



DETERMINANTS OF SOCIAL SECURITY PARTICIPATION AMONG INFORMAL SECTOR WORKERS: A CASE STUDY OF RICKSHAW DRIVERS

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ABSTRACT

Participation of informal sector workers in the Indonesian Social Security Employment Program (BPJS Ketenagakerjaan) in Gorontalo City remains low. This condition is influenced by multiple factors, including individual characteristics, occupational conditions, and socio-economic status. Understanding these determinants is essential to improve coverage and protection for informal workers. This study aimed to identify the key factors associated with BPJS Ketenagakerjaan participation among informal sector workers, particularly rickshaw drivers. This analytical observational study employed a cross-sectional design involving 342 informal sector workers selected through accidental sampling. Data were collected using structured questionnaires that had undergone validity testing using item - total correlations (items accepted when $r\text{-count} > r\text{-table}$, $p < 0.05$) and reliability testing using Cronbach's Alpha, with coefficients ≥ 0.70 indicating acceptable internal consistency. Data were analyzed through univariate analysis, bivariate binary logistic regression, and multivariate binary logistic regression to identify significant predictors of BPJS Ketenagakerjaan participation. Bivariate analysis revealed that income, occupation, and perceptions of BPJS benefits were significantly associated with program participation. Multivariate logistic regression identified income as the most dominant predictor. The final regression model demonstrated good predictive ability, as indicated by satisfactory values of Nagelkerke R^2 and classification accuracy. Participation in BPJS Ketenagakerjaan among informal sector workers is influenced by various internal and external factors, with income emerging as the primary determinant. Efforts to increase participation should prioritize strategies that address these key influencing factors, particularly socio-economic barriers.

Keywords: BPJS ketenagakerjaan; gorontalo city; informal sector workers; logistic regression; social security

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INTRODUCTION

The commitment of World Health Organization (WHO) member states to achieving Universal Health Coverage (UHC) is a critical global issue in strengthening national health systems. UHC aims to ensure that every individual has access to adequate healthcare services and social protection, including health insurance and social welfare. This social security mechanism is internationally recognized as a key strategy to improve quality of life, reduce social inequality, and decrease societal vulnerability to health and economic risks. Moreover, the implementation of UHC also contributes to labor productivity, economic stability, and social development, making it a priority within the global sustainable development agenda (Sustainable Development Goals/SDGs) (Wiasa, 2022).

In Indonesia, this global commitment is realized through the National Health Insurance (JKN) program and the BPJS Ketenagakerjaan scheme, which provide social protection for the entire workforce. These programs include Work Accident Insurance (WAI), Death Insurance (DI), Old-Age Security (OAS), and Pension Security (PS). This framework serves as the fundamental protection system for both formal and informal workers, designed to ensure safety and socio-economic risk certainty for the labor force. Although the national system has adopted Law No. 3 of 1992 on Employment Social Security, not all workers are able to access these programs. In fact,

informal sector workers who constitute the majority of Indonesia's workforce only gained access in 2006 following the issuance of Ministerial Regulation No. 40 of 2006 (Noviansyah, 2019). This sector plays a crucial role in job creation and poverty alleviation. Long perceived as marginal, the informal sector is actually a manifestation of people's resilience and struggle for livelihood, and therefore deserves greater attention (Satriawan et al., 2021).

In Gorontalo Province, informal sector workers make up the majority of the labor force, with 388,459 individuals recorded in August 2024. One of the most prominent professions is that of bendor (motorized pedicab) drivers, who serve as an essential mode of transportation due to their practicality and accessibility. According to BPJS Ketenagakerjaan data from October 2024, only 667 out of 2,329 bendor drivers approximately 28.6% are registered as participants. This low participation rate creates a significant gap in social protection, leaving informal workers vulnerable to occupational accidents, income loss, and healthcare expenses. Preliminary findings indicate that the main barriers include irregular income, limited information about BPJS procedures and benefits, and the perception that occupational risks are simply part of daily work.

Although issues related to BPJS Ketenagakerjaan participation among informal workers have been identified, there is still limited research that systematically analyzes the determinants of participation among bendor drivers. Individual factors, occupational conditions, socio-economic status, perceptions, family support, and BPJS outreach efforts have not been widely examined collectively. This lack of empirical evidence results in intervention strategies that are often poorly targeted and ineffective in increasing participation. Therefore, this study aims to address this gap by analyzing the factors that influence social security participation among informal sector workers in Gorontalo City. Based on this background, the study aims to analyze the influence of individual, occupational, socio-economic, perceptual, and social support factors on BPJS Ketenagakerjaan participation among informal workers, specifically bendor drivers in Gorontalo City. The findings are expected to serve as a basis for more effective policy recommendations to improve social security coverage among informal workers and to contribute to strengthening the national social protection system.

