LIFE INSURANCE OWNERSHIP AND DEMOGRAPHIC BACKGROUND OF ALOR SETAR CITY FOLK IN KEDAH

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ABSTRACT

This is a preliminary study conducted to examine the relationship between life insurance ownership and the demographic background of Alor Setar city folk. A non-probability convenience sampling technique was used to collect data from early February to mid March 2015. A total of 200 sets of structured questionnaires were distributed. After filtering out not completely filled up questionnaires and outliers from the returning 140 sets, only 108 cases were subject to binary logistic regression analysis. The major findings of this study show that ethnicity and income have a significant relationship with life insurance ownership among Alor Setar city folk. Life insurance policyholders are more likely to be Chinese who has higher income as compared to Malay and low income earners. Other demographic variables (i.e. gender, age, education, marital status and number of dependents) are found to have no significant relationship with life insurance ownership among Alor Setar city folk. The study has proposed that intensive promotions of Takaful family and micro-insurance be made targeting at the Malay and low income earners. It is also suggested that future study with a bigger sample size be conducted to cover wider areas in order to obtain more reliable findings and to enable the generalization of findings.

Keywords: life insurance, demographic, binary logistic regression analysis

1.0 INTRODUCTION

Life insurance plays an important role in providing financial security to individuals and their family. The predominant purpose of purchasing life insurance is to protect individuals against any unforeseen financial risks which would be suffered by them and their family members due to adverse events (e.g. the premature death of breadwinner). However, life insurance ownership among Malaysians is still considered not as favorable as expected.

Two types of life insurance are sold in Malaysia, namely conventional life insurance and Islamic life insurance (i.e. family Takaful). According to the Monthly Statistical Bulletin (November 2015) of Bank Negara Malaysia, the market penetration rates of conventional life insurance (measured by the total number of life insurance policies in force divided by total population) fluctuated over years hovering around 40% (i.e. 2010 at 40.4%, 2011 at 39.6% and 2014 at 41.0%). On the other hand, family Takaful business has been growing at a faster pace as compared to conventional life insurance business (Bank Negara Malaysia, 2015). In 2010, the market penetration rate of family Takaful (measured by the total number of Takaful certificates in force divided by total population) was 10.6%. In 2014, the rate has increased to 13.4%.

According to the Performance Management and Delivery Unit (PEMANDU) (2013), it has been tasked with the role, as outlined in Economic Transformation Programme (ETP), to increase Malaysia's life insurance market penetration rate (both conventional and Takaful) to 75% by 2020. However, in 2014, the life insurance market penetration rate (both conventional and Takaful) of Malaysia was only at 54.4% as compared to Japan at 119.5% (Life Insurance Association of Japan, 2015), Hong Kong at 149.3% (Office of Commissioner of Insurance, 2015), South Korea at 165.6% (Korea Life Insurance Association, 2014) and Singapore at 239.6% (Monetary Authority of Singapore, 2014). This implies that the conventional life insurance and family Takaful markets of Malaysia still remain largely untapped. As such, more studies are required to examine the profiles (e.g. demographic background) of those who have owned life insurance (i.e. existing policyholders) so that necessary actions can be taken to encourage those who have not owned life insurance (i.e. prospective policyholders) to purchase life insurance. In line to fill the aforementioned gap, a project has been undertaken to examine life insurance ownership and the demographic background of individuals at the major cities of Kedah, Penang, Perlis and Perak in the northern regions of Malaysia. To start off, a study has been conducted at Alor Setar and this paper will report the findings of this preliminary study.

This paper is structured as follows: Section 2 reviews past studies that have examined the relationship between demographic variables and life insurance ownership, Section 3 states the objectives of this study, Section 4 describes the research methodology, Section 5 provides and discusses the results, and Section 6 concludes the findings of this study.

