

Analysis of the Influence of Socio-Economic Characteristics of Fishermen on the Decision to Participate in the Social Security Administering Body (BPJS) for Employment for the Non-Wage Recipient (BPU) Segment in Masta Village, Tapin Regency

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ABSTRACT

The welfare of fishermen as part of the informal sector in Indonesia still faces various structural and social challenges, especially in access to social protection such as employment insurance. The study aims to analyze the influence of socio-economic characteristics of fishermen on the decision to participate in the BPJS Employment BPU segment in Masta Village, Tapin Regency. The study was conducted in Masta Village, Bakarangan District, Tapin Regency, South Kalimantan Province. Respondents were taken by census in one village, namely Masta Village, Bakarangan District, in 4 (four) Joint Business Groups (KUB) of fishermen or fishermen, with a total of 52 members or respondents. With details of 39 respondents participating in BPJS Employment and 13 respondents not participating in BPJS Employment. Data analysis was carried out using binary logistic and descriptive methods with a Likert scale. The socio-economic characteristics of fishermen, especially age and education level, have a significant effect on the decision to participate in the BPJS Employment BPU segment program in

Masta Village, Tapin Regency. Fishermen's perception of BPJS Employment is generally in the high category, as reflected in the perception index of 677 from a maximum limit of 832. Socio-economic aspects have a certain influence; positive perceptions and the level of social security literacy are key factors in encouraging fishermen's participation in the BPJS Employment BPU program.

Keywords: Consumers, Fish, Price, Income, Bauntung Market.

INTRODUCTION

The welfare of fishermen as part of the informal sector in Indonesia still faces various structural and social challenges, especially in access to social protection such as employment security. Fishermen are very vulnerable to various risks, ranging from work accidents, weather uncertainty, to fluctuations in catches. The Employment Social Security Program organized by BPJS Employment is an important instrument to provide protection for formal and informal workers. The realization of fishermen's participation in this program is still relatively

low (Satriawan et al., 2021). This problem raises questions about the factors that influence the low level of participation of fishermen in the program, especially in rural areas that have limited access and information.

Data from the Population and Civil Registration Service of Tapin Regency (2023), the population of Bakarangan District reached 10,978 people with an annual growth of 1.24 percent. The highest population density was recorded in Tangkawang Baru Village at 821 people/km², while the lowest density was in Masta Village, which was only 11 people/km². Although Masta Village has the largest area, namely 34.09 km² or 48.16% of the total area of Bakarangan District, its population density is very low. This reflects the inequality in population distribution which also has an impact on the pattern of utilization of natural resources and the types of work carried out by the local community, including in choosing the informal job sector such as fishermen.

Masta Village is inhabited by 379 people with a population growth rate of 3.84 percent (2022–2023), which is higher than the sub-district average. The economic activities of the Masta Village community are dominated by the agriculture, plantation, and capture fisheries sectors. The existence of abundant rivers and wetlands makes capture fisheries an important alternative livelihood. The fishing profession has also grown in response to the availability of freshwater resources. The work of fishermen is highly dependent on the seasons and environmental conditions which are often uncertain, so fishermen are vulnerable to income fluctuations and other work risks.

Law Number 7 of 2016, fishermen are people whose livelihood is fishing, including activities of catching, transporting, storing, and processing the catch. This activity directly faces high natural and mechanical risks. Social protection for fishermen is an urgent need to ensure the economic sustainability of fishermen's families.

Without protection such as BPJS Employment, fishermen are at risk of experiencing acute poverty due to loss of work ability or accidents at sea (Tsamara et al., 2023).

BPJS Employment is a mandate from Law Number 24 of 2011 concerning the Social Security Administering Body which aims to provide protection against socio-economic risks, including work accidents, death, and old age. This program is important to improve the quality of life of informal workers and their families. Even many informal sector workers have not joined BPJS Employment for various reasons, such as lack of information, low levels of education, and the perception that respondents do not need social security (Lutfian et al., 2016).

Participation in BPJS Employment is divided into two segments: Wage Recipients (PU) and Non-Wage Recipients (BPU). The BPU segment is intended for informal workers such as farmers, traders, and fishermen. However, nationally, the coverage of BPU segment participation is still low. Data from BPJS Employment HSS Kandungan (2025) shows that the active coverage of participants in Tapin Regency only reached 40.87% of the total potential, and of that figure, BPU participants only reached 29%. This shows a large gap between the existence of social security programs and the level of awareness and willingness of informal workers to participate in the program.

