

PREDICTING WILLINGNESS TO EXTEND CONTRACTUAL ASSIGNMENT AMONG MEDICAL DOCTORS IN WEST JAVA

MEMPREDIKSI KESEDIAAN UNTUK MEMPERPANJANG MASA KONTRAK DI KALANGAN DOKTER JAWA BARAT

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ABSTRACT

Background: Unbalanced distribution of medical personnel exists in many regions and to some extent is adverse by the current implementation of decentralization policy in health sector as well as policy on medical fresh graduate non-permanent contractual assignment. Extending contract assignment after finishing the compulsory service is one alternative in dealing with medical personnel lacking in the decentralized era. However, factors related to such willingness have not been studied yet.

Method and Result: A cross-sectional study involving 584 medical doctors in West Java under the contractual scheme was done at the end of 2003. With the response rate of more than seventy-two percent, it was revealed that more than one-third of the doctors are willing to extend their contract assignment. Multiple logistic regression analysis shows that the doctors who were being deployed in municipal and not married were more likely to be willing to extend their contractual assignment. On the other hand, the doctors who were not running private practice during the deployment period and who did not perceive to benefit supports from the local Health Office were less likely to be willing for contract extension.

Conclusion: Among policy implication of this study include offering contract extension for doctors in underserved area in order to maintain local health program sustainability and to anticipate hesitance of medical fresh graduate to be deployed in underserved areas.

Keywords: medical doctor, contract, deployment, Pegawai Tidak Tetap

ABSTRAK

Latar belakang: Ketidakmerataan penyebaran tenaga medis terjadi di banyak daerah dan dalam beberapa keadaan diperberat oleh pelaksanaan kebijakan desentralisasi di sektor kesehatan dan juga kebijakan pengangkatan tenaga medis sebagai Pegawai Tidak Tetap (PTT). Memperpanjang masa bakti sebagai tenaga PTT merupakan salah satu alternatif untuk mengatasi ketiadaan tenaga medis di berbagai daerah dalam era desentralisasi. Namun demikian, faktor-faktor yang terkait dengan bersedianya tenaga medis untuk memperpanjang kontrak PTT-nya belumlah terungkap melalui suatu studi.

Metode dan Cara: Suatu studi belah lintang yang melibatkan 584 dokter PTT di Jawa Barat telah dilakukan pada akhir tahun 2003. Dengan angka partisipasi sebesar lebih dari 72%, terungkap bahwa sekitar sepertiga dari para dokter PTT bersedia untuk memperpanjang kontraknya sebagai pegawai tidak tetap. Hasil analisis regresi logistik berganda menunjukkan bahwa para dokter PTT yang ditempatkan di perkotaan dan tidak menikah lebih bersedia untuk memperpanjang kontraknya. Sementara itu, dokter PTT yang tidak melakukan praktik pribadi selama masa baktinya dan yang berpendapat bahwa Dinas Kesehatan Kabupaten/Kota tidak berperan terhadap pengembangan karirnya sebagai tenaga medis lebih sedikit menginginkan untuk memperpanjang kontrak PTT-nya.

Kesimpulan: Di antara implikasi kebijakan dari hasil studi ini adalah

diberikannya penawaran untuk memperpanjang kontrak sebagai tenaga PTT, sehingga dapat menjaga keberlanjutan program-program kesehatan di daerah dan mengantisipasi keengganan para lulusan baru untuk ditempatkan di daerah-daerah yang memerlukan.

Kata Kunci: dokter, kontrak, penempatan, Pegawai Tidak Tetap

INTRODUCTION

Unbalanced distribution of health personnel between and within countries is a worldwide, longstanding and serious problem. Many countries, rich and poor, report a higher proportion of health personnel in urban and wealthier areas. For Indonesia in particular, its vast size and difficult terrain raises an enormous obstacle for the delivery of health services and for a balanced distribution of health personnel. Doctors are reluctant to be deployed to remote areas that offer poor communications with the rest of the country and few amenities for health professionals and families.³

Since the enactment of new policy on fresh graduate medical and dental doctors in 1991, West Java Province has been known to be one of the most preferable locations for spending mandatory service period of the doctors. Among the reasons is because the Province has better infrastructures, facilities and amenities compared to most other provinces. However, Agoes, et.al.,⁴ reported that there had been imbalance of medical professional distribution within the province. It was identified that many local governments fail to attract and retain doctors to stay serving in their localities after they finished compulsory deployment period. Local government, as regulated by the Health Minister Decree No. 1540/Menkes/SK/XII/2002⁵, in refer to the Indonesian Presidential Decree No. 37 Year 1991⁶, is allowed to assign and deploy new graduate doctors for government health services in meeting local need on health professionals.

