ALTERNATIVE SOLUTIONS TO INCREASE PENSION SECURITY PARTICIPATION IN INDONESIA

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ABSTRACT

KEYWORDS

pension security, public policy, population aging

This study aims to analyze alternative solutions to increase the number of pension security participation in Indonesia. The analysis method used in this study is Panel Data Regression. The data used in the panel data analysis are Number of Pension Security Participants, Human Development Index (HDI), Gross Regional Domestic Product (GRDP), Open Unemployment Rate (TPT), Information and Communication Technology Development Index (IPTIK), Young age (15-24) who are not in school, working or training (NEET), Proportion of Average Hourly Wages to Provincial Minimum Wage (Wages), Gini Ratio, Labor Force Participation Rate (TPAK) from 2017-2022 in 33 Provinces in Indonesia. The results of panel data processing, the best model is the *Fixed Effect Model* with regression results showing that only GRDP variables have a significant positive influence. While the Wage variable has a significant negative effect and the IPM, TPT, IPTIK, NEET, Gini Ratio, TPAK variables have no influence on the Number of Pension Security Participants.

INTRODUCTION

Nearly 80% of older people will live in countries with low to medium poverty levels by 2050. OECD (2023) projections of population aging in G20 countries have far-reaching implications for economic growth, productivity, inequality within and between generations, and the sustainability of public finances. According to the World Health Organization (2022), the aging rate of the population today is faster than in the past. The conditions that will be experienced if a country with an aging population have implications both socially and economically which ultimately have an impact on the welfare of the people themselves. One implication that has a multiplier effect is the potential increase in poverty.

Efforts to face these challenges can be done with sustainable socio-economic development and ensuring a decent quality of life for the elderly (Dobrokhleb & Barsukov, 2017). Some conditions that cause the elderly to continue working are because they are still physically strong and 21 mentally, economic pressure, and because of self-actualization and emotional motives (Gachuri et al., 2023; Ivtzan et al., 2013; Junaidi et al., 2017; Krems et al., 2017). However, apart from economic pressure, where according to Affandi (2009), the main factor that encourages the elderly to work in the labor market is due to individual factors owned by the elderly.

Indonesia is expected to enter a demographic bonus period from 2012 to 2035, with a peak between 2020 and 2030. From 1971 to 2019, the proportion of elderly people doubled, increasing from 4.5% to 9.6%, even regionally. Regionally, 8 of the 34 provinces in Indonesia are included as provinces with the oldest population (BPS, 2023). Based on data from BPS, the Number and Percentage of Poor People in September 2022, increased by 0.20 million people compared to March 2022 (BPS, 2022). Data from TNP2K states that since 2017 the highest poverty rate in Indonesia was found to occur in people aged 65 years and

over. Approximately 80 percent of the population aged 65 years lives in households with per capita consumption below Rp 50,000 per day. Aging conditions can be taken into consideration for the government to issue policies that can help the retirement-age population to continue to live a decent life, including in this case contributions from the employment sector. Employment is one of the important issues in Indonesia because 68.5% of the population is in the productive age group. The level of participation in the labor force affects economic growth, including contributions to welfare at retirement age through the provision of the right to social security as stipulated in Article 28 letter H paragraph (3) of the 1945 Constitution.

Since Law Number 3 of 1992 concerning Labor Social Security managed by PT Jamsostek, labor social security benefits have existed. With the issuance of Law Number 13 of 2003 concerning Manpower, article 99 paragraph (1) affirms workers' rights to social security. The birth of Law Number 40 of 2004 concerning the National Social Security System (SJSN) has transformed the concept and policy of social security. Through SJSN, everyone is expected to be able to meet their basic needs of life if their income is lost or reduced due to illness, accident, old age, retirement, death, or job loss. In general, the implementation of social security programs in Indonesia is divided into 2 (two), namely short-term programs and long-term programs. For short-term programs given to participants who experience risk when they are still of productive age, namely the Health Insurance (JKN), Work Accident Insurance (JKK), Death Insurance (JKM), and Job Loss Insurance (JKP). While long-term programs are given when participants are no longer of productive age, namely the Old Age Insurance (JHT) program, Pension Insurance (JP).

