Jurnal Ekonomi & Studi Pembangunan
Volume 19, Nomor 2, Oktober 2018, hlm. 116-133
DOI: 10.18196/jesp.19.2.5003

THE IMPACT OF *JAMKESMAS* ON HEALTHCARE UTILIZATION IN EASTERN REGIONS OF INDONESIA: A PROPENSITY SCORE MATCHING METHOD

Novat Pugo Sambodo

Erasmus School of Health Policy and Management, Erasmus Universiteit Rotterdam
Research Associate Pusat Kebijakan Pembiayaan dan Manajemen Asuransi Kesehatan,
Medical Faculty Universitas Gadjah Mada
Jl. Farmako, Sekip Utara, Yogyakarta 55281

Correspondence E-mail: pugosambodo@gmail.com

Received: September 2018; Accepted: October 2018

Abstract: *Underutilization of health care for the poor is one critical problem in Indonesia. Out of pocket share is dominant on overall health financing. Therefore, it is plausible that low demand of modern healthcare services mainly relates to financial aspect. In 2008, the government of Indonesia has introduced health insurance schemes for the poor to help them overcome the problem of medical costs barrier called Jamkesmas (Social Health Insurance). This paper examines the impact evaluation of Jamkesmas to health care utilization in Eastern Indonesia. Data are drawn from Indonesia Family Life Survey East (IFLS-East) that held in 2012. This data only covers the eastern regions of Indonesia that widely known has relatively lower performance in development and infrastructure. Moreover, this study employs Propensity Score Matching (PSM) approach to analyse the data. The results show that average treatment effect for treated group are positive for outpatient utilization. In addition, availability of the healthcare facility variables, travelling time and distance to district capital are factors that determine Jamkemas coverage in Eastern Indonesia.*
Keywords*: social health insurance, healthcare utilization, impact evaluation*
JEL Classification*: I13, I15, H43*

INTRODUCTION

Underutilization of health care for the poor is one critical problem in Indonesia. According to Somanathan (2008), out of pocket share during 1995 to 2004 was between 60-70% on overall health financing. Therefore, it is plausible that low demand of modern healthcare services mainly relates to financial aspect (Somanathan 2008, p. 1). Hence, Government of Indonesia (GoI) tries to reform social safety nets in order to protect the most vulnerable family in the hardship situation, i.e. economics crises in 1997 and 2008. GoI has introduced various health insurance schemes for the poor to help them overcome the problem of medical costs barrier.

Health insurance in Indonesia had been gone through several evolutions. It started with Dana *Sehat* in 1969, *Jaminan Pemeliharaan Kesehatan Masyarakat* (JPKM) in 1992, and Health Card in 1994. After that, it was followed by Social Safety Nets or *Jaring Pengaman Sosial* (JPS) which was introduced to mitigate the impact of Asian Financial Crisis in 1997-1998. Then, the GoI initiated *Asuransi Kesehatan Untuk Masyarakat Miskin* (*Askeskin*) in 2005-2007, and finally it is replaced by *Jaminan Kesehatan Masyarakat* (*Jamkesmas*)[1] in 2008 (Vidyatama et al. 2014). *Jamkesmas* is a social assistance for healthcare that is provided for the poor and those who cannot afford the healthcare fee. GoI has allocated around 500 million USD or around 20% of all social assistance budget to funding *Jamkesmas program.* In addition,

[1]To avoid any confusion, there is also JAMKESDA which is a similar insurance but the regulation and coverage are under district or city local government responsibility.

Ministry of Health appointed to implement this program starting from 2008 until early 2014. Currently, BPJS (Social Security Agency) program substitutes *Jamkesmas* with broader coverage, i.e. not only for the poor. However, the lesson from *Jamkesmas* implementation remains relevant and valuable for policy analysis.

There have been many studies evaluating health insurance program in Indonesia. The latest study by Vidyatama et al. (2014) finds that health insurance owner 8% more likely using healthcare service when falling sick and it becomes 5% if people who are not sick are included in the estimation. Other study tries to contrast the effect of *Askeskin* and non-*Askeskin* (Aji et al. 2013). Their research finding supports the argument of financial barrier; both types of health insurance program can decrease out of pocket payment. Distance and location factors also have a significant influence on healthcare utilisation, especially for rural community. In contrast, people living in urban community are less sensitive to distance, but relatively more sensitive to medical fee (Erlyana et al. 2011).

In brief, contributions of this paper have three points. First, this paper gives more attention to eastern region of Indonesia than try to get national level studies. Most previous studies on the health insurance impact evaluation in Indonesia have a limitation on capturing geographical aspect and eastern Indonesia focus. Nevertheless, this region is relatively lacking in many social development indicators as compared to the western regions. Furthermore, Indonesia Statistic Office reported that 70% of underdeveloped districts are located in eastern Indonesia. It hopes give more understanding of *Jamkesmas* implementation than get only general idea of national level.

Second, this study also includes more variables such as travel time, distance and availability of service variables. Unlike other datasets such as SUSENAS and RISKESDAS used by Vidayatama et.al (2014), and Sparrow et.al (2013), IFLS-East has a possibility to merge between individual and household information with community or village data. IFLS-East data is the newest IFLS since the previous IFLS, IFLS 4 taken in 2007. Thus, this paper expect more update information as compared with other paper using previous IFLS data like IFLS 3 (Erlyana et al. 2011) or IFLS 1 and IFLS 2 (Hidayat et al. 2010).

This paper aims to analyse the impact of *Jamkesmas* on healthcare utilization in eastern part of Indonesia. With this objective, the study attempts to answer two research questions: (1) Does *Jamkesmas* significantly help the poor household to increase their health care utilization when falling ill? (2) Is there any difference of household choice preference between the public and the private health services given variables in the model?

The following part of this essay briefly describes Indonesian health insurance from reform from 1998 (after economic crisis) with Social Safety Net (SSN) until recent implementation of Social Security Agency (BPJS). Section 3 outlines some characteristics of data we use in this research. Empirical challenge and methodology to deal with those challenges will be discussed in section 4. Section 5 discusses the result of this study and discussion. A final section highlights what this paper main finding and policy implication that we can make given the result from this paper.

Reform in Indonesian Social Insurance

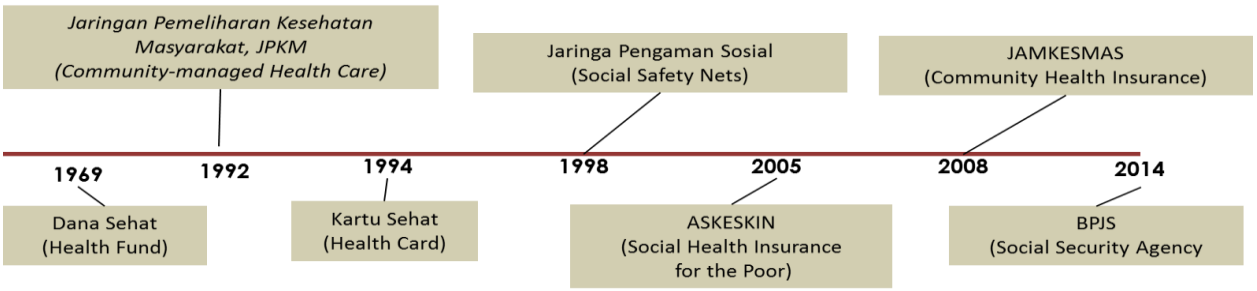
Recently the Government of Indonesia (GoI) has set an ambition to have every citizen covered by insurance. GoI initiated Social Security Agency or *Badan Penyelenggara Jaminan Sosial* (BPJS) in 2014. It is a part of the implementation of National Social Security System Law 2004 no. 40 and Social Security Agency Law 2011 no. 24. The law is introduced as a response of a rigid limitation in the insurance coverage that could only reach people with formal employment status. These insurances include *Aspen*, *Askes*, *Jamsostek* and *Asabri*. Hence, the ultimate goal of BPJS is to expand the coverage and improve the service to its beneficiaries.