Among policy alternatives to retain medical workforce in the areas is to extent contract assignment after finishing the mandatory service period. So far, there have been no study undertaken revealing factors related to willingness for contract renewal among medical doctors, at least in Indonesia.⁴ Therefore, purpose of this study was to determine factors that predict one's willingness to extend his/her contract assignment after compulsory deployment as fresh-graduate medical doctor.

METHODS

A non-experimental, cross-sectional design using an existing survey data set was employed to study predictors of willingness to extend contractual assignment among fresh-graduate medical doctors after they finish their compulsory service period. The data were obtained from a survey conducted in 2003 investigating situations of fresh-graduate medical doctors who were being deployed in contractual/temporary assignment scheme in West Java Province.

The study site is a province with 36 million populations residing in 25 municipals/ districts. The study data were collected in 12 municipals/districts. Such study areas were assigned using stratified approach representing municipal and district area groups. In West Java, there are four development regions and in the survey, each region was represented by one municipal and two districts, which were assigned randomly. All eligible doctors in sampled municipals and districts were then invited to join the study.

The survey identified that according to the personnel database available at the Provincial Health Office, there were 584 doctors who were eligible to be involved in the study. Eligibility was based on deployment status of the doctors. Any doctors who were currently being deployed in the sampled municipals and districts under the fresh graduate compulsory service scheme were eligible. However, only 425 doctors who agreed to be involved in the study, leading the response rate of 72.77%.

The data of this study were collected through a self-administered questionnaire in November 2003. The sample doctors were asked to fill up the questionnaire in a special gathering organized by the research team and the corresponding Municipal/ District Health Office collaboratively. The questionnaire had been piloted to eighteen fresh medical doctors who were being deployed with the same scheme but

coming from non-sampled areas. Feedbacks from the pilot were taken into account for questionnaire development as well as data management procedures.

The outcome variable of this study is the doctor's willingness to extend his/her contractual assignment after finishing compulsory service period. In predicting such outcome, thirty variables were selected as candidate independent variables. Those variables were derived from four groups of variables, i.e. individual background, deployment characteristics, experiences during deployment, and doctors' perceptions on the corresponding policy. A framework as presented below was used for conducting this study analysis.

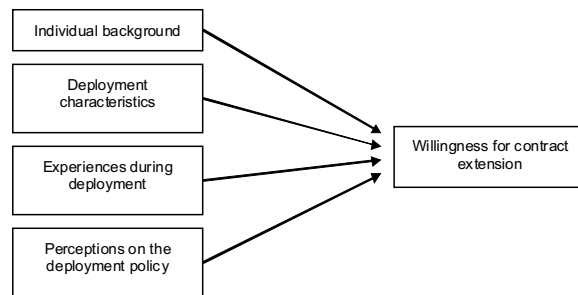


Figure . Framework of Study Data Analysis

Data collected were entered into database using Microsoft Access 2000 by two operators and cross-checked for entry validity and reliability. Differences in data entry process were traced and corrected correspondingly. In addition, analysis was conducted using SPSS 11.5 statistical software. The dataset was reviewed for missing or incomplete values. Pair wise deletion was used for samples with missing data. Univariate analysis was obtained through frequency distributions and bi-variate analysis was conducted using chi-square test of association. A variable was considered to be a candidate for the multivariable model analysis if it had a p-value of less than 0.25 in the bivariate analysis.⁷ Candidate variables were then analysed using backward-stepwise multivariable logistic regression with the level of 5%.

RESULTS

A total number of 425 doctors participated in the survey. Majority of the doctors were female (66.4%), married (72.5%) and aged more than 30-years old (56.2%). Among them, only 152 doctors (35.8%) expressed their willingness to extend their contractual assignment. Table 1 below shows in a more detail descriptive information of the subjects.