2.0   LITERATURE REVIEW

Past studies have investigated demographic variables (e.g. age, gender, marital status, education, number of dependents, ethnicity and income) to examine whether they have a significant relationship with the purchase (ownership) of life insurance. A brief review of related past studies is provided below.

Baek and DeVaney (2005) have examined the purchase (ownership) of term life insurance (which is a non cash value life insurance) and cash value life insurance in U.S. Their data are obtained from the Survey of Consumer Finance for the year 2001. Their study examines the demographic background of household heads who owned term life insurance and cash value life insurance.

Their findings on term life insurance ownership show that the household heads tend to be those who have married and a White. The likelihood to own term life insurance increases when the household heads' age rises until they become much older. There is a greater tendency to own term life insurance among household heads in the second, third and fourth (higher) income tax brackets (between $35,151 and $288,350) relative to those in the first (being the lowest) income tax bracket (between $0 and $35,150). However, the education level and number of children of household heads are found to be not significant factors of term life insurance ownership.

On the other hand, their findings on cash value life insurance ownership show that the household heads tend to be those who have married, and who are either younger or older as compared to those middle-aged. Household heads who have some college education are found to be more likely to own cash value life insurance as compared to those who have education level of less than high school. Household heads who are in the fifth (being the highest) income tax bracket ($288,351 or more) have a greater tendency to own cash value life insurance relative to those in the first (being the lowest) income tax bracket (between $0 and $35,150). However, the household heads who are a White have a low tendency to own cash value life insurance. Meanwhile, the number of children of household heads is found to have no significant relationship with cash value life insurance ownership.

Another related study on life insurance ownership in U.S. has been conducted by Gutter and Hatcher (2008). Their data are obtained from the Survey of Consumer Finance for the year 2004. The major findings of their study show that the probability of owning life insurance increases with the increase in total household earnings and the age of household head. Their findings also show that household heads who have completed high school education are more likely to own life insurance than those who do not complete high school education. Household size and the presence of a child are not significant factors of life insurance ownership. Although their study has reported that there is a slight difference between African-American and White citizens in life insurance ownership, the finding is not statistically significant.

Yet another related study on life insurance ownership in U.S., Frees and Sun (2010) have examined the ownership of term life insurance and whole life insurance among household heads in U.S. Their data are acquired from the Survey of Consumer Finance for the year 2004. Their findings on term life insurance ownership show that there is a greater tendency for household

heads who earn higher income, who are better educated and whose household has a higher average age to own term life insurance. Meanwhile, for whole life insurance ownership, none of the demographic variables (i.e. income, education and age) examined are found to be significant.

One more related study on life insurance ownership in U.S., Kim, DeVaney and Kim (2012) have examined two different types life insurance (i.e. term life insurance and cash value life insurance) owned by American households in different income groups (ranging from low to moderate). Their data is gathered through self-administrated questionnaires distributed to the households with an annual household income not more than $80,000.

Their findings on household income show that it has a positive and significant relationship with term life insurance ownership. Further analysis shows that relative to the households in the lowest income group (earning less than $20,000 annually), the likelihood for the households in other higher income groups to own term life insurance is shown to rise at varying degrees of intensity: (i) five times greater for households in the income group earning between $40,001 and $60,000 annually, (ii) more than four times for households in the income group earning between $60,001 and $80,000 annually, and (iii) approximately three times greater for households in the income group earning between $20,001 and $40,000 annually. In contrast, household income is found to have no significant relationship with cash value life insurance ownership.

On the other hand, their findings on the age of household head show that it is positively and significantly related to cash value life insurance ownership only. Meanwhile, for the marital status of household head, household size and the education level of household head, they are found to have no significant relationship with both term and cash value life insurance ownership.