BPJS Employment for BPU includes three main programs, namely Work Accident Insurance (JKK), Death Insurance (JK), and Old Age Security (JHT). For fishermen, these three programs are very important to face high work risks. Unfortunately, the awareness of the Masta Village community to participate in this program is still low. Several previous studies have revealed that the decision to become a BPJS participant is influenced by various factors such as education level, income, perception of risk, information from the social environment, and family support.

The characteristics in question include age, education, income, and work experience as fishermen. Identification of the main determinants that influence fishermen's decisions to participate, it is expected that the results of the study can provide policy recommendations that support increased participation and expand the scope of social protection for informal sector workers, especially fishermen in rural areas. The study aims to analyze the influence of fishermen's socio-economic characteristics on BPJS Employment membership decisions in the BPU segment in Masta Village, Tapin Regency.

MATERIALS & METHODS

The study was conducted in Masta Village, Bakarangan District, Tapin Regency, South Kalimantan Province. The study was conducted using purposive sampling with the consideration that there are groups of fishermen registered with the Tapin Regency Fisheries Service who participate or register for BPJS Employment.

Respondents were taken through a census in Masta Village, Bakarangan District in 4 (four) Joint Business Groups (KUB) of fishers or fishermen, with a total of 52 members or respondents. With details of 39 respondents participating in BPJS Employment and 13 respondents not participating in BPJS Employment.

Data analysis

Binary logistic regression is used because the dependent variable in the form of the decision of fishermen's participation in the BPJS Employment program is dichotomous, namely participants (1) or non-participants (0). This method allows analysis of the influence of socio-economic characteristics such as age, education, income, and work experience on the probability of participation, so that the results can be the basis for formulating targeted policies (Sepang, 2012), so that it follows the Bernoulli distribution as follows:

$$f(y_i) = \pi_i$$
$$y_i (1 - \pi_i)^{1-y_i} (2)$$

Information:

π_i = probability of event i

y_i = i th random variable consisting of 0 and 1

The descriptive analysis method with a Likert scale was used to analyze fishermen's perceptions of the BPJS Employment Bukan Bukti Pah (BPU) program, because it is able to systematically and factually describe qualitative social phenomena. The Likert scale provides alternative answers with attitude gradations ranging from strongly agree to strongly disagree, making it easier for respondents to assess the statements given (Sugiyono, 2007). A questionnaire with five answer choices was used to measure fishermen's perceptions, where each answer was given a score of 1–5. The scores obtained were then processed using the Likert scale assessment formula to determine the level of eligibility and fishermen's perceptions of the social security program (Febrianty (2021)). The analysis criteria are as follows:

1 = strongly agree (SS, value 5)

2 = agree (S, value 4)

3 = less agree (RR, value 3)

4 = disagree (TS, value 2)

5 = strongly disagree (STS, value 1).

After that, to get the average score on the indicators in the statements contained in the questionnaire, the following formula is used:

$$\text{Average Score} = \frac{(5 \cdot \text{SSfi}) + (4 \cdot \text{Sfi}) + (3 \cdot \text{KSfi}) + (2 \cdot \text{TSfi}) + (1 \cdot \text{STSfi})}{N}$$

N

Description:

SS = Strongly Agree = 5

S = Agree = 4

KS = Less Agree = 3

TS = Disagree = 2

STS = Strongly Disagree = 1

n = Number of Respondents

F_i = Frequency

The results of the comparison of ideal scores with actual scores are described in Table 1 as follows:

Table 1. Percentage Criteria of Respondents' Response Scores

No.	Total score (%)	Category
1.	84.01 – 100	Very Good
2.	68.01 – 84.00	Good
3.	52.01 – 68.00	Not Good
4.	36.01 – 52.00	Not Good
5.	20.00 – 36.00	Not Good

(Yurasti, 2018)

RESULT AND DISCUSSION

Fishermen Characteristics Analysis

The results of the Binary logistic regression analysis are presented in the following table:

Table 2. Analysis of Fishermen Characteristics

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Age	0,100	0,042	5,768	1	0,016	1,106
Education	-0,669	0,331	4,091	1	0,043	0,512
Experience	-0,885	0,586	2,284	1	0,131	0,413
Number of Family Dependents	-0,092	0,264	0,121	1	0,728	0,912

The characteristics of fishermen, age and education level, have a significant influence on respondents' decisions to participate in the BPJS Employment for Non-Wage Recipients (BPU) program, while the variables of fishing experience and number of family dependents do not show a statistically significant influence.

