

# The Demands for Outpatient Care in Private Hospitals

## Permintaan Rawat Jalan di Rumah Sakit Swasta

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### Abstract

Improvement of per capita income will boost the demand for outpatient care and lead enhanced expectation of service quality of hospital. People perceived that private hospital has better services than public hospital. Based on these, we assumed that private hospital users have particular characteristics. This study aimed to investigate factors associated with utilization of private hospitals for outpatient care and who get the benefits, the rich or the poor. This study used data of 42,540 respondents from IFLS-4 collected in 2007. Analyses showed the higher the income the higher the demand. Insured's groups have higher demand than uninsured. Demand analyses revealed that increased price of private hospital caused higher demand. This evidence indicated that outpatient care of private hospital was perceived as luxuries goods. However increased price of public hospital did not influence the demand of private hospital. It is indicate that private hospital has different type with patients of public hospital. It means that the two types of hospital comprise different segment of patients. The rich benefited more outpatient care in private hospital than the poor. It implies that the government should enforced Ministry of Health's regulation on hospital social function.

**Keywords:** demand, elasticity, outpatient care, private hospital

### Abstrak

Peningkatan pendapatan per kapita menaikkan permintaan rawat jalan dan harapan mutu pelayanan rumah sakit. Masyarakat memiliki persepsi pelayanan rumah sakit swasta lebih bermutu daripada rumah sakit pemerintah, sehingga terdapat asumsi pelanggan rumah sakit swasta mempunyai karakteristik khusus. Tujuan studi ini adalah menginvestigasi berbagai faktor yang berhubungan dengan utilisasi rawat jalan dan kelompok yang mendapat manfaat. Studi ini menggunakan 42.540 responden rumah sakit swasta IFLS-4 tahun 2007. Semakin tinggi pendapatan semakin tinggi pula permintaan, kelompok jaminan/asuransi mempunyai permintaan yang lebih tinggi daripada non-jaminan. Kenaikan tarif rawat jalan rumah sakit

swasta yang dipersepsi masyarakat sebagai barang mewah meningkatkan permintaan. Namun, kenaikan tarif rawat jalan rumah sakit pemerintah tidak memengaruhi permintaan rawat jalan rumah sakit swasta. Hal tersebut mengindikasikan karakteristik pasien rumah sakit swasta yang berbeda dari rumah sakit pemerintah. Kelompok kaya mendapatkan manfaat rawat jalan rumah sakit swasta lebih besar daripada kelompok miskin. Untuk mengoreksi keadaan ini pemerintah perlu menegakkan peraturan menteri kesehatan tentang fungsi sosial rumah sakit.

**Kata kunci:** permintaan, elastisitas, rawat jalan, rumah sakit swasta

### Introduction

Improving health status leads to increase productivity by reducing disability days, increasing number of work days, or providing more productive time.<sup>1</sup> Improvement of community health status, among other, can be achieved by providing a better access to health care services. There are two strategies to improve access to health care services, i.e. narrowing health service facilities to the consumers, and removing financial barriers to utilize healthcare services, for instance, by increasing income and/or providing health insurance.

In attempt to narrow health service facility to the people, the Government of Indonesia has built various health facilities in the country, i.e. about 8,737 primary health care (*Puskesmas*) has been established as primary care and an entry point for referral care to about 667 hospitals owned by the government. Private sectors has also involved in the health care markets in Indonesia. Recent

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data confirm that 535 private hospitals are now providing health care services in the country.<sup>2</sup>

While the number of private hospital is less than government owned hospital, the use of both hospitals is quite similar. Outpatient utilization rate in private hospital is about 0.70 percent point per month, while government hospital is 0.72 percent point.<sup>3</sup> But, private hospital has been perceived to have a better services than public hospital. Based on this rationality, we assume the users of private hospital have particular characteristics. This study therefore aimed to investigate the factors associated with utilization of private hospitals for outpatient care in Indonesia and whose groups get the benefits, the rich or the poor.

