UNDERSTANDING NON-WAGE WORKERS BEHAVIOR TOWARDS BPJS EMPLOYMENT PROGRAMS: A BOUNDEDLY RATIONAL PLANNED BEHAVIOR ANALYSIS

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Abstract:

Background: The ongoing gap in social security protection for informal workers (BPU) presents a significant challenge for BPJS Employment, necessitating a deeper understanding of factors influencing participation in social security programs.

Purpose: This study aims to analyze the characteristics of BPU workers and their participation in BPJS Employment programs through an expanded Boundedly Rational Planned Behavior theory.

Design/methodology/approach: Conducted in Jakarta, the research employed a convenience sampling method with 130 respondents. Data analysis was performed using Smart PLS software.

Findings/Results: The study found that attitudes and subjective norms did not significantly influence rational planning, although some trends were observed. Similarly, perceived behavioral control had no significant effect on rational planning, consistent with previous research suggesting that perceptions of control are more relevant in less complex decision-making contexts. However, knowledge was identified as a significant predictor of rational planning, underscoring its crucial role in fostering engagement. While rational planning did not directly affect participation, positive attitudes were found to significantly influence participation levels. In contrast, subjective norms and perceived behavioral control did not significantly impact participation. Although perceived behavioral control showed a marginal effect on participation, this effect did not reach statistical significance, suggesting that individuals' perceptions of their ability to control participation outcomes may have a limited influence in this context. Knowledge was also a critical factor in encouraging participation, emphasizing the importance of awareness in promoting active involvement.

Conclusion: The findings highlight that the attitudes of informal workers significantly drive participation in the BPJS Employment program, while knowledge plays a crucial role in enhancing rational planning and engagement. Although subjective norms and perceived behavioral control have a minimal direct impact, the marginal effect of perceived behavioral control suggests that boosting individuals' confidence in managing their participation could enhance involvement. Overall, addressing knowledge gaps and fostering positive attitudes are essential for increasing participation rates among informal workers and providing insights for targeted interventions to promote social security protection for this vulnerable group.

Originality/value (State of the art): This research contributes to the understanding of participation dynamics in social security programs for informal workers, advocating for targeted educational campaigns to enhance knowledge, foster positive attitudes towards BPJS, and address barriers to participation.

Keywords: employment programs, informal workers, theory of planned behavior, BPJS

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INTRODUCTION

Formal employment is the backbone of the labor market, offering legal protection, stable wages, job security, and access to social insurance. However, informal workers, who are not officially recognized and often lack legal protections, face significant economic insecurity. The gap in social security coverage between the formal and informal sectors is a growing concern, particularly in Indonesia. While formal workers have access to social insurance, informal workers are left vulnerable, as they do not receive the same protections (Chen, 2012). This discrepancy is exacerbated by the increasing size of the informal sector, which accounts for over half of Indonesia's workforce (BPJS Employment, 2021). Social protection mechanisms, including employment social security, aim to mitigate this gap by ensuring that individuals and families in need are supported, thus reducing poverty and inequality (ILO, 2017). However, the participation rate of informal sector workers in the BPJS Employment program remains low, particularly among non-wage earners (BPU), highlighting a significant challenge in expanding social security coverage.

Based on Simon's logic (2019), this study replaces the general, unlimited intention variable in the Theory of Planned Behavior (TPB) introduced by Ajzen with the concept of bounded rationality. Ajzen's model (1991) assumed that individuals are rational without limitations in all circumstances, a view based on the universal assumptions of neoclassical economics. However, Simon (2019) contested this assumption, arguing that individuals often operate under conditions of bounded rationality. As a distinct branch of economics, behavioral economics seeks to improve predictive and analytical models, not by assuming that behavior is random or unpredictable but by recognizing it as systematic and modelable (Van Acker & Lips, 2021). This perspective suggests that actions are often seen as consequences rather than calculations (Akintola, 2020) and that rationality is limited, not accidental. Thus, individuals make decisions based on subjective, limited rationality constrained by their goals (Simon, 2019). Consequently, applying bounded rationality to model actual behavior offers a more accurate prediction of the behavior of economic agents.

Simon (2019) argued that several factors influence individuals' behavior. Rationality requires complete knowledge of the consequences of actions. However, considering the consequences of those actions, it becomes challenging for decision-makers to assess the future value of their decisions fully. Additionally, other social actors, such as family members or friends, may influence an individual's rational plan regarding specific behaviors, a concept known as subjective norms (Fishbein & Ajzen, 2009). Furthermore, rationality requires awareness of all action alternatives, but in actual decision-making processes, very few alternatives are known, making it challenging to achieve optimal decision-making. Therefore, control over each alternative action becomes essential for rationality in certain behaviors. These points are crucial in influencing individual rationality towards specific behaviors.

