

# **DEMOGRAPHIC PROFILING OF LIFE INSURANCE OWNERSHIP IN THE NORTHERN REGIONS OF MALAYSIA**

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## **ABSTRACT**

The paper aims to provide the demographic profiling of life insurance ownership in the northern regions of Malaysia that could be generalized to the whole of Malaysia so that efforts could be taken to raise the market penetration rate of life insurance by insurers in promoting the purchase of life insurance to individuals who have not owned life insurance yet. A structured questionnaire was used to collect data through stratified random sampling to enable generalization of findings. The data were subject to binary logistic regression analysis. The major findings show that gender, education, ethnicity and income have a significant relationship with life insurance ownership. Life insurance policyholders (in the northern regions) of Malaysia are more likely the males, highly educated individuals, the Chinese and middle income earners. The paper proposes that efforts be taken to identify and encourage the females, less educated individuals, non-Chinese and low income earners who have not owned any life insurance to purchase one. The paper suggests that future studies can consider other geographical areas of Malaysia or the whole of Malaysia in demographic profiling for conventional and Islamic life insurance ownership separately, and for their different types of life insurance products.

**Keywords:** Demographic profiling; Life insurance ownership; Malaysia; Binary logistic regression analysis

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*Received: 28 March 2018*

*Accepted: 12 January 2019*

## **1. INTRODUCTION**

Life insurance plays an important role in providing financial security to individuals and their beneficiaries. The main purpose of purchasing life insurance is to minimize the financial stress and anxiety which would be endured by the individuals and their family members during unfortunate events (e.g. the premature death of breadwinner). However, life insurance ownership among Malaysians is still considered not as favorable as expected.

According to the Monthly Highlights and Statistics (November 2018) of the central bank of Malaysia (Bank Negara Malaysia, 2018), the conventional life insurance market penetration rate (measured by total number of policies in force divided by total population) of Malaysia was at 40.3%

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in 2015 (2016: 40.0%). Meanwhile, the Islamic life insurance market penetration rate (measured by total number of certificates in force divided by total population) of Malaysia was at 14.7% in 2015 (2016: 14.6%). When considering both conventional and Islamic life insurance together, their combined market penetration rate was at 55.0% in 2015 (2016: 54.6%). The market penetration rates appear to remain the same but have gone down slightly from 2015 to 2016.

The combined market penetration rate of conventional and Islamic life insurance at 55.0% in 2015 is far below the target rate of 75% by 2020 as outlined in Malaysia's Economic Transformation Programme (Performance Management and Delivery Unit, 2013). The life insurance market of Malaysia still remains widely untapped as compared to other countries in Asia that have much higher market penetration rates in 2015, e.g. Japan at 126.1% (2016: 132.1%) (Life Insurance Association of Japan, 2017), Hong Kong at 160.5% (2016: 162.9%) (Hong Kong Insurance Authority, 2016), South Korea at 168.2% (2016: 169.9%) (Korea Life Insurance Association, 2016) and Singapore at 242.7% (2016: 246.1%) (Monetary Authority of Singapore, 2016). Therefore, more studies are required to examine life insurance ownership in Malaysia by profiling the demographic characteristics of life insurance policyholders so that necessary actions can be taken by life insurers in promoting their life insurance products to prospective policyholders to encourage the purchase of life insurance by those who have not owned life insurance yet. As such demographic profiling of life insurance ownership, in terms of gender, age, marital status, education level, number of dependents, ethnicity and income level, was undertaken. This study was conducted in the northern regions of Malaysia, in the four states of Kedah, Penang, Perak and Perlis that could resemble the different levels of urbanization (between rural and urban areas) and the composition of ethnic groups (of Malay, Chinese, Indian and other races) among the component states in Malaysia, so that the findings of this study could be generalized to the whole of Malaysia. Besides that the identification of predominant demographic factors in life insurance ownership in the context of Malaysia could also provide evidence whether life insurance ownership among Malaysians is in line with expected utility theory that the purchase of life insurance by Malaysians is meant to attain certainty or to avoid risk.

