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Chairina Hanum Siregar
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Institute for Economic and Social Research
Faculty of Economics and Business
Universitas Indonesia (LPEM-FEB UI)

Salemba Raya 4, Salemba UI Campus Jakarta, Indonesia 10430
Phone : +62-21-3143177
Fax : +62-21-31934310
Email : lpem@lpem-feui.org
Web : www.lpem.org

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Enrolment of Informal Sector Workers on the National Health Insurance System in Indonesia: A Qualitative Analysis

Teguh Dartanto[1&2,★], Chairina Hanum Siregar[2], Alvin Ulido Lumbanraja[2], Usman[2], Hamdan Bintara[2], Wahyu Pramono[2], & Nia Kurnia Sholihah[2]

Abstract
One of the main challenges to Universal Health Coverage in developing countries like Indonesia is a high prevalence of those working in the informal sector that by the system they have to voluntarily register in the National Health Insurance System (NHIS) as Self Enroled Member. Therefore, challenges are administrative difficulties in recruiting, registering and collecting regular contribution in the most of cost-effective way. This condition hinders some individuals for being covered NHIS. This research aims to analyze qualitatively some aspects that influence the decisions of individuals or households to join NHIS in Indonesia. By conducting in-depth interviews with some of the informants who were surveyed in 2014, and some new additional informants in the three selected regions of Deli Serdang, Pandeglang, and Kupang, the study found that regional socio-economic characteristics, demographics, culture and belief systems have varying degrees of influence on individual decisions to join the NHIS. The general pattern across all the regions reveals three main factors that influence the decisions of those working in the informal sector to join the NHIS: health conditions; family and peers; and existing knowledge and experience. High-risk individuals tend to join the NHIS through interactions with health workers, family members, and friends, concerning their illnesses or health risks. These groups tend to advocate NHIS as a means of reducing overall health expenses, particularly for expensive procedures. This creates an adverse selection problem and a pressing challenge for Social Security Agency for Health (SSAH) to attract healthy, young and low-risk groups in the informal sector to join the NHIS. The stories provided by the informants regarding their decision-making processes in joining NHIS also reveal the necessary and sufficient conditions that enable informal sector workers to join the program. The necessary conditions are individual-specific and may differ between people, depending on individual characteristics, regional socio-economic and demographic characteristics, as well as belief systems. All the factors, apart from knowledge and experience, are necessary conditions for joining the NHIS, while knowledge and experience are sufficient conditions that encourage informal sector (PBPU) to join NHIS. Without reliable information and knowledge about the NHIS, PBPU will not join NHIS, although they may like to join because of various individual factors.

JEL Classification: I13; I14; I18; I3

Keywords
NHIS — Universal Health Coverage — missing middle problem — informality — qualitative study — Indonesia

[1] *Department of Economics, Faculty of Economics and Business, Universitas Indonesia*
[2] *Institute for Economic and Social Research, Faculty of Economics and Business, Universitas Indonesia*
★**Corresponding author**: Department of Economics, Faculty of Economics and Business, Universitas Indonesia, Campus UI, Depok, West Java 16242, Indonesia. Email: teguh.dartanto@ui.ac.id.

1. Introduction

The Universal Health Coverage (UHC) is increasingly prioritized by Low and Middle-Income Countries (LMICs) for improving access of health cares and reducing financial burden (Sachs, 2012). Indonesia as one of lower middle income countries has committed to achieving Universal Health Coverage (UHC) through the enforcement of Law No.40/2004 on SJSN and Law No. 24/11 on BPJS in January 2014. The SJSN (*Sistem Jaminan Sosial Nasional*/National Social Security System) Law mandates all residents in Indonesia to register for *Jaminan Kesehatan Nasional* (JKN)/National Health Insurance System (NHIS). Following the enactment of the SJSN law, the fragmented government insurance schemes, such as JAMKESMAS (Health Insurance for Poor and Near-Poor), ASKES (Health Insurance for Civil Servant), ASABRI (Health Insurance for Military) and JPK JAMSOSTEK (Health Insurance for Private Sector), were merged into NHIS as a single scheme for government-provided health insurance. The government established BPJS (*Badan Penyelenggara Jaminan Sosial*) Kesehatan or the Social Security Agency for Health (SSAH)-a semi-government organization for managing NHIS.

The rollout of NHIS has also significantly improved the welfare of the majority of Indonesians in general, and that of lower income households and the rural population in particular, who before were severely underserved by the private health insurance market (Agustina et al., 2019). As of January 2019, 215.8 million people were covered by NHIS, with 129.75 million poor and vulnerable citizens covered by premium subsidies from the central government (PBI APBN) or regional governments (PBI APBD). This amount represents a significant increase in coverage, given that many poor households were not previously covered by Jamkesda (*Jaminan Kesehatan Daerah*/District Health Insurance Scheme). NHIS has narrowed access gap between

income quintile ((Agustina et al., 2019; Johar et al., 2018), while the NHIS has also protected around 1 million people from poverty condition due to sickness (Dartanto et al., 2017).

This achievement, however, is not without challenges, particularly the reaching of the stated goal of UHC by 2019. First, there are cases where data collection, monitoring, and evaluation problems render some poor and vulnerable households that are supposedly eligible for the PBI scheme are ineligible (exclusion error), thus making them unable to access healthcare services. On the other hand, some non-poor households who are ineligible for the scheme may be mistakenly covered by it (inclusion error) (Bah et al., 2015). Second, A more pressing and inherent challenge to UHC in developing countries such as Indonesia is the high number of non-poor working in the informal sector. Together, this segment of the population forms a group often referred to as the "missing middle".

This group is not an inconsequential demographic; the Central Statistics Agency (*Badan Pusat Statistik*/BPS) reported that in 2014, the informal sector employed approximately 60% of Indonesia's labour force and collectively accounted for 160.9 million people when family members are included (SUSENAS 2014). Recent data from SUSENAS 2016 suggests that the informal sector employs nearly 63% of the labour force. This group voluntarily register with the NHIS as PBPU (*Pekerja Bukan Penerima Upah*/Informal Sector Workers). While workers in the formal sector are covered through the PPU (*Pekerja Penerima Upah*/Formal Workers) scheme, there are no means to enforce large-scale collection registration of workers in the informal economy. This sizeable missing middle thus poses a major obstacle to the achievement of universal health coverage by 2019, as mandated in Presidential Decree No. 111/2013 (Agustina et al., 2019; Dartanto et al., 2016).

