

Profiles of health insurance policyholders and health care users: evidence from Malaysia

Arpah Abu-Bakar^{a*}, Shamzaeffa Samsudin^b, Mohd Taipor Suhadah^c

* Corresponding author: Arpah Abu-Bakar, arpah@uum.edu.my

^aDepartment of Banking and Risk Management, School of Economics Finance and Banking, Universiti Utara Malaysia, arpah@uum.edu.my

^bDepartment of Economics, School of Economics Finance and Banking, Universiti Utara Malaysia, shamzaeffa@uum.edu.my

^cOYA Graduate School of Business, Universiti Utara Malaysia, mohd.suhadah@gmail.com

Abstract

<http://dx.doi.org/10.15405/epsbs.2016.08.46>

This study attempts to examine the profiles of the individuals with health insurance ownership (insured) and those without (uninsured) and their health utilization behaviors. In terms of the profiles, the insured, compared to the uninsured, were younger, male and tended to seek health care treatment more often. It is rather interesting to record that the insured and the uninsured were not different in terms of their health status and smoking behavior. The health care users, compared to non-users, were older, female and had bad health status. The results seem to suggest that adverse selection and moral hazard may not exist in the Malaysian health insurance market.

© 2016 Published by Future Academy www.FutureAcademy.org.uk

Keywords: Profile; Health Insurance; Adverse Selection; Underwriting; Risk Classification

1. Introduction

Private health insurance is one of the sources of funds for financing health care apart from direct taxes, public insurance and out of pocket payments. In some countries such as the United States, private health insurance is the source of funds for medical care for many individuals while in countries like the United Kingdom, the people are highly dependent on the public health insurance. The public health insurance could be in several forms such as mandated social insurance scheme as in the case of Japan or a tax-funded health financing scheme as in the case of United Kingdom.

In Malaysia, there is no specific program for public health insurance. Nevertheless, health care is highly accessible at the public health institutions for a minimal fee. Despite the fact, based on the Central Bank of Malaysia annual reports from year 2008 to 2013, the private health insurance business has grown significantly (Bank Negara Malaysia, 2009; 2014) The report from the National Health and Morbidity Survey III (NHMS III) which is a cross-sectional survey undertaken in year 2006, indicates that about 18.8% of the Malaysian population owned some type of private health insurance (Institute for Public Health).

In Malaysia, all health insurance are sold by the private market. The health insurance policies are sold by the general and life insurance companies. Health insurance policy in the Malaysian market is known as medical and health insurance (MHI) policy. The MHI in Malaysia is designed primarily to cover inpatient care as offered by HSI policy and hospital income policy which captured 69% of the total market share in MHI sales in Malaysia. Adults aged 18 to 65 years old are eligible to purchase coverage while children must obtain coverage through their parents. Most health insurance policies are renewable to the age of 75. In the early days, MHI policies were sold as a rider to life insurance policies. Starting in year 1997, MHI was allowed to be sold as stand-alone policies.

MHI customers in Malaysia can be classified into individuals who obtain coverage through their employers and individuals who purchase coverage directly from the market. The Central Bank of Malaysia estimated that about 15% of the Malaysian population has MHI (Bank Negara Malaysia, 2005). The growth in the sales of MHI products can be attributed to the introduction of personal income tax relief for the purchase of MHI policies in 1996 and the stand alone policies starting in year 1997.

A large and growing body of literature has investigated the effect of health insurance on health care use. For an expected utility maximizing consumer, the demand for health insurance and health care is interdependence. Individual who expects to consume more health care will be more likely to buy health insurance. This phenomenon, called adverse selection, may occur when there is an asymmetrical flow of information between the insurer and the insured where the insurance company is unaware of the relevant characteristics of the insureds.

In addition, individual who own health insurance may consume more health care because the price paid during consumption is zero due to the reimbursement by the insurance company. The fact that health insurance ownerships gives incentives to individuals to consume more health care because the existence of health insurance has received considerable argument in the literatures (Ekman, 2006; Manning & Marquis, 1996; Manning, Newhouse, Duan, Keeler & Leibowitz, 1987). This phenomenon is called moral hazard.

Insurance company mitigates the problem of moral hazard and adverse selection through underwriting. Risk factors used in underwriting and risk classification are age, gender, health status, smoking behavior and past medical use. Are these factors able to classify between health insurance owners and non-owners and; between health care users and non-users? This study attempts to profile policyholders and non-policyholders as well as health care users and non-users using the selected risk factors.