Before *Jamkesmas* is implemented, Indonesia has a long experience in providing insurance to its citizens, see Figure 1. In 1998 Indonesia introduced *Jaring Pengaman Sosial* or Social Safety Net as a response of economic crisis. The intention of this program is to protect the poor from economic turbulence during this Asian Financial Crisis 1997-1998. Shrinking indicators, like a massive decline of unemployment rate, high inflation and socio-politic crisis, make the poor more vulnerable. As part of JPS, a health card program is introduced to poor households to waive the fee to access the public healthcare provider, i.e. Public Health Centre (*Puskesmas*) and public hospital.

In 2005 the GoI attempted to reform the social health insurance with broader beneficiaries. The government introduced *Askeskin* (health insurance for the poor) with the goal to expand the coverage to the informal sector workers that had not been covered by the existing insurances. Afterwards, the GoI appointed Ministry of Health to manage the financial aspect of *Askeskin* because there had been many requests for evaluation and improvement. Then, it was renamed to *Jamkesmas* in 2008. In this program, the near poor group was included as eligible recipient. Furthermore, to standardize with the establishment of National Social Assistance, the GoI incorporated *Jamkemas* under National Health Insurance (JKN); *Jamkesmas* is managed by BPJS. With this merger, all *Jamkesmas's* members automatically become member of National Health Insurance Program under BPJS.

According to Harimurti et.al. (2013), there are several changes in *Jamkesmas* compared to *Askeskin*. First, the insurance fee is higher, it increases between IDR 5,000 to IDR 6,500 per individual per month. Second, *Jamkesmas* only gives the limited basic package with some specific exclusions of benefit and no cost-sharing. However, the member may get an extended package as add-in. Another benefit of *Jamkesmas* is that the medicine is covered with prescribed evidence. *Jamkesmas* holders can exercise the insurance in Puskesmas, Public Hospital and some registered private hospital (Harimurti et.al 2013, p.14).

According to World Bank background paper (World Bank 2012), the official number of *Jamkesmas* recipients in 2010 approximately 74.6 million people. In term of budget, the average cost of health services utilized per card is Rp6,250, while the administrative cost itself is Rp9,362 (US$ 0.9). Moreover, this report also shows that *Jamkesmas* successfully cover around 41% of poor household. To manage the implementation, Ministry of Health works together with public hospitals and local health centers as service providers and fee claims. BPJS regulates the eligibility and targeting. PT Askes handles the card production and distribution. Ministry of Finance is responsible for financing the disbursement. Local government also has a role to distribute *Jamkesmas* cards, provide sufficient socialization and undertake monitoring and evaluation.



Source: Author's estimation based on Vidyatama et.al. (2014)

Figure 1. Evolution of Health Insurance in Indonesia

RESEARCH METHOD

Data

This paper utilizes the IFLS-East 2012 (Sikoki et al. 2013), which is the first survey that specifically covers the eastern provinces of Indonesia that have never been surveyed by 4 previous IFLS. It covers the information in individual, household and community level. There are seven provinces surveyed: Kalimantan Timur, Nusa Tenggara Timur, Maluku, Maluku Utara, Papua, Papua Barat, and Sulawesi Tenggara. Moreover, IFLS-East data involves 99 villages consisting of 3,159 and 2,547 households. Within these households, 10,887 individuals are interviewed (Satriawan et al. 2014). The richness of information presented in this dataset supports the analysis, thus leading to better estimates in explaining the independent variables. IFLS-East data is accessible at this URL <http://surveymeter.org/research/3/iflseast>.

This study exercises some dependent variables, including outpatient variables for total, public health centres and private health services. This paper also tries to capture the impact of *Jamkesmas* on inpatient utilization. Similar to outpatient outcome, it also classifies both public and private. Using the household expenditure dataset from IFLS, this paper constructs the out of pocket variables and the catastrophic health expenditure incident if the health expenditure of the household exceeds 15% of its total.

The fundamental interest of this program evaluation study is to investigate the real impact of *Jamkesmas* on the main outcome. However, we face some empirical challenges in the data. First, it is required to estimate the outcomes that capture the "true" difference between the impact of *Jamkesmas* to the treated group and the untreated group. This cannot be done by simply estimating the outcome, like the outpatient and inpatient service utilization or health expenditure variable of people with and without *Jamkesmas*. That naive approach is not sufficient to capture the causal effect relationship between program and outcomes. Hence, the main challenge for this impact evaluation study is to get the counterfactual group in the data. Each household needs to get match comparison with other household with same characteristic before get the program.

Second, the allocation of *Jamkesmas* is based on the eligibility determined by Indonesian Ministry of Health, and certainly it is not selected randomly. *Jamkesmas* is only provided for the poor and the non-poor. Hence, measuring the outcome with simple Ordinary Least Square could produce a bias estimation. This is because there is also a possibility that some poor and near poor households who are eligible, but they do not receive the benefit of *Jamkesmas*. These eligible households have a tendency to have less utilization, even if they hold a health insurance. If the randomness of data is satisfied, we could make an estimation with other estimation model, such as randomized selection, regression discontinuity and difference-in-difference. However, since the randomness is not satisfied, the IFLS-East dataset is a cross-sectional data. Lastly, we assumed that the eligibility of *Jamkesmas* are observable in variables contained in IFLS-East dataset.

In this non-ideal condition, there is one method that can solve the counterfactual group problem. It is by looking the counterfactual group within dataset that has a similar or exact characteristic of the treated group, except the fact that they get the insurance. This can be done by using the exact match Propensity Score Matching (PSM).According to Rosenbaum & Rubin (1983), propensity score which is also known as balancing score, represent the conditional probability of observation that will be given a treatment based on the definite pretreatment specification. Furthermore, the fundamental reason of PSM is the absence of experimental framework of program and allocation of program in non-random setting. Then, the difference of treatment group and control group is not only in their status in program as a receiver, but also on the other characteristics

that might impact on the outcome. This bias can be avoided if we can get the corresponding similar households or individuals. After estimating the outcome of both groups, we then compare those outcomes. The average difference outcome of treated and untreated groups allows us to get impact of the program on beneficiaries.

PSM approach has tree steps in order to get the average impact of the treatment. First, we need to estimate the probability of households in datasets who are receiving *Jamkesmas*. This is based on several selected control variables, which are observable. In this step, we can utilize Logit or Probit estimation. Both estimates only have minor difference, and the selection is based on the researcher's adjustment. In this study, the Logit method is used. The next step is to limit our analysis only for households that have a range of common supports. Then, after obtaining the range of common support for each treatment group, we pair them with the untreated household having the same or the closest balancing score. Finally, in the last step we produce the average treatment effect on the treated group (ATT) by acquiring the average difference of expected outcome (outpatient, inpatient, health spending) from people with and without *Jamkesmas*.

Based on *Jamkesmas* and datasets characteristics, this research prefer to use PSM model that also used by Sparrow et al. (2013) and Pradhan et al. (2004) for *Askeskin* and Health Card program, respectively. As an extension of their work, this paper is to add more specific information data on the community infrastructure, travel time or distance, and availability of healthcare facility characteristic both public and private healthcare provider. The matching model using Logit estimation is shown as follow:

$$(\Pr(Y_i = 1)) = (\beta_0 + \beta_{1i}(\alpha_{ind}) + \beta_{2i}(\alpha_{hh}) + \beta_{3i}(\alpha_{fas}) + \beta_{4i}(\alpha_{comm}) + \beta_{5i}(\alpha_{dist}) + \varepsilon_i)) \quad (1)$$

Equation (1) is the matching model, where Y_i is an outcome of household probability that is covered by *Jamkesmas (Pr (Y_i=1))* i.e Y=1 if yes and Y=0 if no.