Figure 1. shows the pattern of insurance coverage based on the expenditure quintile. Although 40% of the lowest expenditure group received around 54% of the subsidised health insurance (*Kartu Indonesia Sehat*/KIS, a new name of PBI), the remaining KIS is still distributed inappropriately to the middle and upper classes. Figure 1 confirms the inclusion and exclusion errors. A missing middle problem also exists, since those who are in Q2, Q3, and Q4 remain uncovered by health insurance. Moreover, Figure 2 strongly supports the notion that those who are working in the informal sector tend to be uninsured. Almost half of those working in this sector remain uncovered by the health insurance system.

Existing literatures suggest that challenges for attracting informal workers to join health insurance is not unique to Indonesia (Dror et al., 2007; Reich et al., 2016; Thornton et al., 2010). Challenges dealing with informal sector workers are administrative difficulties in recruiting, registering and collecting regular contribution in a cost-effective way (Lagomarsino et al., 2012). Thornton et al. (2010) analyse the behavior of workers in the informal sector in the new health insurance program in Nicaragua. They found that low

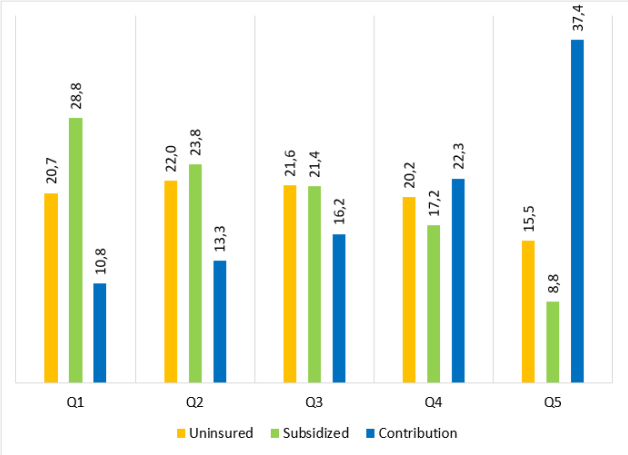

Figure 1. Distribution of NHIS Enrolment by Income Quintile in 2016 (in %)

Note: (1) Q1 refers to the lowest quintile in terms of expenditure (bottom 20%), while Q5 refers to the highest quintile group in such terms (top 20%). The uninsured 20.7% in Q1 means that 20.7% of the total number of uninsured people are in the Q1 group; and (2) The insurance coverage figure inferred from the SUSENAS 2016 data is probably underestimated, given that the data was collected from a sample and was not drawn from SSAH. However, the pattern of income/expenditure group could still provide a clear picture of insurance coverage in Indonesia.

Source: Authors' calculation based on Susenas 2016

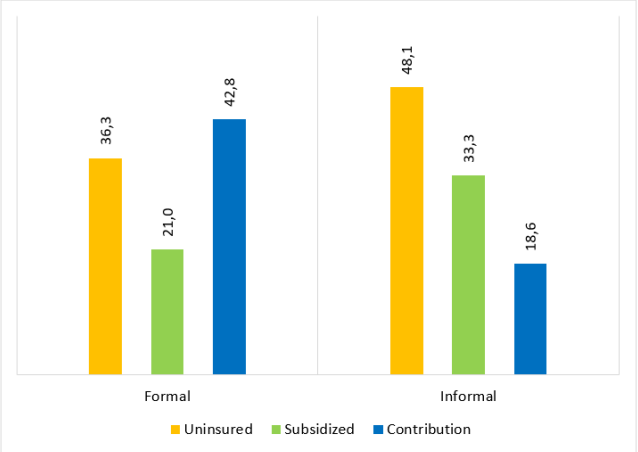

Figure 2. Insurance Coverage and Employment Sector in 2016 (in %) [1]

Note: The meaning of "36.3% uninsured in the formal sector" indicates that among those working in this sector, 36.3% remain uninsured.

Source: Authors' calculation based on Susenas 2016

rate of enrolment in the program is due to costs of premium and enrolment location. Inadequate information about the registration and membership processes as well as benefit entitlements are main reasons why informal sector workers in Kenya not joining the social health insurance (Barasa et al., 2017).

In the case of Indonesia, Dartanto et al. (2016) investigated why workers in the informal sector do not register for national health insurance, hence hindering government efforts towards UHC. The availability of hospitals, experience of inpatient or outpatient treatment knowledge about NHIS, the gender of the head of the household, age, household income levels, and access to information (internet) were sig-

[1]The Central Statistics Agency of Indonesia defines the informal sector as comprising the following activities: (1) self-employment; (2) self-employment assisted by temporary jobs; (3) agricultural/farm labour; (4) non-agricultural labour; and (5) unpaid (family) labour.

nificant variables which were highly positively correlated with the likelihood of informants joining NHIS. Workers in the informal sector with high health risks tend to join NHIS, revealing an adverse selection problem. The study also shows the importance of insurance literacy as one of the important policies to increase the enrolment rate of workers in the informal sector on NHIS. Other studies in Indonesia also found quietly similar findings. Nadiyah et al. (2017) suggest that knowledge of the NHIS was the main factor that prompted people to register as participants in the program, while Siswoyo et al. (2015) show that although the informants had a high awareness of the NHIS program, as measured by knowledge indicators on various aspects of it, this was not enough to encourage them to join it. However, most of studies employ quantitative approaches, with data collected through interviews with informants using closed questions, which may limit the information obtained.

Previous ethnographic researches on the social safety net may prove instructive in providing contexts about the effect of differing circumstances on decisions to access social safety net programs. Both religious beliefs and local/syncretic beliefs in supernatural reasons behind diseases may hinder people from accessing formal health services. Offit (2015) accounts of cases in which some people have shied away from modern medical services on religious grounds, which have often proved to be fatal. In the Indonesian context, there is also principled opposition to NHIS over its perceived un-Islamic conduct (e.g. insurance is claimed as gharar (gambling/uncertainties), and some parts of NHIS funds are placed in conventional banks, which is claimed to promote riba/usury. This understanding may prevent some people from enroling on the NHIS program. Dartanto et al. (2017) employing an online survey covering 720 respondents (using non-random sampling), show that among those who had not enroled, around 24% reported that this was due to uncertain income, 18% were simply unwilling to join the program, while 7% declared that it was due to their religious beliefs.