## Methods

This study uses secondary source of data of the fourth round of the Indonesian Family Life Survey (IFLS-4). IFLS is a large-scale integrated socio-economic and health survey that collects extensive information on the lives of respondents, their households, their families, and the communities in which they live. The survey was undertaken by the RAND Corporation in collaboration with the Indonesian researchers and various international agencies. The survey was initiated in 1993 (IFLS-1) and repeated with the same respondents in 1997 (IFLS-2), in 2001 (IFLS-3), and in 2007 (IFLS-4).

The IFLS sample included 13 of 27 provinces in Indonesia containing 83% of the population include four provinces on Sumatra island (North Sumatra, West Sumatra, South Sumatra, and Lampung), all five of the Java provinces (DKI Jakarta, West Java, Central Java, Yogyakarta, and East Java), and 4 provinces covering the remaining major island groups (Bali, West Nusa Tenggara, South Kalimantan, and South Sulawesi).<sup>4</sup> In the IFLS-1, a total of 7,730 households were sampled to obtain a final sample size goal of 7,000 completed households and in fact the surveys succeeded in interviewing 7,224 households. In the year of 2007, the survey succeed to resurvey 93.6% of IFLS1 households.<sup>5</sup>

The number of individuals in the IFLS-4 would be 73,016. However, the survey only interviewed 44,109 individuals, among others, due to dead, outside in time of interview, and move to another household. About 3.5% (1,563 out of 44,109) interviews was uncompleted and 6 were missing. This suggests that a final sample used in our analysis was 42,540 only. The demand for health care is measured by the likelihood of using a health care provider. While people have several possibilities to seek care, e.g., health center, public hospitals, private hospitals, this study considered Outpatient Care (OP) with private hospital only. We measured the demand by the probability whether an individual uses OP during 4-week recall period of the survey. The main dependent variable

was OP utilization of private hospitals.

Several independent variables were selected in order to create a model that would sufficiently explain the OP utilization patterns of private hospitals. Individuals characteristics variables include gender, age groups, education, employment, marital status, smoking behavior, and coverage of health insurance. The household characteristics variables consist of household head gender, age, education, and per capita income (proxies by households expenditures). Locations were captured by the level of urbanization and place of residence (provinces). Need for OP care was proximately addressed by self-perceived health status, as measured by the presence of a serious illness, symptom, and activity of daily living (ADL).

Price is the key variable in a demand study. In the present study, price was measured as the out-of-pocket (OOP) costs reported by individuals in the IFLS samples. Given that OOP costs only incurred among those who utilized healthcare services, we adopted a hedonic approach to generate predicted OOP. We used information on the predicted OOP costs to compute prices for private hospitals for all individuals who have a missing data on prices. In the hedonic price equation, price was assumed to be a function of gender, per capita income, coverage of health insurance, the presence of a serious illness, symptom, and activity of daily living, age, marital status, education, smoking behavior, employment, urban/rural, and province.

The selected dependent and independent variables described above were included in the model of OP utilization to private hospital. In a bivariate analysis, the differences in the socio-demographic characteristics were assessed by both the student t-test and chi-square tests. In addition, a logistic regression model was applied to determine the predictors of OP utilization. The probability of an event occurring OP use of private hospitals can be directly estimated from the model. In the case of multiple covariates, the probability of using and not-using OP in private hospitals can be written as equation (1) and (2), respectively.

$$\text{Prob (use private hospital)} = 1/(1 + e^{-Z})$$

$$\text{Prob (not use private hospital)} = 1 - \text{Prob (use private hospital)}$$

Variable Z in equation (1) is the linear combination of:

$$Z = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n$$

Where, Z is a random variable indicating OP use in private hospitals, this can take a value 0 or 1 representing not-use or use of OP in private hospitals, respectively. Coefficients represents regression parameters to be estimated, and the vector represents a set of exogenous variables describe above.

The interpretation of the logistic regression coefficient is not straightforward. The logistic model can be rewritten in terms of the odds of an event occurring (utilizing private hospitals) that are defined as the ratio of the probability that it will utilize private hospitals to the probability that it will not utilize private hospitals. The value of the coefficient for each variable indicates the changes in the log odds when the value of a particular variable changes by one unit and the values of the other independent variables remain the same.

