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**| RESEARCH ARTICLE**

## **Social Security On Labor Markets to Address the Aging Population in Selected ASEAN Countries**

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**| ABSTRACT**

The world is becoming older, and aging in the developing countries of the ASEAN region is unfolding faster than most developed countries in the United States and Europe. This paper examined the effectiveness of old age income security programs mandated in selected ASEAN countries. These programs sought to address the aging problem to encourage the government to promote the aging labor force's efficiency and increase labor force productivity. Furthermore, the study examined the effect of old-age dependency, increase in the life expectancy, and GDP per capita on labor force productivity using a panel data set from selected ASEAN countries from various income brackets, specifically Malaysia, Singapore, Thailand, and Vietnam, which are also classified as yellow group nations that are in the process of the demographic dividend implementation. Using the Multiple Regression Model, the researchers found out that the Old-Age Dependency Ratio positively impacts Labor Force Participation Rate. However, GDP per Capita, Life Expectancy, and the Non-contributory fund decrease the Labor Force Participation Rate.

**| KEYWORDS**

ASEAN, Ageing Population, Labor Productivity, Social Security, Non-contributory Pension Funds

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### **1. Introduction**

The world population is getting older as aging, a global problem affecting numerous nations. It has not been a significant concern for most countries in the past decades, but its effects can be felt and seen everywhere now at a faster pace (Chung & Mansur, 2018; Ince Yenilmez, 2014). Banzon, Banzon, and Villas (2015) stated that population aging is increasing globally and is a demographic phenomenon in developed and developing countries. The World Health Organization (WHO) projected that people aged 65 and over in 2019 would double to 1.5 billion in 2050.

The accelerated aging of populations worldwide is due to the cumulative forces of diminishing fertility, rising life expectancy, and the transitional complexities of differing cohort sizes passing across the age distribution. As the population ages due to longer life expectancy and a lower fertility rate, the old-age dependency ratio rises in the following decades. (Serban, 2012; Howdon and Rice, 2018). Male and female life expectancy shows the number of years a newborn would live if predominating mortality trends at the time of birth remained constant throughout their lives. The proportion of elderly dependents (64 years old and older) to the working-age population is old dependency (15 to 64 years old).

However, population aging results from economic and social growth and therapeutic and medical advancements over early deaths and illnesses that have reduced human lifespan throughout history, and it should be embraced and considered a success story for the human race (UNDESA Population Division, 2019). Longevity and population aging have developed medicine and public health in general, but aging has also created several problems, particularly healthcare and retirement facilities and labor force supply (Schoeni & Ofstedal, 2010).

Thang (2011) analyzed that increased employability of older employees would positively impact both the labor force and productivity growth. However, it is crucial to allow more workers to stay past the official retirement age by steps such as re-employment to maintain the beneficial impact of labor supply; thus, demographic aging would eventually result in a labor force reduction. Oliver (2015) suggested that increasing the employment-labor force participation ratio and the employment rate is crucial to increase real GDP per capita. The World Bank defined the labor force participation rate as the population ages 15 and older economically active. GDP per capita is the most commonly used metric for comparing the sizes of economies across countries. In 2019, the OECD defined GDP per capita as the sum of all marketable commodities and duties generated inside a country's borders, averaged across all persons who live within it.

Aging and population decline have consequences for affected countries, necessitating the development of policies, expanded healthcare, and social security to meet the needs of an aging population. By promoting active aging and encouraging older adults to work beyond retirement age, Older adults are enabled to engage based on their willingness and skills, protect their ability to earn a living wage, prohibit discrimination, and create a more welcoming and supportive environment for older adults (Haque, Soonthorndhada, Hunchangsith, & Kanchanachitra, 2016; Peng & Fei, 2012). Parkash, Younis, and Ward (2012) found out that high-income countries with well-established social security and pension programs have lower labor force participation rates because it allows elderly workers to retire with financial stability. Bloom, Canning, and Fink (2010) argue that several countries' social security systems provide good benefits for people retiring between the ages of 60 and 65. Longer careers should be encouraged and rewarded through tax and income programs changes. It was discovered that raising the legal retirement age increased older workers' labor force participation and shifted their preferred and expected retirement age toward the public pension system.