This paper is structured in the following manners: Section-2 reviews past studies that have examined the relationship between demographic factors and life insurance ownership, Section-3 describes the research methodology, Section-4 provides and discusses the results, and Section-5 concludes the findings of this study.

## **2. LITERATURE REVIEW**

Expected utility theory has been used to explain the purchase of life insurance by individuals. Based on expected utility theory, an individual's decision whether to purchase life insurance or not depends on the expected utility with or without life insurance. The individual who has decided to purchase life insurance is opting for a certain level of utility over an uncertain level of utility. The purchase of life insurance is regarded as a demand for certainty, or equivalently for avoiding risk. Therefore, individuals are more likely to purchase life insurance when they have stronger bequest motive, higher income and greater probability of death (Campbell, 1980; Fischer, 1973; Hakansson, 1969; Lewis, 1989; Yaari, 1965).

Individuals generally have a stronger bequest motive if they are married, have a bigger number of dependents in the household and have acquired a higher level of education. These individuals are more likely to purchase life insurance with the intention of creating trans-generational wealth. The individuals earning higher income have a greater human capital value. These individuals are more likely to purchase life insurance to protect their beneficiaries from financial difficulties because their premature death will result in a greater loss of human capital value to their beneficiaries. Meanwhile, a greater probability of death will induce the purchase of life insurance among the males who generally have a higher mortality rate (than the females). However, when individuals grow much older (implicating a greater probability of death), their accumulated wealth is presumed to have increased, so this reduces their likelihood to purchase life insurance (Campbell, 1980; Fischer, 1973; Lewis, 1989).

Numerous past studies have examined whether demographic factors (i.e. gender, age, marital status, education, number of dependents, ethnicity and income) have a relationship with life insurance ownership. A brief review of these studies is provided below.

Gutter and Hatcher (2008) have used the data obtained from the Survey of Consumer Finance for the year 2004 to examine life insurance ownership in U.S. Their findings show that the likelihood to own life insurance increases with the increase in household earnings and the household head's age. The household heads who have completed high school education are more likely to own life insurance than those who do not complete high school education. However, household size and the presence of a child are not significant factors for life insurance ownership. Although Gutter and Hatcher (2008) have found a slight difference in life insurance ownership between African-American and the White citizen, ethnicity is not a significant factor for life insurance ownership.

Ćurak, Džaja and Pepur (2013) have examined life insurance ownership in the Republic of Croatia. Their data were collected from a survey distributed to the residents of Croatia. They have found that the respondents in different age groups have a different pattern of life insurance ownership. Most respondents in the age group of 44-56 years old (72%) owned life insurance, followed by the respondents in the age groups of 31-43 years old (69%), 57-69 years old (47%) and 18-30 years old (38%). Only one out of five respondents (20%) in the age group of 70 years old and above is found to own life insurance. Meanwhile, their findings show that there is a positive and significant relationship between education and life insurance ownership. The respondents who have a university degree (94%) exhibit the highest likelihood to own life insurance, followed by the respondents who have high (50%), secondary (48%) and low (33%) education levels. Other demographic factors (i.e. gender, marital status and number of family members) examined do not show significant relationship with life insurance ownership.

A few past studies have examined life insurance ownership in Malaysia. The studies of Annamalah (2013), Loke and Goh (2012), Tan and Lim (2016) and Tan, Wong and Law (2009) do not differentiate between conventional and Islamic life insurance. Gustina and Abdullah (2012) conducted a comparative study on conventional and Islamic life insurance. Meanwhile, the study of Sherif and Shaairi (2013) focuses on Islamic life insurance.

Tan et al.'s (2009) study examines life insurance ownership by randomly distributing structured questionnaires to individuals throughout Malaysia. Their findings show that yearly household income and age have a positive and significant relationship with life insurance ownership.