Contrary to the popular perception that some of the population are uninsured because they are not well-informed and/or are less than rational, the microeconomic framework allows us to understand several conditions in which such a decision is in fact taken by rational and well-informed agents. The most important issue that should be highlighted is that people respond to incentives, and different people may face different sets of incentives and disincentives, even in a one-size-fits-all program such as NHIS. As some aspects of the perceived benefits and costs of a program are subjective in nature, various qualitative factors may influence individual judgment of utility-maximizing decisions. These qualitative and subjective factors cannot be measured ex-ante, but can only be uncovered through direct interviews with people for whom opting out of NHIS is preferred to joining it, or with those who first joined NHIS and then had to leave because they did not pay the mandatory monthly contribution. Even though, a qualitative research is often criticized as biased, small scale, anecdotal, and/or lacking rigor; a proper qualitative study will result unbiased, in depth, valid, reliable, credible and rigorous (Anderson, 2010).

There is still limited study in terms of number and variation of methodology on how to ensure the workers in the informal sector will be willing to join the NHIS, especially in the case of Indonesia. To explore further how informal worker choice has evolved after three years of NHIS implementation, this research is designed to analyse aspects, particularly within the context of subjective and qualitative factors such as economic, sociological and anthropological perspectives, which influence individual or household decisions to enrol on NHIS or not, or to drop out (or become inactive members). The study will then make a significant contribution to the discussion and policy relevance on how to expand coverage, as well as how to achieve UHC. In a diverse society like Indonesia, which hosts an enormous range of ethnic, linguistic, cultural, economic, geographic natural (bio) diversity, religion and system of belief, the behaviour of society in responding to the introduction of the NHIS will also vary greatly. Therefore, understanding factors that influence people to join the NHIS will qualitatively provide valuable information to stakeholders about the problems in expanding coverage, as well as potential solutions. A field study was conducted in three areas: Deli Serdang (North Sumatra), Pandeglang (West Java), and Kupang (East Nusa Tenggara). Most of the study informants were selected from the respondents of the 2014 LPEM-JICA survey who had not joined the NHIS.

The study proceeds as follow: second section presents a literature review on why people adopt health insurance. Section three explains the research methodology, how we conducted the field study and how the informants were selected. This chapter also explores the main qualitative factors that may influence people's decisions to join the NHIS. Section four presents the field study results from Deli Serdang, Pandeglang, and Kupang respectively, while the last section concludes some important findings and policy recommendations.

2. Methodology

2.1 Qualitative Approach and Influential Factors

A qualitative approach is grounded on a constructionist paradigm, while the quantitative is grounded on a positivist paradigm (Creswell, 2014). A quantitative methodology is concerned with attempts to quantify social phenomena, to collect and analyse numerical data, and to focus on the links between a small number of attributes across many cases. On the other hand, qualitative methodology is more concerned with understanding the meaning of social phenomena and focusing on links between a larger number of attributes across relatively few cases. While quantitative research presents statistical results represented by numerical or statistical data, qualitative research presents data as descriptive narration, with words and attempts to understand phenomena in "natural settings". This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2013 p.3).

This study is qualitative in nature, and is intended to explore in-depth why those working in the informal sector join the NHIS. It has the possibility to trace back the households which were informants in the LPEM 2014 study on

WTP, who were categorized as non-members of the NHIS program (Dartanto et al., 2016). The study will establish their current membership status and also their behaviours and views regarding NHIS membership. In the form of a fully qualitative study, ten aspects will be focused on. These aspects were selected based on previous studies, and in-depth interviews with several stakeholders such as SSAH, National Development Planning Agency (Bappenas) and other public health experts. In-depth interviews with households were semi-structured, focusing on the several aspects, but not limited to the following:

1. **Family**. The explorations focused on the informant's family behaviour regarding their health condition and what they would do if they became ill. Those included as family are parents, relatives, children and siblings.
2. **Patron Effect**. The questions asked whether the informant had a role model who may influence their decision to join the NHIS program or not; it could be a community or religious leader. Authors also asked about what the patrons (such as community leaders) did to encourage people to join the program or not to do so.
3. **Peer Effect**. The questions focused on the role of peers (neighbours and friends) on the informant's decision on whether or not to join the NHIS.
4. **Belief System**. With reference to the 2017 Dartanto's study, one of the reasons why people do not join the NHIS program is their religious or other cultural beliefs. In relation to this, the questions therefore focused on how the informant's religious and common cultural beliefs had affected their decision on NHIS membership.
5. **Knowledge and Experience**. This element focused on the informant's knowledge of insurance and the NHIS, such as what they knew about the NHIS; what was or was not covered; how to join etc. The questions asked whether the informant had other health insurance or not, what kind of benefit they had, whether or not they were facing any difficulties etc.
6. **Health condition**. Sickness, accident, medical history and other health-seeking behaviour probable have a significant influence on encouraging people to join the program.
7. **Service Quantity and Quality**. This question asked about the availability and quality of health facilities in the informant's neighbourhood.
8. **Economic Factors**. This question asked whether the informant had experienced any economic shocks which had affected their income, such as business shutdown or debt, or if they had experienced a social shock, such as a riot. Someone may also have registered as a NHIS member due to economic windfalls in commodity booms.
9. **Employment**. This question asked about the job status of the informant. Some were probably members of NHIS, but after finishing a contract they would then be unemployed and would voluntarily register as PBPU.
10. **SSAH**. The question asked about what SSAH, NHIS cadre, and health professionals who were SSAH's partners in the region, did to attract people's membership.