METHOD

This study employed a quantitative analytical observational design with a cross-sectional approach, conducted in Gorontalo City. The study population consisted of all active bendor (motorized pedicab) drivers in Gorontalo City based on the 2023 data from the Central Bureau of Statistics (BPS), totaling 2,329 drivers. A total of 342 respondents were selected using an accidental sampling technique. The inclusion criteria consisted of respondents whose primary occupation was working as bendor drivers in Gorontalo City, who had been actively working for at least one year prior to the study, were at least 18 years old, and resided in Gorontalo City. Additionally, respondents were required to be present at the research location during data collection, willing to participate by signing an informed consent form, and able to answer the questionnaire and interview properly.

The exclusion criteria included respondents who did not work as bendor drivers as their main occupation, those who currently held formal employment, and those who were no longer actively working as bendor drivers. Data were collected using structured questionnaires that underwent validity testing through item-total correlation (items were accepted when $r\text{-count} > r\text{-table}$ at $p < 0.05$) and reliability testing using Cronbach's Alpha, with coefficients ≥ 0.70 indicating acceptable internal consistency. Data analysis included univariate, bivariate, and multivariate procedures. Bivariate analysis was performed using Simple Logistic Regression, while multivariate analysis employed Multiple Logistic Regression to identify the most influential determinants of social security participation among informal sector workers, specifically bendor drivers in Gorontalo City.

RESULT

Table 1.
Distribution of Respondents by Characteristics

Respondent Characteristics		f	%
Age	17 – 26	48	14.0
	27 – 36	148	43.3
	37 – 46	105	30.7
	47 – 56	39	11.4
	57 – 66	2	0.6
Tenure	2 – 6	115	33.6
	7 – 11	105	30.7
	12 – 16	59	17.3
	17 – 21	48	14.0
	22 – 26	15	4.4
Education	No Schooling	6	1.8
	Elementary School	55	16.1
	Middle School	96	28.1
	High School	184	53.8
	College	1	0.3
Marital Status	Unmarried	77	22.5
	Marry	255	74.6
	Widower	10	2.9
Daily Income	50.000 – 99.000	248	72.5
	100.000 – 150.000	86	25.1
	151.000 – 200.000	8	2.3

Based on the characteristics of the respondents, out of 342 study participants, the largest age group was 27–36 years, consisting of 148 individuals, while the smallest group was aged 57–66 years with only 2 individuals. In terms of work experience, most respondents had been working as bentor drivers for 2–6 years (115 respondents), whereas the fewest had 22–26 years of work experience (15 respondents). Regarding educational background, the majority of respondents had completed senior high school (184 individuals), while only one respondent had a tertiary education. For marital status, most respondents were married (255 individuals), with the smallest group being widowers (10 individuals). As for daily income, the largest group earned between IDR 50,000–99,000 per day (248 respondents), whereas the smallest group earned IDR 151,000–200,000 per day (8 respondents).

Table 2.
Analysis of Univariate Determinants of Labor Social Security Participation

Variable		f	%
Employment Social Security Membership	Non-Participant	214	62.6
	Participants	128	37.4
Income	Low	136	39.8
	High	206	60.2
Access to Services	Difficult	165	48.2
	Easy	177	51.8
Social Support	Poor	223	65.2
	Good	119	34.8
BPJS Socialization	Poor	220	64.3
	Good	122	35.7
Perception	Poor	48	14.0
	Good	294	86.0
Work	Unstable	4	1.2
	Stable	338	98.8

Based on the collected data, the majority of respondents were not enrolled in the employment social security program, totaling 214 individuals (62.6%), while 128 respondents (37.4%) were registered participants. Most respondents had a high income, with 206 individuals (60.2%), whereas 136 respondents (39.8%) were classified as having a low income. In terms of access to services, 177 respondents (51.8%) reported easy access, while 165 respondents (48.2%) experienced difficulties. The majority of respondents perceived their social support as inadequate, totaling 223 individuals

(65.2%), with only 119 respondents (34.8%) reporting good social support. BPJS outreach efforts were also considered insufficient by most respondents (220 individuals, 64.3%), while 122 respondents (35.7%) rated the outreach as adequate. Respondents' perceptions of BPJS tended to be positive, with 294 individuals (86.0%) reporting good perceptions, while 48 respondents (14.0%) had poor perceptions. Regarding employment status, nearly all respondents had stable jobs 338 individuals (98.8%) and only 4 respondents (1.2%) reported unstable employment.