Unexpectedly, number of children is found to have a negative and significant relationship with life insurance ownership. The finding on number of children is not in line with expected utility theory for individuals with a stronger bequest motive (proxied by number of dependents) to be more likely to purchase life insurance. According to Tan et al. (2009), this could possibly because Malaysians still have a strong cultural belief that their children would fulfill their filial duties to take care of their parents. Thus, when the individuals have many children, they have not much desire to purchase life insurance. Meanwhile, their findings do not show that gender, marital status and education are significant factors for life insurance ownership.

Loke and Goh (2012) have examined life insurance ownership of individuals in Penang (a state located in the northern regions of Malaysia). Their survey was administered by randomly distributing structured questionnaires to respondents in shopping mall, commercial areas and offices, from mid-March to mid-April 2011. They have found that income has a positive and significant relationship with life insurance ownership. Making low-middle income group (earning between RM2,000 and RM4,000) as the base group, the likelihood to own life insurance by high income group (earning greater than RM6,000) increases more than six times. The respondents in the age group of 20-29 years old have a lower likelihood to own life insurance as compared to the respondents in the age group of 30-39 years old. Single respondents are found to be less likely to buy life insurance than married respondents. Unexpectedly, the likelihood to own life insurance is found to be lower among respondents with tertiary education than those without tertiary education. Loke and Goh (2012) explained that this could possibly due to more highly educated individuals are attracted to other wealth management and creation products (e.g. mutual fund), not life insurance. Meanwhile, ethnicity is found to have a significant relationship with life insurance ownership. The Chinese and Indian are more likely to own life insurance than the Malay. However, gender and number of dependents do not have a significant relationship with life insurance ownership.

Annamalah (2013) has examined life insurance ownership among married couples. A random survey was conducted from 2012 to 2013 by distributing self-administered questionnaires to be answered by the household head in the family. The empirical results show that income and education have a positive and significant relationship with life insurance ownership. Meanwhile, age, number of children and ethnicity are found to be not significant factors.

Tan and Lim (2016) have examined life insurance ownership of Alor Setar city folks in Kedah (a state located in the northern regions of Malaysia). A structured questionnaire was used to collect data from early February to mid-March 2015. Their findings show that ethnicity and income have a significant relationship with life insurance ownership. Life insurance policyholders in Alor Setar are more likely the Chinese and higher income earners as compared to the Malay and low income earners. Meanwhile, other demographic factors (i.e. gender, age, marital status, education and number of dependents) are found to have no significant relationship with life insurance ownership.

Gustina and Abdullah (2012) have conducted a comparative study to examine conventional (measured by premium amount per policyholder) and Islamic (measured by contribution amount per participant) life insurance ownership. The data used in their study were obtained from Bank Negara Malaysia and Department of Statistics Malaysia for the period from 1990 to 2009. Their

findings show that the most important factors for conventional and Islamic life insurance ownership are income and education respectively. Although income is found to have a positive and significant relationship with both conventional and Islamic life insurance ownership, education is found to have a positive and significant relationship with Islamic life insurance ownership only. Their findings also show that religion (measured by the ratio of Muslim population to total population) has a significant relationship with Islamic life insurance ownership. The finding on religion is expected by Gustina and Abdullah (2012) because Islamic life insurance serves as the alternative to conventional life insurance for the Muslim whose religion is Islam. Hence, Islamic life insurance ownership is projected to be high when there is a larger Muslim population in the country.

Sherif and Shaairi (2013) have examined Islamic life insurance ownership (measured by total annual contribution amount). Their data were obtained from Bank Negara Malaysia and Department of Statistics Malaysia for the period from 1986 to 2010. Their findings show that income, education, dependency ratio and the religion of Islam (proxied by total number of Muslim population) have a positive and significant relationship with Islamic life insurance ownership.