In this logit estimation (equation 1) there are some variables that are included in the control variables. The variables in the category α_{ind} represent factors attached to person in demographic categories such as age, sex, years of education, education level, marital status, while the category α_{hh} represents the household level characteristics, such as education of household head, whether of household head is female and household expenditure (food, non-food and medical expenditure). Variables in the category α_{fas} include the availability of the supply sides, such as the availability of health center facilities, tools availability and number of staff. The category α_{comm} comprises of community characteristics, such as geographical and infrastructure variables. This research also gives more attention in this aspect as the sample relatively lacks in infrastructure. Furthermore, self-reported illness is not included in these covariates. It is because the inclusion of self-reported illness could lead us to a selection bias because the probability for people who are sick and actively looking for *Jamkesmas* is relatively high. This is also related that rich people has more tendency to report their illness rather than the poor.

This research employs the five nearest-neighbours matching approach to match the treated group with the control group. The matching is based on the propensity score. After this process, the difference between those two groups is possible to calculate. To estimate the average impact of a treatment for a household that get *Jamkesmas* in notation βpsm, we determine the disparity between the expected outcome of the treatment group and the expected outcome of the non-treated group as mentioned earlier. In mathematical notation, this can be expressed as follow (see Sparrow et.al 2013):

$$\beta psm = E(yiA{=}1, S{=}1) - E(WiyiA{=}0, S{=}1) \quad (2)$$

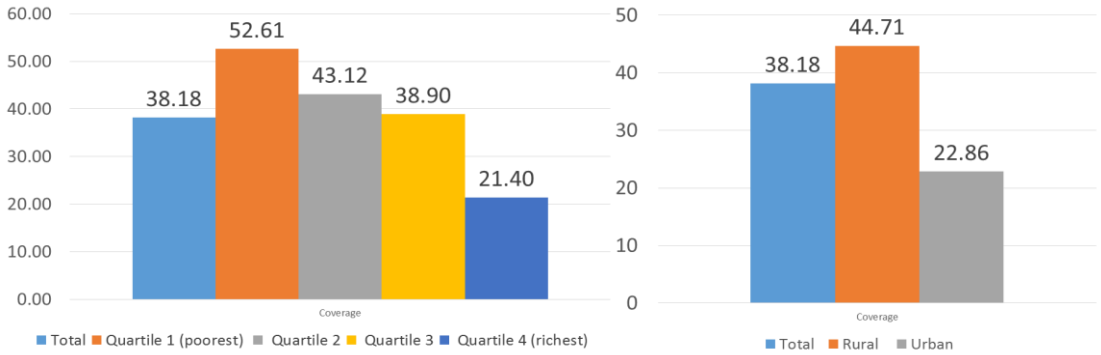
In equation (2), (yiA=1, S=1) is the expected outcome of household groups who receive

Jamkesmas (A=1) and having a common support (S=1) as conditional requirement. Then, E ($WiyiA$=0, =1) shows the potential outcome of 'artificial' control groups based on the propensity score that do not have *Jamkesmas* (A=0) and have common support (S=1). We denote the weight estimated balancing score.

RESULT AND DISCUSSION

Jamkesmas Coverage

Table 3 shows the experiment result of *Jamkesmas* coverage that has been classified into rural and urban groups, quartiles as well as gender. It is to be noted that this table is in individual level. Even though the allocation might not be entirely received by the targeted groups, quartile 1 and quartile 2 still have the highest percentage of people holding the insurance, i.e. 52.61% and 43.21%, respectively. This pattern indicates that *Jamkesmas* has reached the target that is the poor and the near poor group. However, there is an indication that *Jamkesmas* is utilized by unintended groups, i.e. quartile 3 and quartile 4. This means that there is leakage of *Jamkesmas* allocation in eastern region of Indonesia. This finding is similar with a study done by Sparrow et al. (2013) and Vidyatama et.al (2014) in the national level case. In addition, more people in the rural area take the benefit of *Jamkesmas* rather than the urban counterparts. Around 44.71% of people in the rural area who receive *Jamkesmas*, while only 22.86% of urban people who receive *Jamkesmas*. Another finding is that there is no significant difference of allocation for male or female groups. They are equally likely to receive *Jamkesmas*.



Source: Author's calculation based on IFLS-East 2012

Figure 2. Targeting of *Jamkesmas* Coverage in 2012

Table 1. Utilization and Health Spending for Household with or without *Jamkesmas* Holder

	Household with no *Jamkesmas* holder	Household with *Jamkesmas* holder	Total
Outpatient	0.163	0.176	0.168
Public	0.086	0.122	0.101
Private	0.068	0.050	0.061
Inpatient	0.044	0.035	0.040
Public	0.037	0.034	0.036
Private	0.015	0.007	0.012
Out of pocket health expenditure (%)	1.539	0.861	1.267
Catastrophic health spending (more than 15% of total expenditure) (%)	0.020	0.007	0.015

Source: Author's estimation based on IFLS-East 2012

Table 1 exhibits a naïve comparison between household with and without *Jamkesmas* with regards to the utilization of healthcare service, out of pocket expenditure and catastrophic health incidence. This table is based on the household level data. *Jamkesmas's* holder has a slightly higher average of visitation than household with no *Jamkesmas*. The value of 0.176 means that 17.6% of household with *Jamkesmas* is reported to access modern healthcare (either public or private) in the past 4 weeks. The difference gets bigger in public healthcare provider, which is 0.122 for *Jamkesmas* holder and only 0.086 for non- *Jamkesmas* household. This pattern differs from the case of outpatient private healthcare; the average number of people go to private healthcare provider is larger for non- *Jamkesmas* household. In terms of spending, out of pocket health expenditure for non-*Jamkesmas* household is relatively higher, and that is almost double. Similarly, catastrophic health incidence spending is also higher for non- *Jamkesmas* household, though the value is very small. In general, it can be inferred that with this naïve analysis the utilization of healthcare is higher for the *Jamkesmas* holder and they pay less health spending.

In Propensity Score Matching analysis, there are two properties that must be satisfied. First, there should be enough common support in balancing the treated and the untreated group. Second, the balancing properties are satisfied. Estimation on the propensity score shown in the table 6 on the appendix consists of 54 propensity score estimated for each variable. Using Logit estimation, the probability of household getting *Jamkesmas* coverage is calculated.

Some variables show a positive coefficient, which means that it has higher probability to receive *Jamkesmas*. For example, Unconditional Cash Transfer (BBM BLT) is introduced as the compensation of subsidy cut on fuel; this might be the same eligibility requirement between *Jamkesmas* and BLT. Other variables that also indicate a positive coefficient are the size of household, the accessibility to clean water, the accessibility to piped water, the private clinic's accessibility to water, and the residency of household in rural area Unexpected positive sign appears from group that has far proximity with hospital. This means that the longer travel time might positively correlates with the probability to get *Jamkesmas*. There are also positive sign variables, although they are not statistically significant, that are interesting to note. There are private clinics that provide health check-up examination services. Many villages have public transport facilities, and their main road is made from asphalt. We expect that improving availability and infrastructure might broaden the allocation of *Jamkesmas*.

In contrast, there are variables that can significantly reduce the probability of *Jamkesmas* coverage. Variables, like Askes, *Jamsostek* and company insurance, have a negative sign and they are significant. This shows that households having other kind of insurance are less likely to receive *Jamkesmas*. Moreover, variables related to household assets, such asthe size of house (m^2) and the vehicle ownership also reduce the probability of *Jamkesmas* coverage. This is desirable because the richer households should have less probability to be covered by *Jamkesmas*. Interestingly, if one of the household members working in the government office, their propensity score is significantly lower. This could be because they are automatically covered by *Askes*. Moreover, the variable of the distance of village capital to district capital in kilometres has a negative value. This result is expected. Other distance and travel time related variables also have a negative sign, but not significant.

The availability of private clinics is determined by many variables. It is predicted that these variables have a positive sign. The accessibility of clean water is positive and significant. However, there is a variable that has a negative sign, i.e. the availability of dental service in private clinic.