People who are knowledgeable about insurance and those with experience of it would be enthusiastic to join the program, compared to those who have never had exposure to insurance. A patron may also have a significant influence on people's decisions; for instance, in a society based on patronage, when community or religious leaders join the program, then other people surrounding them will follow their lead. The peer effect may also encourage people to join the program. If most neighbours or friends have joined the program, then this will create peer pressure and motivate others also to join. Sickness, accident, medical history and other health-seeking behaviour will also significantly encourage people to join the program. ADB-LPEM (2015) shows that almost 28% of PBPU joined the NHIS when they were sick. Another reason for joining is the outreach activities by SSAH. SSAH has recently deployed the so-called "Kader NHIS" in some regions in Indonesia. The main task of cadre NHIS is to visit PBPU/*Peserta Mandiri* and remind them to routinely pay their insurance premiums. Due to the incentive system, NHIS cadre mostly comprises well-respected local people, who will promote the scheme and attract uninsured people to join it.

Although this is a qualitative study, we will summarize the results of the in-depth interviews and present them in a spider chart to make it easier for readers to readily understand them. The main challenge to transforming the results of the interviews into a spider chart is to objectively divide informants' reasons for joining NHIS program into the ten categories. There are three steps in judging and categorizing the reasons of the informants into ten categories: 1) reviewing the field study notes and listening to the recorded interviews; 2) reviewing the field study report and logbook written by the local research assistants; and 3) an internal focus group discussion. We conducted FGD (Focus Group Discussion) three times to make the categorization, compressing the information from each informant into two main categories, representing the first and second reasons. For instance, an informant joined the NHIS because of illness (health seeking behaviour), and experience and knowledge. These two categories can represent the necessary and sufficient conditions for joining the NHIS.

2.2 Informants and Field Study Area

The study was conducted in three provinces: North Sumatra, Banten, and East Nusa Tenggara. As previously mentioned, these areas were chosen to represent the major informal job sector. Deli Serdang district represents the industry/service area, Pandeglang district represents agriculture, and Kupang City and District represents fisheries. There are two sub-districts in each province, representing rural and urban conditions. The sub-districts are based on the 2014 quantitative survey. Table 1 shows the selected sub-districts. There are at least five household informants in each sub-district, representing each of the informant categories.

The study, however, will focus on self-enrolment member (PBPU). All the informants in the 2014 study were given non-member status. In 2017, they could have already joined the NHIS (member) or still not have joined the NHIS (non-member). The main focus is on gathering as much as information as possible on why people join the NHIS. The

Table 1. Selected Sub-Districts of Informants

Province	District	Job Sector	Sub-District	Rural/Urban	Number of HH Informants
North Sumatra	Deli Serdang	Industry/Service	Percut Sei Tuan	Rural	7
			Sunggal	Urban	6
Banten	Pandeglang	Agriculture	Pandeglang	Rural	7
		Fisheries	Pandeglang	Urban	7
East Nusa Tenggara	Kupang	Agriculture	Central Kupang, East Kupang	Rural	7
	Kupang City	Fisheries	Kelapa Lima, Alak, Oebobo	Urban	6
Total HH Informants					40

Source: Authors'

study will also consider a new set of informants who were not respondents in the 2014 survey. These new informants are expected to complement and provide new insight into the main reasons for joining the NHIS. To identify the informants, the LPEM team checked by phone if they had already enroled or not. As for the availability and willingness of the informants to be interviewed, five were selected from the 2014 list, while another five were selected by the LPEM team through the snowball method. Information from the 2014 informants about their relatives/neighbours in the selected area who were eligible for inclusion in the study was collected. However, this distribution of informants is fairly flexible, depending on local conditions.

To supplement the information obtained from the informants, we also interviewed relevant officials and held focus group discussions with key stakeholders in all three regions to further explore the factors that influence individuals' enrolment decisions and to discuss the preliminary findings. The relevant officials includes SSAH officers, head of villages, head of community, Indonesia Ulama Council, academician, social welfare agency, health agency, head of community healthcare.

3. Results and Discussion

3.1 Main and Enabling Factors for Joining the NHIS

In spite of the differences across regions that shape households' decisions to join the NHIS, there are several common patterns that are useful for making qualitatively generalization at the national-level about why informal households decide to join. We identify several common factors across regions that have a strong influence on NHIS enrolment. We also observe how various factors interact and drive the personal decision-making process concerning to NHIS membership, by synthesising the information from all the interviews.

The overwhelming majority of informants cited **health conditions** as the primary reason for doing so, with 11 informants citing these as the primary reason behind their enrolment decision. Most of the informants who had joined the program due to health conditions had usually gone through the following pattern: informants or family members of informants were suffering from serious adverse health conditions or were expecting a child, and were visiting primary health workers (e.g. general practitioners or midwives), paying out-of-pocket for their health treatment. The primary health workers then often advised informants to enrol on NHIS to reduce their overall healthcare costs and to make these costs more predictable. This is particularly the case if health workers expect informants to undergo more serious and expensive procedures, and/or if they work in facilities that accept NHIS coverage for the payment of healthcare costs.

> "*I became a participant in BPJS because I was bleeding. I registered myself because I am only an honorary teacher who is not registered by the school.*" (Pandeglang-9, 45 years old).

> "*Before I got married, I registered for private health insurance to have better services. However, private health insurance did not cover all the medical expenses, and my father's treatment cost a lot. Therefore, I registered as a member of SSAH.*" (Kupang-5, 37 years old)

This finding reinforces the notion of adverse selection within the current pattern of NHIS enrolment. In this case, people who have a high probability of undergoing major and expensive procedures and/or have high health risks are more likely to join the program compared to healthy and low-risk individuals. This pattern is not unlike that exhibited in the private insurance market, even though the NHIS program is made mandatory precisely to avoid the adverse selection problem. As punitive or coercive means to compel the uninsured population to join NHIS are inherently impossible to implement[2], one of the most pressing challenges for SSAH as the administrator of the NHIS program is to devise effective solutions to attract healthy, young and low-risk groups in the informal sector to join the program.