Fundamental changes in social security for workers include participation in social security not only for formal workers but also informal workers. Sakernas 2019 data released by BPS shows that more than 50% work in the informal sector. Based on the SJSN Law, workers who are required to participate in the JHT and JP programs are workers who work in companies with large, medium and small business scales. Meanwhile, workers who work in companies with a micro-business scale and workers who work independently or the informal sector or workers who are not wage earners in the old-age insurance program are still voluntary and for the new pension security program can be accessed by workers who work in large and medium-scale companies.

In terms of participation, although there has been an increase in the number of JHT and JP participants from 2017 from 10,633,336 participants to 17,710,734 participants in 2022. When juxtaposed with the data on potential participation, it can be seen that JHT membership only amounted to 12.8% (of the total working population, 135.3 million people), while JP program participants amounted to 10.3% of the total working population. Henni Gusnia and Ardhian K (2021) stated that the National Social Security System (SJSN) and the Social Security Organizing Agency (BPJS) are in accordance with the mandate of the Constitution of the Republic of Indonesia in 1945 in the field of Social Security. Meanwhile, Rokhim et al. (2022). Low participation rates are still one of the biggest challenges faced by BPJS Ketenagakerjaan, and Indonesia's pension scheme ranked 30th among 39 countries in the Mercer CFA Institute's Global Pension Index in 2020. SJSN has not placed informal workers in getting adequate social protection for employment, for example pension security for informal workers (Prakarsa, 2021). Kartikasari (2020) stated that the higher the number of pension fund recipients, the work participation of the elderly decreased. The results showed that only the elderly living in urban areas, formal workers, recipients of financial assistance have access as recipients of pension funds. Looking at the condition of the country's financial capacity, the development of social security programs is based on funded social security

where social security is funded by participants and is still limited to working people in the formal sector (BPJAMSOSTEK, 2020). To become a participant of BPJS Ketenagakerjaan, it is not mandatory for workers in the formal sector but also for informal workers. The implementation of social security programs for informal sector workers should be a priority because these workers dominate the workforce in Indonesia (Adillah & Anik, 2015).

Seeing the difference in the application of pension security policies certainly cannot be separated from the conditions of economic development and government background in a country. In the end, almost all countries, as they developed, eventually established pension systems that offered all citizens a guaranteed income upon reaching old age. Data from ILO (2019) At least 56 countries around the world offer pensions to at least 90 percent of older people – aged 65 and over – and a growing number of low- and middle-income countries are expanding pension systems. Large populations such as Indonesia, China, India need to evaluate strategic policies in the minimum protection of pension security.

Departing from the dynamics of changes in social security policies for workers in Indonesia, through the intersection of economics-based public policy science as one form of science that helps solve the problem of low participation rates of Pension Security, using macroeconomic data, the purpose of writing this study is, first, to analyze and examine the effect of the Human Development Index (HDI), Gross Regional Domestic Product (GRDP), Open Unemployment Rate (TPT), Information and Communication Technology Development Index (IPTIK), Young age (15-24) who are not in school, working or training (NEET), Proportion of Average Hourly Wages to Provincial Minimum Wages (WAGES), Gini Ratio, Labor Force Participation Rate (TPAK) of 33 Provinces in Indonesia to the Number of Pension Security Participants. Second, to analyze and review the evaluation of Pension Insurance policies that have been carried out by the Government of Indonesia today in facing implementation challenges.

RESEARCH METHOD

The research method conducted by the author is a quantitative research method that is systematically arranged, planned, and clearly structured from the beginning to the making of the research design. The selection of descriptive quantitative in this study is based on research that wants to examine and see the degree of relationship between variables. The study population in this study is 33 provinces in Indonesia. So the sample studied in this study is data for 2017-2022. The type of data used in this study uses secondary data in the form of numbers by conducting statistical analysis. The data used in this study were obtained from BPS, Kominfo, Kemenaker and BPJS Ketenagakerjaan.

