2030. The in-lining regulation and law column includes relevant laws and regulations that govern each program in Indonesia.

Please note.: this table is for illustrative purposes on the integration and synergistic of development program actions between national and local level Government on official regulations and laws about social security programs for ageing populations in Indonesia.

One strength of the ageing social security scheme in Indonesia is the existence of the national social security system, which provides a basic safety net for elderly citizens. However, the system still faces several weaknesses, such as limited coverage and insufficient funding. In addition, the implementation of social security schemes at the local level is often inconsistent and lacks a comprehensive approach, resulting in unequal distribution of benefits among elderly citizens. The social security on allocation budget program, only small amount and not sufficient compared to the amount of population beneficiaries.

To address these weaknesses, it is important for local and national authorities to work together to develop a comprehensive and coordinated ageing social security scheme. This should involve a clear understanding and interpretation of relevant regulations and laws, as well as sufficient funding and resources to ensure comprehensive coverage and equal distribution of benefits. The involvement and participation of elderly citizens in the policy-making process can also help ensure that their needs and interests are taken into account.

3.6. Prospects for inclusion of ageing in sustainable social security schemes

The key challenges in ensuring sustainable social security schemes for ageing populations is the need to balance the growing demand for services with limited resources. In Indonesia, this challenge is exacerbated by the country's relatively low levels of economic development and limited fiscal capacity. As a result, the Indonesian government has focused on developing innovative funding mechanisms and public-private partnerships to ensure that its social security schemes are financially sustainable over the long term.

Another challenge in developing sustainable social security schemes for ageing populations is ensuring that these schemes are inclusive and accessible to all members of society. In Indonesia, this challenge is particularly acute, as many elderly citizens live in rural areas and have limited access to formal financial services. To address this challenge, the government has implemented various programs aimed at increasing financial inclusion for elderly citizens, such as the national health insurance program and the social security program for the elderly, previously been discussed (Figure 1, 2 and Table 1.).

The prospects for inclusion of ageing in sustainable social security schemes in Indonesia face significant challenges, the government's programs and initiatives provide a promising starting point, that been planned in 2023. By focusing on improving the quality of care, expanding social security coverage, and enhancing funding mechanisms for social security and long-term care, the government can ensure that its ageing population receives the care and support they need.

5. Conclusions

Indonesia's ageing population poses challenges for social security, especially financing long-term care. Policy interventions needed include a long-term care insurance scheme,

public-private partnerships, and tax incentives. Political will and stakeholder collaboration are necessary for sustainable, adequate long-term care. Government and businesses should work together to ensure older adults access necessary care. Implementing the recommendations outlined can work towards creating a sustainable and equitable social security system.

The Indonesian government since 2023 has developed several strategies to address the challenges of providing quality care and sustainable financing for the growing elderly population. These strategies include improving the quality of care, expanding social security coverage, and enhancing funding mechanisms for social security and long-term care. While challenges remain, these initiatives represent an important step forward in ensuring that the elderly population in Indonesia receives the care and support they need.

Businesses in Indonesia face challenges in providing long-term care services for the ageing population, including a lack of government support, limited public awareness, and a shortage of skilled caregivers. However, there are also opportunities for businesses to innovate and fill the gap in services, such as offering a range of services and leveraging technology to improve the quality and efficiency of care.

The global shift towards aging populations presents significant fiscal challenges that demand immediate attention. As birth rates decline and life expectancies rise, nations are witnessing a shrinking workforce and growing retiree populations, which strain public finances. This demographic shift reduces tax revenues while increasing the need for public spending on pensions, healthcare, and long-term care. Countries with pay-as-you-go pension systems are particularly vulnerable, as fewer workers are available to support a growing number of retirees. High-income nations like Japan and Germany are already grappling with these pressures, while emerging economies face the challenge of preparing for similar demographic changes with fewer resources. Without proactive fiscal reforms, countries risk facing deficits, slower economic growth, and reduced public services, all of which could erode social stability.

To address these challenges, governments must adopt human-centered, long-term strategies that ensure fiscal sustainability without compromising the well-being of aging populations. This includes reforming pension and healthcare systems, expanding the tax base through measures like consumption and wealth taxes, and promoting greater workforce participation, especially for older and female workers. Investments in automation and technology can help offset labor shortages, but policies should also focus on retraining and supporting displaced workers. Importantly, governments must balance these economic reforms with social equity, ensuring that vulnerable populations are not disproportionately burdened. By embracing thoughtful, inclusive policies that recognize the value of all citizens, societies can navigate the demographic shift while maintaining fiscal health and social protection.

6. Policy Implications and Recommendations

Indonesia needs to support its ageing workforce through job redesign and training and improve access to care through the National Social Security System (SJSN). A national long-term care insurance program is needed to meet the growing demand, along with investment in technology to improve healthcare efficiency. Private companies can also invest in long-term care facilities with government incentives. These recommendations are crucial to ensure the provision of sustainable long-term care services and support for the ageing population in Indonesia.

This paper suggests policy options for Indonesia's social security system to provide sustainable financing for long-term care services. These options include establishing long-term care insurance and health insurance schemes like Japan and Germany, investing in nursing homes and long-term care facilities, offering incentives for private companies, promoting public-private partnerships, and implementing tax incentives. Additionally, the establishment of a regulatory framework to ensure quality care and protect elderly rights is recommended.

7. Acknowledgement

Thank you to the organizers of this conference, and blind reviewer who already made recommendation to include this research proposal to this prestigious conference. We hope that this fundamental research paper for action on sustainable financing of social security schemes for ageing people in Indonesia will be included inNBER conference and special Journal or Working paper of World Studies Publication very soon.

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