The Social Security Administration's (SSA) publication *Social Security Programs Throughout the World* defined a contributory pension as a form of social security funded by payroll tax contributions from employers and employees. Non-contributory pensions are social security that is typically funded through government contributions. According to Maestas and Zissimopoulos (2010), such changes in the structure of employer-provided benefits such as pensions and social security would almost certainly increase elderly labor force participation.

Thailand implemented a non-contributory old-age allowance in 2009 to address the aging population to protect older people who did not have pension coverage (Canonge, De, Ortiz, Schmitt, Cunha, & Sakulphanit, 2016). Malaysia established a non-contributory pension system in 1982, and Vietnam established a social pension system in 1995, which covers employees in the private, semi-private, and cooperative sectors (*Social Security Programs Throughout the World*, 2018). The Silver Support Scheme (SSS) is Singapore's first national non-contributory pension scheme, established in 2016, to assist the 20–30% of most vulnerable Singaporeans aged 65 and up (Chen & Tan, 2018).

*Silver Tsunami* is a metaphor used to describe a phenomenon of demographic changes in an aging society that shows the success of efforts and programs to promote and improve the public's health (Barusch, 2013; Binns & Yun Low, 2018). Currently, aging is much more visible in developed countries. The elderly populations in developed nations are anticipated to expand more in size, although at a far slower rate than those in developing nations (He, Goodkind, & Kowal, 2016). Developed countries such as Japan and Singapore also raised the retirement age, which increased demand for older workers and resulted in a sharp increase in the employment-to-population ratio of older workers (Ramely, Ahmad & Harith, 2017). The Japanese government also encouraged particular policies that promote social participation and productive aging as older adults became essential in supporting its development due to the declining younger workforce (Uesugi, 2010).

The two-child policy in Vietnam was successful in reducing family size, and son preference emerged as the strongest predictor of current birth imbalances (Guilmoto, 2012; Ngo, 2020). Thus, Vietnam is still reaping the benefits of its demographic dividend, and the Vietnamese government should implement programs and policies to slow the aging trend in the short run while ensuring labor supply in the long run (Wei, Wang, Wang, Li, & Jiang, 2019). As Giang (2013) concurred, social security policies should be implemented as soon as possible, as the Vietnamese population is aging faster than expected; while retirement and social allowances have become more widely available to the elderly, there remain a variety of accessibility and funding issues.

Based on Teerawichitchainan, Prachuabmoh & Knodel (2019), elderly adults from Myanmar, Vietnam, and Thailand, who engage in economic activities, tend to contribute to the family by providing cash, doing household chores, and looking after family members. Adhikari, Soonthorndhada, and Haseen (2011) found out that the labor participation of the elderly (aged 60 or above) in Thailand continues to increase as they transition to the aging population due to low fertility and increase in longevity, but the likelihood to face the labor shortage in the coming years is still high as the number of young workers continue to decline. Furthermore, for several years, Thailand has been experiencing a labor shortage, both skilled and unskilled, and its economy has been trapped between being a labor-intensive and a capital-intensive state far way too long (Jitsuchon, 2012).

As Singapore transitions to a knowledge-based economy, the skills and knowledge of older workers are critical to the economy's viability (Singapore Management University, 2016). According to Kwon (2018), the liberalization and incorporation of competent immigrant workers into the labor market in Singapore, Japan, and Korea is due to skill shortages caused by demographic transitions, skill mismatch, and advanced technology-service sectors.

Singapore can also learn from Malaysia's multiethnic profile and geographical, economic, and cultural similarities with Hong Kong to develop and implement successful aging policies and programs in their own country (Malhotra et al., 2019). According to a study conducted by Chan and Kamala Devi (2012), life expectancy in Singapore, Malaysia, and Thailand has no direct effect from demographics, healthcare services, and socioeconomic advantages. On the other hand, Hamid, Momtaz, and Ibrahim (2012) concluded that maintaining a healthy aging life in older Malaysians is linked to certain demographic factors, such as being more informed and affluent, giving them better access to medical care facilities and services.

