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The Gap in Social Security Participation of Informal Workers in Indonesia

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ABSTRACT: The gap in social security participation of informal workers in Indonesia has become a serious challenge in realizing inclusive social protection. This study has analyzed the distribution and determinants of BPJS Ketenagakerjaan participation among informal workers using microdata Sakernas 2023. The methods used kernel density estimation and quantitative descriptive analysis. The results show that only 7.61% of informal workers are registered as active participants, with a concentration in the middle to upper-income group (around IDR 3,270,000 monthly). Lower participation was found among the low-income, low-educated, working in non-permanent work locations and female groups. These findings confirm the existence of high-risk preferences among poor workers and show structural inequalities in access to social security. This study suggests adjusting the social security scheme to be more flexible and affordable and integrating with government social assistance programs. These results provide new contributions to mapping social security participation and a scientific basis for inclusive policy-making to support informal workers

KEYWORDS: social security, informal workers, participation gap, BPJS Ketenagakerjaan, gig economy workers

I. INTRODUCTION

Social protection programs are proliferating in developing countries. Currently, safety net programs cover about 2.5 billion people. More than 120 low- and middle-income countries run cash transfer programs for low-income families, and more than 70 run social pension programs (Banerjee et al., 2023; World Bank, 2018). These programs are believed to have the potential for efficiency and better redistribution to low-income people. Employment social security is part of social protection that is expected to overcome economic shocks, promote economic stability, and improve the welfare of society as a whole.

The International Labour Organization (ILO) emphasizes that social security is one of the important elements of decent work. The ILO defines decent work by strongly emphasizing the values of social justice, equality, and human dignity. In developed countries, social security for workers is a crucial element in the social protection system, considering that almost all households have been integrated into the scheme. In contrast, in developing countries, the coverage of social security for workers is still limited and only reaches a small proportion of households, one of the reasons being the dominance of workers in the informal sector (Pratama et al., 2024).

Source: BPS Indonesia, 2024

Figure 1 Population Aged 15 Years and Over Who Work According to Formal and Informal (in percentage)

The Gap in Social Security Participation of Informal Workers in Indonesia

Based on Figure 1 in 2021, shows that 41.71 percent (32,432,000 people) work in the formal sector and 58.29 percent (77,765,000 people) work in the informal sector. The percentage of the population working in the informal sector dominates every year. Based on data from the National Labor Force Survey (Sakernas) of the Central Statistics Agency (BPS) as of February 2023, the working-age population in Indonesia reached 211.59 million people. Of that number, the working population is 138.63 million people, with the population working in the informal sector 83.34 million (60.12 percent) and working in the formal sector 55.29 million people (39.88 percent).

The Indonesian government, through BPJamsostek, covering formal and informal sector workers, has initiated various schemes, including Work Accident Insurance (JKK), Death Insurance (JKM), Old Age Insurance (JHT), Pension Insurance (JP) and Job Loss Insurance (JKP) (BPJamsostek, 2023). Until now, the government's attention to increasing the scope of community protection through social security continues to be carried out. The Social Security Administering Agency (BPJS) for Employment has set a target of 70 million active participants by 2026. This number is about double the current number of active participants of 35.86 million (BPJS for Employment, 2024).

Data from the Social Security Administering Agency (BPJS) for Employment until July 2023 shows that the number of participants is only 37.40 million working people. This number comprises 31.05 million wage earners, 6.35 million non-wage earners, 7.40 million construction service participants, and 391,344 Indonesian migrant workers. These data show that of the working population, 26.97 percent have been protected by social security for employment, and 7.61 percent are informal sector workers. The large number of workers working in the informal sector is not comparable to the number of informal workers with BPJS Employment insurance. Implementing a social security program for informal sector workers should be a priority because this workforce dominates the workforce in Indonesia (Adillah & Anik, 2015).

Informal workers, especially in specific employment sectors, such as small trade, the agricultural sector, or domestic workers, experience very low BPJS Employment participation. One of the main factors is the economic difficulties experienced by informal workers, the amount of BPJS Employment contributions or rates considered burdensome for participants, especially in unstable economic conditions. In addition, their priorities tend to be more towards meeting basic needs and other requirements and a lack of information regarding the importance of employment social security (Diana & Syarvina, 2022; Suryani & Yasa, 2022). This phenomenon raises fundamental questions regarding the distribution of BPJS Employment membership and how this relates to individual income levels. Does individual income play a role in encouraging or inhibiting their participation in social protection programs?