Although previous studies have explored factors affecting participation in social security schemes, there still needs to be a gap in understanding the behavioral factors influencing informal sector workers' participation in BPJS Employment. Traditional models, such as TPB, assume unlimited rationality, which does not reflect the decision-making processes of informal workers, who often operate under bounded rationality (Simon, 2019). This gap highlights the need for alternative models that integrate bounded rationality to understand better and predict BPJS participants' behavior in the informal sector (Kőszegi & Rabin, 2019).

Many studies using behavioral economics models to predict participation in social security schemes assume rational decision-making processes, overlooking informal sector workers' limited information-processing abilities and subjective rationality (Van Acker & Lips, 2021). TPB has been widely used to explain the intentions behind social security participation. However, it assumes individuals have complete information and unlimited rationality, which may not apply to informal sector workers who face cognitive limitations and environmental constraints (Ajzen, 1991). Despite research focusing on socio-economic factors affecting informal sector workers' participation, many studies overlook psychological and behavioral aspects. To overcome these limitations, this study proposes the Theory of Planned Behavior with Bounded Rationality (TBRPB), which integrates bounded rationality into the TPB framework. This approach acknowledges that individuals have limited cognitive resources and are influenced by subjective rationality, offering a more realistic framework for

understanding informal workers' decision-making regarding BPJS Employment participation. The TBRPB model incorporates bounded rationality, recognizing that individuals have limited cognitive abilities and access to information, which affects their ability to make entirely rational decisions (Simon, 2019). It also emphasizes the importance of subjective norms, highlighting the influence of social factors, such as family and friends, on decision-making.

Previous research has explored challenges related to extending social security to informal workers, focusing on factors like knowledge, trust, and access to information (Chen, 2012). However, much of the existing literature assumes that decisions are based on rational intentions, ignoring cognitive and psychological limitations. The concept of bounded rationality challenges this assumption by suggesting that individuals make decisions with limited information, cognitive resources, and time. While studies on bounded rationality and TPB have focused on formal settings, they have yet to fully address the unique challenges informal workers face in contexts such as social security participation. The novelty of this study lies in applying the Theory of Bounded Rational Planned Behavior (TBRPB) to understand informal workers' decision-making regarding BPJS Employment participation. The TBRPB integrates bounded rationality, replacing the assumption of unlimited information processing with a more context-specific decision-making process that accounts for cognitive limitations. This approach offers a more accurate model for predicting the behavior of informal sector workers in social security schemes.

This study adopts a behavioral approach to problem-solving, recognizing that individuals, particularly in the informal sector, often face limitations in processing information and making fully rational decisions. Rather than assuming that individuals make decisions based solely on optimal information, this research explores how cognitive biases, limited access to information, and other psychological factors influence participation in the BPJS Employment program. By incorporating the concept of bounded rationality into the Theory of Planned Behavior, the study offers a more nuanced model of decision-making that reflects real-world conditions. This approach will provide insights into how informal workers process information, what factors they consider when deciding whether or not to participate in social security programs, and how these factors contribute to the low participation rate in the BPJS Employment program. The main objectives of this study are as follows:

1. Identify key factors influencing participation: To identify the primary factors that influence BPU workers' decisions to participate in the BPJS Employment program, including knowledge, trust, and perceived benefits.

2. Examine the role of bounded rationality: To investigate how bounded rationality impacts the decision-making process, particularly when workers have limited information or cognitive resources.

3. Propose an improved model: To propose an updated model based on the Theory of Bounded Rational Planned Behavior (TBRPB), which can more accurately predict individual behavior in the informal sector, specifically regarding social security participation.

4. Provide actionable recommendations: To offer recommendations for BPJS Employment and policymakers on how to increase participation rates among informal workers by addressing psychological barriers, information asymmetries, and the limited decision-making resources that hinder registration.

METHODS

The data for this study consists of primary data, which were collected from respondents in DKI Jakarta Province, Indonesia. The data sources include BPJS Employment participants as well as non-participants, particularly non-wage earners (BPU workers). These include individuals engaged in informal employment, such as small business owners, motorcycle taxi drivers, public transportation drivers, doctors, lawyers, and other freelance or independent workers. This mix of participants and non-participants provides a comprehensive view of the factors influencing social security participation among the informal workforces.

The primary data were gathered using a structured questionnaire, which was administered to the selected respondents through survey methods. The questionnaire was divided into two sections are 1) Demographic Information: This section collected general details about the respondents, such as age, gender, employment status, and income level. 2) Variable Measurement: The second section focused

on the research constructs relevant to the study, such as attitude, subjective norm, perceived behavioral control, knowledge, and intention to register for BPJS Employment. The measurement of these constructs was developed from a thorough literature review and included 26 questions (formulated in Indonesian). To measure the attitudes and perceptions of respondents, a Likert scale was used, where, 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree. This Likert scale is widely accepted in behavioral and psychological measurements in social science research (Joshi et al. 2015; Kim, 2011).