The dependent variables in this study are the Number of Pension Security Participants and the independent variables in the study are data on Human Development Index (HDI), Gross Regional Domestic Product (GDP), Open Unemployment Rate (TPT), Information and Communication Technology Development Index (IPTIK), Young age (15-24) who are not in school, working or training (NEET), Proportion of Average Hourly Wages to Provincial Minimum Wages (Wages), Gini Ratio, and Labor Force Participation Rate (TPAK).

Table 1. Definition of Operational Variables and Measurement Scales

No	Variable	Conceptual Definition of Variables	Indicator	Unit
1	JPP	Number of Active Pension Security Participants	Number of Pension Security Membership	person
2	HDI	Human Development Index as a	Very High (IPM ≥	Index

		comprehensive description of the level of achievement of human development as an impact of development activities carried out by a country / region.	80),High (70 ≤ IPM ≥ 80), Current (60 ≤ IPM ≥ 70) and Low (IPM ≤ 60)	
3	GRDP	The amount of gross value added arising from all economic sectors in the area.	GRDP Prices in Effect	Rupiah
4	TPT	Open Unemployment Rate	Percentage of unemployment to labor force	Percentage
5	NEET	Not in Employment, Education or Training	Young people (15-24) who are not in school, work or training	Percentage
6	WAGES	The government's ability to encourage an economy to be able to provide a better level of welfare to workers and their families through a fair and decent wage system.	Proportion of Average Hourly Wage to Minimum Wage	Percentage
7	Gini Ratio	Describe equity and inequality as a whole, from income to distribution.	Scale 0-1. Higher values indicate higher inequality	Index
8	TPAK	Labor Force Participation Rate	Comparison between the labor force and the total working-age population.	Percentage

The data analysis used in this study used techniques with Panel Data Regression and Regulatory Impact Analysis (RIA). Panel Data is a combination of time series data and cross section data. Panel data regression models are expressed in the form of equations:

$$JPP_{it} = \alpha + \beta_1(IPM_{it}) + \beta_2(PDRB_{it}) + \beta_3(TPT_{it}) + \beta_4(IPTIK_{it}) + \beta_5(NEET_{it}) + \beta_6(UPAH_{it}) + \beta_7(GINI_{it}) + \beta_8(TPAK_{it}) + \varepsilon_{it}$$

In which:

JPP_{it}	: Number of BPJS Employment Pension Insurance Participants
α	: Konstanta
β_1 β_2 β_3 β_4 β_5 β_6 β_7 β_8	- Koefisien Regresi
IPM_{it}	: Provincial Human Development Index i in year t
$PDRB_{it}$	: Provnisi i Gross Regional Domestic Growth in t year t
$IPTIK_{it}$	: Information and Technology Development Index i in year t
$NEET_{it}$	: Unemployed youth are not included in the work / training i in year t
$UPAH_{it}$	: Proportion of Average Hourly Wages to Wages i in year t
$GINI_{it}$	: Poverty Rate (poverty ratio) i in year t
$TPAK_{it}$	: Provincial labor force participation rate i in year t
ε_{it}	: Eror term

The data will be processed using office excel application software and Eviews 12.0 software. The selection of the best panel regression model between common effect, fixed effect, and random effect was done using the Chow, Hausman and Lagrange multiplier tests. The selection criteria for the best model use the following conditions:

Table 2. Best Model Determination

No	Test Type	Results	Conclusion
1	Hausman Test	Reject H0	Fixed effect
2	Chow Test	Reject H0	Fixed effect
3	Lagrange Multiplier Test	Receive H0	Random effect

From the results of the best model suitability test, hypothesis testing was carried out using the t test and F test. The t test is used to measure how far the influence of one independent variable individually in explaining the dependent variable. If t counts > t table then we accept an alternative hypothesis that states that an independent variable individually affects the dependent variable (Ghozali, 2001). While the F test, according to Gujarati (2013), the statistical F test aims to determine the influence of the independent variable on the dependent variable together (simultaneously). This test uses the F test 95% confidence level and error rate (a) 5% and degree of freedom (df1) = k-1, degree of freedom (df2) = n-k. The decision-making criteria are as follows:
1) If the F-count < the F-table with a significant value of F < 0.05 then, the hypothesis will be accepted. This means that there is a significant influence on the independent variable on the dependent variable.
2) If F-calculate > F-table with a significant value of F > 0.05 then the hypothesis will be processed. That is, there is no significant influence on the independent variable on the dependent variable.