This is a serious problem because informal workers are vulnerable to the risk of termination of employment, reduced utility and leading to poverty. The informal sector includes various types of workers, such as self-employed workers, family workers, workers in business units, and even formal business units that do not receive social protection or without job security and legal protection when working in hazardous environments (World Bank Group, 2022; Retnaningsih, 2020). There is a transformation of work in the future, namely working part-time or freelance. They work with a short-term contract system and are difficult to reach by Employment Social Security facilities, so a special strategy is needed to provide Employment Social Security to these workers. Based on these conditions, this study starts with the central question: How is the distribution of informal workers' participation in employment social security in Indonesia, and what socio-economic factors influence it?

Research on social protection has developed in various countries, both developed and developing, with different focuses and approaches. In developed countries, social protection systems generally have a broad scope, supported by strong infrastructure and integration between the public sector and the market. For example, more than 90 percent of the population in developed countries such as Germany and Sweden are covered by state-based or market-based social security systems (Jütting, 2000). In contrast, in developing countries, social protection coverage is still far from optimal, with more than 50 percent of the population not having access to basic social protection. This is due to high dependence on the informal sector, low awareness, and limited access to financial and insurance services (Van Ginneken, 1999).

In Indonesia, research on social protection has also been widely conducted but often focuses on formal sector workers or informal workers in general. For example, Adillah et al. (2019) analyzed the low participation of informal workers in social security, while Purba et al. (2020) highlighted the gap in participation based on socioeconomic factors. Lesmana and Wulandari (2020) evaluated the selection of BPJS Ketenagakerjaan classes and their impact on the distribution of social protection. However, these studies have not comprehensively linked the income of informal worker participants and non-economic factors that also support them. In addition, the distribution of social protection recipients in Indonesia reflects a significant gap. Most informal workers are not covered by the social security system, even though they constitute the majority of the workforce in Indonesia, such as MSMEs and gig economy actors.

This study will fill the gap by focusing on the distribution of social security participation in employment using empirical data from Sakernas. This study aims to answer the inequality and low participation of informal workers by analyzing the implementation of social security in Indonesia according to income, education, location of residence, location of work and gender. This approach provides novelty in understanding the distribution pattern of informal workforce participation in social security and offers a foundation for more inclusive and data-based policies. In order to realize economic development and the welfare of informal workers, inclusive economic growth should be achieved towards Indonesia Emas 2045.

II. RESEARCH METHOD

This study uses secondary data from the National Labor Force Survey (SAKERNAS) in the August 2023 edition. Based on the classification of the Central Statistics Agency (BPS) and the International Labor Organization (ILO) in 2022, informal workers can be identified based on the location of their work as follows: 1) Own home, 2) Family/friend's home, 3) Employer's home/customer's home, 4) Market without buildings, 5) Rice fields/gardens/fields/forests/seas/lakes/swamps/ponds/ponds, 6) Roads/roadsides/circles/non-permanent locations, and 7) Others. These categories are included in the informal sector because they do not have formal, written work contracts, and low access to social security programs.

This study uses the Kernel Density Estimation method and descriptive statistics in the form of cross-tabulation. Kernel Density Estimation is one of the methods used to estimate the pattern of relationships between independent variables and dependent variables, where the form of the regression curve is unknown. The selection of the Kernel Density Estimation method refers to a non-parametric approach that is suitable for describing the distribution of variables smoothly without assuming specific distributions (Silverman, 1986; Wand & Jones, 1995). Descriptive statistical analysis is used to analyze data by describing the collected data. Cross-tabulation analysis calculates the frequency and percentage of two or more related variables so that their meaning is easily understood descriptively.