The collected data will be processed and analyzed using Structural Equation Modeling - Partial Least Squares (SEM-PLS). This method is ideal for analyzing complex relationships between observed and latent variables and is particularly effective for confirmatory analysis (Hair et al. 2013). SEM-PLS will be used to test the relationships between the variables (attitude, subjective norm, perceived behavioral control, knowledge, and intention) and to examine the role of bounded rationality in influencing participation in the BPJS Employment program. Within the SEM-PLS framework, Confirmatory Factor Analysis (CFA) will be conducted to evaluate the construct validity of the manifest variables and to test the reliability of the measurement model (Ghozali, 2014). This will help ensure that the constructs are properly measured and that the model reflects the theoretical assumptions of the study.

The following hypotheses are formulated based on the Theory of Bounded Rational Planned Behavior (TBRPB), which integrates bounded rationality into the traditional Theory of Planned Behavior (TPB):

1. Hypothesis 1: Attitude positively and significantly influenced the bounded rational plan to participate as a BPJS employment program participant among informal workers.
2. Hypothesis 2: Subjective norms positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.
3. Hypothesis 3: Perceived behavioral control positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.
4. Hypothesis 4: Knowledge positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.
5. Hypothesis 5: The bounded rational plan positively and significantly influenced the decision to participate as BPJS employment program participants among informal workers.
6. Hypothesis 6: Attitude positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.
7. Hypothesis 7: Subjective norms positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.
8. Hypothesis 8: Perceived behavioral control positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.
9. Hypothesis 9: Knowledge positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

These hypotheses are based on previous research which suggests that attitudes, social norms, perceived control, and knowledge influence individuals' decisions to engage in various behaviors (Ajzen, 1991).

The conceptual framework of the study is based on the Theory of Bounded Rational Planned Behavior (TBRPB). This theory extends the traditional Theory of Planned Behavior (TPB) by replacing general rational intention with bounded rational planning as a direct antecedent to actual behavior. Bounded rationality suggests that individuals, while aiming to make rational decisions, are limited by cognitive constraints such as memory, attention, and information processing capacity. These constraints influence attitudes, subjective norms, and perceived behavioral control, which in turn affect the intention to participate in BPJS Employment.

The conceptual framework, as depicted in Figure 1 below, shows that these factors (attitude, subjective norm, behavioral control, knowledge) directly influence intention, which then leads to actual participation in the BPJS Employment program. The framework also incorporates bounded rationality as a moderating factor that influences how individuals process information and form intentions.
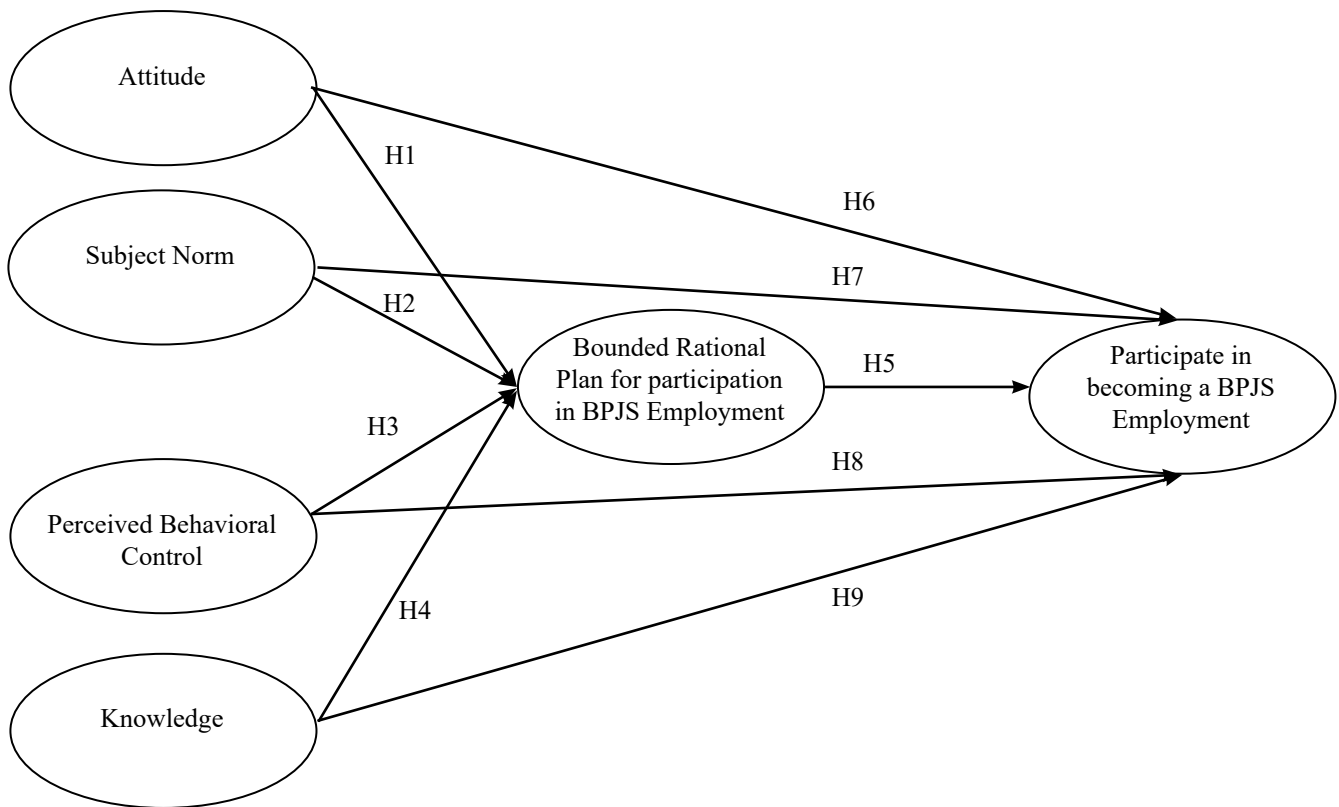
Figure 1. The conceptual framework