On the other hand, the Philippines has a younger population structure due to the country's high but dropping birth rate compared to its neighboring countries (G. T. Cruz, 2019; C. J. P. Cruz, & G. T. Cruz, 2019). Developing countries like the Philippines must prepare for this beforehand so they would be able to take advantage of these phenomena instead of suffering from its consequences. The elderly rely more on their family members in developing countries facing an aging population because of low public pension support than developed countries with a good pension plan that allows them to finance their old age without being a burden to their family (Shetty, 2012). UNDESA Population Division in 2019 emphasizes the importance of establishing social protection programs that can be sustained for a more extended period to reduce inequality and ease the burdens for the family members, especially in the developing countries.

Although, a study conducted by Yu et al. (2016) stated that many current generations of senior citizens are engaging in beneficial aging activities like volunteering due to a desire for personal fulfilment after retirement. With the support from families, community, and government, adult education changes retirees' attitudes and peers' norms to enhance intergenerational relationships while also adding to learning, contentment, and self-worth, reflecting the time for self-interest activities to assist younger generations (Strom and Strom, 2020). Thang, Lim, and Tan (2018) conclude that there is a need to raise awareness of various types of learning to benefit from numerous productive gains given the benefits of lifelong learning; it is critical to identify the hurdles that prevent older persons from participating in lifetime learning.

The research examines the labor market effects of an aging population and an increasing retirement rate. This study examines whether life expectancy, old-age dependency, and GDP per capita are all directly related to labor force productivity by examining the effects of the implementation of social security programs on the selected countries. Additionally, this aims to persuade the government to enact policies that address the employability of the elderly and thus increase labor force participation.

Four (4) countries from the Association of Southeast Asian Nations (ASEAN) were studied in this study to determine the efficacy of their implemented Non-contributory Social Security programs. Singapore, Malaysia, Vietnam, and Thailand are said to be in the yellow group, nations in the process of implementing the demographic dividend, which entered this stage at the beginning of the twenty-first century and contributed to a decrease in the percentage of the child population in the global population structure. Singapore, a high-income economy classified by the World Bank in its 2020 report, takes a pragmatic approach to seniors, ensuring seniors' continued labor-force participation and encouraging the elderly population to improve their financial security. Higgins and Vyas (2017) The study also looks at upper-middle-income countries like Malaysia and Thailand. Vietnam is the study's only aging lower-middle-income ASEAN country. Furthermore, according to the World Bank's population estimation and projections, the ASEAN countries chosen are among the top countries expected to have a massive increase in the proportion of older people aged 65 and over in their total population by 2050. (Figure 1).

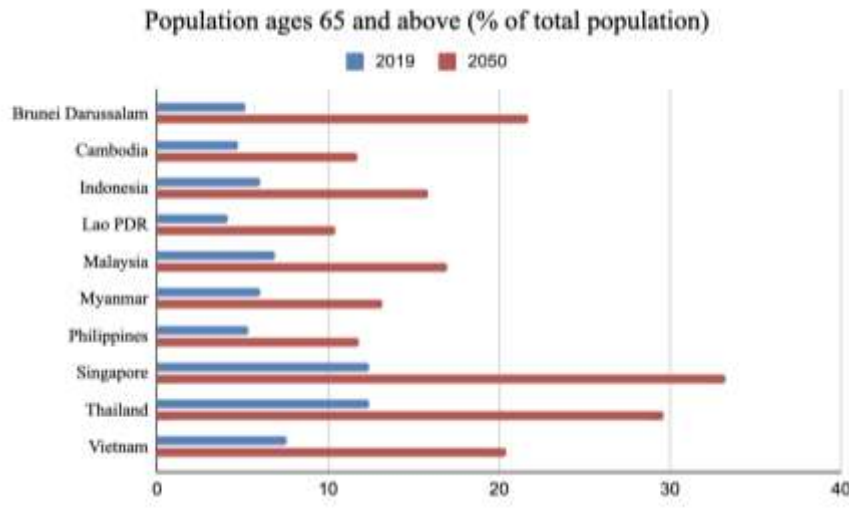
*Table 1: The population of Southeast Asian Countries*

ASEAN Countries	2019 Population	2050 Estimated Population	2019 GNI per capita, Atlas method (current USD)
Brunei Darussalam	433,285	492,000	32,230
Cambodia	16,486,542	21,861,000	1,530
Indonesia	270,625,568	330,905,000	4,050
Lao PDR	7,169,455	9,480,000	2,570
Malaysia	31,949,777	40,550,000	11,230