Outside of U.S., Ćurak, Džaja and Pepur (2013) have conducted a study on life insurance consumption (ownership) in the Republic of Croatia. The sample of their study consists of 95 respondents residing in the Republic of Croatia. Their findings on age show that individuals in different age groups act differently on the purchase of life insurance. In their study, most respondents in the age groups of 31-43 years old (69%) and 44-56 years old (72%) have purchased life insurance. Almost half (47%) of the respondents in the age group of 57-69 years old have purchased life insurance whilst only 20% of the respondents in the age group of 70 years old and above have purchased life insurance. Meanwhile, their findings on education show that it has a positive and significant relationship with life insurance ownership, i.e. more highly educated individuals tend to own life insurance. About 94% of the respondents with a university degree have purchased life insurance. However, other demographic variables (i.e. gender, marital status and number of dependents) examined in their study do not show significant relationship with life insurance ownership.

There are a few past studies that have examined the relationship between demographic factors and life insurance ownership in Malaysia. The studies of Tan, Wong and Law (2009), Loke and Goh (2012) and Annamalah (2013) do not differentiate between conventional life insurance and family Takaful. Their pool of life insurance comprises both conventional life insurance and family Takaful. The study of Gustina and Abdullah (2012) is a comparative study whilst the study of Sherif and Shaairi (2013) focuses on family Takaful only.

Tan, Wong and Law's (2009) study examines life insurance ownership by randomly distributing structured questionnaires to individuals throughout Malaysia. Their findings reveal that annual household income and age have a positive and significant relationship with life insurance ownership. However, number of children is found to be negatively and significantly related to life insurance ownership. The finding on number of children does not provide support to expected utility theory which states that individuals with a higher bequest motive (proxied by number of dependents) would tend to have a greater tendency to purchase life insurance (Campbell, 1980; Zhu, 2007). This unexpected finding has been explained by Tan, Wong and Law (2009) that it could possibly due to Malaysians still have a strong cultural belief that their children will fulfill their filial duties to take care of elderly parents. Thus, individuals with many children tend to have less desire to buy life insurance. Meanwhile, for other demographic variables, marital status, gender and education are found to be not significant factors of life insurance ownership.

Loke and Goh's (2012) study examines life insurance ownership of individuals in Penang. Their data are gathered by randomly distributing self-administered questionnaires to individuals in shopping malls, commercial areas and offices from mid March to mid April 2011. Their findings show that income has a positive and significant relationship with life insurance ownership. The likelihood to own life insurance increases by more than six times for high income group (earning greater than RM6,000 monthly) relative to lower-middle income group (earning between RM2,000 and RM4,000 monthly). Individuals in the age group of 20-29 years old have a lower tendency to own life insurance as compared to those in the age group of 30-39 years old. Single individuals are found to be less likely to own life insurance as compared to married individuals. The likelihood to own life insurance is higher among the Chinese and Indian as compared to the Malay. Number of dependents and gender are found to be not significantly related to life insurance ownership. Contrary to expectation, their findings show that those who have tertiary education are less likely to buy life insurance as compared to individuals who do not have tertiary education. Loke and Goh (2012) have explained that the unexpected finding could possibly due to Malaysian individuals with higher education (i.e. tertiary education) are more interested in different types of financial instruments as wealth creation products instead of life insurance.

Annamalah's (2013) study examines life insurance ownership among married couples in Malaysia. The study was conducted from 2012 to 2013 by distributing self-administered questionnaires to household heads in the family. The major findings of the study show that income and education are positively and significantly related to life insurance ownership. However, age, ethnicity and number of children are found to be not significant factors.

Gustina and Abdullah's (2012) comparative study examines the ownership of conventional life insurance and family Takaful in Malaysia. Premium / contribution amount per policyholder / participant is used to proxy life insurance ownership. Their data for the period from 1990 to 2009 are obtained from Bank Negara Malaysia and Department of Statistics Malaysia. Their major findings show that income is the predominant factor influencing the ownership of conventional life insurance, while education level is the most important factor influencing the ownership of family Takaful. Although income is found to have a positive and significant relationship with both the ownership of conventional life insurance and family Takaful, education level is found to

have a positive and significant relationship with the ownership of family Takaful only. Their findings further show that religion (measured by the ratio of Muslim population to total population) has a positive and significant relationship with the ownership of family Takaful (only). This finding is important and it suggests that family Takaful serves as an alternative to conventional life insurance for a country with a significant Muslim population.