RESULTS

Respondent profile

Most respondents were male (57.69%), while females accounted for 42.31% of the total sample. This indicated that the sample was relatively dominated by males. Most respondents fell within the age range of 20-35 years (55.73%). A smaller portion was in the age range of 36-45 years (25.19%) and 46-60 years (18.32%). Only 0.08% were over 60 years old, suggesting that the sample comprised mostly younger individuals. Nearly all respondents (97.71%) resided in the Jabotabek area, indicating that the sample predominantly came from this region, with only 2.29% located outside of Jabotabek. In terms of occupation, the majority worked in the MSME sector (43.85%), followed by health (30%), agriculture (18.46%), construction (6%), and others (4%).

Convergent Validity

Loading Factor

In Table 1, we can see the results of the loading factor analysis for various indicators associated with different constructs, including Attitude (AT), Subjective Norm

(SN), Perceived Behavioral Control (PBC), Knowledge (K), Behavioral Response (BRP), and Intention to participate (DCS). The output of the estimated outer loading values is presented in the following Table 1.

Indicators such as X1.1, X1.2, X1.3, and X1.4 (for AT), X2.3, X2.4, and X2.5 (for SN), as well as Y2.1 and Y2.3 (for DCS), demonstrated very good measurements of their respective constructs. Indicator Y1.2 (for BRP) had a low loading factor (0.402), suggesting that this indicator might not have made a significant contribution to the BRP construct. Overall, most of the indicators had high loading factors, indicating that they were good measures for their respective constructs.

Average Variance Extracted (AVE) Values

In Table 2, presents the values for Cronbach's Alpha, Rho_A, Composite Reliability (CR), and Average Variance Extracted (AVE) for each construct: Attitude (AT), Behavioural Response (BRP), Intention to participate (DCS), Knowledge (K), Perceived Behavioral Control (PBC), and Subjective Norm (SN). From the Table 2, it is evident that the constructs AT, DCS, K, PBC, and SN demonstrate strong reliability and validity. All constructs exhibit Cronbach's Alpha values above the recommended threshold of 0.70,

with AT achieving a notably high value of 0.900. Similarly, the rho_A values are also satisfactory, indicating consistency in measurement. The Composite Reliability (CR) scores further reinforce the robustness of these constructs, with values ranging from 0.736 to 0.940, well above the acceptable level of 0.70. The Average Variance Extracted (AVE) values also reflect good convergent validity, with AT, DCS, K, PBC, and SN all exceeding the threshold of 0.50, thus confirming that the constructs account for a substantial amount of variance in their respective indicators. In contrast, the BRP construct presents some concerns, as it shows a lower AVE of 0.425 and a Composite Reliability of 0.736. These figures suggest that BRP may not fully capture the intended variance, indicating potential issues with its reliability and validity. Overall, while most constructs demonstrate solid psychometric properties, the BRP construct warrants further examination to enhance its reliability and validity within the model.

Table 1. Loading factor

	AT	SN	PBC	K	BRP	DCS
X1.1	0.895					
X1.2	0.877					
X1.3	0.868					
X1.4	0.867					
X2.1		0.767				
X2.2		0.798				
X2.3		0.917				
X2.4		0.874				
X2.5		0.895				
X2.6		0.848				
X3.1			0.788			
X3.2			0.872			
X3.3			0.877			

	AT	SN	PBC	K	BRP	DCS
X3.4			0.777			
X4.1				0.858		
X4.2				0.912		
X4.3				0.887		
X4.4				0.647		
Y1.1					0.845	
Y1.2					0.402	
Y1.3					0.663	
Y1.4					0.622	
Y2.1						0.848
Y2.2						0.799
Y2.3						0.843
Y2.4						0.812

Note: Attitude (AT), Subjective Norm (SN), Perceived Behavioral Control (PBC), Knowledge (K), Behavioral Response (BRP), and Intention to participate (DCS)