Myanmar	54,045,420	62,253,000	1,390
Philippines	108,116,615	144,488,000	3,850
Singapore	5,703,569	6,210,000	59,590
Thailand	69,625,582	65,940,000	7,260
Vietnam	96,462,106	109,605,000	2,590

Note. Data gathered from The World Bank (2020)

Figure 1: Source: The World Bank Population Estimates and Projections (2020)



**2. Review of Related Literature**

This chapter briefly discussed the key concepts on the old-age dependency ratio, GDP per capita, and life expectancy. To conclude the chapter, the researchers examined the social security programs followed by the synthesis and the theoretical framework.

**A. Old-age Dependency Ratio to Labor Force Participation Ratio**

The old dependency ratio, which is the age-population ratio of older people who are not in the labor force divided into those actively participating in the labor force, who pay for them, is the standard measurement for an aging population (Razak, 2012; Spijker and MaInnes, 2013). According to Bonneuil (2010), an increase in the old-age dependency ratio has an adverse effect on economic growth. The dependency ratios are intended to demonstrate how changes in population age structures affect both direct and indirect social and economic growth. Vicens-Feliberty and Reyes (2015) discovered that family structure, economic dependency, fertility, and elder adult involvement in the household all directly impact female active labor force participation. The researchers have found a link between the rise in the age dependency ratio and the rate of female active labor force participation. However, no studies have been conducted that directly examine the effect of the old-age dependency ratio on the total labor participation rate.

*Hypothesis 1: Old-age Dependency Ratio does not impact Labor Force Participation Ratio*

**B. Life Expectancy to Labor Force Participation Ratio**

An aging population denotes changes in the labor force's size and age structure (Bloom et al., 2015). According to Eggleston and Fuchs (2012), continuing increases in life expectancy will result in additional decreases in expected labor force participation as a percentage of life expectancy at birth unless there is a sharp increase in labor force participation rates across both middle and older ages.

The dramatic shift in the age structure in the United States significantly reduces the labor force participation ratio (Toossi, 2012). Another study conducted by Serban (2012) found that the increase in the elderly population in the European Union gradually slowed their overall population growth rate and will continue to increase in the coming decades, making their age structure older. The aging of their population directly impacts their labor market, as the work-age population continues to decline as a result of the natural decline in labor supply caused by the aging population. Bloom et al. (2015) observed the same phenomenon in their study in the United States. In 2010, the labor force participation rate for people between the ages of forty and forty-four in the United States was 82.3 percent, but it gradually declined with age, falling to 55 percent for people between the ages of 60 and 64.

*Hypothesis 2: Life Expectancy decreases Labor Force Participation Ratio.*

**C. GDP per capita to Labor Force Participation Ratio.**

Regardless of GDP per capita, female labor force participation varies significantly across nations and is influenced by a variety of legal, cultural, social, and other unquantifiable variables; thus, changes in GDP per capita may be only one factor contributing to changes in female labor force participation (Lechman & Kaur, 2015). On the other hand, Gaddis and Klasen (2014) discovered that as female labor force participation rates declined in several provinces of Indonesia, GDP per capita increased. Other regions in Indonesia with lower GDP per capita than the national average have the highest male and female participation rates.

*Hypothesis 3: GDP per capita decreases Labor Force Participation Ratio.*

**D. Labor Market Policies**

**a. Non-contributory Pension to Labor Force Participation Ratio.**

Reforms to public pension incentives appear to have significantly increased the labor supply of older people over the last several decades. This trend is likely to continue in the coming years, as such changes impose a financial loss on future pensioners, motivating them to work more (Blundell, French, & Tetlow, 2016). According to Olivera and Zuluaga (2014), a vast proportion of older adults in rural communities are forced to work until they reach advanced ages due to their inability to retire with a stable income stream. However, Juarez and Pfitze (2015) discovered several effects on labor force participation of Mexico's non-contributory rural pension scheme 70 y Más. According to the study, the program significantly reduces male recipients' labor force participation, has a minimal effect on older women's labor supply due to their already low labor force participation, and has no impact on prime-age recipients' labor force participation. Galiani, Gertler, and Bando (2016) conducted a similar study and discovered that while non-contributory pensions improved the mental health of elderly adults who received them, beneficiaries also opted for unpaid household work, decreasing their formalities employment participation. This finding is consistent with comparisons to other international pension systems, which have also linked increased social security to reduced labor participation rates.