Sherif and Shaairi's (2013) study examines the ownership of family Takaful in Malaysia. Total annual contribution amount is used to proxy life insurance ownership. Their data for the period from 1986 to 2010 are obtained from Bank Negara Malaysia and Department of Statistics Malaysia. Their major findings show that income, education level, dependency ratio and religion (measured by total Muslim population) have a positive and significant relationship with the ownership of family Takaful. A high dependency ratio implies there is more number of dependents, so it stimulates the ownership of family Takaful. Their findings on income, education level and religion provide support to the findings of Gustina and Abdullah (2012).

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

(a)   Most studies have found that age is positively and significantly related to life insurance ownership (Gutter and Hatcher, 2008; Tan, Wong and Law, 2009; Frees and Sun, 2010; Kim, DeVaney and Kim, 2012).

(b)   Past studies have consistently found that gender is not a significant factor of life insurance ownership (Tan, Wong and Law, 2009; Loke and Goh, 2012; Ćurak, Džaja and Pepur, 2013).

(c)   Many past studies have found education to have a significant positive relationship with life insurance ownership (Gutter and Hatcher, 2008; Frees and Sun, 2010; Gustina and Abdullah, 2012; Annamalah, 2013; Ćurak, Džaja and Pepur, 2013; Sherif and Shaairi, 2013).

(d)   The findings on the relationship between marital status and life insurance ownership are inconclusive. Two past studies show that married individuals are more likely to own life insurance (Baek and DeVaney, 2005; Loke and Goh, 2012) but the other three past studies show that marital status is an insignificant factor of life insurance ownership (Tan, Wong and Law, 2009; Kim, DeVaney and Kim, 2012; Ćurak, Džaja and Pepur, 2013).

(e)   Most past studies have found that number of dependents is not a significant determinant of life insurance ownership (Baek and DeVaney, 2005; Gutter and Hatcher, 2008; Kim, DeVaney and Kim, 2012; Loke and Goh, 2012; Annamalah, 2013; Ćurak, Džaja and Pepur, 2013).

(f)   The findings on ethnicity are mixed. In the context of multi-ethnic country, the study of Baek and DeVaney (2005) has found that ethnicity has a significant relationship with life insurance ownership in U.S. but it is otherwise in the study of Gutter and Hatcher (2008). Meanwhile, the study of Loke and Goh (2012) has found that there is a significant relationship between ethnicity and life insurance ownership in Malaysia. Non-Malay citizens are found to be more likely to own life insurance as compared to Malay citizens.

(g)   The findings of most past studies show that income has a positive and significant relationship with life insurance ownership (Baek and DeVaney, 2005; Gutter and Hatcher, 2008; Tan, Wong and Law, 2009; Frees and Sun, 2010; Gustina and Abdullah, 2012;

Kim, DeVaney and Kim, 2012; Loke and Goh, 2012; Annamalah, 2013; Sherif and Shaairi, 2013).

Based on the review of past studies, the following remarks can be drawn:

(i)   The findings of most past studies show that age, education and income have a significant positive relationship with life insurance ownership.
(ii)   Gender and number of dependents are consistently found to not have a significant relationship with life insurance ownership.
(iii)   The findings on marital status and ethnicity are mixed. Some past studies show that they have a significant relationship with life insurance ownership but some other studies show otherwise.