The fact that the majority of informants learned about the NHIS program from doctors or midwives, who publicize NHIS as solution to reducing healthcare expenses, is therefore very interesting and important to note. In most cases, these healthcare professionals suggest that people join the program during their consultation sessions, particularly if they expect people to undergo more serious medical treatment and/or require hospitalization. This may partially explain the adverse selection problem in the NHIS program; the healthy segment of society is likely to remain unenrolled,

[2]Coercing people to enrol, for example by making it a criminal offense to remain uncovered by NHIS, severely infringes the principle of individual liberty and consumer sovereignty, no matter how well-intentioned such coercion is. It is also theoretically possible that coercion to enrol is unconstitutional; for example, if someone's religious beliefs prohibit them from participating in insurance and/or insurance that gain money from usurious (riba) or speculative (gharar) activities, or if someone's cultural beliefs prohibit them from using modern amenities or technology (such as in the formal healthcare system).

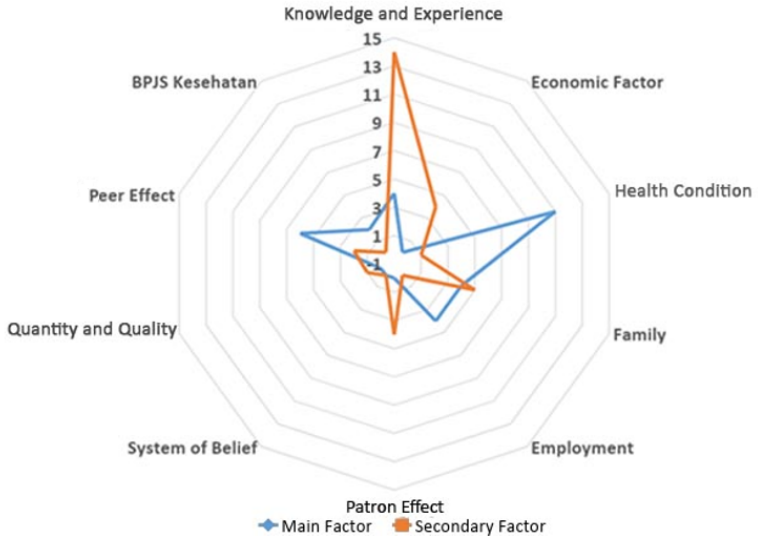

Figure 3. Enabling Factors for Joining the NHIS
Source: Compiled from the results of the three field studies

as they do not interact with health workers. Spreading information effectively about the benefits of joining the program to healthy groups is therefore important to provide individuals and households in informal sectors information about the true benefits of joining and the true costs of remaining uninsured.

In the absence of professional health workers who can promote NHIS enrolment amongst healthy individuals, the next most likely sources of information are **family and peers**. Owing to the close personal relationships, and the perception that family and friends tend to act in one's best interests, they play an important role in an individual's decision. In many cases, members of extended families may also influence other family decisions. Testimonies and information from family members are still crucial for healthcare-related decision-making processes.

The significant role of family and peers in influencing decisions to join NHIS is understandable, as people still base their decisions on the experiences of the people they trust the most, which in most cases are family members, friends or neighbors. Given that some kinds of trust are specific and contingent and that trust is a highly generalized expectation and summation of past experience (Rotter, 1971), it is unsurprising that family members are often seen as the more trustworthy sources of information for informants, as opposed to information from strangers. This applies even to strangers who may be objectively more knowledgeable than family members on healthcare-related subjects. In our interviews, nine informants reported that they were encouraged to enrol on the NHIS program by their family members, friends or neighbors, regardless of their health condition at the time of enrolment. In the case of Indonesia, the decision of medical treatment for the elderly is made by their family member; therefore, a family has a significant role in health cares (Pradnyani & Suariyani, 2016).

> "*When I was hospitalised, my cousin encouraged me to join BPJS Health. He knew that it (hospital costs) would be very costly. He also told my daughter about the benefits. Therefore, my daughter decided to register me…*" (Deli Serdang-13, 60 years old)

> "*My niece is a doctor in town. My nephew invited us to register with NHIS. Then he asked my Kartu Keluarga (Family Card) to be registered as a family. We also paid a premium through my nephew.*" (Kupang-2, 36 years old)

Aside from inputs from family members and peers, existing **knowledge and experience** also help to boost enrolment. People make decisions based on the amount of information they have at hand when trying to choose between different alternatives. Some informants cite previous knowledge of insurance products as the driver of enrolment. Experience in dealing with income fluctuation and lack of other safety nets (e.g. savings) may also drive enrolment, but this also contributes to the probability of late payment (e.g. insufficient income to pay for NHIS premium). Within the context of individual decisions to finance healthcare costs, rational non-poor individuals with no access to employer-provided private insurance or NHIS benefits are better off contributing to the PBPU scheme, rather than risking large, unexpected hospitalization costs by remaining uncovered. Accurate and complete information about the private costs and benefits of joining NHIS is therefore one of the most critical factors (if not the most critical) that influences individual decisions to join and pay premiums regularly.

Related to the role of knowledge and experience in driving people to enrol, we also find that informants who work or have worked in the fishing industry also exhibit somewhat more precautionary motives for joining NHIS. Drawing from the informants' stories, this may be because of their experiences at sea, which seem to create a more accurate mental picture of the actual health risks that they face in their daily lives. In our conversations, one informant seemed to be acutely aware of the mortality and health risks of his industry, drawing from his long experiences of sending people out as seamen on fishing vessels. Another informant in Pandeglang echoed a similar sentiment, as she is mainly concerned with direct or indirect occupational hazards in his husband profession, especially as he is now

over 50 years old and not as fit as he was back in his 20s or 30s.

> "*I think everybody will be sick, so I joined NHIS even though I am not sick at the moment. In the past, I owned a company and all my workers were registered for insurance because of state rules and insurance is important.*" (Pandeglang-11, 61 years old)

> "*When I registered as a member of NHIS, I stopped my private insurance membership. I got the same benefits for a lower monthly premium.*" (Deli Serdang-6, 57 years old)

The relative lack of importance of local patrons and SSAH in encouraging people to join NHIS is also important. Local patrons and community leaders, such as clerics, local officials, and other influential figures, seem to play a rather limited role in motivating people to join the scheme. This limited engagement is rather disappointing, as local patrons tend to be highly respected and trusted by members of the local community, particularly in more rural and remote areas. In some sense, they are akin to micro-influencers, as they inhabit a relatively small niche, but are highly engaged and can actually have the potential to target informal households more effectively at relatively low cost[3].

