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RESEARCH

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Factors Affecting Willingness to Pay for National Health Insurance Program among Informal Workers in Indonesia

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Abstract

The effort to achieve universal health coverage for all people under a single-payer national health insurance in Indonesia still experiences a substantial challenge particularly related to informal workers. This population faces a number of challenges, including income irregularity, a lack of educational variety, the fact that the majority of workers live in rural areas, and a lack of health insurance literacy. The objective of this study was to examine the factors that influence informal workers' willingness to pay for a national health insurance program in Indonesia. This cross-sectional study was conducted in the Banyumas district of Central Java, Indonesia. Employing a multistage random sampling technique, 316 workers in the informal sector were recruited as study participants. Logistic regression was employed to investigate the factors that influence willingness to pay for national health insurance premiums. According to the study findings, urban, national health insurance information, and uneducated factors were related to informal workers' willingness to pay for national health insurance. Workers who lived in urban area ($p < 0.05$, OR = 3.922) were more willing to pay for insurance premium. Workers who received better exposure of national health insurance information ($p < 0.05$, OR = 2.330) were more willing to pay for premium. Furthermore, workers who uneducated ($p < 0.05$, OR = 14.847) were more willing to pay for premium. The national health insurance campaign serves as a catalyst for increasing public awareness of this program. Adequate and widespread national health insurance program information dissemination would aid in the effectiveness of Indonesia's efforts to achieve the goal of universal health insurance coverage.

Keywords: Informal Sector, National Health Insurance, Premium, Universal Health Coverage, Willingness to Pay.

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1. INTRODUCTION

The effort to provide health care for all has been recommended by the World Health Organization and the World Bank by establishing universal health coverage (UHC) (Barber, et al., 2020), (Meara et al., 2015), (The Lancet Global Health, 2017). The UHC has the ability to protect citizens' financial interests while providing access to health care (Aji et al., 2017). Like other countries, Indonesia has initiated UHC by introducing national health insurance program, administered by *BPJS Kesehatan* since 2014. *BPJS Kesehatan* becomes a single payer insurer that attempts to cover the entire Indonesian population under its scheme. By July 2020, it is expected that 220 million people, or approximately 82% of Indonesia's total population, will be covered by *BPJS Kesehatan* (Pratiwi et al., 2021). During the first year of operation, the number of enrollments was gradually increased. However, a large number of workers, approximately 32.5 million people, or 60.14% of all jobs in Indonesia, who work primarily in the informal sector, have not enrolled in the *BPJS Kesehatan* program.

There are several challenges to covering informal workers under national health insurance because of their working characteristics such as own-account, unpaid family workers with non-standardized working hours, and less than 10 employees and employers working establishments (Andria, 2019), (Deranti, Hartini, & Andria, 2019). As a result, extending health insurance coverage to informal sector workers is one of the most difficult challenges in developing countries, including Indonesia (Lavers, 2019), (Muttaqien et al., 2021), (Okungu et al., 2018). In developing countries, informal workforce accounted for 70% of the employment, and it produced about 35% of the gross domestic product (GDP) (Loayza, 2016). Informality has become a significant issue to address because it is associated with poverty, low productivity, and a lack of social protection. Furthermore, informality contributed to issues such as low health insurance coverage, insufficient access to high-quality health care, and a higher burden of out-of-pocket expenses (Aji, Intiasari, & Masfiah, 2019), (Dartanto, et al., 2020), (Nakamura et al., 2020). According to evidence from other countries, the major challenges encountered in providing health insurance to informal workers include premium collection issues, low enrollment rates, and adverse selection (Dartanto, et al., 2020), (Dartanto et al., 2016). The irregularity of their income was one of several factors that hampered the expansion of health insurance coverage among informal workers (Minyihun, Gebregziabher, & Gelaw, 2019), (Miti et al., 2021).

The initial step in extending health insurance coverage to informal workers is to determine their willingness to pay (WTP) for insurance premiums. Individual willingness to join the insurance scheme with its hypothetical package is reflected in WTP (Basaza et al., 2019), (Garedew et al., 2020). It can be measured using contingent valuation methods (CVM), an open-ended valuation in which people are asked to specify the maximum amount of their WTP for insurance benefits, also known as a "bidding game" (Kim, Lee, & An, 2018). Evidence from other developing countries revealed that informal workers' willingness to pay for health insurance schemes was lower than the premium rate (Ahmed et al., 2016); (Donfouet, et al., 2011), (Jain, 2014). However, few studies have been conducted in Indonesia to investigate the willingness of the informal sector to pay for health insurance. The objectives of this study were to measure WTP for informal sector workers and to identify the factors that influence WTP among selected groups of informal workers.