Table 2. Cronbach's alpha, CR, AVE Value

	Cronbach's Alpha	Rho_A	Composite Reliability (CR)	Average Variance Extracted (AVE)
Attitude (AT)	0.900	0.905	0.930	0.769
Behavioral Response (BRP)	0.598	0.606	0.736	0.425
Intention to participate (DCS)	0.846	0.856	0.896	0.682
Knowledge (K)	0.846	0.864	0.899	0.693
Perceived Behavioral Control (PBC)	0.848	0.849	0.898	0.688
Subjective Norm (SN)	0.923	0.924	0.940	0.725

Discriminant Validity

Fornell-Larcker Criterion

In Table 3, we can see the results of the Fornell-Larcker Criterion, which is used to assess discriminant validity among the constructs: Attitude (AT), Behavioral Response (BRP), Intention to Participate (DCS), Knowledge (K), Perceived Behavioral Control (PBC), and Subjective Norm (SN). In this table, the diagonal elements represent the square root of the Average Variance Extracted (AVE) for each construct, while the off-diagonal elements represent the correlations between the constructs. A construct demonstrates adequate discriminant validity if the square root of its AVE is greater than its correlations with other constructs. From the table, the following observations can be made. Attitude (AT): The square root of AVE for AT is 0.877, which is greater than its correlations with BRP (0.676), DCS (0.744), K (0.758), PBC (0.830), and SN (0.842). This indicates that AT has good discriminant validity. Behavioral Response (BRP): With an AVE of 0.652, BRP's correlation with other constructs (AT: 0.676, DCS: 0.682) is lower than its AVE, suggesting that BRP maintains acceptable discriminant validity, although it is on the lower side. (DCS): The AVE for DCS is 0.826, and its correlations with AT (0.744), BRP (0.682), K (0.790), and PBC (0.763) are below the square root of AVE, indicating strong discriminant validity. Knowledge (K): The AVE for K is 0.833, and its correlations with other constructs, particularly with DCS (0.790) and PBC (0.832), are below its AVE. This signifies that K also has good discriminant validity. Perceived Behavioral Control (PBC): PBC shows an AVE of 0.830, and its correlations with AT (0.830), DCS (0.763), K (0.832), and SN (0.851) suggest that it maintains discriminant validity, although the correlation with SN is quite high. Subjective Norm (SN): With an AVE of 0.851, SN exhibits strong discriminant validity,

as its correlations with other constructs remain below the square root of its AVE. Overall, the Fornell-Larcker Criterion results indicate that most constructs exhibit adequate discriminant validity, with all constructs maintaining a clear distinction from one another. This supports the validity of the measurements used in the study and affirms the robustness of the constructs within the model.

Cross Loading

In Table 4, presents the cross-loading values for various indicators associated with the constructs: Attitude (AT), Behavioral Response (BRP), Intention to participate (DCS), Knowledge (K), Perceived Behavioral Control (PBC), and Subjective Norm (SN). The analysis of these cross loadings provides insights into the discriminant validity of the constructs. Most indicators exhibit higher loading values on their intended constructs compared to their loadings on other constructs, indicating generally good discriminant validity. For instance, indicators such as X1.1, X1.2, and X1.4 show strong loadings for AT, with values of 0.895, 0.877, and 0.867, respectively, reinforcing the relevance of these indicators to the AT construct.

However, a few indicators demonstrate relatively low loadings on certain constructs, suggesting potential issues with discriminant validity. Notably, indicator Y1.2 has a low loading on BRP (0.402), which raises concerns about its reliability and validity within this construct. In contrast, other indicators within the BRP construct maintain significantly higher loadings, indicating that while Y1.2 may be problematic, the overall construct still holds validity through its other indicators. Additionally, some indicators, such as Y2.1 and Y2.3, exhibit strong loadings for DCS (0.848 and 0.843, respectively), confirming their relevance to this construct.

Table 3. Fornell-Larker Criterion Result

	AT	BRP	DCS	K	PBC	SN
AT	0.877					
BRP	0.676	0.652				
DCS	0.744	0.682	0.826			
K	0.758	0.759	0.790	0.833		
PBC	0.830	0.682	0.763	0.832	0.830	
SN	0.842	0.704	0.744	0.814	0.851	0.851

Note: Attitude (AT), Subjective Norm (SN), Perceived Behavioral Control (PBC), Knowledge (K), Behavioral Response (BRP), and Intention to participate (DCS)