3.0   RESEARCH OBJECTIVES

This study is a preliminary investigation to examine life insurance ownership and the demographic background of Alor Setar city folk in Kedah. The major objective of this study is to examine the relationship between demographic variables and life insurance ownership. In specific, this study is to examine whether:

a)   age has a positive relationship with life insurance ownership;
b)   education has a positive relationship with life insurance ownership;
c)   income has a positive relationship with life insurance ownership;
d)   gender has a relationship with life insurance ownership;
e)   number of dependents has a (positive) relationship with life insurance ownership;
f)   marital status has a relationship with life insurance ownership; and
g)   ethnicity has a relationship with life insurance ownership.

4.0   RESEARCH METHODOLOGY

This section describes data collection, questionnaire design and the methods of analysis of this study.

4.1   Data Collection

This study employed non-probability convenience sampling to collect its data. Non-probability convenience sampling is a quick, inexpensive and convenient sampling method. This sampling method will enable a preliminary study to try out its questionnaire in an economical manner with less time consumed. As such an improved version of the questionnaire can be used in a subsequent study which covers a wider area that adopts probability sampling method to draw its samples that are representative of the population be conducted.

Data collection was conducted from early February to mid March 2015 in Alor Setar, Kedah. Kedah is a northern state of Peninsular Malaysia, while Alor Setar is the second largest city in Kedah. The units of analysis of this study are individuals approached at their work places and residences. A total of 200 sets of structured questionnaires have been distributed, 140 sets were

being returned. However, only 112 sets were found to be completely filled up. After screening for outliers, four cases deemed to have unacceptably large values of standardized residual (ZResid) were being removed from the sample. Thus, only 108 cases are available for further analysis.

4.2   Questionnaire Design

The questionnaire contains questions asking about life insurance ownership of the respondents and their demographic characteristics such as gender, age, marital status, education level, number of dependents, ethnicity and monthly income level. First, the respondents are asked a question of "Do you own life insurance?" which has a binary choice of "yes" or "no" in order to find out their life insurance ownership status. Next, for demographic information, the respondents are required to indicate their (i) gender (either male or female), (ii) ethnicity (either Malay, Chinese or Indian), (iii) marital status (either married or unmarried), (iv) education level (either completed secondary / high school, obtained a bachelor's degree, a master's degree, or other academic qualifications) and (v) monthly income level (either low income [earning less than RM2,000], low-middle income [earning between RM2,000 and RM4,000], high-middle income [earning between RM4,001 and RM6,000] and high income [earning more than RM6,000]). Meanwhile, for age and number of dependents, the respondents are required to state their age and number of persons in the family who depend on their financial support respectively.

4.3   Methods of Analysis

Binary logistic regression analysis is used to examine the relationship between demographic variables (i.e. age, gender, marital status, education, number of dependents, ethnicity and income) and life insurance ownership. Binary logistic regression analysis is employed by this study because its outcome variable (i.e. life insurance ownership) is a non-metric variable with only two choices of "yes" and "no". Binary logistic regression analysis is preferred as compared to discriminant analysis because the former does not require strict assumptions of multivariate normality and equal variance-covariance matrices across groups (Hair et al, 2010). As such the issue of whether the findings obtained are robust or not will not arise when the above assumptions are not met. Besides that, the explanatory variables (i.e. demographic variables) of binary logistic regression analysis (similar to multiple regression analysis) can be either categorical or continuous, or a combination of both (Pallant, 2013).

Binary logistic regression analysis uses probability scores as its predicted values for outcome variable (i.e. life insurance ownership). Its function is as shown below:

$$Log\left[\frac{p}{1-p}\right] = a + \beta_i X_i + \varepsilon$$

Where
p = The probability of respondents owning life insurance
$(1 - p)$ = The probability of respondents not owning life insurance
$Log\left[\dfrac{p}{1-p}\right]$ = The log of odds that respondents owned life insurance

β_i = The respective coefficients of explanatory variables (i.e. demographic variables)
X_i = Explanatory variables (i.e. demographic variables) of the regression
ε = The stochastic disturbance term of the regression