Based on the past studies above, their findings can be summarized as below:

- (a) Gender is consistently found to be not a significant factor for life insurance ownership (Ćurak et al., 2013; Loke & Goh, 2012; Tan & Lim, 2016; Tan et al., 2009).
- (b) The findings on age are mixed. The studies of Gutter and Hatcher (2008) and Tan et al. (2009) show that age has a positive and significant relationship with life insurance ownership. However, the studies of Annamalah (2013) and Tan and Lim (2016) show that age is not a significant factor for life insurance ownership.
- (c) The relationship between marital status and life insurance ownership is inconclusive. The study of Loke and Goh (2012) shows that married individuals are more likely to own life insurance. However, three other past studies show that marital status is not a significant determinant of life insurance ownership (Ćurak et al., 2013; Tan & Lim, 2016; Tan et al., 2009).
- (d) Many past studies have found education to have a positive and significant relationship with life insurance ownership (Annamalah, 2013; Ćurak et al., 2013; Gustina & Abdullah, 2012; Gutter & Hatcher, 2008; Sherif & Shaairi, 2013).
- (e) Number of dependents is found to have no significant relationship with life insurance ownership in most past studies (Annamalah, 2013; Ćurak et al., 2013; Gutter & Hatcher, 2008; Loke & Goh, 2012; Tan & Lim, 2016).
- (f) The findings on ethnicity are mixed. In U.S., Gutter and Hatcher's (2008) study shows that ethnicity is not a significant factor. In Malaysia, the findings on ethnicity are not consistent. The studies of Loke and Goh (2012) and Tan and Lim (2016) show that ethnicity has a significant relationship with life insurance ownership. Non-Malay citizens are found to be more likely to own life insurance than Malay citizens. However, the study of Annamalah (2013) shows that ethnicity is not a significant factor for life insurance ownership.

- (g) The findings of most past studies show that income has a positive and significant relationship with life insurance ownership (Annamalah, 2013; Gustina & Abdullah, 2012; Gutter & Hatcher, 2008; Loke & Goh, 2012; Sherif & Shaairi, 2013; Tan & Lim, 2016; Tan et al., 2009). These findings are in line with expected utility theory for individuals with higher income to be more likely to purchase life insurance (Campbell, 1980; Fischer, 1973; Hakansson, 1969; Lewis, 1989).

### 3. METHODOLOGY

This study provides demographic profiling of life insurance ownership. In specific, this study aims to examine whether the demographic factors of gender, age, marital status, education, number of dependents, ethnicity and income have a relationship with life insurance ownership.

#### 3.1. Data Collection

A structured questionnaire was used to collect the data required by this study. Data collection was conducted from mid-July to end of December 2015 in the northern regions of Malaysia that consist of four states at different levels of urbanization with Penang (90.8%) having the highest rate of urbanization, followed by Perak (69.7%), Kedah (64.6%) and Perlis (51.4%) as reported in decennial census 2010 of the Department of Statistics Malaysia (2011). As such, this study included both the rural and urban areas in examining life insurance ownership. Meanwhile, the different ethnic groups in these four states in the northern regions of Malaysia (Malay, 62.4%; Chinese, 27.2%; Indian, 9.8%; other races, 0.6%) do not have substantial difference from the whole of Malaysia (Malay, 68.1%; Chinese, 23.7%; Indian, 7.2%; other races, 1.0%) in 2015 (Department of Information Malaysia, 2015). Therefore, the findings of this study could be generalized to the whole of Malaysia.

The units of analysis of this study are shoppers intercepted in shopping malls, and individuals approached at their work places in commercial areas. Based on the formula of Krejcie and Morgan (1970), this study required a sample of 384 respondents. However, a sample size greater than 400 is recommended to run binary logistic regression analysis (Hair, Black, Babin & Anderson, 2010). Hence, a sample size of 500 respondents was used in this study. This study employed stratified random sampling method to collect its data. Stratified sampling was used so that the sample of this study is representative of the population composition of Kedah, Penang, Perak and Perlis that resembles the composition of ethnic groups of Malaysia to enable generalization of findings. Refer to Table 1 for details. Out of 500 sets of questionnaires distributed, 450 sets were returned but only 417 sets were found to be completely filled up. After screening for outliers, four cases deemed to have out-of-range standardized residual (ZResid) values were being removed from the sample. Hence, only 413 cases are available for further analysis.