Table 4. Cross loading value result

	AT	BRP	DCS	K	PBC	SN
X1.1	0.895	0.682	0.710	0.748	0.721	0.762
X1.2	0.877	0.560	0.590	0.584	0.657	0.702
X1.3	0.868	0.551	0.637	0.631	0.733	0.632
X1.4	0.867	0.564	0.664	0.681	0.800	0.850
X2.1	0.584	0.627	0.603	0.658	0.572	0.767
X2.2	0.716	0.604	0.604	0.667	0.667	0.798
X2.3	0.782	0.607	0.644	0.713	0.808	0.917
X2.4	0.788	0.579	0.689	0.709	0.768	0.874
X2.5	0.754	0.611	0.682	0.735	0.781	0.895
X2.6	0.662	0.560	0.561	0.669	0.744	0.848
X3.1	0.691	0.494	0.617	0.678	0.788	0.678
X3.2	0.683	0.536	0.616	0.704	0.872	0.733
X3.3	0.660	0.604	0.654	0.745	0.877	0.770
X3.4	0.718	0.618	0.638	0.629	0.777	0.639
X4.1	0.745	0.601	0.740	0.858	0.797	0.727
X4.2	0.734	0.686	0.713	0.912	0.803	0.785
X4.3	0.627	0.649	0.690	0.887	0.710	0.693
X4.4	0.370	0.597	0.454	0.647	0.408	0.469
Y1.1	0.486	0.845	0.545	0.673	0.524	0.585
Y1.2	0.038	0.402	0.111	0.234	0.046	0.086
Y1.3	0.693	0.663	0.603	0.544	0.665	0.595
Y1.4	0.217	0.622	0.264	0.363	0.219	0.300
Y2.1	0.722	0.645	0.848	0.775	0.749	0.748
Y2.2	0.554	0.494	0.799	0.584	0.589	0.530
Y2.3	0.556	0.571	0.843	0.601	0.564	0.522
Y2.4	0.599	0.523	0.812	0.618	0.589	0.621

Note: Attitude (AT), Subjective Norm (SN), Perceived Behavioral Control (PBC), Knowledge (K), Behavioral Response (BRP), and Intention to participate (DCS)

Overall, while most indicators affirm the constructs they represent, attention must be given to those with lower loadings to ensure the robustness and reliability of the measurement model. Future research may benefit from reassessing these problematic indicators to enhance the overall validity of the constructs.

Assessment of Structural Model

R-Square Value

The R-Square value indicated the change in the response variable due to the presence of endogenous variables. Additionally, a higher R-Square value suggested improved predictive accuracy, ranging from 0 to 1. Chin provided criteria for R-Square values of 0.67, 0.33, and 0.19, categorizing them as strong, moderate, and weak, respectively (Chin, 1998, in Ghozali and Latan, 2015).

In Table 5, we can see that the R-Square for BRP was 0.605, indicating that 60.5% of the variation in BRP could be explained by the independent variables in the model. The R-Square for DCS was 0.686, meaning that 68.6% of the variation in DCS could be accounted for by the independent variables in the model. With an R² of 0.605, the model adequately explained the variation in BRP. However, after adjustment, the Adjusted R² of 0.593 suggested that the model was slightly overfit, yet it remained strong in explaining the variation.

The Adjusted R² for BRP was 0.593, indicating that after adjusting for the number of predictors, 59.3% of the variation in BRP could be explained by the model. The Adjusted R² for DCS was 0.673, which meant that after adjusting for the number of predictors, 67.3% of the variation in DCS could be explained by the model. With an R² of 0.686, this model excelled in explaining the variation in DCS. After adjustment, the Adjusted R² of 0.673 demonstrated that the model was also very strong and not overly fitted. Overall, these values indicated that the model used had a reasonably good predictive power for explaining the variation in BRP and DCS, despite a slight decrease in the adjusted values.

Path Coefficients (Inner Model)

The structural model estimation was conducted through analysis. The tests performed included Beta estimation and the use of t-values for hypothesis assessment via the bootstrap process. A bootstrap with a subsample of 500 was carried out to enhance the statistical significance of the item weights, following statistical guidelines (Ramayah et al. 2016).

Based on Table 6, which presents the results of the hypothesis testing using Partial Least Squares (PLS), we can observe the relationships between various factors influencing participation in the BPJS Employment program. The testing was demonstrated through existing hypotheses, allowing for an understanding of how each variable affected the others.

Hypothesis 1: Attitude positively and significantly influenced the bounded rational plan to participate as a BPJS employment program participant among informal workers.

The analysis results indicated that the relationship between attitude and the bounded rational plan was not significant at the 0.05 level, with a p-value of 0.086 (> 0.05). The t-value of 1.366 suggested a tendency towards a relationship, although it was not sufficiently significant. Recent research indicated that attitudes may not directly influence the bounded rational plan but could be affected by external factors, such as policies or environmental conditions (Dhami & Sunstein, 2022). These findings suggested that to enhance the participation of informal workers in the BPJS employment program, attention needed to be directed toward the external context that could influence their attitudes.

The structural model can be visualized in Figure 2, which provides a graphical representation of the hypothesized relationships between the variables. This model illustrates how factors such as Attitude (AT), Subjective Norm (SN), Perceived Behavioral Control (PBC), and Knowledge (K) influence Behavioral Response (BRP), which in turn affects the Intention to Participate (DCS) in the BPJS Employment program.