The age variable shows a regression coefficient value (B) of 0.100 with a significance level of 0.016, which means that the older the fishermen, the greater the tendency of respondents to participate in the BPJS Employment program. This is reinforced by the Exp(B) value of 1.106, which shows that every additional year of age will increase the chances of fishermen to participate in the program by 10.6 percent. These results indicate that older fishermen may have a higher awareness of the importance of social protection and employment security. Age is an important factor influencing fishermen's decisions to participate in the BPJS Employment Non-Wage Recipients (BPU) program. Older fishermen tend to have higher participation rates, which can be attributed to more experience and awareness of work risks and the importance of social security (Ariska, 2018). Silva, (2016) research data shows that

every additional year of age increases the likelihood of fishermen's participation by 10.6% (Exp(B) = 1.106; p = 0.016), indicating a positive and significant relationship between age and participation decisions (Prasad, 2024). Young fishermen, on the other hand, tend to be less interested due to the perception of feeling strong and prioritizing short-term economic needs (Mayori, 2021). Swathi (2023) an educational approach that adjusts to age characteristics is very important to increase participation.

The level of education shows a negative coefficient of -0.669 with a significance value of 0.043. This shows that the higher the level of education of fishermen, the less likely respondents are to participate in the BPJS Employment BPU program. The Exp(B) value of 0.512 indicates that an increase in the level of education actually reduces the chances of fishermen participating in this program by 48.8 percent. This finding may reflect that fishermen with higher education tend to have a preference for other social security schemes or have wider access to information so that they have different considerations in making decisions. Fishermen with higher education tend to be less likely to participate in this program. This

may be due to respondents' preference for other social security alternatives or skepticism about the effectiveness of the BPJS program (Mudiyana, 2024). Formal education is often seen as a path to improved social status and better job opportunities, so educated fishermen may prefer community-based empowerment initiatives over individual social security programs (Abdullah, 2024). This phenomenon needs to be considered in designing inclusive policies. The variables of fishing experience and number of family dependents do not have a significant effect on the decision to participate in BPJS Employment, with significance values of 0.131 and 0.728, respectively. Although these two variables show negative coefficients, namely -0.885 for experience and -0.092 for number of dependents, because they are not significant, their effects cannot be generalized in the context of decision making by fishermen. Although in theory more experience should increase risk awareness and encourage participation in protection programs, these results indicate that risk perception is influenced by other factors such as psychological and socio-cultural aspects (Misale, 2020). Eluriaga, (2022) work experience alone is not enough to predict fishermen's decisions to participate in BPJS, and additional socio-economic factors must be taken into account in the analysis and intervention.

The number of family dependents also does not have a significant effect on BPJS membership decisions, with a coefficient of -0.092 and a significance value of 0.728 ($\text{Exp}(B) = 0.912$). This indicates that fishermen with more dependents tend to have

a slightly lower chance of becoming participants, although the effect is very small and not statistically significant. This could be because the focus of fishermen with many dependents is more on meeting short-term economic needs than on long-term social security investments (Prayetno, 2022). The challenging economic conditions of fishermen groups, such as poverty and limited access to resources, can also limit respondents' ability to participate in the BPJS program (Ayoob, 2020).

The results of the analysis can be concluded that age and education factors are the main determinants in influencing fishermen's decisions to participate in the BPJS Employment BPU program, while work experience and number of family dependents do not significantly influence the decision. It is important to consider socio-economic characteristics such as age and education in an effort to increase fishermen's participation in the BPJS Employment BPU program. An approach that is tailored to individual characteristics and adequate education is needed so that this program can be widely accepted by the fishing community. Factors of experience and number of family dependents, although not significant, still need to be considered as part of the complexity of fishermen's socio-economic decisions in the context of social protection. Effective intervention policies and strategies will be more successful if they consider these nuances to support the welfare and social security of fishermen as a whole.