According to Ghozali (2016), the coefficient of determination (R^2) is the ability to measure a model in interpreting the dependent variable. The value of the coefficient of determination is between 0 and 1. A small value of R 2 can mean that the ability of the independent variable to explain the variation of the dependent variable is very limited. The coefficient of determination has a fundamental weakness, namely the existence of the number of independent variables entered into the model. The use of R-squared values is necessary because each additional one independent variable will increase the coefficient of determination (R^2), although the variable is not significantly meaningful, if it approaches the value of 1, the independent variable can provide the desired information in predicting the dependent variable. But, if the value is close to 0 then the independent variable cannot provide the desired information in predicting the independent variable.

RESULTS AND DISCUSSION

For the selection of the right model first, it is necessary to do a Chow Test to choose whether the right model is the Common Effect Model (CEM) or Fixed Effect Model (FEM). The processing results are shown in table 4.1, showing that the result of the prob value of the chi-square is 0.0000 < 0.05 so that Ho is rejected and Ho is accepted and the conclusion of the right model is FEM.

Table 3. Chow Test Results

Testing	Prob. Chi-Square	Information
Chow Test	0.0000*	Fixed Effect Model (FEM)

* Significant α z5%

Source: Data processed (E-views 12.0)

The results of the Chow test processing show that FEM is the selected model so that there is no need for Hausman test testing to choose whether the right model is the Random Effect Model (REM) or FEM. From the results of the processing, the probability value of the chi-square probability is $0.0000 < 0.05$ so that Ho is rejected Ha accepted and it can be concluded that the model chosen is FEM as shown in table 4. Thus it can be concluded that FEM is the right model.

Table 4. Hausman Test Results

Testing	Prob. Chi-Square	Information
Hausman Test	0,0000*	Fixed Effect Model (FEM)

* Significant α z5%

Source: Data processed (E-views 12.0)

Based on the test results, an Adjusted R-Squared value of 0.981904 or 98.19% was obtained, which means that the ability of independent variables, namely IPM, PDRB, TPT, IPTIK, NEET, WAGES, GINI and TPAK is able to explain the behavior of the dependent variable, namely JPP by 98.19% and the remaining 1.81% is explained by other variables but is not included in the model.

Table 5. Estimation Results with Fixed Effect Model

Variable Dependen: JPP				
Independent Variables	*Coefficient*	*Tstat*	*Prob*	*Conclusion*
C	1.123262	0.335879	0.7374	
IPM	-0.099450	-1.853486	0.0657	(-) Insig
PDRB	2.450707	5.998708	0.0000	(+) Sig
TPT	-0.023342	-1.024992	0.3069	(-) Insig
IPTIK	-0.107586	-1.243571	0.2155	(-) Insig
NEET	0.022403	1.971258	0.0505	(+) Insig
UPAH	-1.038357	-3.724347	0.0003	(-) Sig
GINI	-0.200386	-0.235096	0.8144	(-) Tdk Sig
TPAK	0.072907	0.457838	0.6477	(+) Tdk Sig
R-squared	0.985578			
Adjusted R-squared	0.981904			
F-stat	268.2317			
Prob F-stat	0,000000			

Info: *significance at *alpha* 0.05

Source: Data processed (E-views 12.0)

To estimate the parameters of the panel data model, there are techniques that are often used, one of which is using the Fixed Effect model. So the approach can be assumed that each province has different intercepts, where the intercepts are random or stochastic

variables. The model is particularly useful in calculating that errors may correlate across cross sections and time series.

Based on the processing of the model selection results in Table 6, it shows that the province with the largest intercept is DI Yogyakarta Province with an intercept value of 3.14188625 which means that when all independent variables have no effect, Yogyakarta DI has the opportunity to increase Pension Security Participants compared to other Provinces.