Table 1 . Background Characteristics of the Study Subjects

	N= 425	n	%
Age group			
< 30 years-old		186	43.8
≥ 30 years-old		239	56.2
Sex			
Female		282	66.4
Male		143	33.6
Marital status			
Married		308	72.5
Not married		117	27.5
Location of medical school			
Outside of West Java		138	32.5
Within West Java		287	67.5
Level of medical care service			
Primary care level		351	82.6
Other than primary care level		74	17.4
Location of service assignment			
Kota Cirebon		22	5.2
Kabupaten Cirebon		29	6.8
Kabupaten Majalengka		17	4.0
Kota Bogor		23	5.4
Kabupaten Bogor		79	18.6
Kabupaten Sukabumi		42	9.9
Kota Bandung		43	10.1
Kabupaten Bandung		41	9.6
Kabupaten Garut		33	7.8
Kota Bekasi		40	9.4
Kabupaten Purwakarta		18	4.2
Kabupaten Karawang		38	8.9

Table 2 . Relationships between the Doctors' Willingness for Contract Extension and Their Individual Backgrounds

Variable	Willing		Not willing		χ^2	p	Odds ratio	95% CI Confidence Interval
	n	%	n	%				
Age group					.265	.607		
< 30 years-old	64	34.4	122	65.6			1.00	Reference
≥ 30 years-old	88	36.8	151	63.2			1.11	.74 – 1.66
Sex					.001	.975		
Female	101	35.8	181	64.2			1.00	Reference
Male	51	35.7	92	64.3			.99	.65 – 1.51
Marital status					6.388	.011		
Married	99	32.1	209	67.9			1.00	Reference
Not married	53	45.3	64	54.7			1.75	1.13 – 2.70
Location of medical school					.620	.431		
Outside of West Java	99	34.5	188	65.5			1.00	Reference
Within West Java	53	38.4	85	61.6			1.18	.78 – 1.80
Status of medical school					8.352	.004		
Public	40	26.7	110	73.3			1.00	Reference
Private	112	40.7	163	59.3			1.89	1.22 – 2.92
Length of study					3.894	.048		
Below average or the same	65	31.1	144	68.9			1.00	Reference
Above average	87	40.3	129	59.7			1.49	1.00 – 2.23

Results of further analysis were presented in Table 2-5 as follows.

According to their individual background, doctors who were willing to extent their contract assignment differed significantly with their counterparts in terms of their marital status ($2 = 6.388$; $p = .011$), medical school's status ($2 = 8.352$; $p = .004$) and length of medical study ($2 = 3.894$; $p = .048$). Five variables of

deployment characteristics were found to be the candidates for multivariable analysis. Those include the location of deployment ($2 = 28.549$; $p < .001$), deploying institution ($2 = 18.264$; $p < .001$), owner of the deploying site ($2 = 10.922$; $p = .001$), whether Puskesmas as the deploying site ($2 = 4.68$; $p = .030$) and tasks at the site ($2 = 3.46$; $p = .063$); as shown the Table 3.

Table 3 . Relationships between the Doctors' Willingness for Contract Extension and Their Deployment Characteristics

Variable	Willing		Not willing		χ^2	P	Odds ratio	95% CI Confidence Interval
	n	%	n	%				
Waiting time for assignment					1.175	.278		
< 1 year	47	39.8	71	60.2			1.00	Reference
> 1 year	105	34.2	202	65.8			.79	.51 – 1.22
Location					28.549	<.001		
District	82	27.6	215	72.4			1.00	Reference
Municipal	70	54.7	58	45.3			3.16	2.06 – 4.87
Remoteness category					.942	.332		
Remote or very remote	7	26.9	19	73.1			1.00	Reference
Non-remote	145	36.3	254	63.7			1.55	.64 – 3.77
Deploying institution					18.264	<.001		
Central government	87	29.3	210	70.7			1.00	Reference
Local government	27	48.2	29	51.8			2.25	1.26 – 4.02
Others	38	52.8	34	47.2			2.70	1.60 – 4.56
Owner of working site					10.922	.001		
Non-government institutions	38	52.8	34	47.2			1.00	Reference
Government institutions	114	32.3	239	67.7			.43	.26 – .71
Type of health care service					.457	.499		
Primary care	123	35.0	228	65.0			1.00	Reference
Other than primary care	29	39.2	45	60.8			1.20	.71 – 2.00
Whether Puskesmas as the					4.68	.030		
No	46	44.7	57	55.3			1.00	Reference
Yes	106	32.9	216	67.1			.61	.39 – .96
Task at deployment site					3.46	.063		
Medical services and service management	16	25.4	47	74.6			1.00	Reference
Medical services only	136	37.6	226	62.4			1.77	.96 – 3.24

Among variables of deployment experiences, the willingness percentages of the doctors were statistically different in four categories. They differed in terms of whether the doctors running private practice or not ($2 = 10.922$; $p = .001$), whether the doctors enjoyed appropriate supports from the District/Municipal Health

Office or not ($2 = 22.654$; $p < .001$), whether they enjoyed suitable supports from the local professional organization or not ($2 = 4.259$; $p = .039$) and whether the doctors had attended any professional activities during their contractual assignment ($2 = 6.010$; $p = .014$).

