



Fostering Active Ageing in Thailand's Informal Economy: A Policy Imperative

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Fostering Active Ageing in Thailand's Informal Economy: A Policy Imperative

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Abstract

Ageing societies pose a unique challenge for Thailand, where a large informal sector excludes most workers from mandatory retirement ages and social security coverage. While extending retirement ages is a pertinent consideration for the formal sector, policy considerations should also encompass the informal sector. Specifically, policies should strive to enhance the physical and cognitive abilities of older workers in the informal sector through appropriate guidance, empowering them to prolong their working years and bolster their financial security. Despite the availability of voluntary social security schemes, enrollment rates among informal workers remain low due to a combination of factors, including lack of awareness, perceived benefit inadequacy, financial burden, and reliance on alternative social welfare programs. Even those receiving the government's old-age allowance may struggle financially.

This article highlights the underutilized potential of Thailand's extensive informal sector as a source of employment opportunities for older adults. Despite cross-country data suggesting a positive association between a large informal sector and high elderly employment rates, Thailand's labor force participation rate (LFPR) for individuals aged 65 and above remains comparatively low among similar developing nations. Furthermore, the LFPR decline for people transitioning from age group 55-64 to 65 and above is sharper in Thailand than in many other countries. The Active Ageing Index (AAI) can serve as a tool to investigate the factors contributing to Thailand's relatively low old-age LFPR by evaluating active ageing scores across various aspects. By identifying the missing elements in specific localities, the AAI and its sub-indices can guide local-area policy prioritization to address these gaps and enhance national policy effectiveness in promoting higher LFPR in old age. Fostering an active-ageing ecosystem within the informal sector will empower older individuals to continue working for longer periods and mitigate poverty risks in their later years.

Keywords: Active Ageing, Informal Economy, Ageing Society, Labor Force Participation, Thailand

JEL Code: E26, H53, I38, J14, J26

1. Background and Introduction

As the world confronts the challenges of an ageing population, retirement age has emerged as a critical policy issue. Unlike developed countries where retirement age is a central concern, Thailand faces a unique challenge. For the majority of Thai workers, retirement age is not a significant issue. The International Labour Organization (ILO) (2023) estimated that in 2018 a staggering 65% of all employment in Thailand falls within the informal sector. This means that their income security is not tied to retirement age restrictions. The prospect of maintaining financial independence persists into their later years, provided they maintain physical and cognitive well-being. Therefore, the notion that retirement leads to old-age poverty does not fully capture the reality for most Thai workers and many of those in developing countries. In many cases, existing old-age poverty stems from earlier periods of poverty during their working years, before the age of 60. This accumulated poverty becomes more severe in later years, highlighting the need for early interventions rather than solely focusing on retirement age. Without adequate support during their working years, many elderly individuals may lack the capacity to extend their working lives. Even with pension or old-age allowance eligibility, those who cannot continue to work may face income insecurity.

Thailand's vast informal economy holds immense potential, particularly in terms of work and employment opportunities for older adults. This potential remains largely underutilized. Aside from restructuring within the formal economy, the government can effectively address the challenges of an ageing society by fostering an active-ageing ecosystem within the informal sector. This approach will enhance income security for older adults and mitigate the risk of poverty in their later years. To effectively design relevant policies, indicators such as the Active Ageing Index (AAI) and its sub-indices can serve as valuable tools. The AAI helps identify the factors that should be prioritized for urgent development in the localized context. This data-driven approach ensures that policies are tailored to the unique needs of each area. The subsequent section delves into the discourse on the informal economy and its implications for the overall economy and the quality of life of workers. The third section presents an overview of the ageing labor force in Thailand. This is followed by a comparative assessment of the informal sector and labor force participation rate (LFPR) among the selected countries, utilizing stylized statistical representations. The paper proceeds to explain the application of AAI as a policy tool, identifying the missing elements in the localities where policy should prioritize. The concluding section provides policy recommendations from the perspective of the informal sector in the context of Thailand.

2. A Review of the Discourse on Informal Economy

The term "informal economy" encompasses all economic activities undertaken by workers and economic units that are either legally or practically excluded from formal arrangements. These activities may fall outside the purview of the law, indicating operation beyond the formal legal framework. Alternatively, they may nominally fall within the legal framework but remain uncovered due to inadequate enforcement or overly burdensome regulations that discourage compliance (ILO, 2015).

According to ILO's definition¹, "informal employment" encompasses three distinct groups as follow:

1. Employees not protected by national labor legislation: This includes individuals who lack access to social security schemes related to their employment, such as pensions, and are not entitled to employment benefits like paid annual leave or sick leave.
2. Entrepreneurs in informal units: This category includes employers, members of producers' cooperatives, and own-account workers (provided their output is for sale) who operate within informal units.
3. Contributing family workers: These individuals contribute their labor to an informal family enterprise without receiving a separate wage or salary.

¹ ILO Stat's definition [1]. The website referred to United Nations: Handbook for Producing National Statistical Reports on Women and Men, Social Statistics and Indicators, Series K, No. 14 (New York, 1997), p. 232.

In contrast, “formal employment” refers to employment that does not meet the criteria of informal employment. Formal workers enjoy social security protections, employment benefits, and independent legal status.