Table 3.

Bivariate Analysis of Simple Logistic Regression

Independent Variables	B	Wald	Sig.	Exp(B)	Nagelkerke R Square
Income	0.209	19.865	0.000	1.233	0.085
Access to Services	0.815	88.369	0.000	2.260	0.750
Social Support	1.737	41.294	0.000	5.682	0.880
BPJS Socialization	0.919	115.833	0.000	2.508	0.732
Perception	0.541	120.439	0.000	1.717	0.793
Employment	1.065	92.341	0.000	2.900	0.483

The results of the logistic regression analysis showed that all independent variables had a significant influence on employment social security participation ($p < 0.05$). Income had a positive effect, increasing the likelihood of participation by 1.233 times. Access to services also increased the likelihood of participation by 2.260 times, while social support had the strongest effect, increasing the likelihood by 5.682 times. BPJS outreach improved participation odds by 2.508 times, and perception contributed with an odds ratio of 1.717. Employment status also had a positive influence, increasing the likelihood of participation by 2.900 times. The high Wald values for most variables further reinforced the strength of each predictor, while the Nagelkerke R Square indicated varying explanatory power, ranging from low to very strong.

Table 4.

Multivariate Analysis of Multiple Logistic Regression

Independent Variables	Employment Social Security Membership		
	B	Sig.	Exp(B)
Income	0.353	0.057	1.423
Access to Services	0.455	0.000	1.577
Social Support	1.692	0.001	5.433
Socialization	0.016	0.951	1.016
Perception	- 0.051	0.775	0.950
Employment	- 0.452	0.032	0.637
Constant	- 24.314	0.000	0.000

The omnibus test results indicated that the multiple logistic regression model was significant ($\chi^2 = 385.482$; $p < 0.001$), while the Nagelkerke R^2 value of 0.922 showed that the model explained approximately 92.2% of the variation in BPJS participation, with the remaining variation explained by factors outside the model. The Income variable had a positive effect on BPJS participation ($B = 0.353$), but it was not statistically significant ($\text{Sig.} = 0.057$; $\text{Exp}(B) = 1.423$). This suggests that higher income slightly increases the likelihood of becoming a BPJS participant, although the effect is not strong enough to be considered significant. Access to Services had a positive and significant effect ($B = 0.455$; $\text{Sig.} = 0.000$; $\text{Exp}(B) = 1.577$), meaning that easier access to services increases the likelihood of BPJS participation by 57.7%. Social Support also had a positive and significant effect ($B = 1.692$; $\text{Sig.} = 0.001$; $\text{Exp}(B) = 5.433$), indicating that individuals with stronger social support are more than five times more likely to participate in BPJS compared to those with lower social support.

The BPJS Outreach variable ($B = 0.016$; $\text{Sig.} = 0.951$; $\text{Exp}(B) = 1.016$) and Perception ($B = -0.051$; $\text{Sig.} = 0.775$; $\text{Exp}(B) = 0.950$) did not have significant effects on BPJS participation, indicating that variations in outreach or individual perceptions did not meaningfully influence enrollment status. Employment had a significant negative effect ($B = -0.452$; $\text{Sig.} = 0.032$; $\text{Exp}(B) = 0.637$), meaning

that certain types of work reduce the likelihood of BPJS participation by approximately 36.3%. The constant value in the model was $B = -24.314$ (Sig. = 0.000; $\text{Exp}(B) \approx 0$), representing the log odds of BPJS participation when all independent variables are set to zero, serving as the baseline for probability prediction in the model. Overall, these results confirm that Access to Services, Social Support, and Employment are significant predictors of BPJS participation, whereas Income, Outreach, and Perception do not have significant effects in the multivariate model.