Table 4 . Relationships between the Doctors' Willingness for Contract Extension and Their Experiences during Deployment/Assignment

Variable	Willing		Not willing		χ^2	p	Odds ratio	95% CI Confidence Interval
	n	%	n	%				
Average net income*					1.175	.278		
Below average or the same	105	34.2	202	65.8			1.00	Reference
Above average	47	39.8	71	60.2			1.27	.82 – 1.97
Running private practice					10.922	.001		
Yes	95	43.2	125	56.8			1.00	Reference
No	57	27.8	148	72.2			.51	.34 – .76
Residing official house facility					.550	.458		
No	131	35.1	242	64.9			1.00	Reference
Yes	21	40.4	31	59.6				
Utilizing official vehicle facility					.537	.464		
No	149	35.6	270	64.4			1.00	Reference
Yes	3	50.0	3	50.0			1.812	.36 – 9.09
Enjoyed appropriate supports from the District/Municipal Health Office					22.654	< .001		
Yes	128	43.1	169	56.9			1.00	Reference
No	24	18.9	103	81.1			.31	.19 – .51
Enjoyed appropriate supports from the local professional organization					4.259	.039		
Yes	65	41.9	90	58.1			1.00	Reference
No	86	32.0	183	68.0			.65	.43 – .98
Attended any proof activities, e.g. conf, trainings and workshops					6.010	.014		
Yes	118	39.5	181	60.5			1.00	Reference
No	34	27.0	92	73.0			.57	.40 – .90

* equals to 1,665,400 Rupiahs

Table 4 shows that regardless of their willingness, 399 out of 424 doctors (94.1%) were actually not satisfied with their monthly salary. However, it is interesting to note that 68.7% of the doctors personally are in favour of the mandatory deployment policy to be sustained. The results of bi-variate analysis also showed that the percentage of doctors who would be willing for contract extension were different in terms of

their perception on the personal benefit of the deployment policy ($2 = 10.984$; $p = .001$), perception on the appropriateness of the salary level ($2 = 9.155$; $p = .002$), perception on the deployment policy goal in distributing more equal and equitable health services ($2 = 7.6$; $p = .006$); and their perceived support to the deployment policy that has to be sustained in the future ($2 = 10.166$; $p = .001$).

Table 5. Relationships between the Doctors' Willingness for Contract Extension and Their Perceptions on the Compulsory Deployment Policy

Variable	Willing		Not willing		χ^2	p	Odds ratio	95% CI Confidence Interval
	n	%	n	%				
Perceived that the policy offers incentive for specialization training					1.454	.228		
No	103	37.9	169	62.1			1.00	Reference
Yes	49	32.0	104	68.0			.77	.51 – 1.18
Perceived that the policy offers benefit for personal development					10.984	.001		
No	13	18.6	57	81.4			1.00	Reference
Yes	139	39.4	214	60.6			2.85	1.50 – 5.40
Perceived that the policy offers appropriate amount of salary					9.155	.002		
No	136	34.1	263	65.9			1.00	Reference
Yes	16	64.0	9	36.0			3.44	1.48 – 7.98
Perceived that the policy is a means of distributing more equal and equitable health services					7.600	.006		
No	37	26.4	103	73.6			1.00	Reference
Yes	113	40.1	169	59.9			1.86	1.19 – 2.90
Personally support the policy to be sustained					10.166	.001		
No	31	24.4	96	75.6			1.00	Reference
Yes	121	40.6	177	59.4			2.12	1.33 – 3.37

Having reviewed analysis results presented in the Table 2 – 5, there are seventeen variables that have p-value of less than .25. Therefore, only those variables are to be the candidates for the multivariable model analysis. A multivariable backward-stepwise logistic regression analysis was in addition performed with those variables and revealed that 7 cases had missing values and were then excluded for the analysis. Therefore, only 418 cases were included in the analysis indeed. A test of the full model with all seventeen predictors against a constant-only model showed that only four variables were statistically reliable, $\chi^2(15, N = 418) = 80.172, p < 0.01$. The four variables include the deployment location, marital status, whether the doctor was running private practice, and whether the doctor gained support from the Municipal/District Office. It indicates that those

predictors, as a set, reliably distinguished between the doctors who were willing to extend their contract and the ones who were not willing. Prediction success was unimpressive for the doctors who were willing to have extension, i.e. only 48%, in contrast with the doctors who were unwilling to extend their contract (87%). However, the overall successful prediction rate was quite good, accounted for 73%.