Fishermen's Perceptions of the Benefits and Risks of Work

Table 3. Perception of How Important Social Security Is

No.	Information	Score	Interest	%	Score Value
1	Very Important	4	38	73%	152
2	Important	3	13	25%	39
3	Not Important	2	1	2%	2
4	Very Not Important	1	0	0%	0
	Total		52		193

Perception of How Important BPJS Employment BPU Social Security is for a Fisherman. Table 3. shows that the majority of fishermen have a very positive perception of the importance of BPJS Employment BPU social security. This can be seen from 38 respondents (73%) who stated that the program is very important for the lives of respondents as informal sector workers in the fisheries sector. With a weighted score of 152 from the "Very Important" category, this category contributed the most to the total overall score, which was 193. 13 respondents (25%) considered the social security important, with a score of 39. Only 1 respondent (2%) stated that this program was not important, and no respondents stated that it was very unimportant.

Fishermen's awareness of the importance of social protection in the form of BPJS Employment is quite high. The total score of 193 out of a maximum possible 208 (if all respondents choose "Very Important") produces a perception index of 92.8%, indicating that the collective perception of fishermen on the importance of social security is in the very strong category. This result suggests that although in practice not all fishermen have participated in the BPJS Employment program, respondents have a high understanding of the urgency of the program.

Perceptions of how likely it is that work accidents will occur during fishing activities are presented in the following table:

Table 4. Perception of How Likely a Risk Will Occur

No.	Information	Score	Possible Risks	%	Score Value
1	Very Big	4	20	38%	80
2	Big	3	8	15%	24
3	Not Big	2	18	35%	36
4	Very Not Big	1	6	12%	6
	Total		52		146

The results of the analysis of Table 4. show that fishermen's perceptions of the possibility of work accident risks in fishing activities are quite varied. Of the total 52 respondents, 20 people (38%) considered that the risk of work accidents in fishing activities was very large to be considered, with the highest contribution score of 80 points.

As many as 18 fishermen (35%) considered that this risk was in the not big category, resulting in a score of 36 points. This shows that although most fishermen are aware of the risk, respondents may not have fully felt the urgency directly, or have not experienced

a significant incident so that their perception is still in the moderate category.

There are 8 respondents (15%) who consider the risk of work accidents as something big, giving a score of 24. On the other hand, there are still 6 fishermen (12%) who consider this risk to be very small, with the lowest score of 6 points. This group shows that a small number of fishermen may ignore the potential dangers that accompany the respondents' work when fishing. In general, the total score obtained was 146

Perceptions regarding the amount of BPJS employment contributions are presented in the following table:

Table 5. Perception of the Amount of BPJS Employment Contributions

No.	Information	Score	Amount of Contribution	%	Score Value
1	Very Big	4	15	29%	60
2	Big	3	31	60%	93
3	Not Big	2	6	12%	12
4	Very Not Big	1	0	0%	0
	Total		52		165

Table 5. shows that most fishermen consider this aspect as important in the respondents' decision to join the social security program. Of the total 52 respondents, 31 people (60%) considered that the total of contributions was in the large category, which contributed the highest score of 93 points. 15 respondents (29%) even considered that the amount of the contribution was very large, with a contribution score of 60 points. This reflects that the majority of fishermen

have high sensitivity to the nominal contribution, and makes it one of the main considerations in determining respondents' participation in BPJS Employment. On the other hand, only 6 people (12%) considered that the contribution amount was not large, and no respondents considered it very small, which means that all respondents placed this issue at a certain level of concern. Perceptions of trust in BPJS employment are presented in the following table:

Table 6. Perception of Trust in BPJS Employment

No.	Information	Score	Trust	%	Score Value
1	Very Big	4	25	48%	100
2	Big	3	20	38%	60
3	Not Big	2	6	12%	12
4	Very Not Big	1	1	2%	1
	Total		52		173

Table 6 shows that in general, fishermen have a high level of trust in BPJS Employment. Of the total 52 respondents, the majority, namely 25 people (48%), considered that trust in this institution is very important, with a score contribution of 100 points.

As many as 20 respondents (38%) considered that trust in BPJS is a big thing, resulting in a score of 60 points. This shows that the majority of fishermen are not only aware of the importance of social protection, but also have confidence in the credibility and ability of BPJS in organizing the employment insurance program properly.

Then, 6 respondents (12%) stated that this trust was not large, with a score of 12, and only 1 person (2%) stated that this aspect was very small, contributing the lowest score, that is 1 point.