## Results

### Descriptive Statistics

The overall OP rate during 4-week recall period of the survey was 16.35% (6,956 respondents) on which 0.70 percent point of them opted to private hospitals for ambulatory care. The average number of OP visit to private hospitals was 1.34 (standard deviation = 1.05). We observed 3 users did not spend any expenditures when they utilized OP services in private hospitals. Average out-of-pocket payment per visit was IDR 224,353 (standard deviation = 545,602) (1 USD = IDR 8,650).<sup>6</sup> Our sample consisted 49% males and 51% females. Most of individuals in the samples had an elementary school (46%), no-work (42%), and hold marital status (47%), and had no-smoking habit (53%). Table 1 provides detail information on the sample distribution according to socio-demographic characteristics.

The dependent variable for this study, OP-use, is discrete categorical, while the independent variables consist of both discrete and count data measurements. In the bivariate analysis, we employed 2 parametric statistic tests, i.e. chi-square test and t-test. Significant differences abound in OP rate for 12 out of 15 covariates. Insignificant differences was only observed in three variables, e.g., respondents and households head marital status and having symptoms. Whilst the t-test confirm that only 2 variables, i.e. year of schooling and ADL score, showed a significant differences in OP use between user and non-user of private hospitals. The average years of schooling and ADL scores for the users were lower than that of non-users.

### Model Estimates

This study pays attention on the two main covariates, i.e. price, as peroxide by OOP expenditures, and income. Data on prices were converted into log-natural (Ln) in order to normalized their distribution. Our model also incorporated price of government owned hospitals. This approach enables us to estimate both price-elasticity and cross price-elasticity of the demand. Table 2 presents the results from the logit estimation of OP use to private hospitals. The first column of the Table 1 gives lists of variables as the determinants for private hospitals. These variables include prices (public and private hospitals), income, interaction terms be-

tween insurance and serious illness, serious illness alone, male, age-group, household head education, household size, urban, and provinces. The second column provides the coefficients estimates for each variable listed in the first column. The R-square of the model suggests that our covariates area able to predict by 16.75% variations in the outpatient use to private hospitals.

The coefficients of price variables were positive for both private and public hospitals, but significant only for the former at 0.1% level. This implies the use of outpatient care in private hospitals is likely to increase if the price of private hospital is increased. As expected, incomes have a significant influence on the demand for OP to private hospitals. Our estimates reveals that higher income lead to pent-up the demand for outpatient care in private hospitals. The use of outpatient in private hospitals amongst individuals at the 4<sup>th</sup> income quintile was higher than that of at the lowest income quintile. Furthermore, the demand for individuals at the 5<sup>th</sup> quintile was higher than 4<sup>th</sup> quintile.

The coefficients of the interaction term between four insurance dummies and serious illness were all positive, but significantly different from zero for the interaction between private insurance and serious illness only. This findings suggest that the members of private insurance who has a serious illness had higher demand for outpatient care at private hospitals. This finding is justifiable given that individuals who were suffering from a serious illness were also more likely to use private hospitals for ambulatory care.

Gender and age-groups influence the use of OP in private hospitals. Male were less likely to have more OP in private hospitals than female. The estimated effects of the 7 age-group dummies were all negative, and significant at 1% and 0.1% level in the OP use of private hospitals. With the exception of individuals age above 60 years, the OP use of private hospitals in all age-group were less likely than individuals below five years of ages. Those at 10-19 years of old had the lowest chance opt to private hospitals for obtaining ambulatory care services.

Individuals with household head holding the university degree have significantly higher OP use to private hospital than individuals with household head without schooling. However, respondents with household head holding elementary, junior, and senior high school did not have different in the demand for private hospitals as compared to individuals with household head without schooling.