Informal employment, encompassing approximately 2 billion workers, representing 60% of the global labor force, constitutes a significant aspect of the economic landscape (Delechat & Medina, 2021). While prevalent in emerging and developing economies, informality also exists in developed nations. The majority of informal workers, around 85%, are engaged in precarious employment situations within small production units, often driven by a lack of opportunities in the formal sector (ILO, 2018). A multitude of scholarly investigations underscore the imperative of adopting a comprehensive strategy to combat informality, encompassing measures that foster formalization, augment social safeguards, and broaden the reach of education and essential services for the entire population.

The pervasiveness of informal employment has significant macroeconomic consequences. Informal firms, typically small and unproductive, contribute minimally to the tax base, hindering government revenue generation (Joshi et al, 2014; World Bank (2019)). Limited fiscal resources constrain governments' ability to provide adequate coverage for social protection programs, comprehensive public services, and business cycle improvements (World Bank, 2020). Consequently, countries with high levels of informality experience lower growth rates and struggle to collect sufficient taxes, further perpetuating informality (Ohnsorge and Yu, 2022).

Economies with a large informal sector typically exhibit lower levels of development and workers' living standards. Informal workers are more likely to experience poverty and earn lower wages compared to their counterparts in the formal sector (World Bank, 2019). This disparity is further exacerbated by their lack of social protection and access to credit. Consequently, human development indicators such as life expectancy and maternal mortality tend to be lower in economies with a large informal sector.

The informal economy encompasses a diverse range of individuals and enterprises, exhibiting substantial heterogeneity across demographic groups. Youth and older workers are disproportionately represented in the informal sector. Youth often face challenges in securing formal employment due to limited experience and qualifications, while older workers may transition to informal work as they approach retirement or face age-related discrimination (OECD, 2019). Globally, informal employment tends to absorb a higher proportion of less-educated workers, who may resort to informal activities to generate income due to limited opportunities in the formal sector.

In terms of gender, women are more likely than men to be engaged in informal employment, particularly in the most precarious and low-paying categories. This gender disparity is partly attributed to women's unequal access to education and healthcare services (UN Women, 2016). Malta et al. (2022) reveal a connection between the prevalence of women in the informal sector and gender imbalances in education, social and legal norms that are biased against women, and the legal system.

Despite long-held misconceptions, the informal economy, often perceived as a drain on government revenue, actually contributes significantly to tax coffers. A cross-country analysis by the OECD/ILO (2019) found that the assumed negative correlation between informality and tax revenue does not hold true when controlling for various factors, including the level of development. Instead, informal workers and firms contribute to tax revenue through indirect taxes, presumptive taxes, and their connections with the formal economy. Additionally, they contribute to the provision and maintenance of local public goods through various forms of taxation outside the formal system. These often-overlooked contributions play a crucial role in supporting local communities and infrastructure.

Beyond tax revenue, the informal sector also contributes to economic growth through direct and indirect channels, including the transfer of hidden subsidies to the formal economy, the production of goods and services, and the creation of skills development and employment opportunities. The OECE/ILO (2019) report's estimates suggest that the informal sector's contribution to GDP can be substantial, reaching as high as 30% in agriculture and 17% in non-agricultural sectors. By recognizing and effectively harnessing the multifaceted contributions of the informal sector, developing countries can pave the way towards a more inclusive and sustainable economic landscape, particularly in the context of an ageing population.

3. The Characteristics and Well-being of Thailand's Ageing Labor Force

The Survey of the Older Persons in 2021, conducted by the National Statistical Office (NSO) (2022), provides insights into the labor market participation and employment characteristics of Thailand's older population. Thailand's demographic landscape is characterized by a rapidly ageing population, with approximately 13.4 million older persons aged 60 and above, constituting 19.6% of the total population in 2021. This ageing trend is reflected in the steady rise of the old-age dependency ratio, which reached 30.5% in 2021 and is projected to reach 55% by 2040.

Despite this ageing trend, labor market participation among older persons remains significant. Approximately 34.7% of the total older population reported working in the past seven days, representing a modest decrease compared to 2017 (35%) (NSO, 2018). Self-employment is the dominant form of employment among older workers, with 64.8% engaged primarily in the agricultural, forestry, and fishery sectors. The average working hours for older workers vary by age group, with young elderly working 6.2 hours per day, middle elderly working 5.7 hours per day, and old elderly working 5.3 hours per day.

Although there was a slight reduction in working hours compared to 2017, older workers in Thailand continue to exceed the desirable work hours recommended by Bell and Rutherford (2013) of 7-21 hours per week (approximately 4 hours per day for a five-day workweek). This persistent overexertion among older workers raises concerns about their well-being and necessitates further investigation into the factors influencing their labor market decisions. Paweenawat and Liao (2021) provide compelling evidence that poorer health status and pension (for the higher income group) are significant factors in reducing the labor force participation of older individuals in Thailand. This suggests that the extended working hours of older workers may be driven by a sense of necessity rather than choice, as they may be compelled to continue working despite declining health to maintain financial security.