**Table 1: Stratified Random Sampling by States and Ethnic Groups**

<b>A. Population by States and Ethnic Groups (N=6,202,000)</b>										
State	Malay Population		Chinese Population		Indian Population		Other Races Population		Total Population	
	('000)	%	('000)	%	('000)	%	('000)	%	('000)	%
Kedah	1574.4	79	263.2	13	143.2	7	19.6	1	2000.4	100
Penang	699.4	44	689.6	44	166.0	11	4.7	1	1559.7	100
Perak	1386.7	57	713.0	30	293.3	12	10.5	1	2403.5	100
Perlis	211.4	89	19.2	8	3.1	1	4.7	2	238.4	100

*Source:* Department of Information Malaysia (2015)

<b>B. Sample by States and Ethnic Groups (n=500)</b>										
State	Malay Sample		Chinese Sample		Indian Sample		Other Races Sample		Total Sample	
		%		%		%		%		%
Kedah	126	79	21	13	11	7	2	1	160	100
Penang	55	44	55	44	14	11	1	1	125	100
Perak	111	57	59	30	23	12	2	1	195	100
Perlis	17	89	1	8	1	1	1	2	20	100

*Note:* If the total percent does not equal 100%, it is because of rounding effects.

### 3.2. Questionnaire Design

The questionnaire contains questions asking about the respondents' life insurance ownership (not differentiating between conventional and Islamic life insurance) and their demographic characteristics such as gender, age, marital status, education level, number of dependents, ethnicity and monthly income level. First, the respondents were asked a question of "Do you own life insurance?" that has a binary choice of "yes" or "no" to find out their life insurance ownership status. Next, for demographic information, the respondents were required to indicate their (i) gender – either male or female, (ii) marital status – either single, married, divorced/separated or widowed, (iii) education level – either low (completed secondary/high school), average (obtained other academic qualifications), or high (acquired a bachelor's degree or higher), (iv) ethnicity – either Malay, Chinese, Indian or other races, and (v) monthly income level – either low (earning less than RM2,000), low-middle (earning between RM2,000 and RM4,000), high-middle (earning between RM4,001 and RM6,000), or high (earning more than RM6,000). Meanwhile, for age and number of dependents, the respondents were required to state their age and number of persons in the family depending on their financial support respectively.

### 3.3. Methods of Analysis

Binary logistic regression analysis was employed to examine the relationship between demographic factors (i.e. gender, age, marital status, education, number of dependents, ethnicity and income) and life insurance ownership. Logistic regression is sensitive to high correlations (multicollinearity) among predictor variables (Pallant, 2013), so multicollinearity diagnostic test was performed by examining the two collinearity statistics of tolerance and variance inflation factor (VIF) of the variables to ensure that the estimated model is free from collinearity problem.

As the rule of thumb, tolerance values less than 0.10 or VIF values above 10 indicate the presence of multicollinearity (Pallant, 2013).

Next, Omnibus Tests of Model Coefficients and Hosmer and Lemeshow Test were used to examine the overall goodness of fit of the estimated binary logistic regression model. The model is considered as a good fit model when the result of Omnibus Tests of Model Coefficients is significant (indicating the estimated model is significantly better than the baseline model) while the result of Hosmer and Lemeshow Test is not significant (indicating the predicted values of the estimated model are not significantly different from the observed values) (Pallant, 2013). On the other hand, the Cox & Snell and Nagelkerke R-squared values were used to determine how much variations in the outcome variable (i.e. life insurance ownership) can be explained by the explanatory variables (i.e. demographic factors). Meanwhile, the overall correct percentage was used to gauge the percent of cases for which the outcome variable (i.e. life insurance ownership) is correctly predicted by the estimated model.

## 4. RESULTS AND DISCUSSION

This section presents and discusses the results of this study. First, it describes the sample of this study. Next, it provides the results of the estimated binary logistic regression model. Then, discussions are made with regard to the goodness of fit of the estimated model, and the relationship between demographic factors and life insurance ownership.