Local SSAH representative offices also seem to take a rather passive approach to promote NHIS to the local community. During meetings with sub-district level officials and focus group discussions, it became apparent that even officials who are in charge of social welfare and health at the local level are not familiar with how the NHIS program works, and how different programs target different community members. In Pandeglang, for example, local sub-district, district, and even regency-level officials, did not know the objective criteria for eligibility for NHIS subsidies, and were not aware of how exactly the PBPU scheme of the NHIS program works to help informal households. As a result, many local households in the Pandeglang sub-district who did not qualify for a NHIS subsidy were disappointed and did not even bother to enrol on the PBPU scheme.

3.2 How Each Factor Interacts to Influence Household Decisions to Join NHIS

When we separate each factor to provide a simpler picture of individual reasoning behind decisions to join NHIS, individual factors are shown not to work in isolation from others. Indeed, the results of our field interviews revealed that various factors taken together reinforce each other in shaping enrolment decisions (or hold people back from doing so). To identify the connection between the various factors that have been previously explained in great detail, we synthesise the stories of all the informants and construct a generalized decision-making process.

The significant influence of the more horizontal form of communication, as mentioned in the previous section on the role of family and peers, highlights the critical role of social networks in individual enrolment decisions. Let us create a hypothetical example of the social network of individual x, as illustrated in Figure 4. While x may only have direct contact with his family and friends (strong ties) or co-workers and acquaintances (weak ties), we have to consider that his immediate family and friends also have their own weak and strong ties, with whom they tend to spread relevant information more readily.

The fact that people tend to recommend or advise against using certain goods or services amongst their immediate circles forms the basis of word-of-mouth marketing. Brown & Reingen (1987) observe that both weak and strong social ties play different, but equally crucial, roles in propagating information about products and services. Strong ties tend to be more active and influential for the flow of referral information; i.e., people tend to receive information about certain products or services from their inner circle of family and friends and tend to place more trust in referrals from these inner circles. Weak ties, on the other hand, serve as a bridge, over which information flows between different subgroups in a broader social system (e.g. new referrals made by co-workers may pique people's interest, which will be transmitted to their inner circle). This means that positive experiences of using a product and positive testimonials tend to be a much more powerful marketing tool in terms of conversion rate than conventional promotional channels.

When it comes to use a product and recommending it to others, however, we also have to take into account the confluence of factors that are relevant to individual perceptions of a product. Even if individuals receive positive testimonials from families and friends about certain products or services, they may receive relevant information from other sources or experience other circumstances that may negate or contradict the endorsement from within their social circles. Similar insights into consumers' decision-making processes are applicable to informal household enrolment on the NHIS program. Even if households are legally mandated to join it, the aforementioned lack of means to legally coerce them (given the highly undemocratic and unconstitutional nature of such coercion) makes the NHIS especially for PBPU scheme similar in practice to a voluntary insurance program. Unlike normal products or services, its success hinges on the visibility of NHIS to informal households (i.e. how well-known the scheme is among informal households) and the overall perception that joining NHIS is worth the cost (e.g. households perceive, from all information they can gather, that benefits such as lower healthcare costs and peace of mind outweigh the direct and opportunity costs).

Apart from economic/financial ability, knowledge and experience, and enrolment through employment, most of the factors that influence household decisions to enrol do so by providing new material information. An aggregate of all the new information may provide households with a better picture of what the PBPU scheme is, what the costs and benefits of joining it are, and how people can benefit from the program (e.g. the availability of quality healthcare facilities at a reasonable distance from people's homes). Individuals place different weight on information from different sources, which may reflect their trust in and familiarity with sources of information (i.e. weak ties, strong ties).

[3] In many cases, local SSAH officers may leverage connections simply by initiating and maintaining relationships with local community leaders, allocating time to explain the benefits of NHIS to informal households, and encouraging them to help others by using their status in the local community, without having to pay for the local community leaders.

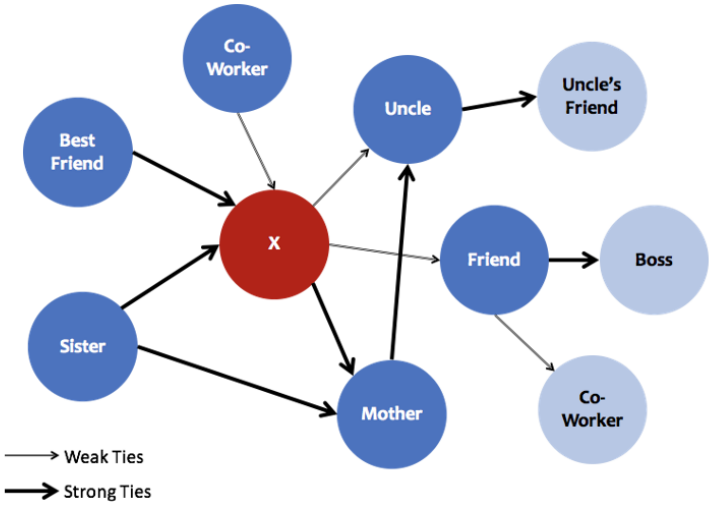

Figure 4. Illustration of Propagation of Information through Personal Networks
Source: Authors