The reasons why older persons continue to work from the survey may be collectively grouped as: "work without necessity" (physical capability, making good use of time, etc.) and "work out of necessity" (income needed for family, children, debt, etc.). Approximately half of older workers reported working out of necessity, highlighting the need for income generation to meet basic living expenses. This is further supported by their self-evaluation of income sufficiency. Based on their subjective assessment without formal monetary benchmarks, close to half of the older population reported income insufficiency, with a higher prevalence in rural areas outside the municipality.

An examination of income sources among Thailand's older population reveals that the average annual income range for over half of this demographic falls within the 10,000-50,000 Baht bracket. A breakdown by age group indicates that work serves as the primary income source for most young elderly individuals. In contrast, the middle and old elderly populations primarily rely on family and state pensions. Notably, there has been an increasing dependence on income from work and pensions across all age groups compared to the 2017 statistics. This trend underscores the urgent need for concrete policy discussions focused on old-age employment and income security. Approximately half of the older population possess savings, with an average savings range of approximately 25,000 – 100,000 Baht. In terms of housing, the majority of older persons or their spouses (84.3%) own their accommodation, while 12.6% and 3.1% reside in accommodations owned by family and relatives, respectively.

Public assistance programs significantly influence the well-being of older adults beyond income and employment factors. Thailand's Universal Health Coverage (UHC) scheme encompasses three public health insurance plans: the Civil Servant Medical Benefit Scheme (CSBMS) for government officials, retirees, and their dependents; the Social Health Insurance (SHI) for private-sector employees; and the Universal Coverage Scheme (UCS), introduced nationwide in 2002, for the rest of the population. Notably, Thailand's informal workers enjoy a comparatively higher level of protection through its universal healthcare system, as compared to informal workers in other developing countries.

The Social Security Act of 1990 (B.E. 2533) stipulates that employees in the formal sector are entitled to social protection, encompassing a comprehensive range of benefits such as injury or sickness benefits, maternity benefits, invalidity benefits, death benefits, child benefits, old-age benefits, and

unemployment benefits. However, the majority of these workers continue to grapple with the challenge of inadequate retirement savings. To extend social protection beyond formal employment, the government has introduced voluntary contributions to the Social Security Fund (SSF) for informal sector workers (Section 40 of the Social Security Act). Individuals aged 15-65 can choose from three contribution options with varying benefits:

Option 1: 70 Baht per month provides 300 Baht per day for injury or sickness, 500-1,000 Baht per month for invalidity benefits, and 25,000 Baht for funeral expenses.

Option 2: 100 Baht per month offers the benefits of Option 1 plus 50 Baht per month for old-age benefits.

Option 3: 300 Baht per month provides 300 Baht per day for injury or sickness, 500-1,000 Baht per month for invalidity benefits, 50,000 Baht for funeral expenses, 50 Baht per month for old-age benefits, and 200 Baht per month for child welfare.

Despite Section 40 of the Social Security Act, which mandates coverage for informal workers, numerous barriers impede their enrollment and protection under the Act. Primarily, informal workers lack adequate information about the Act's benefits and enrollment procedures. Additionally, they perceive the Act's benefits to be insufficient compared to the expected monthly contributions. Furthermore, informal workers view monthly contributions as an unnecessary financial burden. Finally, informal workers may perceive that existing social welfare programs and occasional ad-hoc government support policies are available for low-income individuals, rendering contributions under the Social Security Act unnecessary. These factors collectively contribute to the low coverage rates among informal workers, highlighting the need for targeted interventions to enhance awareness, address perceived benefit inadequacies, and alleviate financial concerns.

As an illustration of additional government support policies, the Thai government announced in April 2023 the five key benefits of its social welfare program for 2023. This program, designed to provide financial assistance to low-income households, is projected to benefit an estimated 14.6 million individuals. The objective of the social welfare program is to alleviate financial burdens on low-income households and assist them in meeting their basic needs (The Standard, 2023, March 23). The revised social welfare program introduces a range of enhanced benefits, including:

- An increased monthly allowance of 300 Baht per person for essential goods, educational supplies, and agricultural supplies.
- An expanded monthly LPG subsidy of 80 Baht per person, valid for a three-month period.
- An elevated monthly public transportation allowance of 750 Baht per person.
- Financial assistance for electricity and water bills:
 - Households consuming less than 50 units of electricity per month for three consecutive months will continue to receive free electricity. Households consuming more than 50 units per month will receive a monthly allowance for electricity costs.
 - Households consuming water valued between 100 baht and 315 baht per month will continue to receive a monthly allowance. Households consuming water valued above 315 baht per month will be responsible for the entire water bill.
- A disability allowance of 200 baht per month for cardholders holding a disability card and receiving disability benefits.

Eligibility for the scheme is contingent upon Thai nationality, an age of at least 18 years, an annual income below 100,000 baht, and financial assets (deposits, bonds, etc.) with a value less than 100,000 baht. Additionally, the size of a candidate's house must not exceed 25 square wah (100 square meters) or 35 square meters for an apartment. Agricultural land ownership must not surpass 10 rai (1.6 hectares), while non-agricultural land ownership must be limited to 1 rai (The Nation, 2023, February 28). Overall, Thailand's informal workers stand out from their counterparts in many developing countries due to the comprehensive range of healthcare benefits, social security options, and additional government support programs available to them.