Household size influence OP use in private hospital. The coefficients of household size are positive, suggesting the larger household size the higher the demand. Locations of the residence have a strong influence on the use of outpatient care to private hospitals. Our estimates confirms that urban dwellers were likely to have more OP use to private hospitals than rural resident. With the exception in Yogyakarta, Jakarta's inhabi-

Table 1. Estimation Results of the Logit (Private Hospitals) Model

Variable	Categories	Coefficient	SE	Z	OR
hospital price	Ln of private	0.59	0.16	3.59***	1.80
	Ln of government	0.09	0.17	0.51	1.09
Percapita income	Quintile 2	0.18	0.47	0.37	1.19
	Quintile 3	0.49	0.44	1.13	1.64
	Quintile 4	1.19	0.42	2.84**	3.29
	Quintile 5	1.23	0.43	2.83**	3.41
Insurance*serious illness	Social	0.52	0.32	1.65	1.69
	Private	1.09	0.33	3.34**	2.98
	Indogenous	0.03	0.54	0.06	1.04
	Double	0.51	0.65	0.79	1.67
Had serious illness	Male	-0.44	0.14	-3.03**	0.65
Age-groups	5-9	-0.72	0.26	-2.75**	0.49
	10-19	-1.73	0.33	-5.21***	0.18
	20-29	-1.24	0.24	-5.1***	0.29
	30-39	-1.11	0.24	-4.64***	0.33
	40-49	-1.47	0.30	-4.96***	0.23
	50-59	-1.15	0.32	-3.57***	0.32
	60+	-0.55	0.30	-1.87	0.58
HH-education	Elementary	-0.53	0.29	-1.82	0.59
	Junior high-school	-0.53	0.32	-1.64	0.59
	High-school	0.18	0.28	0.64	1.19
	University	0.59	0.26	2.22*	1.80
Household size		0.09	0.02	4.34***	1.09
Urban		0.78	0.21	3.71***	2.18
Provinces	North Sumatera	-0.72	0.29	-2.45*	0.49
	West Sumatera	-0.78	0.34	-2.28*	0.46
	South Sumatera	-0.91	0.39	-2.34*	0.40
	West Java	-1.01	0.24	-4.19***	0.36
	Central Java	-1.10	0.31	-3.54***	0.33
	Yogyakarta	0.30	0.23	1.31	1.35
	East Java	-0.62	0.25	-2.43*	0.54
	Bali	-1.00	0.37	-2.71**	0.37
	West Nusa Tenggara	-1.67	0.60	-2.76**	0.19
	Central Kalimantan	-2.80	1.01	-2.76**	0.06
	South Sulawesi	-3.08	1.01	-3.04**	0.05
	Others	-0.36	0.39	-0.94	0.69
Constant		-13.37	2.85	-4.69***	

n = 40.459    Log likelihood = -1129.0044    F-test = 454.28\*\*\*    R = 0.1675

Note: \* statistically significance at  $\alpha = 0.05$ ; \*\*  $\alpha = 0.01$ ; \*\*\*  $\alpha = 0.001$

Ln = Log natural

tants were likely to have significantly higher use of private hospitals for OP than individuals who live in all provinces. Individuals lived in South Sulawesi had the lowest demand for private hospitals.

Table 1 shows that statistically significant factors distinguishing private hospitals users for OP care from non-users are price, per capita income, interaction terms between insurance and serious illness, serious illness alone, gender, age-groups, household head education, household size, and locations (both urban

## Discussions

Results from the model described above are interesting and should prove valuable from several aspects. Our study clearly revealed OP use in private hospital was influenced by its price, not influenced by price of public

hospitals. Price elasticity appeared inelastic with the estimated elasticity 0.01. A positive value of the elasticity estimates contradict with the theory of normal good which state that “higher price lead to decreasing the quantity of demand”. This result was contradict with some studies from other countries such as Japan and the United States.<sup>7</sup> Our finding indicates that OP care in private hospitals as luxuries goods. Such finding can be explained by the fact that private providers are perceived to have a better quality of services. Anecdotal, quality of services in private hospitals higher than in government hospitals. Consequently individuals are willing to pay, even with higher price, in order to satisfy their utility. Meanwhile, generally Indonesian agree a parallel opinion between quality and prices. In daily dialect Indonesian accept, without questioning the validity of “taste come with



prices” or “money knows the quality”. It means ones want to get a good quality, they need to pay more. Hence, increasing price of OP private hospital is precisely detected by consumers as a signal of better quality, and finally enhances the demand.<sup>8</sup>