In the first property of balancing common support, PSM analysis does not obtain lack of

common support. Table 9 in the appendices reveals range of common support based on the number of observation whether it is off support or on support. In this table there are 36 out of 1953 are off support. It means 36 observation of treated group does not have match comparison group and dropped as a consequences. Meanwhile in the Figure 2 Distribution of the propensity score for treatment and control group, it shows the overlap pattern and also present how each group of treated are compared with some group of control (untreated). Furthermore in this matching step, 5 Nearest Neighborhood matching technique is employed.

In the balancing properties in table 10 in the Appendices, we can see that there are some variables do not satisfy balancing property. It means some of the differences between treated and control groups are large in those variables indicated by t-test show significant result. The author try to make some changes in the covariates by make some interaction variable but the significant feature in the t-test are unchanged. As a consequence, we need to get the new set of covariates that satisfied balancing properties. Due to the time constraint, author will limit the analysis here and will update with the newest balanced set of controls.

Impact of *Jamkesmas* on Healthcare Utilization and Healthcare Expenditure

Table 2 shows the result of the estimated impact of *Jamkesmas* on healthcare utilization using Propensity Score Matching method. In general, *Jamkesmas'* holders has a higher probability of using modern healthcare outpatient service than those without *Jamkesmas*. For total level, there is 2.9% of difference between the treated groups with the controlled groups. The probability of *Jamkesmas'* holders using public healthcare facility is slightly higher, that is 3.6% difference. Hence, this shows how *Jamkesmas* could significantly impact the outpatient service usage.

Table 2. Estimated Impact of *Jamkesmas* on Healthcare Utilization and Health Expenditure (PSM)

VARIABLES	Outpatient			Inpatient			Out of pocket expenditure	Catastrophic health spending (more than 15% of total expenditure)
	All	Public	Private	All	Public	Private		
Total	0.0290*	0.0359***	-0.0053	0.0127*	0.0103	0.0036	-0.0395	0.0000
	0.0154	0.0130	0.0103	0.0076	0.0085	0.0044	0.2416	0.0090
Quartile 1	0.0217	0.0177	0.0008	-0.0031	-0.0042	0.0043	-0.2009	0.0083
	0.02748	0.02306	0.01779	0.01279	0.01376	0.00429	0.33174	0.00583
Quartile 2	0.0039	0.0067	-0.0041	0.0274	0.0301*	-0.0001	-0.1645	-0.0156
	0.0318	0.0266	0.0220	0.0137	0.0173	0.0061	0.3936	0.0173
Quartile 3	0.0505	0.0545**	0.0105	0.0038	0.0029	-0.0014	-0.1454	0.0063
	0.0318	0.0277	0.0208	0.0173	0.0207	0.0114	0.5257	0.0213
Quartile 4	0.0647	0.0251	0.0310	0.0338	0.0258	0.0080	0.8784	0.0253
	0.0400	0.0339	0.0297	0.0259	0.0269	0.0108	0.7853	0.0245
Rural	0.0298*	0.0183	0.0119	0.0139*	0.0133	0.0024	-0.1030	-0.0024
	0.0173	0.0144	0.0115	0.0079	0.0088	0.0029	0.2691	0.0085
Urban	0.0221	0.0576**	-0.0272	0.0130	0.0136	0.0033	-0.2923	-0.0034
	0.0290	0.0286	0.0183	0.0200	0.0221	0.0131	0.4442	0.0181

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, *p<0.1

Source: Author's calculation based on IFLS-East 2012

As we can see in table 3, outcome of inpatient service utilization affected only in total level. The coefficient means that *Jamkesmas's* holder has a bigger probability with around 1.3 higher, but it is not statistically significant for public and private categories. Decomposition in the quartile groups shows no considerable difference. It is expected that the two lowest quartiles get the most of impact. However, the result does not meet this expectation. Moreover, the out of pocket health expenditure has a negative difference, although it is not statistically significant across the groups. Similar average treatment effect pattern also happens for the catastrophic health spending incidence. This finding is similar with the result from Suryanto et.al (2013) using previous IFLS 3, IFLS 4, *Susenas* 2009 and 2010 that health cost assistance to the poor has no significant influence on reducing catastrophic health expenditure. The one reason to explain is because the informal sector and who poor reducing their health related expenses and decide to use traditional or even inappropriate method.

Furthermore, the rural households who receive *Jamkesmas* have a higher probability to use the healthcare service in total level, both outpatient and inpatient service. However, this finding is different with the urban household receive *Jamkesmas.* The impact only occurs in the public outpatient service, but it has a bigger magnitude with 5.6% ATT.

CONCLUSION

The aim of this study is to investigate the impact of *Jamkesmas* on health care utilization of in eastern Indonesia using IFLS-east data. The prior knowledge of about eastern Indonesia is they are relatively less developed than western part of Indonesia. Thus, they need more attention given their lack of infrastructure and health facilities and staff. We expect that *Jamkesmas* could reduce those barrier to access health services, with better targeting with better impact.

Moreover, allocation of *Jamkesmas* is more likely goes to quantile 1 and 2 of income group. It reflects that *Jamkesmas* program that are received by people targeted as eligibility criteria that *Jamkesmas* for the poor and near poor. However, there is still some leakage with people in quartile 3 and 4 still get this health insurance. In addition, propensity score evaluation shows that people with longer distance and travelling time between village capital and district capital and health facilities like Puskesmas and private health provider has a less probability to get covered by *Jamkesmas*. In contrast with distance, if the availability of the Public Health Centre in that village is better, the higher probability of household participates in *Jamkesmas* program.

As a main purpose of this study, results show that in general utilization in general In general, *Jamkesmas's* holder has a bigger probability to utilize in healthcare service especially for public health center but only in outpatient. Inpatient is not statistically significant impacted by *Jamkesmas* in public or private groups but in total level. Furthermore, *Jamkesmas* has no significant impact on health spending both out of pocket expenditure and the probability of catastrophic health spending incidence.

Within those findings, however, we need to note some point that some factors might affect utilization of *Jamkesmas* which are not captured in the model. For example, the shock of when people is get chronic illness which will increase possibility for household to looking for *Jamkesmas* after get chronic condition. This study finds distance and travelling time variables are significant variables to reduce *Jamkesmas* coverage in Eastern region of Indonesia. Thus, improving more infrastructure or provision of transportation will help household participation in health insurance and health care utilization to get less time in travelling.

REFERENCES

Aji, B., De Allegri, M.D., Souares, A., and Sauerborn, R. (2013). The Impact of Health Insurance Programs on Out-of-Pocket Expenditures in Indonesia: An Increase or a Decrease?. *International Journal of Environmental Research and Public Health*, *10*(7), 2995-3013.

Erlyana, E., Damrongplasit, K.K., and Melnick, G. (2011). Expandinghealth Insurance To Increase Health Care Utilization: Will It Have Different Effects In Rural Vs Urban Areas?. *Health Policy, 100*, 273–81.

Government Regulation Number 40 Year 2004 Concerning National Social Security System (Republic of Indonesia).

Government Regulation Number 24 Year 2011 Concerning National Social Security Agency (Republic of Indonesia).

Harimurti, P., Pambudi, E., Pigazzini, A and Tandon, A. (2013). The nuts and bolts of *Jamkesmas*, Indonesia's government-financed health coverage program for the poor and near-poor, The World Bank, UNICO Studies Series 8, Washington. Viewed 4 June 2015, <http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/03/25/000333037_20130325130647/Rendered/PDF/749960REVISED0000PUBLIC00Indonesia1.pdf>.

Hidayat, B., and Pokhrel, S. (2010). The Selection of an Appropriate Count Data Model for Modelling Health Insurance and Health Care Demand: Case of Indonesia, *International Journal of Environmental Research and Public Health*, 7(1), 9-27.

Satriawan, E., Priebe, J., Prima, R.A., and Howell, F. (2014). An introduction into the IFLS-East 2012: Sampling, questionnaires, maps and socio-economic background characteristics, TNP2K (Tim Nasional Percepatan Penanggulangan Kemiskinan). Viewed 16 March 2015, <http://www.tnp2k.go.id/images/ uploads/downloads/WP%2011a%20Introduction%20to%20IFLS%20East%202012.pdf>.