### 4.1. *Descriptive Statistics*

This study has 413 cases in its sample. About 37.3% of the respondents are from Kedah, 24.9% are from Penang, 32.5% are from Perak and 5.3% are from Perlis. About 55% of the respondents owned life insurance, while 45% do not own any life insurance. Female respondents (51.1%) are slightly more than male respondents (48.9%). More than half of the respondents are single (55.9%), followed by married (41.2%), divorced/separated (1.7%) and widowed (1.2%). Most of the respondents have low education level (63.9%), 15.3% have average education level and 20.8% have high education level. Majority of the respondents are Malay (66.3%), 27.1% are Chinese, 5.3% are Indian and 1.2% are other races. About their monthly income level, 63% are in low income group, 26.4% are in low-middle income group, 6.3% are in high-middle income group and 4.4% are in high income group. The respondents' age ranged from 16 to 64 years old. Meanwhile, the number of their dependents ranged from none to 11 persons. (Refer to Table 2.)



**Table 2:** Descriptive Statistics (n=413)

<b>Demographic Characteristic (Categorical Variable)</b>	<b>Attribute</b>	<b>Frequency</b>	<b>Valid Percent (%)</b>
Gender	Female	211	51.1
	Male	202	48.9
Marital status	Single	231	55.9
	Married	170	41.2
	Divorced/separated	7	1.7
	Widowed	5	1.2
Education level	Low	264	63.9
	Average	63	15.3
	High	86	20.8
Ethnicity	Malay	274	66.3
	Chinese	112	27.1
	Indian	22	5.3
	Other races	5	1.2
Income level	Low	260	63.0
	Low-middle	109	26.4
	High-middle	26	6.3
	High	18	4.4
State	Kedah	154	37.3
	Penang	103	24.9
	Perak	134	32.4
	Perlis	22	5.3
Life insurance ownership	Yes	227	55.0
	No	186	45.0
<b>Demographic Characteristic (Continuous Variable)</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
Age	30	16	64
Number of dependents	2	0	11

*Note:* If the total percent does not equal 100%, it is because of rounding effects.

#### 4.2. *Estimated Binary Logistic Regression Model and its Goodness of Fit*

Table 3 presents the results of the estimated binary logistic regression model in panel A and the results on the goodness of fit of the estimated model in panel B. First, this section highlights and discusses the goodness of fit of the estimated model. Then, it is followed by the discussion on the relationship between demographic factors and life insurance ownership. As a guide for decision, the p-value of 0.05 or lower is considered as significant.

**Table 3:** Estimated Model showing the Relationship between Demographic Factors and Life Insurance Ownership and its Goodness of Fit (n=413)

Variable	B	S.E.	Wald	Exp(B)	95% C.I. for Exp(B)	
					Lower	Upper
Male	0.506 *	0.236	4.613	1.659	1.045	2.634
Age	0.010	0.015	0.419	1.010	0.980	1.041
Married	0.180	0.312	0.331	1.197	0.649	2.206
Divorced/separated	-0.079	0.974	0.007	0.924	0.137	6.236
Widowed	-0.688	1.185	0.337	0.503	0.049	5.125
Average education	0.603	0.320	3.558	1.828	0.977	3.421
High education	0.668 *	0.335	3.971	1.950	1.011	3.761
Number of dependents	0.025	0.059	0.179	1.025	0.913	1.151
Chinese	2.021 **	0.314	41.449	7.545	4.078	13.959
Indian	0.848	0.473	3.222	2.336	0.925	5.899
Other races	0.278	0.966	0.083	1.320	0.199	8.778
Low-middle income	0.764 **	0.294	6.742	2.147	1.206	3.821
High-middle income	1.223 *	0.596	4.216	3.399	1.057	10.926
High income	1.571	0.841	3.487	4.812	0.925	25.034
Constant	-1.497	0.435	11.846	0.224		

Note: The reference categories are female, single, low education level, Malay and low income group.  
Note: \*\* indicates significant at 1% level; \* indicates significant at 5% level.