III. RESULTS AND DISCUSSION

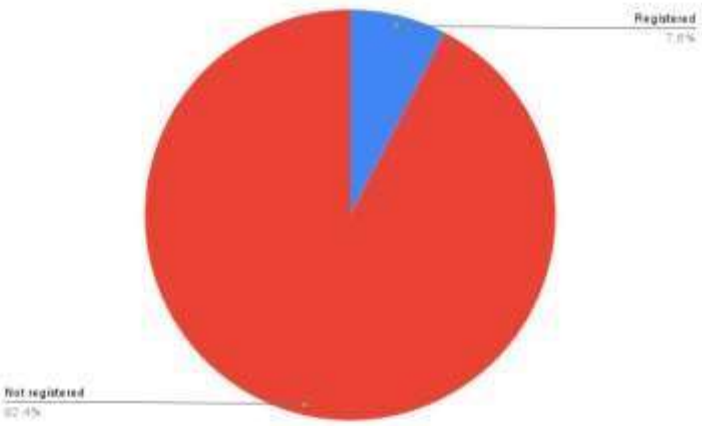
BPJS Employment is based on the constitutional rights of every person and as a form of State's responsibility as mandated in the 1945 Constitution of the Republic of Indonesia Article 27 paragraph (2), Article 28 D paragraph (1) and (2), and Article 28 H paragraph (3). On July 1, 2015, BPJS Employment began operating fully, marked by the issuance of Government Regulation Number 44 of 2015 concerning the Implementation of the Employment Injury Security and Death Security Programs, Government Regulation Number 45 of 2015 concerning the Implementation of the Pension Security Program, Government Regulation Number 46 of 2015 concerning the Implementation of the Old-Age Security Program.

In its implementation, BPJS employment runs five programs: 1) Old-Age Security (JHT) is a social security program that is useful as a substitute for workers' income loss due to death, permanent total disability, or reaching the age of 55 years. 2) Pension Security (JP) is a social security program for workers where workers have experienced permanent total disability, entered old age, or the participant's heirs have died to replace monthly income and guarantee a decent life. 3) Employment Injury Security (JKK) is a social security program for workers that provides benefits and compensation as well as health services and rehabilitation for workers who experience work accidents from when they leave for work, in the work environment, until they return home or suffer from work-related diseases in order to replace their income. 4) Death Security (JKM) is a social security program for employment for heirs of BPJS Employment program participants who die not as a result of a work accident, and 5) Unemployment Benefit (JKP) is a guarantee provided to workers/labourers who experience termination of employment in the form of cash benefits, access to labour market information and job training.

In running its program, the working population is the most important factor because workers must be registered in the employment social security. BPJS Employment membership is divided into 4: 1) Wage Recipient (PU) is every person who works by receiving a salary, wages, or other forms of compensation from the employer. 2) Non-Wage Recipient (BPU) is an individual who carries out business activities independently to earn income. 3) Construction Service Workers (Jakon) are non-government employers on a large, medium, small, and micro business scale, engaged in the construction service business sector that has workers with contract contracts, daily freelance, and other work agreements. Moreover, 4) Indonesian Migrant Workers (PMI) are Indonesian citizens who will, are or have worked outside the territory of the Republic of Indonesia and receive wages or salaries.

Based on BPS Sakernas data in August 2024, the working age population was 215.37 million people in the workforce and non-workforce. The workforce in Indonesia in August 2024 reached 152.11 million people, while the non-workforce was 63.26 million. The number of people working in August 2024 was 144.64 million people. The agriculture, forestry, and fisheries sector is the business sector that absorbs the most workers, namely 40.76 million people (28.18 percent), while the electricity, gas, steam/hot water, and cold air supply business sector absorbs the least workers, namely 0.36 million people (0.25 percent).

The Gap in Social Security Participation of Informal Workers in Indonesia



Source: BPJS Ketenagakerjaan, 2023

Figure 2 Informal Workers' Participation in BPJS Employment

Based on BPJS Ketenagakerjaan data until July 2023, the number of registered participants reached 37.40 million. Of that number, only 6.35 million are non-wage workers (BPU) or informal workers, which means that only around 7.61 percent of the total informal workers are protected by the employment social security system (Figure 2). This low participation rate shows that most informal workers still do not receive adequate protection.