4. A Comparative Assessment of the Ageing Labor Force Participation in Thailand

In 2018, based on the ILO's (2023) estimation, a staggering 65% of employment fell within the informal sector, indicating a significant portion of the workforce operating outside the formal economy (Table A.1 in the Appendix). This prevalence of the informal sector presents a distinct challenge in the context of Thailand's ageing population. Thailand's population ageing is occurring at a relatively low-income level compared to other ageing East Asian economies like Hong Kong, Japan, Korea, and Singapore. This raises concerns about the country's ability to support its growing elderly population and address the potential economic slowdown associated with a shrinking working-age population. According to Moroz et al (2021), population ageing could have a negative impact on Thailand's economic growth. Projections suggest that, without policy adjustments, demographic changes alone could reduce growth in GDP per capita by 0.86% in the 2020s.

Moreover, Thailand's labor market, once a vibrant hub of economic activity, faces a declining total labor force participation rate from 70.27% in 2013 to 67.54% in 2022. However, it can be observed that despite the decline in the total participation rate, the labor force participation rate of those aged 65 and above have seen an increasing trend (Table 1). This divergence in participation rates underscores the importance of considering the dynamics of the elderly workforce in Thailand's ageing landscape.

Table 1. Labor Force Participation Rate (LFPR) in Thailand

	Total LFPR, %	LFPR Age 55-64, %	LFPR Age 65+, %
2013	70.27	69.14	25.66
2014	69.83	69.00	25.67
2015	69.24	68.70	25.45
2016	68.25	67.37	24.94
2017	67.50	66.87	24.76
2018	67.80	67.80	25.17
2019	66.96	66.80	24.42
2020	67.02	67.70	25.72
2021	66.94	68.06	26.42
2022	67.54	68.61	26.49

Source: ILO Stat (ILO, 2023), compiled and rearranged by the author.

The labor force participation rate (LFPR) is a crucial economic indicator that measures the proportion of the working-age population that is either employed or actively seeking employment. It reflects the available labor supply relative to the working-age population. The LFPR is influenced by various factors, including economic conditions, demographics, social norms, and government policies. It is calculated by dividing the number of people in the labor force (employed and unemployed) by the working-age population (usually 15 and older). (see detail of the calculation in Bourmpoula et al, 2013) .

In developing nations, the lack of adequate income security and social welfare compels older individuals to remain active in the workforce, resulting in significantly higher LFPR compared to developed countries. Despite their substantial contribution to household finances, older workers in developing countries, particularly in low-income regions, face declining remuneration as they age (Barrientos et al (2003). Previously, Arifin and Anata (2009) drew attention to Thailand's relatively high labor force participation rate (LFPR) among individuals over 60, surpassing that of neighboring Southeast Asian economies such as Singapore, Indonesia, and Brunei Darussalam. However, recent ILO's (2023) estimations in 2018 indicate that Thailand's old-age LFPR has declined below that of Singapore and Indonesia, while still remaining higher than Brunei and Myanmar and close to Vietnam. (Figure 1). When examining the LFPR change between the age groups of 55-64 and 65 and above, Thailand, along with Brunei, Vietnam, and Myanmar exhibit the most significant negative shift (Figure 2). This suggests that a relatively high proportion of older workers in these countries have exited the workforce as they have aged.

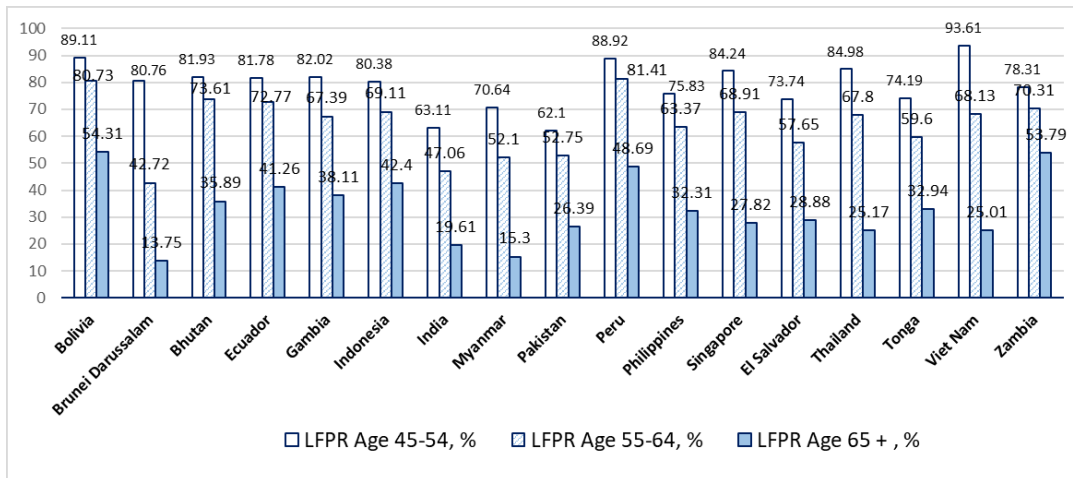


Figure 1. Labor Force Participation Rate in Thailand and Selected Countries, 2018
 Source: ILO Stat (ILO, 2023), compiled and rearranged by the author.

