

# Analysis of Willingness to Pay Contributions for Independent National Health Insurance Participation in Informal Sector Business Actors in the Mandalika Tourism Area, Lombok, Nusa Tenggara Barat, Indonesia

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## ABSTRACT

**Background:** Health insurance implemented in Indonesia is managed by the Social Security Administering Body (BPJS). In its administration, BPJS Health works based on the principle of non-profit social protection. Willingness to Pay (WTP) has been carried out in Nigeria which uses a community-based health insurance system. This study aims to analyze the willingness to pay (Willingness to Pay) contributions in independent national health insurance membership among informal sector business actors in the Mandalika tourist area of Lombok.

**Subjects and Method:** This type of study is observational analytic using a cross-sectional study design. The target population in this study is all informal sector business actors in the Mandalika Lombok tourist area. The sampling technique in this study is random sampling, namely a random sampling method that involves dividing the population into groups called strata, based on certain relevant characteristics.

**Results:** This study explains that informal sector workers with income  $\geq$  IDR 2,000,000/month are on average willing to pay insurance premiums of IDR 64,573/month (Mean= 64,573; SD= 41,292). Workers with income  $<$  IDR 2,000,000/month are on average willing to pay insurance premiums of IDR 24,880/month (Mean= 24,880; SD= 14,206). Overall, workers in the informal sector are on average willing to pay insurance premiums of IDR 48,100/month (Mean= 48,100; SD= 38,229). Willingness to pay insurance premiums is significantly influenced by income. Every increase in income of IDR 1,000,000 will be followed by a higher willingness to pay for health insurance of IDR 21,745 ( $b = 0.02$ ; 95% CI= 0.01 to 0.03;  $p < 0.001$ ). Willingness to pay premiums was not significantly influenced by gender ( $b = 346.13$ ; 95% CI= -15241.31 to 15933.56;  $p = 0.965$ ) or age ( $b = -7110.17$ ; 95% CI= -22958.38 to 8738.04;  $p = 0.375$ ).

**Conclusion:** The results of this study conclude that the willingness to pay insurance premiums is significantly influenced by income. The higher the income, the higher the willingness to pay premiums, and this effect is statistically significant.

**Keywords:** Willingness to pay, Income, Informal workers

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## BACKGROUND

The National Health Insurance Program (JKN) is social insurance which requires every Indonesian resident to become a member. Health insurance implemented in Indonesia is managed by the Social Security Administering Body (BPJS). In its administration, BPJS Health works based on the principles of non-profit social protection, mutual cooperation, portability, good governance, openness, prudence, accountability, efficiency and effectiveness (Aryani & Muqorrobin, 2013). According to data from BPS NTB Province in 2022, the number of JKN participants in Central Lombok Regency is the lowest number of participants in NTB Province, namely 44.98% who are registered as JKN participants while the remaining 55.02% are not guaranteed by BPJS Health (BPS NTB, 2022).

Willingness to pay (WTP) has been carried out in Nigeria which uses a community based health insurance system, the results of which are factors that influence WTP are education, socio-economic status, place of residence (Bärnighausen et al., 2007), and gender. Nigerian people who live in urban areas have a higher WTP than rural people (Karimah, 2015).

Income is an indicator that can measure people's purchasing power for goods or services in an effort to fulfill needs, including health insurance (Agago et al., 2014). This result is in line with the theory that the higher the income level, the higher the ability and willingness to pay for health insurance (Aryani & Muqorrobin, 2013).

The Mandalika tourist area is located in Central Lombok Regency, West Nusa Tenggara Province, which is a tourist area that has been designated by the central government as a Special Economic Zone (KEK) which can improve the economy of the surrounding community by opening new jobs, has extraordinary business potential, and will provide

a multiplier. The effect on the economy of the surrounding community is marked by the rise of economic activity in the community around the tourist area.

Based on the explanation above and supported by available data, researchers are interested in conducting research with the title "Analysis of the willingness to pay contributions for independent National Health Insurance membership among informal sector business actors in the Mandalika Lombok Tourism Area", because willingness to pay is one of the factors influencing informal sector workers to participate in the National Health Insurance program.

## SUBJECTS AND METHOD

### 1. Study Design

This type of study is observational analytic with a cross-sectional study design. Researchers used this cross-sectional study design to carry out observations and measurements of subject variables at the same time at one time with the aim of explaining the willingness to pay (Willingness to Pay) contributions for independent National Health Insurance participation among informal sector business actors in the Mandalika Tourism Area, Lombok.

### 2. Population and Sample

The target population in this study is all informal sector business actors in the Mandalika Lombok tourist area. The sampling technique in this study is random sampling, namely a random sampling method that involves dividing the population into groups called strata, based on certain relevant characteristics.