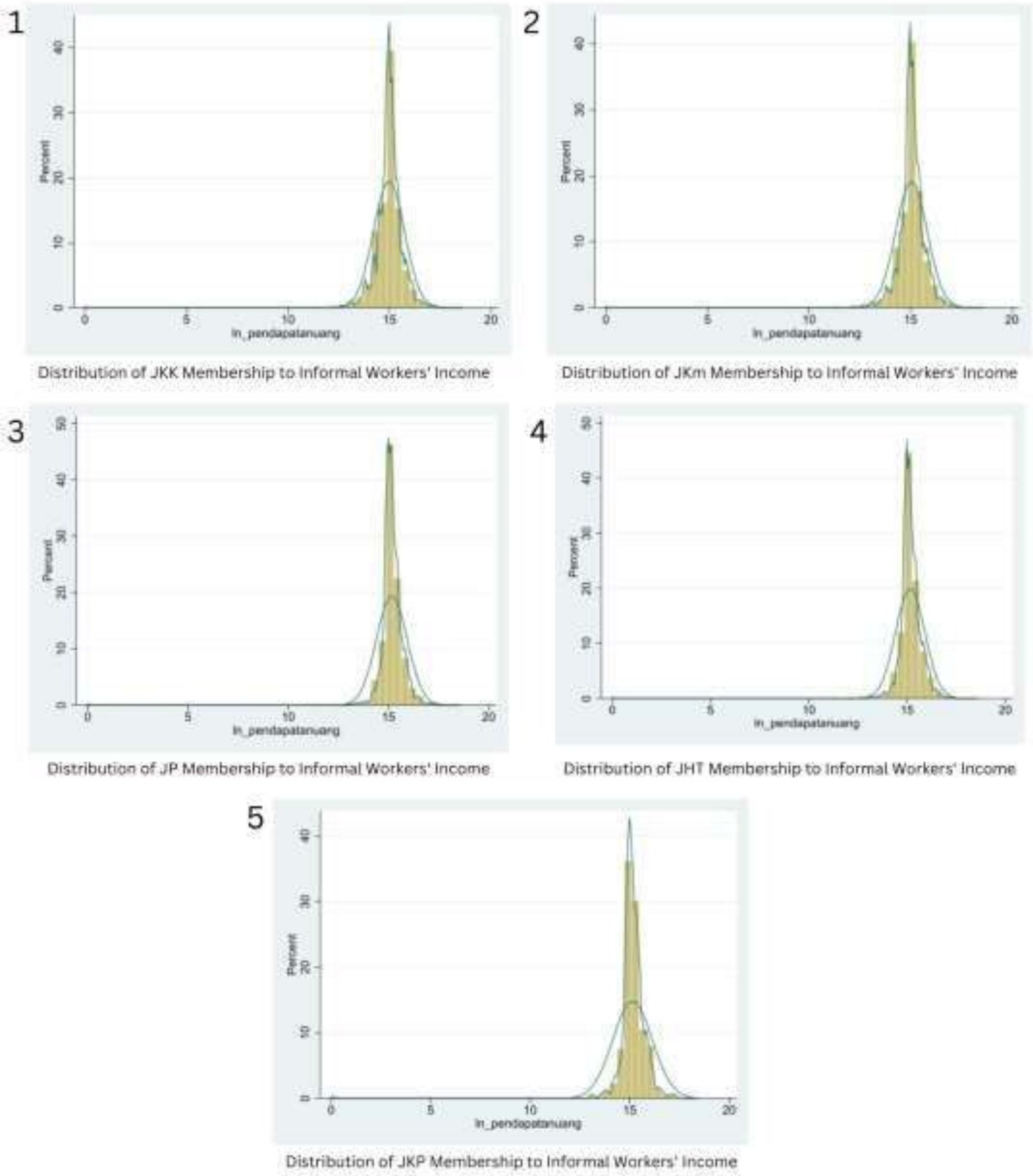
According to the business sector, workers in the informal economic sector, such as (1) agriculture, forestry, and fisheries, (2) provision of accommodation and food and beverages, (3) construction, and (4) other services, have the lowest participation rates in employment insurance. This group is a group that works independently outside of an employment relationship and is not classified as a poor group whose premiums are borne by the government, and there is no precise mechanism to encourage their participation in social security (Purba et al., 2020). Meanwhile, the highest participation is in government administration, electricity and gas procurement, and health services. This is because most workers in these sectors are formal workers who have generally been registered by the office/workplace for social security participation (BPJS Ketenagakerjaan, 2024).

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy, contributing 61 percent to GDP (IDR 9,580 trillion) and absorbing 97 percent of the workforce (Kadin, 2023). However, MSME participation in the employment social security program is still low due to financial constraints, low social protection literacy, and complex administrative procedures (Saputra et al., 2022). This condition is exacerbated by the inability of MSME actors to meet minimum wages and basic needs, increasing the vulnerability to bankruptcy and unsustainable contribution payments.