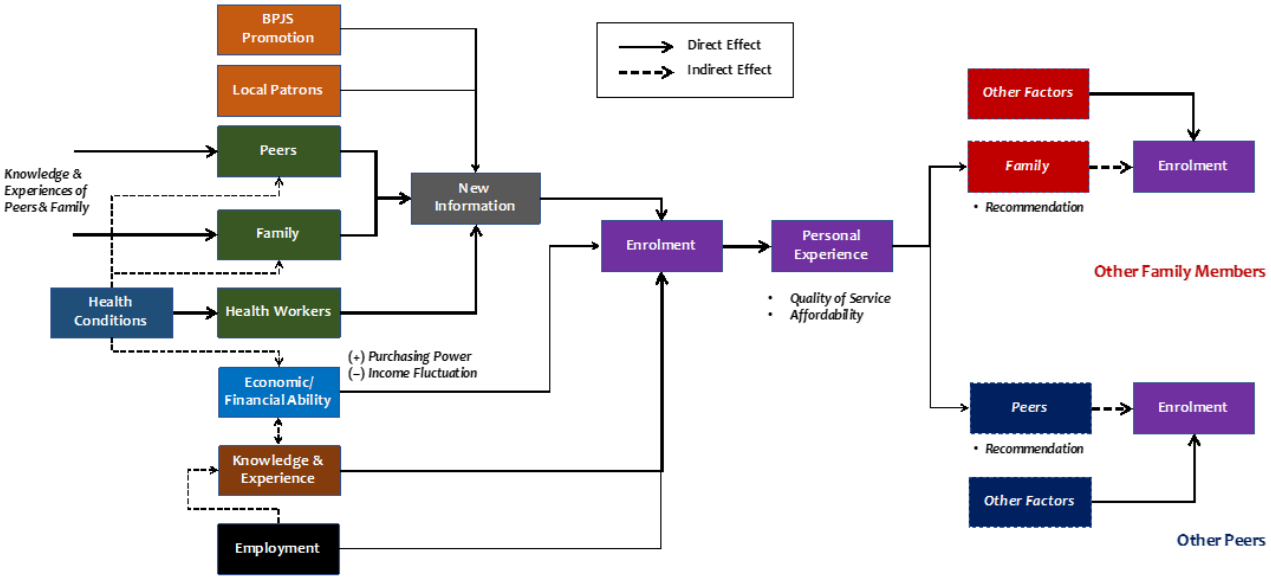

Figure 5. Visualisation of How Various Factors Affect People's Decisions to Enrol on NHIS
Source: Authors

Unsurprisingly enough, informal households are least influenced by sources of new information that have more distant and weaker ties. Among all the 40 informants in this study, only two reported that their enrolment had been primarily driven by SSAH's promotional campaign, and four that their enrolment had been driven (as a secondary factor) by local patrons. The relatively low effectiveness of using direct promotional campaigns or influential locals may be explained by the non-interactive methods of SSAH's promotional campaigns and the lack of comprehensive knowledge about NHIS among local patrons.

Health conditions, which is the most cited factor that drives enrolment, influence household enrolment decisions indirectly through various other channels. First, adverse health conditions usually prompt individuals to consult health workers, who in turn advise them to join NHIS. Second, frequent contacts with other family members and friends increases the probability of an exchange of information with unhealthy individuals or expectant mothers. Family members, friends, neighbours, or even co-workers are then more likely to share their experiences of using healthcare services paid for by NHIS, with the expectation that being NHIS will be able to reduce the overall healthcare costs of sick individuals and expectant mothers.

Additionally, health conditions may indirectly affect how individuals assess their economic abilities and, ultimately, their decision to enrol. For informal households with little savings and who only earn income when they work (i.e. no paid leave), every day the breadwinner falls sick and is unable to work means that the family earns nothing. Without income or sufficient savings, the breadwinner cannot afford to pay for medication. This situation creates a vicious circle; breadwinners that cannot afford to see the doctor will remain sick and, if the illness is serious and prolonged enough, this will prevent them from working, which in turn will only worsen their condition. While no respondents had experienced this situation first hand, some did explain that they were concerned enough about the financial risks posed by potential illnesses that they appreciated the value proposition of the NHIS program.

In other cases, informants cited economic abilities less as something to be concerned about, but more as an enabling factor for enrolment on the NHIS program. Informal workers with sufficient savings and income may find the PBPU scheme appealing, as protection against unexpectedly high healthcare costs that may arise from illnesses or related health conditions. This is consistent with the standard economic models, which assume individuals to be rationally risk-averse. As the NHIS program is not-for-profit and its Class 2 and 3 premiums are priced under its actuarial fair value levels[4], it can be easily shown that being enrolled on the program yields positive net benefits for individuals who can afford to pay the monthly premium.

More affluent informants who can afford to enrol on the program with relative ease also tend to possess sufficient knowledge about NHIS and health insurance in general. These middle-class and upper-middle class informal households learn most details about NHIS through extensive coverage in the mass media, which they consume more extensively than their less affluent counterparts, and/or from their friends or family members who work in formal sectors. A few of them have even enrolled on private health insurance programs and experience the benefits offered by owning such insurance. Compared to other informants, those with wide knowledge and prior experience of insurance (specifically health insurance) tend to be influenced more strongly by their prior knowledge and experience than by other external factors. Likewise, these informants also tend to have more realistic expectations (being more accepting of the concept of monthly premiums) and have a more favourable opinion of NHIS, given its much more affordable premiums compared to similar private offerings.

Rather different to the other remaining factors, enrolment through employment works by turning enrolees into a captive market, even after they become informal workers. Some informants who previously worked in formal sectors and had their premiums paid by their employers have taken advantage of their NHIS coverage, which provides input to their existing knowledge and experience about insurance. Those who have experienced good care usually do not want to lose their coverage after exiting the formal sector and are thus willing to pay for the PBPU scheme. Additionally, there is one case in which an informant's spouse (Pandeglang-2) was given coverage by her employer through the PBPU scheme, as she works as a contract worker for about 8 months a year.

3.3 How Post-Enrolment Experiences Affect the Enrolment of Other Non-Members

Previous discussion about the influence of family and friends on individual enrolment decisions reveals the critical nature of individuals' perceptions of their post-enrolment experiences in understanding the likelihood of informal NHIS members continuing their premium payments and encouraging others to join (or discouraging from doing so). As a rule of thumb, people who are satisfied with the quality of care obtained through the NHIS program will almost always have the incentive to continue payment and to provide positive endorsements for it to their social circles, and vice versa. It is therefore unsurprising when healthy informants who have not benefited from the program and were previously unaware of the concept of insurance perceive NHIS as a waste of money and may not actively promote it to their social circle.

Perception of the inferior quality of care received by NHIS patients compared to those who pay out-of-packet was a recurring theme when we asked about informants' opinion of NHIS quality and their satisfaction with the program. Even when the quality of care given by healthcare providers to NHIS members cannot be directly controlled by SSAH as the NHIS administrator, and even when this quality in itself does not go against generally agreed standards, the widespread public perception of NHIS as an inferior service is at best unhelpful in attracting potential PBPU members. Strong public association of the NHIS program with its KIS (subsidised) element further reinforces its perception of NHIS as inferior, targeted primarily to the poor, as observed by some informants in Deli Serdang and Pandeglang.