2. RESEARCH METHOD

This study was quantitative study employing cross sectional study design. Data was collected among 316 informal sector workers encompassing drivers, cow-breeder and fish breeder in the district of Banyumas. The study's minimal sample was examined using multi-stage random sampling, but the sample was obtained using an accidental sampling approach because there was no clear sample frame prior to the study's conduct. As inclusion criteria for

this study, a structured questionnaire was administered by a trained enumerator to informal workers who are eligible, i.e., have worked for at least one year in their field and agree to participate voluntarily in research.

WTP was calculated by employing CVM approach. This method has previously been employed elsewhere (Asgary et al., 2004), (Entele & Emodi, 2016), (Gyldmark & Morrison, 2001) Kim, e & An, 2018), (Mohsin, Islam, & Ahmed, 2021). CVM questions were composed either open-ended or discrete questions. In an open-ended valuation questionnaire, the respondents were requested to mention their maximum amount of WTP for the health insurance benefit, frequently understood as “bidding game”. In the first step, a bidding was made to ask the respondents to accept or reject it. Then, depending on the answer, further bidding was adjusted to reach the maximum amount of WTP. The results of the bidding were applied for estimating WTP for national health insurance program premium. The questionnaire also asked about gender, age, educational level, household size, information exposure about health insurance, household income, which was then decomposed using quintiles (quintiles 1 to 5), work duration, health behavior regarding smoking, health condition, and willingness to pay for health insurance premiums as predicted and outcome variables of this study.

Informed consent was employed in order to solicit participation in the study. To ensure clarity, the nature of the survey and the right to participate in the study were also explained in Bahasa or local languages. The data was analyzed using logistic regression. The ethical clearance of this study was approved by the Faculty of Medicine, Jenderal Soedirman University, Indonesia (Letter No. 221/KEPK/VII/2018).

3. RESULTS AND DISCUSSION

Out of 316 informal sector workers, 45% had completed junior high school, and almost all of them (96.2%) had a small family (1-4 household members). Only one-quarter (25.6%) have previously been exposed to health insurance (*BPJS Kesehatan*) information. More than half (67.7%) of them work more than 8 hours per day. More than two-thirds of them (78.8%) had a chronic illness condition in the year preceding the study.

Table 1. Demographic Characteristic of informal workers.

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	313	99.1
Female	3	0.9
Age (years old)		
25 - 34	23	7.3
35 - 44	80	25.3
45 - 54	132	41.8
55 - 64	69	21.8
> 65	12	3.8
Education		
No education	17	5.4
Primary school	143	45.3
Junior high school	106	33.5
Senior high school	47	14.9
Diploma and above	3	0.9
Household size		
Small (1 – 4 household member)	304	96.2

Big (> 5 household member)	12	3.8
<i>BPJS Kesehatan</i> information exposure		
Yes	81	25.6
No	235	74.4
Monthly income		
1st Quintile (lowest)	71	22.5
2nd Quintile (lower)	93	29.4
3rd Quintile (middle)	40	12.7
4th Quintile (higher)	55	17.4
4th Quintile (highest)	57	18.0
Work duration (hour/day)		
< 8	97	30.7
> 8	214	67.7
Smoking behavior		
Yes	221	69.9
No	95	30.1
Chronical illness status		
Yes	67	78.8
No	249	21.2

Source: primary data

Informal workers were asked whether they were willing to pay for the health insurance scheme or not. If they are willing to pay, the question about how much money they are willing to pay per member of their family to register for health insurance will be asked. According to Table 2, more than half of informal workers are willing to pay for insurance. The average amount of money they are willing to pay (Table 3) is approximately Rp 24.740, - (1.65 US\$).

Table 2. Willingness to pay for the national health insurance among informal workers.