*Hypothesis 4: Non-contributory Pension decreases Labor Force Participation Ratio*

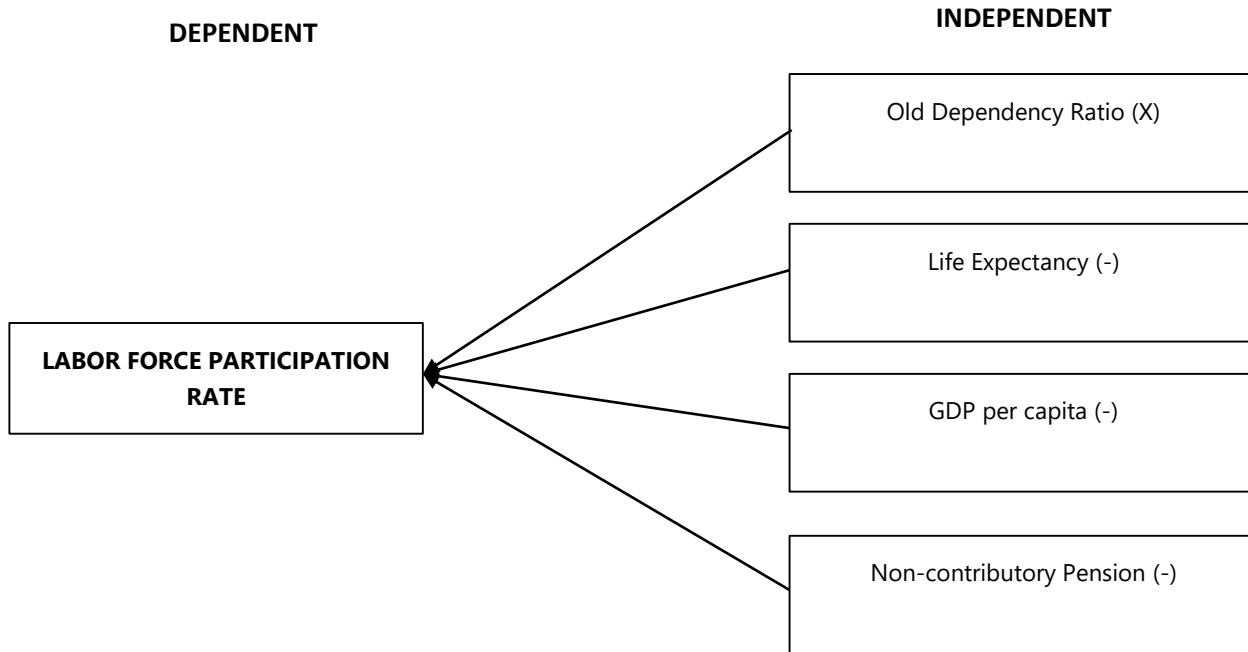
**2.1 Synthesis**

According to the study's first hypothesis, the Old-age Dependency Ratio has a detrimental effect on the Labor Participation Ratio. However, no literature exists that establishes a correlation between the two variables. The study's second hypothesis stated that there was a negative relationship between Life Expectancy and Labor Force Participation Ratio. Sufficient government action can mitigate the aging population's negative impact on labor supply, allowing healthy older adults to work past their traditional retirement age. The third proposition demonstrated a negative relationship between GDP per capita and labor force participation, although the magnitude of the relationship varied considerably across countries. According to the study's fourth hypothesis, there is a negative correlation between non-contributory pensions and labor force participation.

**2.2 Theoretical Framework**

In 2002, The World Health Organization (WHO) described that the *active aging* framework includes three pillars: health, participation, and security. This vigorous aging policy affects both men and women, which has financial and economic implications (Paz, Doron, & Tur-Sinai, 2017). In Indonesia, a study also backed this up by Arifin, Braun, and Hogervorst (2012), as the three pillars vary greatly across Indonesia's provinces and gender.