Hypothesis 2: Subjective norms positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.

The analysis results indicated that the relationship between subjective norms and the bounded rational plan was not significant at the 0.05 level, with a p-value of 0.061 (> 0.05). The t-value of 1.546 suggested a tendency toward a relationship, although it did not reach the expected level of significance. Recent studies indicated that subjective norms might have a greater impact in specific social contexts or within groups with strong norms (Cialdini & Goldstein, 2020; Dhami & Sunstein, 2022). These findings suggested that to enhance the participation of informal workers in the BPJS employment program, it was important to consider the social context and prevailing norms within their communities.

Hypothesis 3: Perceived behavioral control positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.

Table 5. R-Square value result

	R Square	R Square Adjusted
Behavioral Response (BRP)	0.605	0.593
Intention to participate (DCS)	0.686	0.673

Table 6. Hypothesis Testing Result

	Original Sample (O)	Sample Mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
AT → BRP	0.166	0.172	0.121	1.366	0.086
SN → BRP	0.160	0.168	0.103	1.546	0.061
PBC → BRP	-0.033	-0.020	0.150	0.223	0.412
K → BRP	0.531	0.508	0.151	3.509	0.000
BRP → PART	0.115	0.127	0.100	1.148	0.126
AT → PART	0.219	0.204	0.124	1.764	0.039
SN → PART	0.042	0.044	0.138	0.304	0.381
PBC → PART	0.159	0.160	0.122	1.302	0.097
K → PART	0.370	0.370	0.109	3.382	0.000

Note: Attitude (AT), Subjective Norm (SN), Perceived Behavioral Control (PBC), Knowledge (K), Behavioral Response (BRP), and Intention to participate (DCS)

The analysis results showed that the relationship between perceived behavioral control (PBC) and the bounded rational plan (BRP) was not significant at the 0.05 level, with a p-value of 0.412 (> 0.05). The t-value of 0.223 indicated that perceived control over behavior did not have a significant impact on the bounded rational plan in the context of informal workers' participation in BPJS.

Recent research indicated that PBC often influenced intentions and actions in simpler decision-making contexts (Bandura, 2006; Bussey & Bandura, 1999). In this case, informal workers faced various challenges that made them feel they had less control over their participation in the BPJS program, such as lack of information, limited access, or economic factors. Ajzen (2002) and Santoso et al. (2020) noted that perceived behavioral control could serve as an important factor in shaping intentions, but its influence might be more apparent in more direct and clear situations. Therefore, to enhance the participation of informal workers in the BPJS employment program, interventions that could improve their perception of control were necessary, such as outreach, better access, and supportive policies.

Hypothesis 4: Knowledge positively and significantly influenced the bounded rational plan to participate as BPJS employment program participants among informal workers.

The analysis indicated that the relationship between knowledge and the bounded rational plan was significant at the 0.05 level, with a p-value of 0.000 (< 0.05). The t-value of 3.509 showed that knowledge had a significant and strong impact on the bounded rational plan in the context of informal workers' participation in BPJS.

These findings aligned with recent research indicating that knowledge could enhance awareness and individual engagement in rational planning (Vlaev et al. 2020). Additionally, studies by March (1978) and Simon (1955) emphasized the importance of knowledge in rational decision-making. Therefore, to improve the participation of informal workers in the BPJS employment program, it was crucial to provide adequate information and education to help them better understand the benefits and registration processes.

Hypothesis 5: The bounded rational plan positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

The analysis indicated that the relationship between the bounded rational plan (BRP) and the intention to participate (DCS) was not significant at the 0.05 level, with a p-value of 0.126 (> 0.05). The t-value of 1.148 suggested that having a bounded rational plan did not directly influence the participation of informal workers in the BPJS employment program.

Recent research indicated that participation was more influenced by factors such as intrinsic motivation and available opportunities than by mere rational planning (Deci & Ryan, 1985; Kahneman, 2003; Bicchieri, 2017). These findings suggested that while structured plans were important, other internal and external factors might play a more dominant role in encouraging informal workers' participation in the BPJS program. Therefore, efforts to enhance participation should also focus on strengthening motivation and creating better opportunities for informal workers.

Hypothesis 6: Attitude positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

The analysis indicated that the relationship between attitude and the intention to participate (DCS) was significant at the $\alpha = 0.05$ level, with a p-value of 0.039, indicating that attitude had a significant impact on participation. The obtained t-value of 1.764 suggested a fairly strong level of significance. Recent research confirmed that positive attitudes not only encouraged participation in the BPJS context but also contributed to active involvement in social and political activities in the community (Fishbein & Ajzen, 2009, Hortal, 2023). This is in line with the research by Wulandari et al. (2024) on the role of awareness, which affects an individual's attitude toward making positive intentions. Ideally, if BPJS participants fully understand the important benefits of joining the BPJS program, it will encourage them to participate. However, in reality, the current situation is not yet like this. These findings emphasized the importance of developing interventions that could strengthen positive attitudes toward social insurance programs to enhance the participation rates of informal workers.