Binary logistic regression analysis is sensitive to outliers, so it is important to subject individual cases for diagnostic in order to detect outliers so that unrepresentative cases are removed before further analysis is conducted. In general, cases with standardized residual (ZResid) values above 2.5 or less than -2.5 should be examined with care as these cases are clear outliers (Pallant, 2013). In order to ensure that the estimated model is free from collinearity problem, multicollinearity diagnostic test is performed by examining the two collinearity statistics of tolerance and variance inflation factor (VIF) of the variables. As the rule of thumb, tolerance values less than 0.10 or VIF values above 10 indicate the presence of multicollinearity (Pallant, 2013).

Next, the Omnibus Tests of Model Coefficients and Hosmer and Lemeshow Test are used to examine the overall goodness of fit of the estimated model (Pallant, 2013). The estimated model is regarded as a good fit model when the result of Omnibus Tests of Model Coefficients shows that the estimated model is significantly better than the baseline model, and the result of Hosmer and Lemeshow Test shows that the predicted values of the estimated model are not significantly different from the observed values. Further, the "-2 Log Likelihood" (-2LL) statistic (which represents the unexplained variance in the outcome variable, i.e. life insurance ownership) is used to judge whether the estimated model is a better fit model relative to other estimated models (Hair et al, 2010). A smaller -2LL value would reflect that the estimated model is a better fit model relative to other estimated models.

On the other hand, the Cox & Snell and Nagelkerke R-squared values of the estimated model are 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 variables) (Pallant, 2013). Meanwhile, the overall correct percentage is used to gauge the percent of cases for which the outcome variable (i.e. life insurance ownership) is correctly predicted by the estimated model (Pallant, 2013).

5.0   DISCUSSION OF RESULTS

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 variables and life insurance ownership.

5.1   Descriptive Statistics

This study has 108 cases in its sample. Male respondents (50.9%) are slightly more than female respondents (49.1%). More than half of the respondents (63.9%) are married and the remaining 36.1% are unmarried. About 58.3% of the respondents have completed secondary school, 30.6% have a bachelor's degree, 7.4% have a master's degree and 3.7% have acquired other academic qualifications (e.g. diploma, teaching or other private certifications). Chinese respondents comprise 52.8%, while 38.9% are Malay and only 8.3% are Indian. About 31.5% of the respondents have low monthly income, 40.8% have low-middle monthly income, 15.7% have

high-middle monthly income and 12.0% have high monthly income. About 59.3% of the respondents owned life insurance, while 40.7% do not own any life insurance. The respondents in the study are aged between 18 and 64 years old. Meanwhile, the number of family members who depend on the respondent's financial support ranged from none to eight persons. (Refer to Table 1.)

Table 1

Descriptive statistics (n = 108)

Demographic Characteristic (Categorical variable)	Attribute	Frequency	Percent (%)
Gender	Male	55	50.9
	Female	53	49.1
Marital status	Married	69	63.9
	Unmarried	39	36.1
Education level	Secondary / high school	63	58.3
	Bachelor's degree	33	30.6
	Master's degree	8	7.4
	Other academic qualifications	4	3.7
Ethnicity	Chinese	57	52.8
	Malay	42	38.9
	Indian	9	8.3
Income level	Low (< RM2,000)	34	31.5
	Low-middle (RM2,000-RM4,000)	44	40.8
	High-middle (RM4,001-RM6,000)	17	15.7
	High (> RM6,000)	13	12.0
Ownership of life insurance	Yes	64	59.3
	No	44	40.7

Demographic characteristic (Continuous variable)	Average	Minimum	Maximum
Age	37	18	64
Number of dependents	2	0	8

5.2   Estimated Binary Logistic Regression Model and its Goodness of Fit

Table 2 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. To start off, this section highlights and discusses the goodness of fit of the estimated model. Then, it moves on to discuss the relationship between demographic variables and life insurance ownership.