Sikoki, B., Witoelar, F., Strauss J., Meijer, E., and Suriastini N.W. (2013). Indonesia Family Life Survey East 2012: User's guide and field report. Yogyakarta: Survey METER.

Somanathan, A. (2008). The impact of price subsidies on child health care use: evaluation of the Indonesian healthcard. Viewed 20 March 2015, <https://openknowledge.worldbank.org/bitstream/handle/10986/6682/wps4622.pdf?sequence=1>.

Sparrow, R., Suryahadi A., and Widyanti, W. Social Health Insurance for the Poor: Targeting and Impact of Indonesia's *Askeskin* Programme. *Social Science & Medicine, 96*, 264–71.

Suryanto, B.A., Mukti, A.G., Kusnanto, H., and Satriawan, E. (2015). The Role of Health Insurance, Borrowing and Aids to Pay for Health Care on Reducing Catastrophic Health Expenditure in Indonesia. Viewed 4 June 2015, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2586648.

Vidyatama, Y., Miranti, R., and Resosudarmo, B.P. (2014). The role ofhealth insurance membership in health service utilization in Indonesia. *Bulletin of Indonesian Economic Studies 50*(3), 393-413.

World Bank. (2012), *Jamkesmas* health service fee waiver social assistance program and public expenditure review, World Bank Background Paper, viewed 4 June 2015,http://www.wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2012/03/06/000356161_20120306010803/Rendered/PDF/673120WP00PUBL0Background0Paper0040.pdf.

APPENDICES

Table 3. Utilization of Outpatient and Inpatient at Public and Private Health Facility, IFLS East 2012

	Outpatient			Inpatient		
	All	Public	Private	All	Public	Private
Quartile 1 (poorest)	0.137	0.090	0.041	0.023	0.023	0.003
Quartile 2	0.170	0.108	0.061	0.038	0.038	0.006
Quartile 3	0.180	0.106	0.056	0.042	0.034	0.014
Quartile 4 (richest)	0.191	0.089	0.098	0.068	0.052	0.029
Urban	0.170	0.106	0.055	0.062	0.049	0.022
Rural	0.165	0.094	0.064	0.025	0.025	0.004
Male	0.139	0.084	0.047	0.035	0.029	0.010
Female	0.194	0.113	0.074	0.046	0.041	0.013
Non-Papua Island	0.167	0.094	0.063	0.036	0.03	0.012
Papua Island	0.166	0.114	0.052	0.055	0.053	0.011
Total	0.167	0.099	0.061	0.040	0.035	0.012

Source: Author's estimation based on IFLS-East 2012

Table 4. Distribution of Out-of-Pocket Health Expenditure, Non-Food Spending Share and Incidence of Catastrophic Spending Occurence (Percentages)

	Out of pocket expenditure	Share of non-food spending	Catastrophic health spending (more than 15% of total expenditure)
Quartile 1 (poorest)	0.807	33.171	0.005
Quartile 2	1.208	38.100	0.015
Quartile 3	1.350	40.913	0.016
Quartile 4 (richest)	1.945	46.421	0.026
Urban	1.837	47.403	0.024
Rural	0.844	32.848	0.008
Male	1.297	38.803	0.016
Female	1.227	39.114	0.013
Non-Papua Island	1.242	39.844	0.012
Papua Island	1.328	35.927	0.023
Total	1.261	38.962	0.015

Source: Author's estimation based on IFLS-East 2012

Table 5. Health Expenditure Regression, 2012, Ordinary Least Square

VARIABLES	Coefficient	Standard Error
JAMKESMAS	-339.617	(3,324.383)
ASKES	9,486.302	(6,865.709)
JAMSOSTEK	-10,329.332	(8,109.217)
Company insurance	799.733	(8,378.626)
Company clinic	-368.546	(7,594.197)
Private Insurance	17,963.538	(18,190.075)
Unconditional Cash Transfer (BBMBLT)	-5,251.233*	(2,147.330)
Female household head	-9,737.538+	(5,203.506)
Household head education	24.536	(691.828)
Household size	-4,677.177**	(1,367.664)
Share under 6 female	-18,317.522	(16,172.800)
Share under 6 male	-6,671.307	(13,702.742)
Share 6 to 17male	-10,869.672	(11,613.777)
Share 18 to 60 female	6,338.932	(18,026.549)
Share 60 up female	-16,677.414	(11,078.186)
Share 60 up male	-5,552.574	(15,899.435)
Owned House	-5,484.773	(5,955.024)
House size (m^2)	90.276+	(49.385)
Own water access	-842.489	(3,132.538)

Own vehicle	1,593.262	(6,333.295)
Own piped water	-9,784.529	(6,973.282)
Self employed	9,808.427*	(4,991.176)
Self Employed with permanent workers	4,161.914	(16,331.479)
Self Employed with permanent workers	6,710.701	(6,209.129)
Working part-time	5,266.362	(5,049.198)
Government official	-915.305	(6,811.227)
Casual worker in agriculture	-3,825.328	(4,564.503)
Casual worker non in agriculture	-7,978.930	(7,309.612)
Puskesmas has a water access	6,487.737	(5,506.652)
Puskesmas offer check-up/health examination	6,404.672	(4,008.677)
Puskesmas offer inpatient service	-3,947.382	(4,974.984)
Puskesmas offer dental service	-3,719.917	(6,357.939)
Puskesmas has a pharmacy	5,957.999+	(3,070.323)
Private clinic has an electricity	7,731.782*	(3,715.223)
Private clinic has an access to water	-756.747	(6,328.137)
Private clinic provides an inpatient services	-10,592.019	(17,199.239)
Private clinic provides dental services	17,211.214+	(10,207.628)
Private clinic has more than 1 medical staff	19,429.780	(19,735.290)
Private clinic's medical staff number	6,933.733	(13,742.041)
Private clinic provide check-up/health examination services	-14,558.457*	(6,050.481)
Village has public transport facilities	4,328.199	(3,890.562)
Village main road from asphalt	-1,000.469	(2,721.279)
Distance of district capital from village office (km)	30.379	(33.255)
Distance of bus station from village office (km)	47.645	(77.010)
Travel time to nearest PUSKESMAS from village office (hours)	-20,912.816**	(6,869.707)
Travel time to nearest private clinic from village office (hours)	14,211.392**	(5,373.004)
Travel time to nearest traditional clinic from village office (hours)	-18,367.031	(29,020.811)
Travel time to nearest hospital from village office (hours)	917.153	(646.347)
rural	-14,109.628+	(7,360.844)
Constant	15,267.004	(14,286.709)
Observations	2,009	
R-squared	0.122	
Robust standard errors in parentheses		
** p<0.01, * p<0.05, + p<0.1		

Table 6. Propensity Score Function, Probability of *Jamkesmas* Coverage (Logit Estimates)

VARIABLES	Coefficient	Standard Error	P>|z|
ASKES	-0.8039761***	0.250713	0.001
JAMSOSTEK	-0.6501821**	0.2969173	0.029
Company insurance	-1.140431*	0.6489512	0.079
Company clinic	-0.1234484	0.5685474	0.828
Private Insurance	-1.020746	0.7798305	0.191
Unconditional Cash Transfer (BBMBLT)	0.9906677***	0.1352175	0
Female household head	-0.0704081	0.1917069	0.713
Household head education	-0.0012435	0.0158683	0.938
Household size	0.2013327***	0.0348588	0
Share under 6 female	-0.7868103	0.5262906	0.135
Share under 6 male	-0.2807972	0.5155342	0.586
Share 6 to 17male	0.6789076	0.418534	0.105
Share 18 to 60 female	0.1915376	0.3982037	0.631
Share 60 up female	1.020724	0.4501642	0.023
Share 60 up male	-0.3541693	0.5264139	0.501
Owned House	0.1857353	0.1565389	0.235
House size (m^2)	-0.003937***	0.0015075	0.009
Own water access	0.256806**	0.1448193	0.076
Own vehicle	-0.0985058**	0.1461105	0.5