In addition to MSMEs, the gig economy sector has grown rapidly in recent years. The number of Gojek driver partners in 2024 will reach 2.4 million, but an increase in welfare does not accompany this. Although the government collaborates with digital platforms (for example, the BPJS Ketenagakerjaan-Gojek program), only 7,000 new monthly participants are registered, reflecting low participation (less than 50 percent of total partners). The main challenges include irregular income, lack of awareness of social security, and partnership status that ignores fundamental rights such as health insurance and pensions (Putri et al., 2020; Roqikin et al., 2024).

Structurally, informal workers, both MSMEs and the gig economy, face a paradox: on the one hand, they drive economic growth; on the other hand, they are trapped in vulnerability due to the lack of recognition as formal workers, the absence of work contracts, and flexibility-based exploitation (Wood et al., 2019; Sitorus & Kornitasari, 2024).

The data in Figure 3 shows the distribution of participants in the Jamsostek program (Employment Injury Security, Death Security, Pension Security, Old-Age Security and Job Loss Insurance) against the income of informal workers in Indonesia. The distribution of participants shows the same pattern, namely that participants are concentrated in groups of workers with certain incomes. Most Jamsostek participants are in the log income range of around 15 or Rp3,270,000 per month. An income of Rp3,270,000 is in the high category, while the participation of lower-income workers is much more limited.



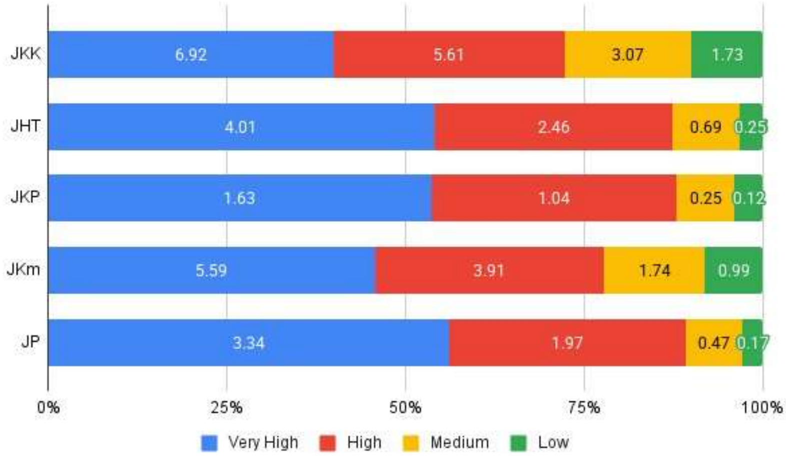
Source: Data Sakernas, 2025

Figure 3 Distribution of Jamsostek Program Participation to Informal Workers' Income in Indonesia

This pattern shows that lower-income informal workers have limited access to the Jamsostek program. The main factors causing this are the limited income of workers in paying contributions regularly, low awareness of Jamsostek benefits, and high job uncertainty, so they focus more on meeting daily needs than on long-term social protection. This uneven distribution of participants also indicates that Jamsostek is utilized more by informal workers who are relatively more economically stable, while those in the lower group are less accommodated.

On the other hand, the uncertainty informal workers face makes them more likely to adopt precautionary motives. The relationship between disposable income levels and individual/family expenditures of informal workers ultimately determines their ability and willingness to register and pay BPJS premiums (Dartanto et al., 2016). Wealthier informal workers may consider insurance premiums more affordable and a better alternative to private insurance or having to pay for health care costs themselves, thus motivating them to join the scheme. However, in many cases, informal workers who are not poor can be classified as vulnerable workers.

Based on the Expected Utility Model theory, informal workers with low incomes are likelier to avoid paying insurance premiums because they have a higher risk preference (risk-seeking). They prefer to allocate their income to meet basic needs, such as food, shelter, and education, rather than paying social security contributions. This happens because they have financial limitations and focus more on short-term needs. They consider insurance or social security as a non-priority expense because the benefits are not immediately felt. This is in line with the results of the study by Banerjee and Duflo (2007), which showed that low-income individuals tend to avoid expenses that are considered non-urgent, including insurance, because they prioritize basic needs. On the other hand, informal workers with higher incomes tend to have a lower risk preference (risk-averse) and see social security as a form of long-term economic protection. They have better financial ability to allocate part of their income to insurance premiums because they understand the benefits of protection against future financial risks.