2.3 Research Simulacrum



3. Research Method

The main focus of the study is a quantitative observational research design with the use of panel data set for regression. The variables for the study were gathered from various income brackets within the ASEAN Region— namely Malaysia, Singapore, Thailand, and Vietnam.

According to the World Health Organization's Regional Office for South-East Asia (2018), the region's population is aging, with the percentage of people aged 60 and over standing at 9.8 percent in 2017 and expected to reach 13.7 percent in 2030 and 20.3 percent in 2050.

The study drew its secondary data from the World Bank's data bank. The researchers' multiple linear regression model with categorical dummy variable is founded on the three pillars of the World Health Organization's *active aging* framework.

3.1 Econometric Model

$$LFPR = \beta_0 + \beta_1 OADR_1 + \beta_2 GDP_2 + \beta_3 LIFE_3 + \beta_4 NCPF_4 + \varepsilon$$

where:

LFPR is the Labor Force Participation Rate

$OADR_1$  is the Old-age Dependency Ratio

$GDP_2$  is the GDP per Capita

$LIFE_3$  is the Life Expectancy

$NCPF_5$  is the dummy variable for Non-contributory Pension Fund

The developed multiple linear regression model is aggregated to explain the ageing population's effect on employment and assess the effectiveness of old age income security programs in selected ASEAN countries. The study's dependent variable is the Labor Force Participation Rate (percent Of Total Population Aged 15+, Modeled ILO Estimate). As independent variables, the old-age dependency ratio (percentage of the working-age population), GDP per capita (current US dollars), life expectancy at birth, total (years), and non-contributory pension funds are used. The Non-contributory Pension Fund is used as the categorical dummy variable in the regression. It is zero if there is no non-contributory pension (flat-rate or earnings-related) and one if there is (flat-rate and earnings-related).

**4. Results and Discussion**

The purpose of this research is to determine the labor market impact of an aging workforce and the effect of implemented social security programs on life expectancy, old-age dependency, and GDP per capita on labor force productivity. As previously stated, the dependent variable was the Labor Force Participation Rate (LFPR). On the other hand, we used the Age Dependency Ratio (ADR), GDP per capita (GDP), Life Expectancy (LIFE), and Noncontributory Pension Fund (NCPF) as independent variables. The dummy variable NCPF was assigned a value of one (1) for the years in which it was implemented and a value of zero (0) for the years in which it was not implemented. All variable data were interpolated using the Mersenne Twister Algorithm in SPSS to fill in the gaps left by missing data points. Table 2 contains the descriptive statistics for the Multiple Linear Regression Model used in this study. Each variable has 164 observations from 1980 to 2020. Figure 2's scatter plot demonstrates homoscedasticity, indicating that the residual variances were constant, as indicated by the scattering of the residuals. Additionally, it implies that within the model, the variation in the values of the residuals is always constant, albeit to varying degrees.

*Table 2: Descriptive Statistics*

	Mean	Std. Deviation	N
LFPR	69.30	6.143	164
ADR	9.10	2.566	164
GDP	9514.80	15591.960	164
LIFE	73.65	3.952	164
NCPF	.50	.502	164