Own piped water	0.3635692*	0.2124169	0.087
Self employed	0.2033447	0.1463234	0.165
Self Employed with permanent workers	0.2259828	0.5190333	0.663
Self Employed with permanent workers	-0.0912295	0.1488595	0.54
Working part-time	0.0218014	0.1466572	0.882
Government official	-0.3719803*	0.2193433	0.09
Casual worker in agriculture	-0.1483717	0.3833932	0.699
Casual worker non in agriculture	-0.0438928	0.3062193	0.886
Puskesmas has a water access	-0.1455417	0.1941079	0.453
Puskesmas offer check-up/health examination	0.5217562	0.188935	0.006
Puskesmas offer inpatient service	0.2094606	0.1876386	0.264
Puskesmas offer dental service	-0.2494966	0.2128469	0.241
Puskesmas has a pharmacy	-0.4318904	0.2567635	0.093
Private clinic has an electricity	0.2716368	0.3095453	0.38
Private clinic has an access to water	0.4141801**	0.2117421	0.05
Private clinic provides an inpatient services	-0.7895023	0.6733281	0.241
Private clinic provides dental services	-2.863848***	0.6773531	0
Private clinic has more than 1 medical staff	-0.0716691	0.5759863	0.901
Private clinic's medical staff number	-0.7292938	0.4800033	0.129
Private clinic provide check-up/health examination services	0.817454	0.302973	0.007
Village has public transport facilities	0.4014857	0.2259131	0.076
Village main road from asphalt	0.2893342	0.2040933	0.156
Distance of district capital from village office (km)	-0.0023017*	0.0012272	0.061
Distance of bus station from village office (km)	-0.0012068	0.0038828	0.756
Travel time to nearest PUSKESMAS from village office (hours)	-0.4524845	0.5309834	0.394
Travel time to nearest private clinic from village office (hours)	-0.1529145	0.484605	0.752
Travel time to nearest traditional clinic from village office (hours)	-0.5236731	0.9445133	0.579
Travel time to nearest hospital from village office (hours)	0.1859342***	0.0477327	0
rural	1.021743***	0.2392876	0
Kalimantan Timur	-1.393772***	0.3369993	0
Sulawesi Tenggara	-1.053196***	0.2440458	0
Maluku	-1.330475***	0.317391	0
Maluku Utara	-1.978016***	0.2771026	0
Papua Barat	-0.3076135	0.2586118	0.234
Papua	0.0107798	0.2345287	0.963
Constant	-1.249778	0.7074271	0.077
Number of obs = 1953			
LR chi2(54) = 678.37			
Prob> chi2 = 0.0000			
Log likelihood = -948.49491			
Pseudo R2 = 0.2634			

Source: Author's estimation based on IFLS-East 2012

Table 7. Impact of *Jamkesmas* on Healthcare Utilization (OLS)

VARIABLES	outpa-tient	outpub-lic	outpri-vate	inpa-tient	inpub-lic	inpri-vate	wmedi-cal	ch_oop 10	ch_oop 15
Quartile 1 (poor-est)	0.027	0.024	-0.004	-0.001	-0.003	0.004	-0.119	0.001	0.007
	(0.028)	(0.025)	(0.014)	(0.011)	(0.012)	(0.003)	(0.219)	(0.014)	(0.005)
Quartile 2	-0.003	-0.012	-0.005	0.012	0.002	0.010	-0.144	-0.009	-0.017
	(0.034)	(0.031)	(0.018)	(0.014)	(0.016)	(0.010)	(0.348)	(0.016)	(0.015)
Quartile 3	0.024	0.046	-0.000	0.013	0.031	-0.008	-0.622*	-0.032*	-0.013
	(0.034)	(0.034)	(0.016)	(0.015)	(0.025)	(0.008)	(0.312)	(0.016)	(0.012)
Quartile 4 (Rich-est)	0.067	0.058	0.002	0.038	0.043	-0.019	0.502	0.037	0.011
	(0.046)	(0.037)	(0.033)	(0.033)	(0.032)	(0.015)	(0.752)	(0.040)	(0.030)
Rural	0.029	0.016	0.013	0.016*	0.013+	0.003+	0.000	-0.002	-0.001
	(0.020)	(0.016)	(0.012)	(0.006)	(0.008)	(0.002)	(0.178)	(0.009)	(0.007)
Urban	0.007	0.027	-0.017	0.014	0.021	-0.004	-0.227	-0.004	-0.009
	(0.030)	(0.031)	(0.020)	(0.024)	(0.027)	(0.013)	(0.521)	(0.027)	(0.023)

Papua	0.071*	0.059*	0.023	0.019	0.046+	-0.011	-0.218	-0.003	-0.023
	(0.034)	(0.028)	(0.025)	(0.021)	(0.028)	(0.008)	(0.541)	(0.030)	(0.022)
Non Papua	0.018	0.009	0.002	0.010	0.003	0.004	-0.057	-0.000	0.000
	(0.019)	(0.018)	(0.011)	(0.010)	(0.010)	(0.006)	(0.240)	(0.013)	(0.010)
Total	0.028+	0.028+	-0.004	0.015+	0.015	0.001	-0.234	-0.013	-0.010
	(0.017)	(0.015)	(0.010)	(0.008)	(0.010)	(0.004)	(0.200)	(0.011)	(0.008)

Source: Author's estimation based on IFLS-East 2012

Table 8. Descriptive Statistics

Variables	Observation	mean	Standar Deviation	min	max
Outpatient total	2,411	0.167	0.243	0	1
Outpatient public	2,401	0.0987	0.200	0	1
Outpatient private	2,401	0.062	0.165	0	1
Inpatient total	2,411	0.0386	0.119	0	1
Inpatient public	2,357	0.035	0.125	0	1
Inpatient private	2,357	0.011	0.0743	0	1
Out of pocket health expenditure Share	2,411	1.291	3.550	0	73.67
Catastrophic health spending 10%	2,411	0.0282	0.166	0	1
Catastrophic health spending 15%	2,411	0.013	0.116	0	1
illness	2,411	0.725	0.296	0	1
JAMKESMAS	2,411	0.361	0.480	0	1
ASKES	2,411	0.129	0.335	0	1
JAMSOSTEK	2,411	0.0568	0.232	0	1
Company insurance	2,411	0.018	0.135	0	1
Private insurance	2,411	0.0147	0.121	0	1
Company clinic	2,411	0.013	0.116	0	1
Household head female	2,411	0.161	0.367	0	1
HH head education	2,411	7.737	4.569	0	18
Household size	2,411	4.288	2.057	1	16
Share under 6 female	2,411	0.0668	0.119	0	0.667
Share under 6 male	2,411	0.0705	0.122	0	0.600
Share 6 to 17 female	2,411	0.117	0.161	0	1
Share 6 to 17 male	2,411	0.119	0.155	0	1
Share 18 to 60 female	2,411	0.290	0.186	0	1
Share 18 to 60male	2,411	0.261	0.205	0	1
Share 60 up female	2,411	0.0465	0.151	0	1
Share 60 up male	2,411	0.0392	0.119	0	1
Household own BBM BLT card	2,400	0.229	0.420	0	1
Owns house	2,411	0.763	0.425	0	1
House size (m^2)	2,410	62.25	49.92	4	800
Owns water access	2,411	0.307	0.461	0	1