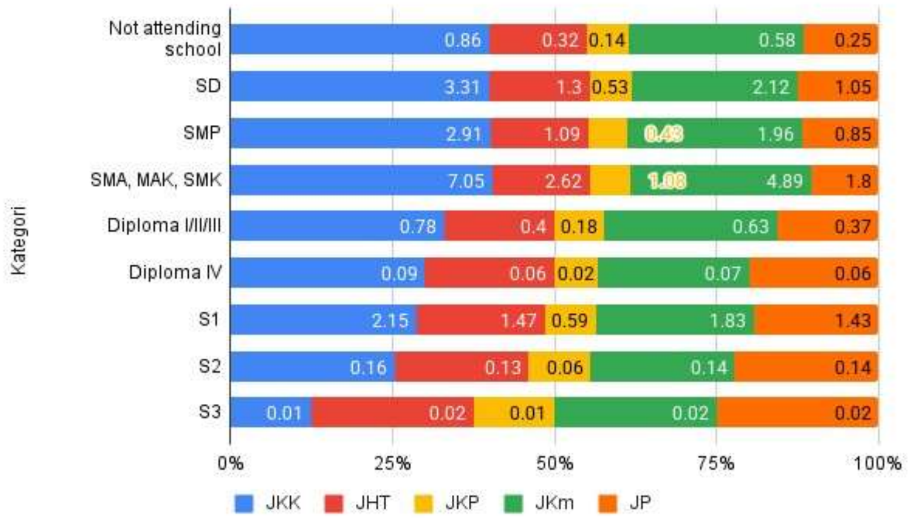


Source: Data Sakernas, 2023

Figure 4 Percentage of Employment Social Security Participation Based on Income Level

Based on Figure 4, participation in the employment social security program based on income groups shows diverse variations. Workers with very high incomes (more than IDR 3,500,000 per month) have the highest participation rate in all types of employment social security programs, including Employment Injury Security (JKK) at 6.92 percent, Death Security (JKM) at 5.59 percent, Old-Age Security (JHT) at 4.01 percent, Pension Security (JP) at 3.34 percent and Unemployment Benefit (JKP) at 1.63 percent.

On the other hand, workers with low income (less than Rp. 1,500,000 per month) have the lowest participation rate in all types of social security for employment. JKK participation in this group is only 1.73 percent, JKm is 0.99 percent, JHT is 0.25 percent, JP is 0.17 percent and JKP is 0.12 percent. The high-income group (Rp. 2,500,000 - Rp. 3,500,000 per month) and medium (Rp. 1,500,000 - Rp. 2,500,000 per month) show a participation rate that is between the two very high and low-income groups. JKK participation in the high-income group reached 5.61 percent, while in the medium-income group, it was only 3.07 percent. Similar things can also be seen in other programs such as JKm, JHT, JP, and JKP, where high-income groups have more participants than middle-income groups.



Source: Data Sakernas, 2023

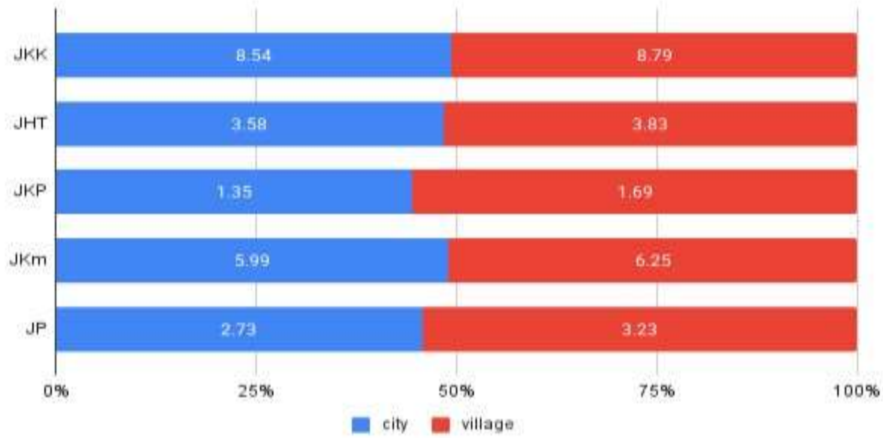
Figure 5 Percentage of Employment Social Security Participation Based on Education

The Gap in Social Security Participation of Informal Workers in Indonesia

The data in Figure 5 show participation in the informal workers' social security program based on education level. Informal workers with secondary education, especially SMA/MAK/SMK graduates, show the highest participation rate in almost all types of Jamsostek programs. For example, for Employment Injury Security (JKK), their participation reached 7.05 percent, much higher than that of other education groups.