The remainder of this article is organized as follows. The next section discusses the research methods employed in this study followed by the research results and discussion. The final section concludes.

2. Data and Analysis

Data was extracted from the National Health and Morbidity Survey (NHMS) III. The NHMS III was conducted by the Institute of Public Health, a division under the Ministry of Health Malaysia. The NHMS III is the first data in Malaysia that combine both the health insurance ownership and the health care utilization data and it is nationally representative. NHMS III reported that 18.8% of the respondents owned some type of MHI either as a stand-alone health insurance policy and/or a rider to life insurance policy or other types of insurance related to health. 14,223 cases answered by individuals above 18 years old were analyzed. Independent sample t-test and chi-square test are used to find the relationship between the variables.

3. Results and Discussion

3.1 Profiles of policyholders and non-policyholders

In this section, the respondents' profiles are segmented according to policyholders and non-policyholders. The results show that the respondents are statistically different in terms of their age, gender, and frequency of visits to inpatient and outpatient medical care.

The independent sample t-test shows that there was a significant difference in the mean age of the policyholders and non-policyholders ($t=9.48$; $p<.0005$). In other words, those who did not own health insurance have statistically significant higher mean age (39.74 years) compared to those who owned health insurance (37.51 years).

Table 1 portrays the profile of policyholders and non-policyholders according to gender. The Pearson Chi-square test was significant ($p<.0005$) indicating that gender was associated with health insurance ownership. The difference between the actual and expected counts in the table suggests that female individuals were less likely to own health insurance compared to male individuals.

Table 1. Profiles of Policyholders and non Policyholders according to Gender

		Health Insurance Ownership		Total
		Do not Own	Own Health Ins	
Male	Count	5773	1935	7708
	Expected Count	6121.2	1586.8	7708.0
Female	Count	5522	993	6515
	Expected Count	5173.8	1341.2	6515.0
Total	Count	11295	2928	14223
	Expected Count	11295.0	2928.0	14223.0

The average visit to the out-patient and in-patient clinic per year was less than 1 with the highest frequency of 32 visits per year. The independent sample t-test ($t=2.645$; $p=.008$) indicates that there

was a significant difference in the mean number of visit of the policyholders (0.33 visit per year) and non-policyholders (0.29 visit per year). This means that the insured tended to seek health care treatment more often than the uninsured.

With respect to health status, the respondents who had one or more chronic diseases were grouped as having ‘bad health’ while those without any chronic disease were classified as having ‘good health’. The Chi-square test shows insignificant value ($p=.203$) suggesting that there was no significant association between health status and health insurance ownership. This means that the insured and uninsured were not different in terms of health status.

For smoking behavior, the Chi-square test shows insignificant value ($p=.203$) suggesting that there was no significant association between smoking behavior and the health insurance ownership. This means that the insured and uninsured were similarly represented by smokers and non-smokers.

In summary, individuals who are more likely to own health insurance are older, are male, and has higher frequency of medical care visits. Older individual may need more health care thus seek insurance coverage to ensure access to health services. Similarly, individual with records of medical visit may expect to incur more medical cost in the future thus they seek insurance coverage to ensure medical cost is reimbursed.

3.2 Profiles of health care users and non-users

In this section, the respondents’ profiles are segmented according to health care users and nonusers. Respondents were classified as health care users if they visited outpatient care or inpatient care for the past one month.

The independent sample t-test shows that there was a significant difference in the mean age of the health care users and non-users ($p<.0005$). In other words, those who seek health care treatment have statistically significant higher mean age (42.53 years) compared to those who did not seek care (38.59 years).

Table 2. Profiles of Users and Nonusers according to Gender

		Health Care Utilization		Total
		NonUser	User	
Male	Count	6418	1290	7708
	Expected Count	6363.4	1344.6	7708.0
Female	Count	5324	1191	6515
	Expected Count	5378.6	1136.4	6515.0
Total	Count	11742	2481	14223
	Expected Count	11742.0	2481.0	14223.0

Table 2 portrays the profile of health care users and non-users according to gender. The Pearson Chi-square test was significant ($p<.0005$) indicating that gender was associated with health care utilization. The difference between the actual and expected counts in the table suggests that female individuals were more likely to utilize health care compared to male individuals.

With respect to health status, the Chi-square test shows significant value ($p=.000$) suggesting that there was a significant association between health status and health care utilization. From Table 3, those with bad health status were more likely to utilize health care.