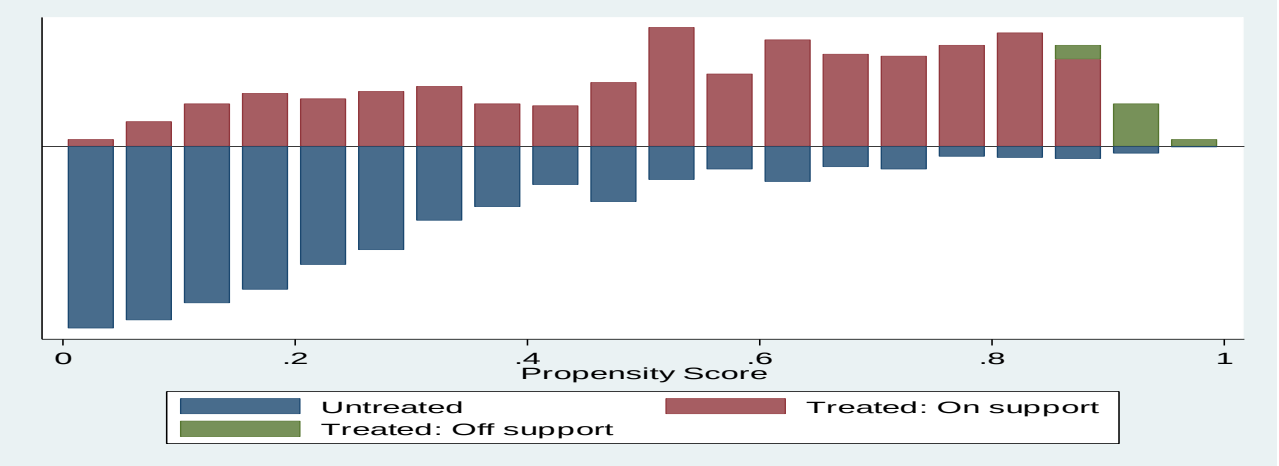
Household has a vehicle	2,411	0.316	0.465	0	1
self employed	2,411	0.287	0.453	0	1
Working Part Time	2,411	0.484	0.500	0	1
Self-employed with permanent workers	2,411	0.015 3	0.123	0	1
Government Official	2,411	0.155	0.362	0	1
Private Worker	2,411	0.202	0.402	0	1
Unpaid family worker	2,411	0.388	0.487	0	1
Casual worker in agriculture	2,411	0.020 7	0.143	0	1
Casual worker not in agriculture	2,411	0.037 7	0.191	0	1
Puskesmas has an electricity	2,411	0.847	0.360	0	1
Puskesmas has a water access	2,411	0.320	0.467	0	1
Puskesmas has a pharmacy	2,411	0.895	0.306	0	1
Puskesmas offer inpatient service	2,384	0.305	0.461	0	1
Puskesmas offer inpatient service other than birth	2,384	0.263	0.441	0	1
Puskesmas offer check-up/health examination	2,384	0.570	0.495	0	1
Puskesmas offer dental service	2,384	0.613	0.487	0	1
Private clinic has an electricity	2,411	0.858	0.349	0	1
Private clinic has an access to water	2,411	0.226	0.419	0	1
Private clinic provides an inpatient services	2,276	0.027 7	0.164	0	1
Private clinic provide check-up/health examination services	2,276	0.055 8	0.230	0	1
Private clinic provides dental services	2,276	0.026 4	0.160	0	1
Private clinic has more than 1 medical staff	2,411	0.078 8	0.269	0	1
Private clinic's number of medical staff	2,411	1.102	0.432	1	4
Village has public transport facilities	2,411	0.809	0.393	0	1
Village main road from asphalt	2,411	0.687	0.464	0	1
Distance of bus station from village office (km)	2,323	9.728	26.69	0.01000	200
Distance of district capital from village office (km)	2,213	56.03	83.42	0.500	450
Travel time to nearest PUSKESMAS from village office (hours)	2,411	0.450	1.898	0	16
Travel time to nearest private clinic from village office (hours)	2,411	0.254	0.801	0	6
Travel time to nearest traditional clinic from village office (hours)	2,411	0.081 3	0.0752	0	0.50 0
Travel time to nearest Hospital from village office (hours)	2,411	0.697	2.828	0	24
Travel time to nearest POSYANDU from village office (hours)	2,411	0.118	0.345	0	3
rural	2,411	0.706	0.456	0	1
HH size square	2,411	22.62	22.43	1	256
Papua	2,411	0.285	0.451	0	1

Source: Author's estimation based on IFLS-East 2012

Table 9. Common Support by Number of Observations using 5 Nearest Neighborhood

	Common Support		
Treatment Assignment	Off support	On Support	Total
Untreated	0	1229	1229
Treated	36	688	724
Total	36	1917	1953

Figure 2 Distribution of the propensity score for treatment and control group using five nearest neighbourhood



Source: Author's estimation based on IFLS-East 2012

Table 10. Balancing Properties of the Matched Samples using 5 Nearest Neighborhood

Variable	Unmatched	Treatment		Bias		t-test		V_e[T]/ V_e[C]
	Matched	Treatment	Control	% bias	Reduce % |bias|	t	p>t	
ASKES	Unmatched	0.06215	0.18308	-37.5		-7.58	0	0.38**
	Matched	0.06541	0.05581	3	92.1	0.75	0.456	1.2
JAMSOSTEK	Unmatched	0.03315	0.08706	-22.8		-4.62	0	0.41**
	Matched	0.03488	0.04273	-3.3	85.4	-0.75	0.451	0.82
Company insurance	Unmatched	0.00414	0.03255	-21.3		-4.15	0	0.13**
	Matched	0.00436	0.00552	-0.9	95.9	-0.31	0.759	0.78*
Company clinic	Unmatched	0.00829	0.02116	-10.7		-2.17	0.031	0.40**
	Matched	0.00872	0.00581	2.4	77.4	0.63	0.526	1.49*
Private insurance	Unmatched	0.00276	0.02766	-20.4		-3.97	0	0.10**
	Matched	0.00291	0.00465	-1.4	93	-0.53	0.598	0.64*
Unconditional Cash Transfer (BBMBLT)	Unmatched	0.14917	0.16029	-3.1		-0.65	0.513	0.94
	Matched	0.15262	0.1532	-0.2	94.8	-0.03	0.976	1
Female household head	Unmatched	7.0359	8.5248	-33.5		-7.02	0	0.74*
	Matched	7.0959	7.093	0.1	99.8	0.01	0.99	0.89
Household head education	Unmatched	4.6878	4.1676	25.2		5.41	0	1.08
	Matched	4.5974	4.4544	6.9	72.5	1.26	0.209	0.9
Household size	Unmatched	0.06516	0.06661	-1.2		-0.26	0.796	0.81
	Matched	0.06485	0.0621	2.3	-90	0.45	0.656	0.94
Share under6female	Unmatched	0.07192	0.0724	-0.4		-0.08	0.933	0.89
	Matched	0.07173	0.07363	-1.6	-294.1	-0.29	0.769	0.96
Share under6male	Unmatched	0.1314	0.11267	11.6		2.47	0.014	1
	Matched	0.13085	0.11297	11	4.5	2.13	0.034	1.25
Share 6to17female	Unmatched	0.13496	0.1082	17.3		3.72	0	1.12
	Matched	0.13182	0.13491	-2	88.5	-0.35	0.724	0.93
Share 6to17male	Unmatched	0.26636	0.2973	-17.9		-3.74	0	0.71*
	Matched	0.27021	0.26832	1.1	93.9	0.21	0.833	0.85
Share 18to60female	Unmatched	0.05554	0.03612	13.3		2.9	0.004	1.47*
	Matched	0.0544	0.05847	-2.8	79.1	-0.46	0.649	0.86
Share 60upfemale	Unmatched	0.04246	0.03652	5		1.07	0.285	1.03
	Matched	0.0425	0.05068	-6.9	-37.7	-1.18	0.239	0.81
Share 60upmale	Unmatched	0.81768	0.71359	24.7		5.18	0	0.70*
	Matched	0.80959	0.8125	-0.7	97.2	-0.14	0.891	1.02
Owned house	Unmatched	55.021	68.533	-27.7		-5.62	0	0.40**
	Matched	55.83	55.465	0.7	97.3	0.18	0.854	1.18
Size of house (M2)	Unmatched	0.34116	0.28478	12.2		2.62	0.009	1.14
	Matched	0.33866	0.34419	-1.2	90.2	-0.22	0.829	1
Own water access	Unmatched	0.28591	0.38405	-20.9		-4.42	0	0.86
	Matched	0.2907	0.29157	-0.2	99.1	-0.04	0.972	1
House hold has a vehicle	Unmatched	0.31354	0.25386	13.3		2.85	0.004	1.15
	Matched	0.31686	0.31919	-0.5	96.1	-0.09	0.926	0.99
self employed	Unmatched	0.56215	0.42718	27.2		5.81	0	0.97