On the other hand, informal workers with higher education (S1, S2, and S3) showed a lower participation rate. This could be due to the tendency of individuals with higher education to seek employment in the formal sector, which usually provides more comprehensive social protection. Meanwhile, informal workers with lower education (elementary and junior high school) and those who did not attend school also had relatively low participation rates. For example, workers who did not attend school only had a JKK participation rate of 0.86 percent, much lower than workers with secondary education.

This phenomenon can be explained by looking at the workforce structure in Indonesia. Based on BPS data in February 2024, as many as 53.68 percent of the workforce in Indonesia had junior high school education or below, while groups with secondary education (SMA/SMK/MAK) dominated the informal labour market. Workers with secondary education tend to be more active in sectors that have higher work risks, such as manufacturing, trade, and construction, so they are more aware of the importance of social protection from the risk of work accidents and death (BPJS Ketenagakerjaan, 2023).

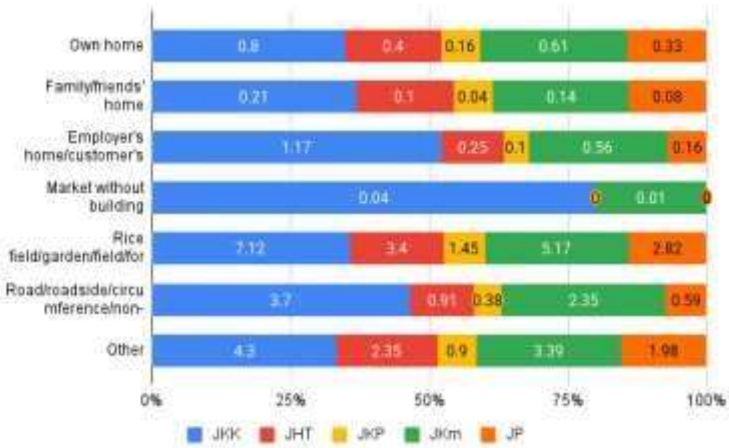


Source: Data Sakernas, 2023

Figure 6 Percentage of Employment Social Security Participation Based on Place of Residence

Based on the data in Figure 6, it can be seen that the percentage of social security participation for workers in informal villages and cities is not very significant. In Employment Injury Security (JKK), workers' participation in villages is 8.79 percent, slightly higher than workers in cities at 8.54 percent. For Old-Age Security (JHT), workers in villages at 3.83 percent have a slightly higher participation rate than workers in cities at 3.58 percent.

Unemployment Benefit (JKP) participation was found to be higher among workers in villages at 1.69 percent compared to cities at 1.35 percent. Death Security (JKM) and Pension Security (JP) also showed a similar pattern, with workers' participation in villages higher than in cities, respectively at 6.25 percent and 3.23 percent, compared to 5.99 percent and 2.73 percent in cities.



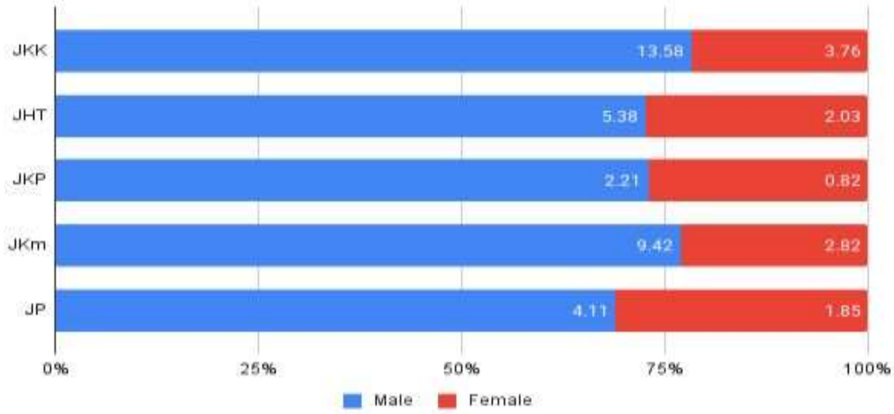
Source: Data Sakernas, 2023

Figure 7 Percentage of Employment Social Security Participation Based on Workplace Location

The Gap in Social Security Participation of Informal Workers in Indonesia

The data in Figure 7 shows active participation in social security programs for workers based on the location of informal workers' workplaces. Overall, the participation rate varies depending on the type of program and work location. Workers who work in locations such as rice fields, gardens, fields, forests, seas, lakes, swamps, ponds, and fishponds show the highest participation rate in almost all Jamsostek programs. For example, for Employment Injury Security (JKK), their participation reached 7.12 percent, while for Old-Age Security (JHT), Unemployment Benefit (JKP), Death Security (JKM), and Pension Security (JP), participation reached 3.4 percent, 1.45 percent, 5.17 percent, and 2.82 percent, respectively.