### 3. Study Variables

**Dependent variables** in this study is the willingness to pay

**Independent variables** in this study are income, gender, and age.

#### **4. Operational Definition of Variables willingness to pay contributions (Willingness to Pay)**

The highest price a person (consumer) is willing to pay to obtain a benefit in the form of goods or services, and is used as a benchmark for how much potential consumers value the goods or services (Adams et al., 2015).

**Income** is the fixed income received every month which is calculated from the average amount of income received by informal sector workers in the last 6 months expressed in rupiah (Firdaus & Wondabio, 2019).

**Gender** is a biological characteristic that can be seen from external appearance. One of the things that drives women's health costs to be greater than men's is that women generally care more about their own health compared to men (Saputra et al., 2022).

**Age** is the length of life of the respondent from birth to the time of research and age influences premiums for health insurance and public health care insurance programs (Aryani & Muqorrobin, 2013).

**Informal workers** are the informal sector, which is an economic activity that is outside the legal economic system, is not protected by law, is vulnerable to possible exploitation by people involved in crime, thugs, or anyone who can manipulate the law (Subakdi & Nugroho, 2018).

#### **5. Study Instruments**

The data collection technique was carried out using a questionnaire as a study instrument. Before the study subjects fill out the questionnaire, the researcher first explains the aims and objectives of the study, explains how to fill out the questionnaire, conveys the confidentiality of the research subject's identity and gives the research subject the right to

withdraw from the research, then fills in a questionnaire regarding willingness to pay dues for independent participation. National Health Insurance for informal sector business actors in the Mandalika Lombok tourist area.

#### **6. Data Analysis**

The study characteristic sample is in the form of categorical data presented in frequencies and percentages. In contrast, numerical data variables are presented in the form of mean, standard deviation, minimum, and maximum. Multivariate analysis in this study uses multiple linear regression analysis (Murti, 2016).

#### **7. Research Ethics**

This study was approved by the Ethics Committee Medical and Health Research (KEP-KK) Faculty of Medicine, Al-Azhar Islamic University Mataram. Number: 188/EC-03/FK-06/UNIZAR/XI/2023.

## **RESULTS**

### **1. Sample Characteristic**

Table 1 shows the willingness to pay health insurance premiums for informal sector workers according to income category. Workers with income  $\geq$  IDR 2,000,000/month are on average willing to pay insurance premiums of IDR 64,573/month (Mean= 64,573; SD= 41,292). Workers with income  $<$  IDR 2,000,000/month are on average willing to pay insurance premiums of IDR 24,880/month (Mean= 24,880; SD= 14,206). Overall, workers in the informal sector are on average willing to pay insurance premiums of IDR 48,100/month (Mean= 48,100; SD= 38,229).

**Table 1. Characteristics of sample data (Continuous Data)**

Variables	N	Mean	SD	Min	Max
WTP ≥ Rp 2.000.000	117	64572.65	41291.5	10000	175000
WTP < Rp 2.000.000	83	24879.52	14206.15	0	50000

Table 2 presents data, the majority of study subjects who had incomes above IDR 2,000,000 were 41.50% and incomes below IDR 2,000,000 were 58.50%, the number of

research subjects with ages above 40 years was 42% and those aged under 40 years were 58 %, research subjects were 52% male and 48% female.

**Table 2. Characteristics of sample data (Categorical Data)**

Variables	Category	n	%
<b>Income</b>	≥ Rp 2.000.000	83	41.50
	< Rp 2.000.000	117	58.50
<b>Age</b>	≥ 40 years old	84	42
	< 40 years old	116	58
<b>Gender</b>	Men	104	52
	Women	96	48

**2. Multivariate Analysis**

Multivariate analysis is used to see the influence of more than one independent variable, namely income, gender and age,

with the dependent variable, namely WTP. Based on analysis with regression tests, the results obtained are as in table 3.

**Table 3. Results of multiple linear regression analysis of factors influencing the willingness to pay BPJS insurance premiums among informal sector workers in Lombok**

Independent variables	Regression coef. (b)	CI 95%		p
		Lower limit	Upper limit	
Income	0.217	0.014	0.029	0.001
Gender	346.13	-15241.31	15933.56	0.965
Age	-7110.17	-22958.38	8738.039	0.375

N observation= 85  
 Adj R-Squared= 26.48%  
 P <0.001

Table 3 presents the results of regression analysis regarding the factors that influence the willingness to pay BPJS insurance premiums among informal sector workers in Lombok. Willingness to pay insurance premiums is significantly influenced by income. The higher the income, the higher the willingness to pay premiums, and this effect is statistically significant. Every increase in income of IDR 1,000,000 will be followed by

a higher willingness to pay for health insurance of IDR 21,745 (b= 0.02; 95% CI= 0.01 to 0.03; p <0.001). Willingness to pay premiums was not significantly influenced by gender (b= 346.13; 95% CI= -15241.31 to 15933.56; p = 0.965) or age (b= -7110.17; 95% CI= -22958.38 to 8738.04; p = 0.375). This multiple linear regression analysis model shows Adjusted R-squared = 26.48%. This means that the two independent variables in this model, namely income,

gender and age, together are able to explain variations in the willingness to pay insurance premiums by 26.48%.