*Figure 2: Homoscedasticity using Scatterplot*

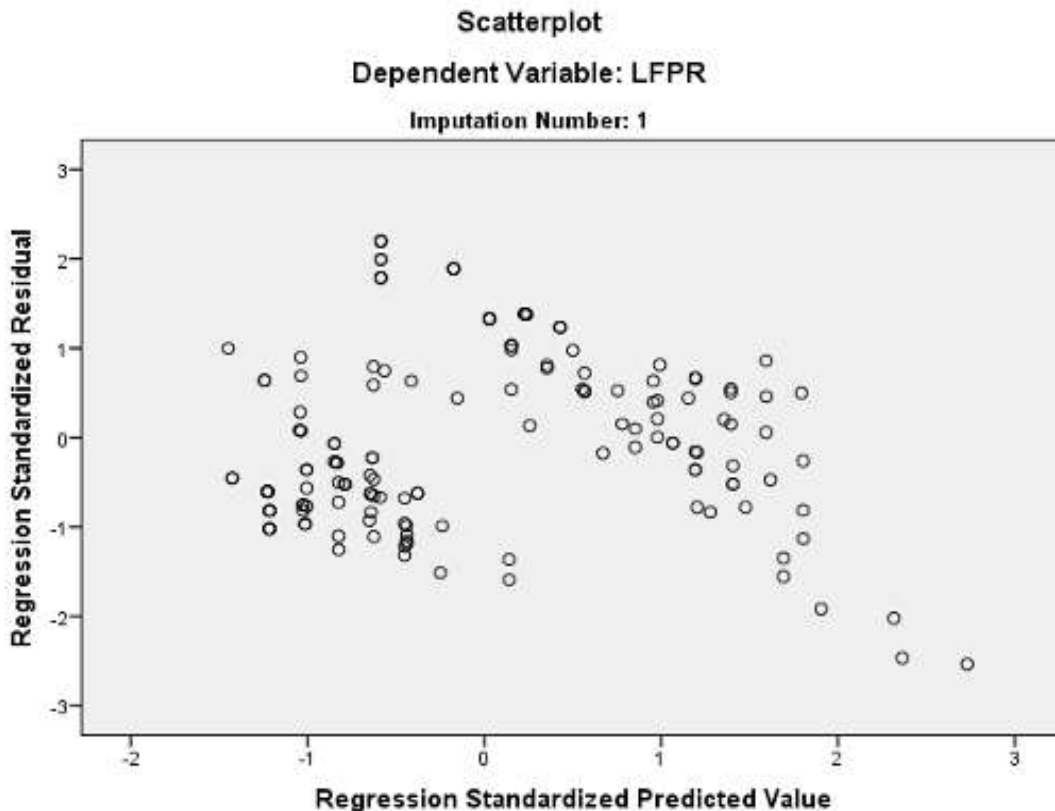


Table 3. Model Coefficients

	Unstandardized Coefficients	Standardized Coefficients			Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	110.532	14.298		7.73	0		
ADR	1.506	0.174	0.64	8.681	0	0.735	1.36
GDP	-1.96E-06	0	-0.005	-0.039	0.969	0.241	4.152
LIFE	-0.73	0.209	-0.484	-3.489	0.001	0.208	4.807
NCPF	-2.057	0.858	-0.171	-2.397	0.018	0.787	1.271

a. Dependent Variable: LFPR

As shown in Table 6, the VIFs of the four (4) independent variables exceeded the acceptable threshold for a regression model, indicating that multicollinearity and autocorrelation are insignificant for this model. With a B value of 1.506 and a p-value of 0.00, ADR positively affects LFPR. LIFE and the dummy variable NCPF, on the other hand, have a negative effect on the variation of LFPR values, as demonstrated by B = -0.730 and p-value = 0.001 for LIFE and B = -2.057 and p-value = 0.018 for NCPF. With B = -1.955E-06, GDP also has a negative effect on the variation of LFPR values. On the other hand, GDP effects on the LFPR are not statistically significant due to p-values greater than 0.05 and are therefore irrelevant in the context of the data presented.

Table 4. ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2166.176	4	541.544	22.788	.000
Residual	3778.547	159	23.764		
Total	5944.723	163			

After conducting an analysis of variance (ANOVA), it was determined that the F-ratio was 22.788 and the associated p-value was 0.000, as shown in Table 4, indicating that the independent variables for the Multiple Linear Regression (MLR) model can significantly predict the dependent variable's values. Although it should be noted that some independent variables within the model may be incapable of predicting such variations, as evidenced by a low f-ratio.

Table 5: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.597	0.357	0.34	4.866

a. Predictors: (Constant), NCPF, GDP, ADR, LIFE

b. Dependent Variable: LFPR

The model summarized in Table 5 was tested to ensure the accuracy of the estimation results. The result indicated that the MLR Model's Multiple Correlation Coefficient is 0.597, indicating that the model has a high degree of predictive power. Thus, the R-square value of 0.357 indicates that the predictor variables account for 35.7 percent of the variation in the dependent variable values.