	Matched	0.54651	0.54273	0.8	97.2	0.14	0.888	0.99
Working Part Time	Unmatched	0.00967	0.02116	-9.3		-1.9	0.057	0.46**
	Matched	0.01017	0.01395	-3.1	67.1	-0.64	0.521	0.74*
Self-employed with permanent workers	Unmatched	0.10221	0.20423	-28.6		-5.9	0	0.57*
	Matched	0.10756	0.09099	4.6	83.8	1.03	0.304	1.24
Government Official	Unmatched	0.19751	0.2441	-11.2		-2.38	0.018	0.85
	Matched	0.20058	0.20581	-1.3	88.8	-0.24	0.81	0.97
Private Worker	Unmatched	0.4779	0.34093	28.1		6.04	0	1.06
	Matched	0.4593	0.43779	4.4	84.3	0.8	0.423	0.98
Unpaid family worker	Unmatched	0.0221	0.02034	1.2		0.26	0.794	1.09
	Matched	0.0218	0.0218	0	100	0	1	1
Casual worker in agriculture	Unmatched	0.04144	0.03173	5.2		1.12	0.262	1.30*
	Matched	0.0436	0.05174	-4.3	16.1	-0.71	0.479	0.85
Casual worker not in agriculture	Unmatched	0.8895	0.90724	-5.9		-1.27	0.206	1.15
	Matched	0.89099	0.92762	-12.1	-106.5	-2.37	0.018	1.36*
Puskesmas has an electricity	Unmatched	0.22928	0.41904	-41.4		-8.66	0	0.69*
	Matched	0.23983	0.22791	2.6	93.7	0.52	0.602	1.06
Puskesmas has a water access	Unmatched	0.8453	0.91456	-21.4		-4.73	0	1.66*
	Matched	0.85029	0.83983	3.2	84.9	0.54	0.592	0.98
Puskesmas has a pharmacy	Unmatched	0.43232	0.26444	35.8		7.75	0	1.23
	Matched	0.41424	0.44244	-6	83.2	-1.06	0.291	0.98
Puskesmas offer inpatient service	Unmatched	0.33149	0.22295	24.4		5.3	0	1.27*
	Matched	0.32122	0.31366	1.7	93	0.3	0.764	1.02
Puskesmas offer inpatient service other than birth	Unmatched	0.58149	0.60862	-5.5		-1.18	0.238	1.04
	Matched	0.57994	0.55727	4.6	16.4	0.85	0.396	0.99
Puskesmas offer check-up/health examination	Unmatched	0.6105	0.65419	-9.1		-1.94	0.052	1.05
	Matched	0.60174	0.5936	1.7	81.4	0.31	0.758	1.01
Puskesmas offer dental service	Unmatched	0.90746	0.93653	-10.9		-2.37	0.018	1.40*
	Matched	0.90988	0.91628	-2.4	78	-0.42	0.674	1.04
Private clinic has an electricity	Unmatched	0.16022	0.29455	-32.5		-6.74	0	0.65*
	Matched	0.1657	0.15203	3.3	89.8	0.69	0.489	1.09
Private clinic has an access to water	Unmatched	0.00552	0.04638	-25.9		-5.04	0	0.18**
	Matched	0.00581	0.00436	0.9	96.4	0.38	0.705	1.34*
Private clinic provides an inpatient services	Unmatched	0.08011	0.0537	10.6		2.31	0.021	1.45*
	Matched	0.0843	0.06105	9.3	11.9	1.66	0.097	1.24
Private clinic provide check-up/health examination services	Unmatched	0.00691	0.04394	-23.7		-4.64	0	0.22**
	Matched	0.00727	0.00698	0.2	99.2	0.06	0.949	1.04
Private clinic provides dental services	Unmatched	0.01796	0.13588	-45.4		-8.87	0	0.19**
	Matched	0.0189	0.02267	-1.5	96.8	-0.49	0.624	0.83
Private clinic has more than 1 medical staff	Unmatched	1.0166	1.1798	-39.2		-7.61	0	0.13**
	Matched	1.0174	1.0227	-1.3	96.8	-0.54	0.587	1.18
Private clinic's medical staff number	Unmatched	0.88398	0.80716	21.4		4.44	0	0.69*
	Matched	0.87936	0.86744	3.3	84.5	0.66	0.507	0.93
Village has public transport facilities	Unmatched	0.73757	0.74044	-0.7		-0.14	0.889	1.03
	Matched	0.73401	0.74128	-1.7	-153.2	-0.31	0.76	1
Village main road from asphalt	Unmatched	10.58	10.986	-1.4		-0.3	0.763	0.76*
	Matched	10.845	11.625	-2.8	-91.9	-0.52	0.6	0.92
Distance of bus station from village office (km)	Unmatched	51.431	58.606	-8.8		-1.8	0.072	0.47**
	Matched	51.517	49.744	2.2	75.3	0.49	0.622	0.96
Distance of district capital from village office (km)	Unmatched	0.16867	0.33233	-21.2		-4.31	0	0.45**
	Matched	0.17265	0.18242	-1.3	94	-0.29	0.775	0.86
Travel time to nearest *Puskesmas* from village office (hours)	Unmatched	0.16664	0.27796	-14.4		-2.93	0.003	0.43**
	Matched	0.16771	0.18823	-2.7	81.6	-0.59	0.555	0.87
Travel time to nearest private clinic from village office (hours)	Unmatched	0.0788	0.09231	-17.8		-3.69	0	0.64*
	Matched	0.07863	0.07695	2.2	87.5	0.47	0.642	1.08
Travel time to nearest traditional clinic from village office (hours)	Unmatched	0.87396	0.81623	1.9		0.4	0.692	0.63*
	Matched	0.87936	1.0341	-5.1	-168	-1.02	0.306	0.87
Travel time to nearest Hospital from village office (hours)	Unmatched	0.06209	0.14582	-25.3		-4.94	0	0.14**
	Matched	0.06347	0.06841	-1.5	94.1	-0.57	0.566	1.32*
Travel time to nearest *Posyandu* from village office (hours)	Unmatched	0.83149	0.59072	55.1		11.37	0	0.49**
	Matched	0.82267	0.81105	2.7	95.2	0.56	0.577	0.91

Kalimantan Timur	Unmatched	0.03867	0.18552	-47.8		-9.49	0	0.30**
	Matched	0.0407	0.03924	0.5	99	0.14	0.891	1.04
Sulawesi Tenggara	Unmatched	0.14641	0.16599	-5.4		-1.14	0.253	0.9
	Matched	0.15262	0.1314	5.8	-8.4	1.13	0.26	1.14
Maluku	Unmatched	0.12845	0.17331	-12.6		-2.64	0.008	0.75*
	Matched	0.13517	0.11424	5.9	53.3	1.17	0.24	1.12
Maluku Utara	Unmatched	0.06906	0.1546	-27.4		-5.6	0	0.44**
	Matched	0.07267	0.06831	1.4	94.9	0.32	0.752	1.08
Papua Barat	Unmatched	0.16575	0.11229	15.5		3.38	0.001	1.43*
	Matched	0.17151	0.19157	-5.8	62.5	-0.96	0.335	0.91
Papua	Unmatched	0.16851	0.12205	13.2		2.87	0.004	1.30*
	Matched	0.17151	0.1561	4.4	66.8	0.77	0.44	1.07

Source: Author's estimation based on IFLS-East 2012