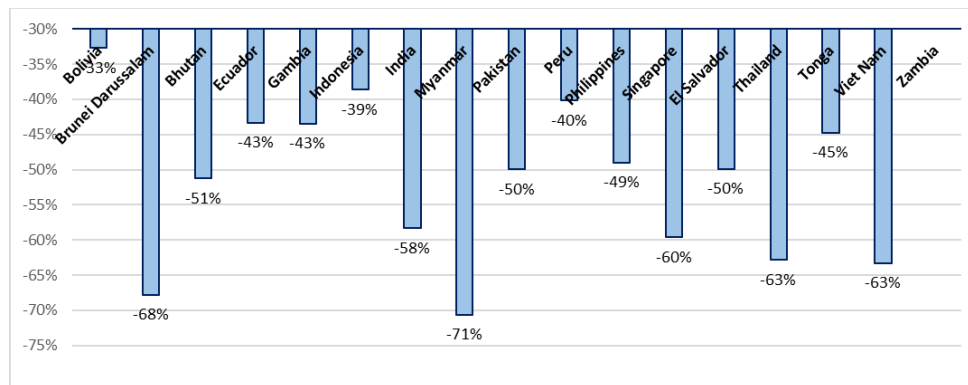


Figure 2. Percentage change of Labor Force Participation Rate (LFPR) from Age 55-64 to Age 65 and above, 2018
 Source: ILO Stat (ILO, 2023), compiled and rearranged by the author.

An analysis of the relationship between the informal sector and the labor force participation rate (LFPR) among individuals aged 65 and above in 82 selected countries reveals a strong positive correlation between the two variables (Table 2). This finding is further supported by the regression analysis, which indicates that for every 1% increase in informal employment, there is an average 0.36% increase in the LFPR among individuals aged 65 and above (Table 3). The goodness-of-fit test demonstrates that the model effectively explains 54% of the variation in the old-age LFPR (Table A.3 in the Appendix). Additionally, the Analysis of Variance confirms the overall significance of the model (Table A.4 in the Appendix). The strong positive correlation between informal employment and LFPR among individuals aged 65 and above, coupled with the significant regression results, underscores the importance of the informal sector in supporting the labor force participation of older workers. It can be observed that the potential of Thailand's informal sector remains underutilized. By fostering the growth and development of the informal sector, Thailand can harness its potential to support the economic security and well-being of its older population.

Table 2 Pearson’s Correlation Coefficient, Informal Employment and LFPR by age group

	<i>Informal Employment, %</i>
Informal Employment, %	1
Total LFPR, %	-0.045684693
LFPR, Age 15+, %	-0.08193781
LFPR, Age 15-64, %	-0.567476918
LFPR, Age 45-54, %	-0.43168281
LFPR, Age 55-64, %	0.051829187
LFPR, Age 65 +, %	0.737640373

Source: Data from ILO Stat (ILO, 2023), author’s calculation.

Table 3 Ordinary Least Squares Regression

Dependent variable: LFPR Age 65 and above, %

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	4.448599889	2.0033873	2.220539128	0.02924709
Informal Employment, %	0.364914692	0.037580415	9.71023571**	4.0213E-15

** Significant at the 0.05 level

Source: Data from ILO Stat (ILO, 2023), author’s calculation.

5. Utilizing the Active Ageing Index (AAI) as an Indicative Policy Tool

Research has shown that appropriate employment can lead to active ageing and vice versa; and active ageing requires supportive policies (OECE, 2006; Parent-Thirion, 2014; Myck, 2015, Phijaisanit, 2015; Magnavita, 2017). An example of the effectiveness of a macro-level policy linked to the degree of active ageing is the case of tax breaks for hiring older adults. In Thailand, one of the measures implemented is the corporate income tax deduction for hiring senior employees, as stipulated in the Revenue Code (No. 639) B.E. 2560. It was found that the provinces with increasing employment have higher active ageing score, compared to that in provinces with declining private sector employment after the policy was implemented in 2016 (Phijaisanit, 2021).

To recall the background concept, the World Health Organization (WHO) (2002) defines “active ageing” as follows:

“Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.”

The term “health” includes physical, mental, and social well-being. Therefore, in the WHO’s framework for ageing policy, promoting mental health and social connectedness is just as important as physical health.

A report by the United Nations Economic Commission for Europe (UNECE) and the European Commission (2019), building on the lessons of their first report in 2015 (UNECE and European Commission, 2015), developed the Active Ageing Index (AAI) using the WHO’s Active Ageing framework as the basis for converting it into different components of the composite index as a benchmark for comparing the quality of life of older people in the European Union.

The composite index, AAI, consists of 22 indicators, divided into four dimensions to reflect the characteristics of active ageing: (1) employment, (2) social participation, (3) independent, healthy and secure living, and (4) enabling environment for active ageing. It is a widely accepted tool for designing effective ageing policies in many countries, particularly in the European Union, the People’s Republic of China, and the Republic of Korea, both at the national and local levels (UNECE & EC, 2015, 2019; Breza & Perek-Bialas, 2014; UNECE, 2012; Zaidi et al, 2017, 2019).