The results of the analysis of research data from various aspects of fishermen's perceptions of BPJS Employment BPU, obtained a total perception value of 677, from a lower limit of 208 and an upper limit of 832. This value is above the high criteria value (624), which can be seen in Appendix 1. which shows that the overall perception of fishermen is included in the high category.

This analysis refers to several dimensions of perception that have been measured through the previous tables:

1. The Importance of BPJS BPU Social Security The majority of fishermen (73%) consider social security to be very important, which shows a high level of awareness of social protection in the respondents' high-risk jobs.
2. Possibility of Occurrence of Work Accident Risk Perception of work accident risk is also quite high, with 38% stating it is very important and 35% quite important. This indicates a good level of awareness, although there is still room for increased awareness.
3. BPJS Contribution Amount Most fishermen (60%) consider the contribution amount important, and 29% very important. This indicates that the ability to pay contributions is a determining factor in participation, so that affordable contribution schemes greatly influence participation.
4. Trust in BPJS Employment for non-wage earners has a percentage of 48% stating it is very important and 38% important, fishermen's trust in BPJS institutions is quite high. This is an important social

capital in encouraging an increase in the number of participants.

The perception value of 677 which is in the high category, it can be concluded that the perception of fishermen towards the BPJS Employment BPU program is generally very positive. Respondents are aware of the importance of social protection, are quite aware of work risks, care about the quantity of contributions, and have a strong level of trust in BPJS as the implementing institution. These results are in line with the findings of Laksono (2024) which states that fishermen's positive perceptions of social programs increase respondents' chances of participation. This trust factor is very important because without confidence in the benefits and feasibility of the program, the level of participation tends to be low (Akbar, 2022). Other aspects such as the importance of social security for fishermen, the possibility of work accident risks, and the quantity of contributions also have a fairly balanced contribution, which shows that fishermen's decisions are influenced by several important considerations simultaneously.

The benefits of the BPJS Employment program as a social safety net for fishermen and their families are crucial in the context of high-risk work such as fishing. This program helps reduce financial uncertainty due to accidents or death, which can directly affect the economic welfare of fishermen (Laksono, 2024). Although the benefits are clear, the biggest challenge still lies in the level of awareness and implementation of the program in the field. Continuous education and socialization are needed so that fishermen understand the importance of participating in BPJS Employment BPU.

Hidayat et al. (2019), the counseling and mentoring approach can improve fishermen's ability to improve fishermen's literacy regarding the importance of participation in government programs, in this case it can be linked to social security such as BPJS Employment. The dependence of fishermen when selling their harvest to collectors

causes fishermen's weak bargaining position in the marketing chain which is often influenced by limited access to transportation and markets, thus affecting fishermen's income (Lilimantik & Sari, 2022). Akbar (2022) with an educational approach and increasing trust is the key to increasing fishermen's participation, especially those with Non-Wage Recipient status. Agusliani et al. (2019), the age of fishermen is positively correlated with BPJS Employment membership, while education level is negatively correlated, so that older and less educated fishermen are more responsive to social protection—a pattern that can also explain respondents' participation in collective and risk-based fisheries supervision. The results of positive perceptions and important factors such as trust and contribution amounts, the BPJS program can be designed and socialized more effectively to be able to reach and provide maximum protection for fishing communities who are vulnerable to work risks.

CONCLUSION

The socio-economic characteristics of fishermen, especially age and education level, have a significant effect on the decision to participate in the BPJS Employment BPU segment program in Masta Village, Tapin Regency. Age shows a positive relationship, meaning that the older the fishermen are, the higher the tendency to become BPJS Employment participants. Conversely, education level shows a negative effect, indicating that fishermen with lower education are more likely to become participants. The variables of work experience and number of family dependents do not have a significant effect. Fishermen's perceptions of BPJS Employment are generally in the high category, as reflected in the perception index of 677 from a maximum limit of 832. The majority of fishermen have a high awareness of the importance of social protection, understand the potential risks of work, pay attention to the quantity of

contributions as an important consideration, and have a high level of trust in the credibility of the BPJS institution. These findings indicate that although socio-economic aspects have a certain influence, positive perceptions and social security literacy levels are key factors in encouraging fishermen's participation in the BPJS Employment BPU program.

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