Hypothesis 7: Subjective norms positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

The analysis showed that the relationship between subjective norms (SN) and the decision to participate (DCS) was not significant at the α = 0.05 level, with a p-value of 0.381 (> 0.05). The obtained t-value of 0.304 indicated that subjective norms, or perceived social pressures, did not have a significant influence on participation in this context. These findings implied that other factors might be more dominant in determining the participation of informal workers in the BPJS employment program.

Recent studies indicated that subjective norms could have a stronger influence in situations where social norms were clearer or more enforced, as well as in contexts where individuals felt more bound by the expectations and judgments of their social groups (Madden et al. 1992; Schneider & Enste, 2000). Therefore, intervention strategies focused on strengthening social norms and community support could be crucial for increasing the participation of informal workers in this social insurance program.

Hypothesis 8: Perceived behavioral control positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

The analysis indicated that the relationship between perceived behavioral control (PBC) and the intention to participate (DCS) was not significant at the α = 0.05 level, with a p-value of 0.097 (> 0.05). However, the p-value approaching 0.05 suggested a tendency toward a relationship that warranted attention. The obtained t-value of 1.302 indicated that perceived behavioral control had a marginal influence on participation, particularly in contexts where individuals felt more capable of controlling the outcomes of their participation decisions.

Previous research indicated that when individuals felt they had the ability and resources to participate, their likelihood of engaging in social insurance programs increased (Berg, 2010; Gigerenzer & Goldstein, 1996; Kraft, 2005). Therefore, to enhance the participation of informal workers in the BPJS employment program, it was important to develop programs that could strengthen perceptions of behavioral control, such as training and clear information regarding the registration process and benefits obtained.

Hypothesis 9: Knowledge positively and significantly influenced the intention to participate as BPJS employment program participants among informal workers.

The analysis showed that the relationship between knowledge (K) and the intention to participate (DCS) was significant at the α = 0.05 level, with a p-value of 0.000 (< 0.05). The t-value of 3.382 indicated that knowledge had a significant and strong influence on participation. These findings suggested that individuals with higher levels of knowledge were more likely to engage actively in participatory activities. Knowledge provided better insights and a deeper understanding of related issues, which in turn encouraged active participation in decision-making processes and community activities. Recent research indicated that knowledge played a crucial role in enhancing individual engagement in various forms of social and political participation, which is essential for creating a more responsive and involved society (Sahibzada & Cai, 2020; Hámornik & Juhasz, 2010). This study is in line with the research conducted by Yuliani (2019), which reveals that knowledge has an impact on the intention to innovate. This finding is relevant to the context of BPJS membership, where a good understanding of the program can encourage active participation. Therefore, efforts to improve knowledge among informal workers could serve as an effective strategy for increasing their participation in the BPJS employment program. Therefore, efforts to improve knowledge among informal workers could serve as an effective strategy for increasing their participation in the BPJS employment program.

Managerial Implications

Knowledge has a significant influence on rational planning in BPJS Employment participation, this explains the importance of increasing workers' understanding of the BPJS Employment program. In this study, attitude also had a significant influence on the intention to participate, so efforts to form a positive attitude towards this program must be a priority. BPJS Employment management needs to increase educational campaigns to strengthen workers' understanding of the benefits and process of the program so that they can change workers' attitudes towards BPJS Employment.

CONSLUSIONS AND RECOMMENDATIONS

Conclusions

The findings highlight that the attitudes of informal workers significantly drive participation in the BPJS Employment program, while knowledge plays a crucial role in enhancing rational planning and engagement. Although subjective norms and perceived behavioral control have a minimal direct impact, the marginal effect of perceived behavioral control suggests that boosting individuals' confidence in managing their participation could enhance involvement. Overall, addressing knowledge gaps and fostering positive attitudes are essential for increasing participation rates among informal workers and providing insights for targeted interventions to promote social security protection for this vulnerable group.

Recommendations

Future research should explore external factors, such as government policies and environmental conditions, that may influence the attitudes and subjective norms of informal workers toward BPJS Employement. It would be beneficial to investigate specific social contexts to understand how subjective norms operate within groups with strong norms. Additionally, employing mediation models could shed light on how knowledge mediates the relationships between attitude, subjective norms, behavioral control, and the bounded rational plan.To enhance participation among informal workers, it is crucial to increase their knowledge about the benefits of BPJS Employment through effective education and socialization campaigns. Programs that promote positive attitudes, such as sharing testimonials from participants who have experienced its benefits, could further encourage enrollment. Lastly, addressing perceived behavioral control constraints by providing more opportunities and reducing barriers to participation in BPJS Employment Programs will be essential.

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