In contrast, workers who work at home, family/friends' homes, and unbuilt markets have very low participation rates in all Jamsostek programs. For JKK, participation at home is only 0.8 percent, at family/friends' homes 0.21 percent, and at unbuilt markets 0.04 percent. The same pattern is seen in other programs, such as JHT, JKP, JKm, and JP, where participation in these locations is very low. Overall, these data show that workplace location influences the level of participation in the employment social security program.



Source: Data Sakernas, 2023

Figure 8 Percentage of Employment Social Security Participation Based on Gender

Based on data from Figure 8, participation in social security for employment by gender, it can be seen that men have a higher participation rate than women in all types of social security. In Employment Injury Security (JKK), male participation reached 13.58 percent, much higher than women, who were only 3.76 percent. Old-Age Security (JHT) also showed a similar trend, with male participation of 5.38 percent, while women were only 2.03 percent.

For Unemployment Benefit (JKP), the participation rate for men is 2.21 percent, while for women, it is only 0.82 percent. The low participation rate for women in JKP may be related to the high proportion of women working in the informal sector or in jobs that do not have an employment protection scheme. In Death Security (JKM) and Pension Security (JP), men also have higher participation rates of 9.42 percent and 4.11 percent, respectively, compared to women, who are only 2.82 percent and 1.85 percent, respectively.

Given this phenomenon, more attention should be paid to encouraging increased participation in areas with low participation rates. This step can include wider dissemination of information, increasing access to social security services, and policies that support informal workers in participating actively in employment social security programs. In the long term, if there is no adequate social security, many workers in the informal sector will face an old age full of uncertainty. Indonesia is entering a demographic bonus period that will peak in 2030, where the productive age population will reach around 69.3 percent of the total population, providing excellent opportunities for economic growth (Humas Kemensetneg, 2023). However, in the next two to three decades, a crucial question arises when this productive age group enters old age: who will bear their living expenses? Without an effective social security system, many informal workers who are now at the peak of their productivity could be trapped in poverty when they enter old age, burdening the State's and society.

The role of the government in this regard is vital, especially since Indonesia has a grand vision to achieve a "Indonesia Emas" by 2045. The demographic bonus can be an opportunity for Indonesia to strengthen social protection so as not only to utilize the large young workforce but also to avoid social and economic crises in the future. Consistent productivity increases and social and economic stability are the main prerequisites for achieving this goal, and social security is the foundation for creating a prosperous and socially just society (Kemnaker and BRIN, 2023). Without the proper steps, Indonesia is at risk of experiencing an economic "crash landing" that will hinder the achievement of this vision, replacing the hope of "Golden Indonesia" with the threat of "Anxious Indonesia". Therefore, the government needs to ensure that all levels of society, especially workers in the informal sector, get the protection they need for a better future.

V. CONCLUSIONS

This study shows that the participation gap in Indonesia's employment social security program is still very real, especially among informal workers who dominate the labour market. Only 7.61% of the total informal workers are registered as active participants in BPJS Ketenagakerjaan. This phenomenon is in line with the higher risk preferences (risk-seeking) among lowincome groups and the economic limitations that make them prioritize basic needs over long-term social protection. The results of the analysis of the distribution of participation based on income, education, location of residence, location of work, and gender confirm that participation is higher in groups with better economic and social stability. This means that the current social security program still does not include the most vulnerable groups of workers.

With these findings, the study's initial hypothesis on low participation due to structural and economic barriers can be proven empirically. Therefore, the social security scheme needs to be adapted to be more flexible, affordable, and responsive to the characteristics of informal workers. The central and regional governments can provide full or partial subsidies for contributions, integrate with social assistance programs such as PKH and BLT, and provide incentives to MSMEs who register their workers.

This study has limitations because it has not included the policy dimension as a control variable. Therefore, further research can more comprehensively examine the impact of government regulations, the effectiveness of digital interventions through gig economy platforms, and the development of quantitative or experimental models to measure social security participation incentives in the informal sector.

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