<b>B. Goodness of Fit of Estimated Model</b>	
Omnibus Tests of Model Coefficients, Chi-square (df = 14, p-value = 0.000)	106.520
Hosmer and Lemeshow Test, Chi-square (df = 8, p-value = 0.065)	14.721
Cox & Snell R-Squared	0.227
Nagelkerke R-Squared	0.304
Overall Correct Percentage	69.5%

The results of multicollinearity diagnostic test show that no variables in the model have a tolerance value less than 0.10 or a VIF value above 10. The estimated model is free from collinearity problem. From the panel B of Table 3, the result of Omnibus Tests of Model Coefficients is significant (Chi-square value = 106.520, df = 14, p-value = 0.000). This shows that the estimated model is significantly better than the baseline model. The result of Hosmer and Lemeshow Test is not significant (Chi-square value = 14.721, df = 8, p-value = 0.065). This indicates that the predicted outcomes for life insurance ownership (from the estimated model) are not significantly different from the observed samples of life insurance ownership. Therefore, the estimated model is a good fit model. The demographic factors collectively are able to explain 22.7% (Cox & Snell R-squared value) to 30.4% (Nagelkerke R-squared value) of the variance in life insurance ownership. The estimated model can correctly predict 69.5% of the cases (i.e. 287 out of 413 cases are correctly predicted).

From the panel A of Table 3, the results show that gender, education, ethnicity and income have a significant relationship with life insurance ownership. The finding on gender shows that the males

( $B = 0.506$ ,  $p$ -value = 0.032) are about 1.7 times more likely to own life insurance than the females. The males, who generally have a higher mortality rate (than the females) and being the breadwinner of the family, have a greater probability of death and assume the responsibility to care for their family, so they are more likely to own life insurance.

The finding on education shows that the respondents with high education level ( $B = 0.668$ ,  $p$ -value = 0.046) are about two times more likely to own life insurance than the respondents with low education level. This finding provides support to the findings of past studies that more highly educated individuals are more likely to own life insurance (Annamalah, 2013; Ćurak et al., 2013; Gustina & Abdullah, 2012; Gutter & Hatcher, 2008; Sherif & Shaairi, 2013). Individuals who have acquired a higher level of education are expected to be more aware of the importance of life insurance in personal financial management (i.e. to protect their beneficiaries against financial difficulties caused by the premature death of breadwinner) and they are assumed to earn higher income, so they are financially more affordable to own life insurance.

The finding on ethnicity shows that the Chinese ( $B = 2.021$ ,  $p$ -value = 0.000) is about 7.5 times more likely to own life insurance than the Malay. This finding provides support to the findings of Loke and Goh (2012) and Tan and Lim (2016) that the Chinese is more likely to own life insurance than the Malay. The finding of significantly more Chinese than Malay owning life insurance is expected as the Malay in Malaysia is a Muslim, and the teachings of Islam hinder a Muslim from purchasing conventional life insurance which contains the elements of Al-gharar (uncertainty), Al-maisir (gambling) and Al-riba (interest) that contravene the decrees of Shariah laws. Although Islamic life insurance is Shariah-compliant and serves as the alternative to conventional life insurance, its market share is still relatively small as compared to conventional life insurance. Having said the above, Muslim individuals always believe that their life is in the God's hands. Thus, the Malay being a Muslim is less inclined to own life insurance.

The findings on income show that the respondents in low-middle ( $B = 0.764$ ,  $p$ -value = 0.009) and high-middle ( $B = 1.223$ ,  $p$ -value = 0.040) income groups (i.e. the middle income earners) are more likely to own life insurance. These two middle income groups are found to be two times and three times respectively more likely to own life insurance relative to the low income group. These findings provide support to the findings of past studies that the likelihood to own life insurance increases at higher income levels (Annamalah, 2013; Gustina & Abdullah, 2012; Gutter & Hatcher, 2008; Loke & Goh, 2012; Sherif & Shaairi, 2013; Tan & Lim, 2016; Tan et al., 2009), and at different degrees of intensity (Loke & Goh, 2012). These findings are also in line with expected utility theory for individuals with higher income to be more likely to purchase life insurance (Campbell, 1980; Fischer, 1973; Hakansson, 1969; Lewis, 1989). When income level increases, the premature death of a breadwinner will bring about a greater loss of human capital value to the surviving family members, so the individuals are more likely to purchase life insurance to opt for a certain level of utility over an uncertain level of utility (i.e. to ensure certainty), either for the purpose of protecting their beneficiaries against financial hardships due to their untimely death or as a method of transferring wealth to their descendants. Furthermore, with higher income, the individuals have a bigger purchasing power that makes the purchase of life insurance becomes affordable.