Table 6: Pearson Correlation Test

		LFPR	ADR	GDP	LIFE	NCPF
Pearson Correlation	LFPR	1	0.376	-0.186	-0.202	-0.147
Sig. (1-tailed)	LFPR		0	0.009	0.005	0.03

The Pearson Correlation test, shown in Table 6, is also used to test the study's hypothesis. The correlation between the independent variables Age Dependency Ratio (ADR), GDP per capita (GDP), Life Expectancy (LIFE), and the Non-Contributory Fund (NCPF) and the dependent variable Labor Force Participation Rate was found to be statistically significant. It indicates that when dependent variables are paired with the dependent variable individually, they have a linear relationship.



The significance level between LFPR and ADR is 0.376, indicating that the variable has a positive linear relationship when paired with the dependent variable LFPR, rejecting hypothesis 1. There is no evidence that the Age Dependency Ratio has a positive relationship with the Total Labor Force Participation Rate; however, Vicens-Feliberty and Reyes (2015) reported that an increase in the Old Age Dependency Ratio only increases female labor force participation as older adults retire from formal employment and focus on unpaid household work.

When LIFE was paired with LFPR, it revealed a negative linear relationship with a  $-0.202$  level of significance, confirming hypothesis 2, Life Expectancy Decreases Labor Force Participation Rate. Toossi (2012) and Serban (2012) conducted research in the United States and Europe on how the increase in the number of older people slowed overall population growth, resulting in a gradual decline in their labor force.

When GDP was paired with LFPR, a negative linear relationship with a  $-0.186$  level of significance was observed, supporting hypothesis 3. GDP per capita has a negative effect on the Labor Force Participation Ratio. Female LFPR decreased in lockstep with increases in GDP per capita over a two-decade period in several provinces in Indonesia; additionally, areas in Indonesia with the highest male and female LFPR also had the lowest GDP per capita on a national level Gaddis and Klasen (2014). Thus, a higher GDP per capita would increase household income, allowing members to further their education and displacing women from the labor force, decreasing the total labor force participation rate.

NCPF, with a significance level of  $-0.147$ , demonstrated a negative linear relationship when paired with LFPR, supporting hypothesis 4 that non-contributory pensions reduce labor force participation. Galiani, Gertler, and Bando (2016) found that while non-contributory pensions improved the mental health of elderly adults, recipients chose unpaid household work, thereby decreasing formal employment participation. As a result, an increase in social security benefits has been associated with a decline in labor force participation.

## 5. Conclusion

The study's objective is to determine the effectiveness of old age income security programs, particularly non-contributory pension funds mandated by countries classified as yellow group nations, which entered the aging stage at the start of the twenty-first century and contributed to a decline in the global child population's percentage.

Numerous tests were performed with the Multiple Linear Regression Model developed specifically for this study. According to the researchers, the Old-Age Dependency Ratio has an effect on total labor force participation. However, it increases female labor supply in the workforce due to changes in demographic structure and an increase in the population's total number of older adults. While the number of retirees is increasing, female workers are increasing their participation in the labor force. The researchers discovered that while specific pension programs positively affect female economic activity, the total labor force participation declines as the number of retirees increases. The increase in GDP per capita, on the other hand, can be attributed to the decline in the total labor force participation rate.

Meanwhile, as life expectancy rises, the labor force participation rate will fall. As technology and innovation advance, the quality of life of their aging population has a direct impact on their labor market, as the work age population continues to decline due to the natural decline in labor supply caused by the aging population. The non-contributory pension lowers the labor force participation rate. The work-leisure theory of labor supply explains this phenomenon by stating that when individuals choose between work and leisure, work benefits must be more valuable.

The states should enact a law, the Anti-Age Discrimination in Employment Act. Everyone should have equal opportunity in the workplace. To this purpose, the State's strategy will be to: promote persons' employment based on their talents, knowledge, skills, and credentials rather than their age; prohibit arbitrary age restrictions in the workplace; and encourage all employees and workers, regardless of age, to be treated similarly in terms of pay, perks, promotions, and other job possibilities. Furthermore, a social security system committee for all generations should consider specific measures as the government encourages businesses' attempts to keep the elderly employed. Companies should implement mechanisms that allow older employees to raise the required retirement age or the age at which employees can continue to work. As a result, employers must take steps to promote and secure job opportunities for the elderly, such as continuing employment, raising the statutory retirement age, or rehiring employees from other companies.

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