## DISCUSSION

Various factors that are thought to influence the estimation results of the willingness to pay BPJS insurance premiums apparently confound the estimation results, where there is one potential confounding factor that shows a statistically significant influence. The confounding factors include gender, age, income.

Respondents' income is associated with willingness to pay contributions significantly,  $p = 0.001$ . Health care costs generally increase as income increases. Besides doctor fees are generally influenced by the patient's economic capacity, people with higher incomes tend to receive health services more often and more extensively. People with high incomes also check and maintain dental health more often than people with low incomes (Khaliq et al., 2023). Likewise with the cost of health services, they demand more advanced services so that health costs are higher. Factors that influence this include, knowledge and awareness of health from groups of people with high incomes is better than those with lower incomes (Firdaus & Wondabio, 2019). The respondent's age is associated with the willingness to pay contributions, which is not significant,  $p = 0.375$ . Age is very determining in a person's work productivity, so that someone who is young is very likely to work more actively when compared to someone who is older (Napitupulu et al., 2023). This has a big influence on work activities because generally someone at a relatively young age has stronger energy so work productivity is also high. A person's work is greatly influenced by age or education. Being of a productive age and good education allows people to increase

their income or family income (Minyihun et al., 2019).

The respondent's gender was associated with the willingness to pay contributions, which was not significant,  $p = 0.965$ . The health costs of female participants in public health care insurance and health insurance programs are generally higher than the health costs of male participants (Pavel et al., 2015). Various studies show that women have a greater chance of experiencing disability requiring higher hospital utilization and requiring more medical treatment, surgery and dental care. One of the things that drives women's health costs to be greater than men's is that women generally care more about their own health compared to men (Hardika & Purwanti, 2020).

The results of this study show that the Adj R-Squared value = 26.48%, meaning that all the independent variables in this linear regression model are only able to explain 26.48% of the variation in WTP values. R square adjusted can measure the level of confidence in adding independent variables correctly in increasing the predictive power of the model. By looking at this value, it can be said that the WTP variable for informal workers in coastal areas in Lombok is influenced by 26.48% by the variables income, age and gender. The results of this study have a  $p$  value  $< 0.001$  which means that the relationship between the independent variable as a whole and the dependent variable in this linear regression model shows a relationship that is statistically very significant, which means the relationship is consistent.

This study concludes that informal sector workers with income  $\geq$  IDR 2 millions/ month are on average willing to pay insurance premiums of IDR 64,573/month (Mean= 64,573; SD= 41,292). Workers with income  $<$  IDR 2 millions/

month are on average willing to pay insurance premiums of IDR 24,880/month (Mean= 24,880; SD= 14,206). Overall, workers in the informal sector are on average willing to pay insurance premiums of IDR 48,100/month (Mean= 48,100; SD= 38,229). Willingness to pay insurance premiums is significantly influenced by income. The higher the income, the higher the willingness to pay premiums, and this effect is statistically significant. Every increase in income of IDR 1,000,000 will be followed by a higher willingness to pay for health insurance of IDR 21,745 (b= 0.02; 95% CI= 0.01 to 0.03; p <0.001). Willingness to pay premiums was not significantly influenced by gender (b= 346.13; 95% CI= -15241.31 to 15933.56; p = 0.965) or age (b= -7110.17; 95% CI= -22958.38 to 8738.04; p= 0.375).

#### **AUTHOR CONTRIBUTION**

Dewi Utary as a researcher who chooses topics, searches for and collects research data. Didik Gunawan Tamtomo and Bhisma Murti analyzed the data and reviewed the study documents.

#### **CONFLICT OF INTEREST**

There was no conflict of interest in the study.

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#### **ABBREVIATION**

JKN	=	Jaminan Kesehatan Nasional
WTP	=	Willingness to Pay
KEK	=	Kawasan Ekonomi Khusus
UHC	=	Universal Health Coverage

BPJS	=	Badan Penyelenggara Jaminan Sosial
SJSN	=	Sistem Jaminan Sosial Nasional

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