Overall both private and government hospitals have a similar type of OP services, and thus the services offered in both hospitals could be substitute each other. In other word, prices change in one hospital causes the quantity demanded change in another hospital with the same directions. Increasing price of government hospitals will be followed by increasing the demand of private hospital and vice versa. However, this present study found OP care in private hospitals did not raise when the public hospitals was increased their prices. This suggest that OP services in both hospitals are not substitute each other. A separate analysis also detect the OP users in public hospitals were sensitive toward its price, e.g. “OP in public hospital drop follow increasing its price”. Since prices in private hospitals more expensive than in public hospital, increasing price in the later hospitals did not influence the users to switch from public to private hospitals. Furthermore, price change in public hospitals did not influence the demand of private hospitals, indicating that private hospitals have different type of patients with public one. This also means that the two type of hospitals have different segment of the patients.

Private hospitals tend to serve a wealthier, and this warrant to inequitable access to private providers. This study found the Odds Ratio among individuals in quintile 5 (3.41) was higher than in quintile 4 (3.29). This is justifiable given that disposable income for the rich is larger than for the poor. Subsequently the rich spend a smaller proportion of their income for OP care in private hospitals than the poor. Findings of this present study also in accordance to the previous study in the country that used the 1997 IFLS dataset.<sup>9</sup> This study have shown inequitable use of outpatient care in private providers in Indonesia when demographic characteristics, or need factors determine the outpatient care use. Like in the present study, the role of the socio-economic status was also found to be a very important determinant of OP utilization in private providers, which implies the existence of clear socio-economic gradients.

Our study also indicate a consistent association between OP use and health needs. Both health insurance and health need factors significantly predict the demand for OP care in private hospitals. This is shown by the association of serious illness with the use of ambulatory care to private providers, a finding in accordance to the results of previous studies in Indonesia.<sup>10-12</sup> The interaction terms between private insurance and the presence of a serious ill give more pronounce on the use of private hospitals. Since private insurance covers OP care benefit

in private hospitals, once a serious ill exist among those who are insured, they demand more for OP. This circumstance indicates that outpatient service are used for curative care rather than promotive and preventive care.

The present study also revealed that OP use to private hospitals is mostly related locations, province and the level of urbanization. This findings obvious horizontal inequity, which is possibly explained by the following aspects. On the supply-side, the state of rural health services facilities in Indonesia, in particular private hospitals, is considerably poor. The scarcity of resources lead the unequal use. In rural setting, there are shortages of medical and the essential equipment. Furthermore, rural residents have to overcome certain obstacles when trying to access private hospitals, this include longer travelling distances and lack of transportation, especially in remote places. These constrains are expected to have an effect upon the most vulnerable individuals, e.g., individuals of a low socio-economic status. Thus, not surprisingly, this study detected individuals at the lowest income had the lowest probability to utilize OP in private hospitals. On the demand side, individuals with higher education seem to be more motivated to seek opportunities, and have the skills to benefit from private hospitals more effectively than those of a low educational level.

## Conclusion

The outpatient demand of private hospital increased after the price grow up. Whilst the outpatient demand of private hospital did not lift up when the price of public hospital increased. The two phenomenons shows that the two types of hospital have different characteristics of users: users of private hospital were the rich and users of government hospital were the poor. The rich benefited more outpatient services of private hospital than the poor. It implies that the private hospital did not engaged their social responsibility to serve all people yet. The government should enforced Ministry of Health regulation on hospital business to balance this. And the Ministry of Health also could pose private hospitals to develop and operate some clinics in the remote areas as a part of their Corporate Social Responsibility (CSR).

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