Table 3. Profiles of Users and Nonusers according to Health Status

		Health Care Utilization		Total
		NonUser	User	
Good Health	Count	9645	1404	11049
	Expected Count	9121.7	1927.3	11049.0
Bad Health	Count	2097	1077	3174
	Expected Count	2620.3	553.7	3174.0
Total	Count	11742	2481	14223
	Expected Count	11742.0	2481.0	14223.0

The analysis also indicates that there was a significant association between smoking behaviors and health care utilization. The Chi-square test shows significant value ($p<.0005$). Table 4 indicates that smokers were less likely to utilize health care.

Table 4. Profiles of Users and Nonusers according to Smoking Behavior

		Health Care Utilization		Total
		NonUser	User	
NonSmoking	Count	8269	1860	10129
	Expected Count	8362.1	1766.9	10129.0
Smoking	Count	3473	621	4094
	Expected Count	3379.9	714.1	4094.0
Total	Count	11742	2481	14223
	Expected Count	11742.0	2481.0	14223.0

For health insurance ownership, the Chi-square test shows insignificant value suggesting that there was no significant difference between the users and nonusers in terms of health insurance ownership ($p=0.214$). The result may indicate that moral hazard does not exist in the Malaysian market.

In summary, the findings suggest that age, gender, health status and smoking behavior are able to classify users and non-users. Thus, these risk factors are good underwriting factors resulting in better risk classification.

4. Conclusion

This study presents profiles of health insurance policyholders and health care users. In terms of the profiles, the insured, compared to the uninsured, were younger, male and tended to seek health care treatment more often. The health care users, compared to non-users, were older, female and had bad health status. The findings indicate that underwriting factors which are age, gender, health status and smoking behavior are good factors for risk classification in health insurance underwriting. It is interesting to note that health status and smoking behavior are not associated with health insurance ownership suggesting that adverse selection may not exist in the Malaysian health insurance market. As health care users and non-users were not different in terms of their health insurance ownership, this

result suggests that moral hazard may not be a problem in the Malaysian health insurance market. Further analysis is needed as these findings are based only on univariate analysis.

References

- Bank Negara Malaysia. (2005). *Insurance Annual Report*. Malaysia
- Bank Negara Malaysia. (2009). *Insurance Annual Statistics*. [online] Available at: <http://www.bnm.gov.my> [Accessed 30 Mar. 2016].
- Bank Negara Malaysia. (2014). *Insurance Annual Statistics*. [online] Available at: <http://www.bnm.gov.my> [Accessed 30 Mar. 2016].
- Buchmeuller, T. C. & Feibig, D.G. (2013). Preference heterogeneity and selection in private health insurance: the case of Australia. *Journal of Health Economics*, 32(5), 757-767.
- Friedman, B. & Savage, L. J. (1948). The utility analysis of choices involving risk. *The Journal of Political Economy*, 56(4), 279-304.
- Ekman, B. (2007). The Impact of health insurance on outpatient utilization and expenditure: evidence from one middle-income country using national household survey data. *Health Research Policy and Systems*, 5(6).
- Halek, M. & Eisenhauer, J.G. (2001). Demography of risk aversion. *The Journal of Risk and Insurance*, 68(1), 1-24.
- Institute for Public Health. (2008). *National Health and Morbidity Survey III*.
- Kunreuther, H. & Pauly, M. (2006). Insurance decision-making and market behavior. *Foundations and Trends in Microeconomics*, 1(2), 63-127.
- Liu, T. C. & Chen, C. S. (2002). An analysis of private health insurance purchasing decisions with national health insurance in Taiwan. *Social Science and Medicine*, 55, 755-774.
- Long, S. H. & Marquis, M. S. (2002). Participation in a public insurance program: Subsidies, crowd-out, and adverse selection. *Inquiry - Excellus Health Plan*, 39(3), 243-257.
- Manning W. G. & Marquis, M. S. (1996). Health insurance: the tradeoff between risk pooling and moral hazard. *Journal of Health Economics*, 15(5), 609-639.
- Manning, W. G., Newhouse, J. P., Duan, N., Keeler, E. B. & Leibowitz, A. (1987). Health insurance and the demand for medical care: evidence from a randomized experiment. *The American Economic Review*, 77(3), 251-277.
- Pauly, M. V. & Herring, B. (2007). The demand for health insurance in the group setting: can you always get what you want? *Journal of Risk and Insurance*, 74(1), 115-140.
- Propper, C. (2000). The demand for private health care in the UK. *Journal of Health Economics*, 19, 855-876.