The development of the Active Ageing Index (AAI) in Thailand has been characterized by a gradual expansion of its scope and complexity. Early research focused on three dimensions of active ageing: health, participation, and security (Thanakwang & Soonthornhdada, 2006; Chansarn, 2012; Saengprachaksakula, 2014). The National Statistical Office (2017) subsequently incorporated a fourth dimension, "enabling factors for active ageing," in its AAI calculations. This dimension captures indicators such as access to information and communication technology (ICT) and literacy. While the use of only two indicators in this dimension is a limitation, it represents a forward step in broadening the index's scope. The research found that the level of active ageing of Thai elderly people is mostly at a moderate level.

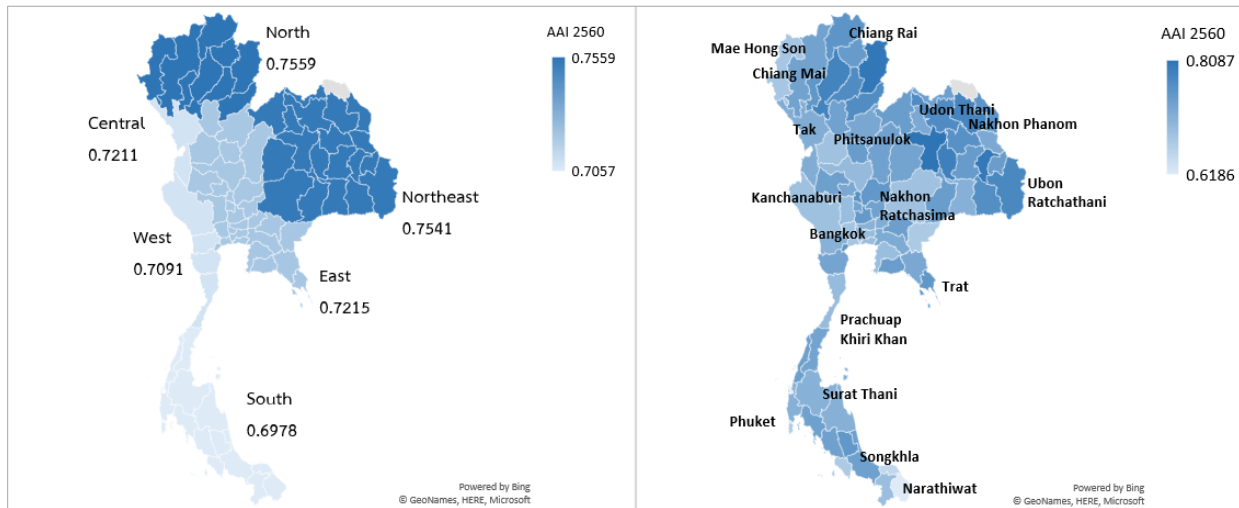


Figure 4. AAI classified by region and province in Thailand, 2017
 Source: Phijaisanit (2021), modified from Figure 9, p. 60 and Figure 17, p. 72

Phijaisanit (2021) modified and expanded the Active Ageing Index (AAI) to reveal regional disparities in active ageing, guiding the design of tailored local policies. Regional AAI scores vary significantly, with the Northern and Northeastern regions having higher scores than the Western and Southern regions (Figure 4). It is indicative that policymakers should prioritize promoting active ageing in the Western and Southern regions, while also considering sub-indices for area-specific interventions. The Northeast region's lower health index (HI) suggests prioritizing public health investments, while the Western and Southern regions' lower social participation (PI) scores indicate a need for transportation investments. The Southern region's lower security index (SI) score, despite a lower elderly population, calls for comprehensive elderly security measures such as long-term care communities and facilities. The Northern region's lower enabling factor index (EI) score suggests prioritizing lifelong learning initiatives. The indices are also available at the provincial level. In its entirety, the Active Ageing Index (AAI) and its sub-indices can serve as valuable tools for crafting effective localized fine-tuning policies that complement national-level initiatives aimed at promoting active ageing, increasing labor force participation among older adults, and consequently enhancing their financial security.

6. Conclusion and Policy Implications

Thailand's ageing society presents a distinct set of challenges compared to developed countries where retirement age is a central concern. This is primarily due to the substantial informal sector, where income security is not contingent on formal retirement plans or age limitations. Consequently, the prevalence of old-age poverty often originates from earlier periods of financial hardship during the working years, underscoring the necessity for early interventions and proactive measures rather than an exclusive focus on retirement age policies. The fundamental challenge lies in empowering older adults to preserve

their physical and cognitive abilities, through appropriate guidance, enabling them to continue working for extended periods to maintain financial security.

Informal employment plays a crucial role in promoting labor force participation among older workers, as evidenced by a strong positive correlation between the informal sector and the labor force participation rate (LFPR) among individuals aged 65 and above. Thailand, with its substantial informal sector, has the potential to effectively tap into this resource to enhance the well-being and economic security of its ageing population. However, despite the large informal sector, old-age labor participation has declined in recent years, particularly when examining the LFPR change between the age groups of 55-64 and 65 and above. Thailand exhibits a significant negative shift, suggesting that a relatively high proportion of older workers have exited the workforce as they have aged. To address these challenges and harness the underutilized potential of the informal sector in Thailand's ageing society, a multifaceted approach is required.