After re-running for the reduced model that only entered the four variables mentioned previously, the final model also revealed a fit model, yet the fit statistics reduced ($\chi^2 = 66.763; df = 4; p < 0.001$). By this model, the overall prediction reliability was also comparable at 71%. Table 6 shows regression coefficients, Wald statistics, odds ratios and 95% confidence intervals for odds ratios for each of the four predictors.

Table 6. Final Model for Predicting the Willingness of Contract Extension

Predictor	β	Wald statistics	OR	95% Confidence Interval	
				Lower	Upper
Deployed in municipal	1.207	26.026	3.35	2.10	5.32
Not married	.513	4.509	1.67	1.04	2.68
Did not run private practice	-.790	12.201	.45	.29	.71
Did not perceive to enjoy appropriate supports from the Municipal/District Health Office	-1.101	17.069	.33	.20	.56

Log-likelihood = 486.595; $\chi^2 = 6.231$; $df = 7$; $p = .513$

According to the Wald criterion, all the four variables reliably predicted willingness. The final model revealed that the doctors who were being deployed in municipal and not married were more likely to be willing to extend their contractual assignment, and in contrast, the ones who were not running private practice during the deployment period and who did not perceive to benefit supports from the local Health Office were less likely to be willing for contract extension.

DISCUSSION

One limitation of this study was that the analysis was performed on secondary data from an existing dataset. The survey was simply a 'snap shot' of the doctors who were being deployed in West Java Province during the study period. Therefore it is impossible to predict whether or not the findings would remain constant over time, particularly in situation in which the policy of health workforce deployment has been sifted to the local government at district/municipal level. In addition, this study used a self-administered questionnaire that may result in less accurate results, compared to a study that uses multiple methods of data collection. However, this analysis offers information that can be used for policy making process.

The main findings of this analysis show that there were above one-third of the doctors had willingness to extent their contract assignment after they finish their mandatory service as fresh-graduate. Factors of the location, marital status, private practice and support from the local Health Office relate to one's willingness to renew his/her contract as medical provider in West Java. The doctors who were spending their compulsory service in municipal and not married were more likely to be willing to continue their contractual assignment, and in contrast, the ones who were not running private practice during the deployment period

and who did not perceive to benefit supports from the local Health Office were less likely to be willing for contract extension.

One possible reason why a doctor deployed in municipal is more willing to lengthen contract is because he/she has much greater opportunities for supplementary earnings from his/her private practice after working hours. Such possibility is supported by the other analysis finding that the doctors who were not running private practice during the deployment period were less likely to be willing for contract extension. Decision as to whether a doctor would like to work at government sector as contracted medical professional is really affected by his/her economic perspective. As real incomes increase, more health professionals will be willing to be employed.⁸

However, it has been shown that economics is just one factor affecting decision as to where to locate his/her practice.^{9,10} Personal, professional, educational and social/lifestyle-related factors can greatly influence job-related decisions.⁸ Theoretically, health care labour is not a competitive market, since there are usually substantial entry regulations, information asymmetries and other market failures. A study conducted among rural health workers in Vietnam identified other motivating and discouraging factors for health workers. The motivating factors include appreciation by managers and the community, income and job stability, while discouraging factors were mostly related to low salaries and difficult working conditions.¹²

Being not married increase willingness to lengthen the contract. It confirms that ones who has lesser family responsibilities are more prepared to move or migrate if they do not get incentives for lengthen their stay,⁸ but it did not applied to age category in this study. According to this study, medical workforces who did not enjoy appropriate supports

from their corresponding local governments would be less likely to extend their contracts. Lack of equipment and supplies and of appropriate facilities can act as deterrent for health professionals to accept, in this case to resume, positions in rural and underserved areas. Also, lack of transparency and of due process in the management of postings and promotion is an incentive to avoid working in expected areas.

In conclusion, this study confirms that there is an interplay between individual, given situation and experience during deployment, as well as perception on the deployment policy in determining whether one would like to extend their contract assignment or not. Among policy implication of this study include offering contract extension for doctors in underserved area in order to maintain local health program sustainability and to anticipate fresh graduate reluctances to be deployed in underserved areas.

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