Table 6. Intercept Analysis per Province

Area	Coefficient Value	Intercept Value
DI YOGYAKARTA	2.797109	3.14188625
PAPUA BARAT	2.404094	2.700427435
NORTH MALUKU	1.983871	2.228406907
BENGKULU	1.85684	2.085717812
CENTRAL KALIMANTAN	1.638753	1.840748972
BALI	1.479509	1.661876238
BANGKA BELITUNG ISLANDS	1.460649	1.640691517
NORTH SULAWESI	1.375417	1.54495365
RIAU ISLAND	1.341137	1.506448229
WEST SULAWESI	1.220226	1.370633497
MALUKU	0.675933	0.759249853
SOUTH KALIMANTAN	0.656637	0.73757539
WEST KALIMANTAN	0.425725	0.478200715
GORONTALO	0.398201	0.447284052
PAPUA	0.230648	0.259078134
BANTEN	0.125719	0.141215375
WEST NUSA TENGGARA	-0.131134	1.123262
WESTERN SUMATRA	-0.226974	-0.254951269
SOUTH SULAWESI	-0.258872	-0.29078108
JAMBI	-0.26763	-0.300618609
EAST NUSA TENGGARA	-0.317848	-0.35702658
ACEH	-0.677132	-0.760596645
EAST KALIMANTAN	-0.679284	-0.763013904
JAKARTA	-1.069385	-1.201199534
LAMPUNG	-1.349726	-1.516095926
SOUTH SUMATRA	-1.464257	-1.644744246
RIAU	-1.586076	-1.7815789
NORTH SUMATRA	-1.645893	-1.848769063
CENTRAL SULAWESI	-1.684487	-1.892120237
SOUTHEAST SULAWESI	-1.684487	-1.892120237
CENTRAL JAVA	-1.91636	-2.152574366
WEST JAVA	-1.930132	-2.168043931
EAST JAVA	-3.18079	-3.572860537

Source: Data processed (E-views 12.0)

By taking a conception in previous research, namely social security and pension security, the results of this study are in line with Morina & Grima (2021) and Vitriyah & Zainuri (2020) which states that there is a significance between economic growth (represented by the

GRDP variable) and Pension Security While the next variable is wages, this is also in line with research from Gatot (2019) wages have a correlation with BPJS Employment participation. While other variables such as TPAK, IPM, TPT, NEET, Gini Ratio, IPTIK do not have significant results.

From these results, it can be said that the low level of participation can be said to be likely due to a decrease in economic growth during the 2017-2022 time frame. During this time span, factually there was a condition of the Covid-19 Pandemic where almost all economic activities did not go according to plan and there was economic pressure in Indonesia. Departing from these conditions, in determining the policy of implementing pension security it is very important to consider economic growth. If the government intends to change contributions and/or increase benefits, it is necessary to consider the factors of economic growth in the aggregate.

While the influence of wage variables, it can be said to be one of the implications for the use of DB structure in pension security in Indonesia. Wages as a form of reward for workers, on the other hand, are also production costs for entrepreneurs. In addition, wages themselves are part of economic growth. In the range of 2017 – 2022, it can be said that the Covid-19 pandemic conditions have caused changes in wages, including flexibility for delays in wage payments and relaxation of BPJS Employment contributions for employers. In line with economic growth becoming backward or stagnant, it will have an impact on the amount of wages received by workers.

In addition, considering that the scope of participation in the new pension security includes only the formal sector and membership contributions, it can be said that wages are significant considering that in the formal sector the prevailing wages in it already have the cost of BPJS employment contributions.

CONCLUSION

The study reveals that pension security participation in Indonesia is still lower than the number of workers, largely due to economic growth and wages. The current pension security policy, based on the DB structure, is dependent on wages and service length, unlike South Korea's structural dualism. Policy recommendations include considering economic growth and national wages, expanding the composition of the DC to include the infomal sector, and aiming to make wages affordable in the informal sector. Future research should consider investment, worker productivity, and the number of informal workers in Indonesia.

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