The other three demographic factors (i.e. age, marital status and number of dependents) are found to have no significant relationship with life insurance ownership. Despite being insignificant, the

findings on age (Annamalah, 2013; Tan & Lim, 2016), marital status (Ćurak et al., 2013; Tan & Lim, 2016; Tan et al., 2009) and number of dependents (Annamalah, 2013; Ćurak et al., 2013; Gutter & Hatcher, 2008; Loke & Goh, 2012; Tan & Lim, 2016) in this study are similar to the findings of several past studies.

## 5. CONCLUSION

The combined market penetration rate of life insurance of Malaysia was at 55% in 2015. In other words, almost half (45%) of the population of Malaysia are still uninsured. As such the life insurance market of Malaysia has not been fully tapped. It is hoped that based on the findings of this study on demographic profiling of life insurance ownership, concerted efforts could be taken to raise the market penetration rate of life insurance by insurers in promoting the purchase of life insurance to individuals who have not owned life insurance yet.

The major findings of this study show that gender, education, ethnicity and income have a significant relationship with life insurance ownership. Life insurance policyholders (in the northern regions) of Malaysia are more likely the males, highly educated individuals, the Chinese and middle income earners. Based on these findings, it is recommended that efforts could be taken to identify and encourage the females, less educated individuals, non-Chinese and low income earners who have not owned any life insurance to purchase one.

Nowadays more females are in the labor force. Their role of a homemaker has shifted to become a provider for their family to alleviate the financial burden of the breadwinner who is usually the male (in the past). Therefore, now life insurance is also important to the females as a protection tool to mitigate their financial risks. Females are different from males. While the males generally have a higher mortality rate, the females have a higher morbidity rate. To induce more females to own life insurance, it is suggested that product innovations are needed to produce tailor-made life insurance products with added (medical) benefits (as riders) for the females.

Less educated individuals may not be aware of the importance of life insurance. It is suggested that awareness campaigns be held from time to time to disseminate knowledge about life insurance to educate the general public and specifically the less educated individuals about the importance of life insurance. In addition, life insurers must use simple languages (avoiding jargon or terminology) in explaining the various types of life insurance products available in the market so that prospective policyholders, especially the less educated, can easily understand the benefits provided by the different types of life insurance policies.

The Malay is the biggest proportion of population and they formed more than 60% of the labor force of Malaysia since 2000 (Department of Statistics Malaysia, 2017). This group of Malay citizens has the earning power and the financial capability of purchasing life insurance. To reach out to them, the Malay being a Muslim, Islamic life insurance which is Shariah-compliant could be promoted to them in encouraging greater life insurance ownership among them. This segment of market has a vast growth opportunity (as compared to conventional life insurance) in view of its current small market size.

To boost life insurance ownership among the low income earners, it is suggested that an affordable life insurance product could be promoted to them. As such low income will no longer become a reason that will restrain them from owning life insurance. For example, micro-insurance with low premium payments (which has been available in Malaysia since 2010) could be recommended to this targeted group.

This study admittedly has limitation as its scope of study is confined to the northern regions of Malaysia. Therefore, it is suggested that future studies could consider other geographical areas of Malaysia or the whole of Malaysia in demographic profiling for conventional and Islamic life insurance ownership separately, and for their different types of life insurance products (e.g. term, endowment, investment-linked and whole life insurance).

### ACKNOWLEDGEMENT

The authors wish to thank Universiti Utara Malaysia in funding this study under the Research Grant Scheme for Postgraduate Program (S/O code 15927).

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