Table 2

Estimated Model showing the relationship between demographic variables and life insurance ownership and its goodness of Fit (n = 108)

A. Estimated Model

Variable	B		S.E.	Wald	Exp(B)	95% C.I. for Exp(B) Lower	Upper
Male	-0.344		0.680	0.256	0.709	0.187	2.688
Age	0.105		0.054	3.733	1.110	0.998	1.235
Married	-1.348		1.190	1.283	0.260	0.025	2.677
Bachelor's degree	0.635		0.829	0.587	1.888	0.372	9.582
Master's degree	0.119		1.126	0.011	1.126	0.124	10.223
Others academic qualifications	-1.228		3.125	0.154	0.293	0.001	133.751
Number of dependents	0.246		0.217	1.294	1.279	0.837	1.956
Chinese	3.611	**	0.915	15.589	37.019	6.164	222.328
Indian	0.910		1.102	0.682	2.484	0.287	21.517
Low-middle income	2.961	**	1.013	8.550	19.318	2.655	140.583
High-middle income	4.668	**	1.609	8.418	106.510	4.548	2494.339
High income	0.891		1.480	0.362	2.437	0.134	44.291
Constant	-6.816		1.922	12.577	0.001		

Note: ** indicates significant at 1% level

B. Goodness of Fit of Estimated Model

Omnibus Tests of Model Coefficients, Chi-square (df = 12, p-value = 0.000)	80.393
Hosmer and Lemeshow Test, Chi-square (df = 8, p-value = 0.981)	1.994
-2 Log Likelihood	65.601
Cox & Snell R-Squared	0.525
Nagelkerke R-Squared	0.708
Overall Correct Percentage	84.3%

The estimated model is free from collinearity problem. No variables in the model have a tolerance value less than 0.10 or a VIF value above 10. From the panel B of Table 2, the result of Omnibus Tests of Model Coefficients is significant (Chi-square value = 80.393, df = 12, 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 = 1.994, df = 8, p-value = 0.981). 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. Further, the estimated model which has excluded four outlier cases (with n = 108) is a better fit model relative to the estimated model which does not remove the outlier cases (with n = 112) as the former model (65.601) has a smaller -2*LL* value than the latter model (92.656). On the other hand, the demographic variables collectively are able to explain 52.5% (Cox & Snell R-squared value) to 70.8% (Nagelkerke R-squared value) of the variance in life insurance ownership. Further, the estimated model can correctly predict 84.3% of the cases. (In other words, life insurance ownership of 91 cases [out of a total of 108] in this study is correctly

predicted.) Hence, based on all the above results, the estimated model is regarded to be a good fit model.

From the panel A of Table 2, the results show that only two (i.e. ethnicity and income) among the seven demographic variables examined are found to have a significant relationship with life insurance ownership. The findings on ethnicity show that the Chinese (B = 3.611, p-value = 0.000) in Alor Setar tends to own life insurance. The results show that the Chinese is 37 times more likely to own life insurance as compared to the Malay. This finding provides support to the finding of Loke and Goh (2012) whose study has found that the Chinese (in Penang) tends to own life insurance as compared to the Malay. The finding of significantly more Chinese than Malay owning life insurance could be due to the fact that the Malay in Malaysia is a Muslim and the teachings of Islam hinder Muslim from purchasing (conventional) life insurance because (conventional) insurance contains the elements of Al-gharar (uncertainty), Al-maisir (gambling) and Al-riba (interest) that contravene the decrees of Shariah laws. Besides that, a Muslim believes that his or her life is in the God's hands. Thus, they are less inclined to own life insurance. The findings on income show that the individuals in both the low-middle (B = 2.961, p-value = 0.003) and high-middle (B = 4.668, p-value = 0.004) income groups in Alor Setar tend to own life insurance. The results show that these two income groups are 19 times and 107 times respectively more likely to own life insurance relative to the low income group. These results validate the findings of past studies that the likelihood to own life insurance increases at higher income levels (Gutter and Hatcher, 2008; Tan, Wong and Law, 2009; Frees and Sun, 2010; Gustina and Abdullah, 2012; Annamalah, 2013; Sherif and Shaairi, 2013) at different degrees of intensity (Baek and DeVaney, 2005; Kim, DeVaney and Kim, 2012; Loke and Goh, 2012). When the income level has increased, the purchasing power of the individuals will also increase. Hence, the purchase of life insurance becomes more possible.