DISCUSSION

The Influence of Income on Participation in the Workers' Social Security Program among Informal Sector Bentor Drivers

Based on the research conducted among bentor drivers in Gorontalo City, the analysis shows that income has a significant effect on participation in the Workers' Social Security Program, with a p-value of 0.000 and an $\text{Exp}(B)$ of 1.233. This finding indicates that most bentor drivers feel their income is unstable and insufficient to meet daily needs. Many respondents reported difficulties saving money, having no financial reserves, and frequently running short of funds before the next working day. Their unpredictable income also makes it difficult for them to plan expenses or cope with rising prices of basic necessities. This situation demonstrates that limited and fluctuating income serves as a major barrier for informal workers to pay their premiums regularly, supporting the conclusion that income significantly influences their participation in the social security program. The findings suggest that individuals with higher income have a greater likelihood of enrolling in BPJS Employment.

This result aligns with Muslim et al. (2022), who found that income had a positive and significant effect on the demand for BPJS Employment in the formal sector in Probolinggo City. The finding is also reinforced by a study by Pramuditya and Setyari (2024), which used logistic regression analysis and confirmed that income significantly influences people's interest in reactivating their BPJS Employment membership in Tabanan Regency. Furthermore, fluctuating income increases informal workers' concerns about their ability to make consistent premium payments. Many avoid registering because they fear being unable to maintain payments in subsequent months. This is consistent with previous studies showing that income instability is one of the primary barriers to accessing social security. Khaldal (2024) emphasized that financial hardship and difficulty paying premiums are major reasons behind the low enrollment of informal workers in social protection programs. The study showed that unstable income directly affects informal workers' ability to make routine contributions. Baillon et al. (2022) also highlighted that individuals' decisions to join insurance programs are strongly influenced by their willingness to pay (WTP), which is shaped by financial capacity and risk preferences. In this context, income plays an important role in determining WTP because individuals with higher income have greater economic capacity to pay premiums without compromising their basic needs.

The Influence of Access to Services on Participation in the Workers' Social Security Program

The study among bentor drivers in Gorontalo City shows that access to services has a highly significant effect on participation, with a p-value of 0.000 and an $\text{Exp}(B)$ of 2.260. Many bentor drivers reported difficulties accessing BPJS Employment services, including challenges in service availability, understanding registration procedures, and receiving adequate assistance from officers. Respondents also indicated that the benefits of the program were not fully felt, and the services were not perceived as equally accessible to all workers. These findings show that limited service access is a real barrier affecting their decision to join BPJS Employment. Limited access reflects structural barriers in reaching mobile informal workers. Workers with high mobility require more flexible and easily accessible services. When access is limited, their likelihood of participating decreases. This highlights the need for service innovations that are closer to workers' daily activities. Putri et al. (2024) found that integrated, continuous, and community-based service innovations can increase informal workers' participation in social security programs. Previous

studies also support these findings. Satriawan et al. (2021) reported that limited accessibility and information contribute to low participation in health insurance among Indonesia's informal sector workers. Similarly, Madya (2024) noted that structural barriers such as difficulty obtaining information and complex administrative procedures are major obstacles for informal workers. These studies confirm the current research: easy access, clear information, and simplified procedures can significantly increase informal worker participation in BPJS Employment.

The Influence of Social Support on Participation in the Workers' Social Security Program

The analysis shows that social support is the most dominant variable influencing participation, with a p-value of 0.000 and an Exp(B) of 5.682. This means that increased social support raises the likelihood of BPJS Employment participation up to 5.68 times. Social support plays an important role in shaping respondents' decisions to participate. Encouragement from family or coworkers often strengthens their belief in the importance and benefits of the program. Thus, social support significantly influences informal workers' behavior regarding social protection. Support from family, friends, or social workers contributes to increasing informal workers' participation. Nabillah et al. (2025) found that social workers strengthen understanding of workers' rights and benefits through education, administrative assistance, advocacy, and community organizing leading to higher enrollment and engagement.

Social support has been shown to strongly encourage informal workers to participate in social protection programs, including BPJS Employment. Support from trusted individuals—family, colleagues, or community leaders reinforces workers' confidence in the program. Syaharani and Ritonga (2024) also found that encouragement, guidance, and assistance significantly help informal workers overcome administrative barriers. This highlights the importance of community-based approaches. When group leaders or senior bentor drivers become role models by registering, others tend to follow. Thus, social support functions not only as a psychological influence but also as a strategic factor in increasing participation rates.