The Active Ageing Index (AAI) encompasses four dimensions: health, social participation, security, and enabling environments. By incorporating these dimensions, the AAI and its sub-indices can assist policymakers in effectively evaluating the employment situation of older informal workers, identifying impediments to their participation in the workforce within the context of their specific local areas. Based on the AAI findings, concrete and tailored policies and programs can be formulated to support the employment and overall well-being of older informal workers. These initiatives could include:

- Skills training and microcredit initiatives: Aligned with the urgent needs in specific localities, these programs can provide older workers with the necessary skills and financial resources to enhance their employability and entrepreneurial opportunities.
- Social participation opportunities: In regions where social engagement is a critical need, fostering opportunities for social interaction, community involvement, and peer support can significantly improve the overall well-being of older informal workers.
- Infrastructure development: Facilitating travel and communication through infrastructure improvements, such as accessible transportation options and digital connectivity, can enhance the mobility and engagement of older informal workers.
- Information technology and skills acquisition programs: Providing access to information technology and promoting skills acquisition opportunities can empower older informal workers to make informed decisions, adapt to changing demands, and actively contribute to society.

By utilization of AAI as a policy tool to create an active-ageing ecosystem, policymakers can harness the potential of the informal sector to promote increasing labor force participation, financial security, social engagement, and continued contribution to society, ultimately leading to a more inclusive and sustainable ageing society in Thailand.

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Table A.1. Informal Employment (% of total employment) and Labour Force Participation Rate (%) by age group, 2018

Country	Informal Employment, %	Total LFPR, %	LFPR, Age 15+, %	LFPR, Age 15-64, %	LFPR, Age 45-54, %	LFPR, Age 55-64, %	LFPR, Age 65+, %
Albania	57.9	59.3	59.3	68.13	83.37	63.5	14.5
Argentina	48.5	59.6	59.6	68.45	81.83	63.56	16.36
Armenia	56.4	69.08	69.08	71.12	82.11	72	46.32
Australia	27.6	65.64	65.64	78.03	83.76	66.67	13.98
Austria	4.7	61.32	61.32	76.69	88.58	56.18	4.94
Belgium	5.3	54.19	66.3	68.59	83.59	52.61	2.76
Benin	96.9	62.74	54.19	63.29	86.03	74.41	52.04
Burkina Faso	95.7	44.89	44.89	46.53	55.65	43.77	21.01
Bulgaria	7.2	55.32	55.32	71.5	86.54	63.69	5.83
Bosnia and Herzegovina	22.1	41.91	41.91	53.98	64.04	36.38	4.7
Bolivia	80.7	71.8	71.8	74.07	89.11	80.73	54.31
Brazil	39.6	64.23	64.23	70.75	74.97	51.69	15.09
Brunei Darussalam	33.3	65.39	65.39	69.04	80.76	42.72	13.75
Chile	29.3	59.9	59.9	67.83	79.1	68.73	24.59
Colombia	62.4	65.24	65.24	70.78	78.91	63.28	26.1
Costa Rica	40.3	62.21	62.21	68.81	78.26	60.55	22.88
Cyprus	13.1	62.49	62.49	75.11	84.44	64.75	8.53
Czechia	17.3	60.56	60.56	76.57	94.17	66.45	7.19
Denmark	7.8	61.82	61.82	78.25	87.71	71.79	8.28
Dominican Republic	56.8	63.77	63.77	68.87	78.03	63.48	27.16
Ecuador	62.6	66.66	66.66	70.01	81.78	72.77	41.26
Egypt	63.7	43.3	43.3	45.24	59.6	42.34	11.47
Spain	5.9	57.92	57.92	73.71	84.34	60.49	2.3
Estonia	2.5	63.73	63.73	78.98	90.68	72.62	13.93
Finland	8.2	59.44	59.44	77.92	90.32	70.27	6.42
France	25.8	55.62	55.62	72.39	87.93	59.31	3.42
United Kingdom	24.5	63.08	63.08	77.88	86.44	67.51	10.68
Gambia	79.5	60.9	60.9	62.22	82.02	67.39	38.11
Guinea-Bissau	94.8	56.02	56.02	56.75	77.12	67.12	43.15
Greece	8.1	51.45	51.45	67.54	80.36	47.68	3.6
Guatemala	80.6	60.5	60.5	62.83	68.59	59.79	37.61
Guyana	51.4	54.12	54.12	58.24	63.44	47.09	17.06
Croatia	4.3	51.19	51.19	66.3	75.79	44.77	2.95
Hungary	6.3	56.73	56.73	71.94	89.66	55.84	3.27
Indonesia	82.4	67.65	67.65	69.89	80.38	69.11	42.4
India	88.6	47.56	47.56	50.11	63.11	47.06	19.61
Ireland	5.7	62.16	62.16	72.94	79.99	63.3	11.58
Iceland	1.4	81.84	81.84	87.5	90.19	82.53	38.17
Italy	12	49.92	49.92	65.64	78.37	56.95	4.78