Willingness to pay (WTP)	Frequency (n)	Percentage (%)
Yes	213	67.4
No	103	32.6

Table 3. The average amount of WTP among informal workers

WTP	IDR	USD
Minimum	0	0
Maximum	80,000	5.33
Mean	24,740	1.65
Median	25,500	1.70
Standard Deviation	13,217	0.88

Among 316 informal workers, 67.4% are willing to pay for health insurance premium. Using logistic regression (Table 4), it was discovered that rural and urban status, *BPJS Kesehatan* information exposure, and education all had a significant impact on the WTP of informal sector workers in the Banyumas District. Workers who live in cities are three times more willing to pay for insurance than workers who live in rural areas. Informal workers who were exposed to *BPJS Kesehatan* information prior to the study were about two times more willing to pay for health insurance than workers who had not been exposed to *BPJS Kesehatan* information previously. Interestingly, this study also revealed that informal workers who do not have education are 14 times more willing to pay the insurance compare to informal workers who graduated from diploma (colleges).

Table 4. Determinants of the WTP among informal workers.

Determinants related to WTP	p-value	OR	95% C.I. for OR	
			Lower	Upper
Age (years old)	0.263		0.061	4.859
25 – 34	0.585	0.543	0.065	2.941
35 – 44	0.395	0.437	0.087	3.576
45 – 54	0.537	0.557	0.186	8.701
55 – 64	0.807	1.271	0.130	2.682
Household size	0.495	0.590	0.455	1.790
Work duration (hour/day)	0.768	0.902		
Monthly income	0.076		0.348	2.190
1st Quintile (lowest)	0.772	0.873	0.861	5.528
2nd Quintile (lower)	0.100	2.182	0.816	8.847
3rd Quintile (middle)	0.104	2.686	0.736	5.765
4th Quintile (higher)	0.169	2.060	0.463	2.236
Chronical illness	0.966	1.017	1.414	10.878
Rural and urban status	0.009	3.922	1.062	5.109
<i>BPJS Kesehatan</i> information exposure	0.035	2.330	0.909	13.458
Marital status	0.069	3.497		
Education	0.301		1.179	186.992
No education	0.037	14.847	0.898	43.760
Primary school	0.064	6.267	0.900	45.427
Junior high school	0.064	6.393	0.716	41.703
Senior high school	0.102	5.464	0.061	4.859

The study unveiled that a large number of informal workers are willing to pay the national health insurance (67.4%), with the average amount of the WTP per month per member of household registered was 1,65 USD. This number was lower compared to other studies of the health insurance WTP in developing countries. Donfouet, et al.,(2011), study revealed that most of respondents who were informal workers in rural Cameroon were willing to pay for national health insurance premium about 2.15 USD (Donfouet et al., 2011). Furthermore, Jain, et al., (2014), study also discovered that WTP for health insurance in rural India was about 2.25 USD per month (Jain et al., 2014). However, a study conducted by Ahmed *et al.* in urban area of Bangladesh uncovered that 86.7% of the informal workers were only willing to pay about 0.8 USD (Ahmed et al., 2016).

This study also investigated whether *BPJS Kesehatan* information exposure and education were significantly associated with WTP of informal sector workers in both rural and urban areas. Previous research on WTP in Sierra Leone discovered that education level and geographic area were significantly related to willingness to pay among informal workers (Jofre-Bonet & Kamara, 2018). Paradoxically, this study revealed that education levels had a significant negative association with WTP. However, previously published studies in China and Bangladesh also uncovered a similar pattern of the negative association between education levels and WTP (Ahmed et al., 2016; Ying et al., 2007).

There are several limitations to this study. First, because this study is limited to informal sector workers, it cannot provide a comprehensive overview of informal sector workers'

willingness to pay for health insurance premiums in Indonesia. Second, due to limitations in describing latent health conditions and the inability to present a significant relationship between chronic disease willingness to pay, this study was unable to investigate the phenomenon of adverse selection.

Despite its limitations, this study supports the evidence of informal workers WTP and identifies its determinants. The findings would help policymakers estimate national health insurance coverage among informal workers by designing an appropriate approach for informal workers premium setting. Furthermore, an innovative premium collection and channeling system for informal workers would significantly increase their enrollment in national health insurance schemes.

4. CONCLUSION

According to the findings of this study, the willingness to pay BPJS Kesehatan premiums is still low and falls below the rate of the national health insurance scheme. However, informal sector workers are quite willing to pay health insurance premiums. Furthermore, informal workers who live in cities and have more knowledge about health insurance are more willing to pay health insurance premiums. The national health insurance campaign serves as a catalyst for increasing public awareness of this program. Adequate and widespread national health insurance program information dissemination would aid in the effectiveness of Indonesia's efforts to achieve the goal of universal health insurance coverage.

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