This perceived inferiority has significant repercussions for the efforts to attract non-poor informal households to join NHIS. Informants whose experiences were less favourable tended to retain their NHIS membership to continue coverage against critical illnesses, but were much less enthusiastic to promote NHIS to others compared to those with more favourable experiences of using the scheme. Without enthusiastic members, SSAH may not be able to leverage word-of-mouth to attract potential PBPU members effectively.

4. Conclusion

The study has found that regional socio-economic characteristics, demographics, culture and belief systems have varying degrees of influence on individual decisions to join the NHIS program. The three main factors that drive households living in Deli Serdang (industries and services area) to join NHIS as PBPU members are health conditions (health seeking behaviour), peer effects, and knowledge and experience. The enabling factors in Pandeglang are health conditions, employment (in or out of the industrial sector), family, economic factors, and knowledge and experience. In the case of Kupang, the main drivers are health seeking behaviour, peer effects, family, and knowledge and experience. The study has also found that those working in fisheries tend to have more precautionary motives for joining NHIS; these, combined with a higher and more stable income from fishing, therefore encourage fishermen to join the NHIS program.

The general pattern across all regions reveals three main factors that influence those working in the informal sector to join the NHIS program: health conditions, family and peers, and existing knowledge and experience. High-risk individuals tend to join the program following interactions with health workers, family members and friends in relation to their illnesses or health risks. These groups tend to advocate NHIS as a means of reducing overall health expenses,

[4]This is necessarily the case, since NHIS expenses (which excludes the administrative costs of SSAH that is paid by Government of Indonesia) represent approximately accurate picture of total healthcare costs in Indonesia. If NHIS premium is equal or lower than average healthcare cost reimbursement per member, average household will theoretically receive net positive benefit by joining NHIS.

particularly for expensive procedures. This creates an adverse selection problem and a pressing challenge for SSAH to attract healthy, young and low risk groups in the informal sector to join the scheme.

Moreover, the behavioural pattern of informants suggests heavy reliance on family and peer group recommendations in individual decision-making processes, at least when it comes to the NHIS program. Testimonies and information from family members, friends and neighbours are valued by individuals and seen as trustworthy sources of information, owing to their strong ties with, and the relatively high trust placed in, these groups. Aside from new information given by family and peers, existing knowledge, information and experience are crucial in influencing enrolment decisions, as people are subject to bounded rationality and make decisions based on the amount of information they have at hand when trying to choose between different alternatives. Indeed, most informants in the three areas mention that knowledge and experience are the second factor for joining the NHIS program.

The stories provided by the informants regarding their decision-making processes in joining NHIS also reveal the necessary and sufficient conditions that enable PBPU to join the NHIS program. The necessary condition is individual-specific and may differ between people. The necessary condition varies depending on individual characteristics, regional socio-economics and demographic characteristics, as well as belief systems. All the factors, apart from knowledge and experience, are the necessary conditions for joining the NHIS program, while knowledge and experience are the sufficient condition that encourages PBPU to join the program. Without any reliable information and knowledge about the NHIS program, PBPU will not join it, although they may like to join because of certain individual factors. This finding is similar to that of the previous study of (Dartanto et al., 2016), that insurance literacy plays a very important part in expanding coverage. Spreading information and knowledge about insurance and the NHIS program will improve the insurance literacy of society in the long run, and could attract young and healthy groups to join it. An increase in insurance literacy does not guarantee 100% that PBPU will join the program; however, it would expedite their decisions. This finding also calls for customised policies and strategies for each region to expand insurance coverage in Indonesia, based on local characteristics.

With the need for customised promotion policies in each region in mind, we identify at least two broad policy directions that may improve enrolment by informal workers and households. First, future promotional strategies should be focused on interactive campaigns and involve actual informal households and influential locals, so as to maximize the word-of-mouth effect. This can be done by engaging local village/sub-district offices (*kantor desa/kelurahan*) and influential locals in creating question-and-answer sessions regarding NHIS. These events need not be expensive, as they require only the presence of local SSAH officials, and can be held in conjunction with other events, such as community religious study sessions (*pengajian*), church events, or other local events (mass immunisation, car-free days, etc.). These interactive events are useful to provide locals with useful information and tips regarding NHIS, to provide avenues for SSAH to dispel commonly-held misinformation, and to build community trust in NHIS.

Second, as informal households may have distorted ideas about the costs and benefits of NHIS, SSAH may be interested in developing new promotional campaigns that emphasise the *gotong royong* (communal work) nature of NHIS and provide concrete examples on how it pays off for everyone in the long term. For example, in its promotional campaigns, SSAH may wish to highlight the cost calculation for those uninsured, involving scenarios such as having to borrow from banks or loan sharks, compared to the predictable costs of paying NHIS premiums. Also related to the misinformation problem, SSAH could also emphasize that the NHIS-PBPU scheme is not only for poor people and give several examples of successful informal households who have also benefited from it.

Finally, with respect to the problem of reluctance or inability to pay the monthly NHIS premiums, SSAH should also introduce and fully advertise several payment schemes that may be used by households with variable incomes. This may include, but not be limited to, pre-payment or the ability to pay in installments, which may be coupled by providing reminder message via SMS to members (such as to farmer members during harvest seasons, etc.). These features may be useful in increasing compliance, both in terms of enrolment and premium payments.

Ethical Clearance and Research Permission

The ethics approval has been obtained from the Ethics Committee, Faculty of Public Health, Universitas Indonesia, Indonesia (No. 604/UN2.F10/PPM.00.02/2017). This study got a research permission letter from Directorate General of Politic and Nation Unity (Ministry of Home Affair) at Central Government and Agency of Politic and National Unity at Provincial and District Government to conduct a field study in three provinces in Indonesia.

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Gedung LPEM FEB UI
Jl. Salemba Raya No. 4, Jakarta 10430
Phone : +62-21 3143177 ext. 621/623;
Fax : +62-21 3907235/31934310
Web : http://www.lpem.org/category/publikasi/workingppers/