Jamaica	57.3	63.14	63.14	67.29	83.34	71.95	29.6
Jordan	48.6	39.18	39.18	41.8	39.87	18.87	4.72
Kyrgyzstan	57.3	64.13	70.13	67.43	80.49	63.62	20.28
Saint Lucia	32.2	69.88	69.88	79.56	87.02	68.48	22.57
Sri Lanka	68.1	51.72	51.72	56.86	69.52	54.15	22.11
Lithuania	6	61.55	61.55	77.31	88.78	73.84	9.33
Luxembourg	7.3	59.88	59.88	71.08	84.86	41.96	1.94
Latvia	8.5	61.44	61.44	77.7	88.53	70.77	9.7
Moldova, Republic of	56.3	67.05	67.05	68.7	82.58	77.5	58.57
Mexico	57.6	59.63	59.63	63.77	72.63	56.29	27.42
North Macedonia	16.2	54.81	54.81	65.04	73.62	51.25	3.51
Mali	94.7	63.75	63.75	65.77	79.46	70.85	34.8
Malta	11.4	60.08	60.08	74.71	79.79	51.9	4.8
Myanmar	79.8	62.36	62.36	66.89	70.64	52.1	15.3
Mongolia	48.8	59.47	59.47	62.82	77.09	36.57	10.64
Mauritius	53.5	58.67	58.67	66.83	72.51	51.31	9.18
Namibia	55.8	58.88	68.29	68.29	76.67	49.02	39.56
Netherlands	14.4	64.27	64.27	80.25	86.03	70.85	8.34
Norway	6.2	64.12	64.12	77.87	85.93	73.18	11.05
Pakistan	81.8	50.99	50.99	52.46	62.1	52.75	26.39
Panama	51.4	64.91	64.91	70.81	83.27	67.83	28.55
Peru	68.5	77.18	77.18	80.22	88.92	81.41	48.69
Poland	19.1	56.34	56.34	70.13	83.42	50.34	5.45
Portugal	6.1	59.11	59.11	75.14	86.87	63.36	11.47
Paraguay	70.3	71.87	71.87	75.29	82.82	71.97	37.48
Occupied Palestinian Territory	53.6	43.45	43.45	45.49	49.97	32.57	6.85
Rwanda	83.8	60.38	60.38	62.61	71.64	56.67	28.88
Senegal	93.6	49.29	49.29	50.72	72.97	60.07	31.57
Sierra Leone	93.1	53.91	53.91	55.33	70.56	60.37	34.91
El Salvador	68.5	59.82	59.82	64.4	73.74	57.65	28.88
Serbia	19.8	54.49	54.49	67.83	80.66	50.95	10.7
Slovakia	15.7	59.81	59.81	72.4	90.08	57.28	3.98
Slovenia	6.6	58.82	58.82	75.06	90.95	49.46	4.64
Sweden	3.4	72.97	72.97	82.74	92.89	81.66	17.27
Chad	96.9	59.97	59.97	60.1	78.38	75.23	57.87
Thailand	65	67.8	67.8	74.63	84.98	67.8	25.17
Tonga	81	53.77	53.77	55.97	74.19	59.6	32.94
Türkiye	34.8	53.21	53.21	58.53	60.77	37.79	12.48
Uruguay	24	63.68	63.68	74.3	85.7	64.6	14.88
Viet Nam	71.4	75.61	75.61	82.73	93.61	68.13	25.01
South Africa	40.4	58.13	58.13	62.06	76.41	49.9	12.79
Zambia	83.6	58.48	58.48	58.73	78.31	70.31	53.79

Source: ILO Stat (ILO, 2023), compiled and rearranged by the author.

Table A.2. Descriptive Statistics

<i>Informal Employment, %</i>		<i>LFPR, Age 65 +, %</i>	
Mean	43.50123457	Mean	20.32283951
Standard Error	3.445157406	Standard Error	1.704338049
Median	48.5	Median	15.09
Mode	96.9	Mode	28.88
Standard Deviation	31.00641665	Standard Deviation	15.33904244
Sample Variance	961.3978735	Sample Variance	235.2862231
	-		-
Kurtosis	1.346644199	Kurtosis	0.261474999
Skewness	0.183653885	Skewness	0.82506865
Range	95.5	Range	56.63
Minimum	1.4	Minimum	1.94
Maximum	96.9	Maximum	58.57
Sum	3523.6	Sum	1646.15
Count	81	Count	81

Source: Author's calculation

Table A.3. Goodness of Fit

<i>Regression Statistics</i>	
Multiple R	0.737640373
R Square	0.544113319
Adjusted R Square	0.538342602
Standard Error	10.42216991
Observations	81

Source: Author's calculation

Table A.4. Analysis of Variance

ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	10241.78943	10241.78943	94.2886775	4.02134E-15
Residual	79	8581.10842	108.6216256		
Total	80	18822.89785			

Source: Author's calculation

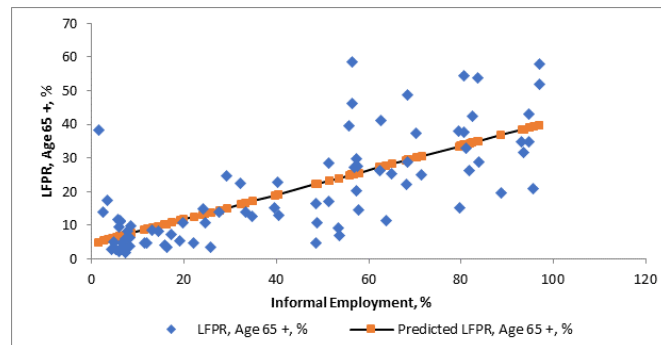


Figure A.1. Informal Employment, % Line Fit Plot

Source: Author's calculation