The Influence of BPJS Socialization on Participation in the Workers' Social Security Program

The study shows that socialization significantly affects participation, with a p-value of 0.000 and an Exp(B) of 2.508. Bentor drivers who received proper socialization were about 2.5 times more likely to participate than those with low exposure. Some respondents reported receiving information from family members, clear explanations from PERISAI agents, and encouragement from community leaders who were also participants. However, the distribution of information remains uneven. Many workers still do not receive information that suits their needs or work patterns. Most bentor drivers require practical, direct, and community-based socialization. Formal methods such as brochures, billboards, or official meetings often do not match the characteristics of field workers who spend most of their time on the road. The lack of direct involvement from BPJS officers also reduces the effectiveness of information delivered. Previous research confirms that community-based workshops and local campaigns can increase informal workers' awareness of social security (Putri et al., 2024). These findings align with Aseandi (2024), who emphasized that systematic and easy-to-understand socialization increases awareness among self-employed workers. Putri et al. (2024) also found that structured education improves informal workers' understanding of occupational risks and the benefits of social protection. Kuncoro et al. (2025) further showed that the intensity and quality of socialization are key factors in promoting awareness and participation among informal workers.

The Influence of Perception on Participation in the Workers' Social Security Program

The bivariate analysis shows that perception has a significant influence, with a p-value of 0.000 and an Exp(B) of 1.717. This means that better perceptions toward BPJS Employment increase the likelihood of participation. Respondents with high perception (86.0%) generally understood the benefits of social security, especially regarding work accident risks. This perception is shaped by

personal experiences, observations of coworkers' accidents, or general information about BPJS benefits. These findings are consistent with Rajagukguk (2025), who found that informal workers feel "social and financial security" after understanding BPJS protections but are still hindered by limited knowledge and complex procedures. However, positive perception does not always translate into action. Barriers such as premium costs, service access, and lack of social encouragement may prevent workers from registering. Thus, perception alone is insufficient to drive participation unless supported by external factors such as better access and strong social support. This is consistent with Damayanti et al. (2024), who found that market vendors' perceptions significantly influenced participation interest, and Siregar (2024), who argued that perceptions and benefit understanding are crucial for retention in BPJS Employment.

The Influence of Occupation on Participation in the Workers' Social Security Program

The findings show that occupation significantly affects participation, with a p-value of 0.000 and an Exp(B) of 2.900. This indicates that higher-risk occupations are associated with a greater likelihood of participating in social security programs. Driving a bentor is a physically demanding job with long hours, unstable income, and high accident risk—factors that naturally increase the need for BPJS Employment. However, despite this high-risk condition, many workers are still not registered, showing that risk alone does not automatically lead to action. Ronaldi (2025) found that informal workers tend to join BPJS Employment only when they clearly recognize the dangers of their job. Higher psycho-physical risks increase the likelihood of considering social protection. Nevertheless, even though high-risk occupations create strong needs, registration decisions are still influenced by income, access to services, social support, and socialization. Risk serves as a trigger but requires reinforcement from other factors to produce participation.

Dominant Determinants of Social Security Participation Among Informal Workers

The multivariate analysis shows that only three variables remain significant in the logistic regression model: Social support ($p = 0.001$; $\text{Exp}(B) = 5.433$), Access to services ($p = 0.000$; $\text{Exp}(B) = 1.577$), Occupation ($p = 0.032$; $\text{Exp}(B) = 0.637$). Meanwhile, income, socialization, and perception are no longer significant after all variables are analyzed simultaneously. Social support emerges as the most dominant predictor. Each increase in social support raises the likelihood of participation by 5.4 times. This demonstrates that decision-making among informal workers is strongly shaped by community influence, shared experiences, and peer recommendations. Access to services is the next significant factor. Ease of accessing BPJS offices, fast service, complete information, and simple procedures all influence decisions to register, especially for highly mobile workers. Occupation remains significant, although its effect weakens when combined with social factors. High-risk jobs create a need for protection, but decisions to register still depend on social encouragement and service accessibility. Income, socialization, and perception do not remain significant, indicating that understanding and awareness alone do not ensure participation unless supported by structural and social factors.

CONCLUSION

Based on the findings of this study, it can be concluded that at the bivariate stage, all independent variables demonstrated a significant influence on BPJS participation. Increases in income, service access, social support, socialization, perception, and type of occupation were shown to enhance the likelihood of individuals becoming BPJS members. However, when all variables were simultaneously included in the multivariate analysis, only a subset remained significant. Service access, social support, and occupation played an important role in determining BPJS participation, whereas socialization and perception no longer made a meaningful contribution after controlling for the other variables. Among the significant predictors, social support emerged as the most dominant factor influencing BPJS participation. These findings highlight that the involvement of one's social environment, along with the availability and accessibility of health services, plays a crucial role in encouraging community participation in the national health insurance program.

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