Further analysis has been conducted by plotting the cross-tabulation table for ethnicity and income. The results reveal that more Chinese relative to Malay and Indian (non-Chinese) has higher levels of monthly income. As such, the Chinese individuals who are at higher income levels will have greater purchasing power, so they are more likely to own life insurance. (Refer to Table 3.)

Table 3

Cross-Tabulation table for ethnicity and income (n=108)

Monthly Income Level	Ethnicity			Total
	Malay	Chinese	Indian	
Low (< RM2,000)	21 (61.8%)	11 (32.3%)	2 (5.9%)	34 (100%)
Low-middle (RM2,000-RM4,000)	15 (34.1%)	24 (54.5%)	5 (11.4%)	44 (100%)
High-middle (RM4,001-RM6,000)	4 (23.5%)	11 (64.7%)	2 (11.8%)	17 (100%)
High (> RM6,000)	2 (15.4%)	11 (84.6%)	0 (0%)	13 (100%)
Total	42 (38.9%)	57 (52.8%)	9 (8.3%)	108 (100%)

Other demographic variables, namely gender, age, marital status, education and number of dependents, have failed to show any significant relationship with life insurance ownership among Alor Setar city folk. The insignificant findings on gender (Tan, Wong and Law, 2009; Loke and Goh, 2012; Ćurak, Džaja and Pepur, 2013), marital status (Tan, Wong and Law, 2009; Kim, DeVaney and Kim, 2012; Ćurak, Džaja and Pepur, 2013) and number of dependents (Baek and DeVaney, 2005; Gutter and Hatcher, 2008; Kim, DeVaney and Kim, 2012; Loke and Goh, 2012; Annamalah, 2013; Ćurak, Džaja and Pepur, 2013) in this study have provided further support to the findings of past studies.

The findings on age and number of dependents, although insignificant, they have displayed the expected positive sign. When individuals grow older, they go through different life events at different stages of their lives and eventually come to the time when they feel that life insurance is needed to provide protection for their dependents from declining income as a result of their untimely death, or (in line with expected utility theory) to fulfil their bequest motives of leaving money behind when they die.

Gender is also found to be insignificant. However, its relationship with life insurance ownership should be further explored in future study because male and female individuals show various distinct differences. In general, females have a longer life expectancy than males. Moreover, the social roles of women have changed in the present days when they can easily gain access to education and are able to secure a job. It is not surprised that women can also be the breadwinner of the family.

Marital status and education are also found to have no significant relationship with life insurance ownership. The results for marital status unexpectedly show that married individuals are less likely to own life insurance. The possible explanation might be that married individuals could have experienced financial constrains in view of the costs of living have increased dramatically over the years. As such, their priority is not life insurance but to spend their income on basic needs and to pay for necessities expenses (e.g. food, education for children, mortgage, transportation and so on). On the other hand, for education, the results show that individuals who have a bachelor's degree or a master's degree are more likely to own life insurance. Individuals who have attained higher education are more aware of the importance of life insurance as part of their personal financial management, so they are more likely to own life insurance as compared to those who have lower levels of education.

At this stage, it is still too early to conclude that these demographic variables do not have a significant relationship with life insurance ownership. The insignificant findings of these demographic variables might be due to the major setback of this study, i.e. its small sample size (which is reflected by the wide confidence intervals as shown in the "95% CI for Exp(B)" column in Table 2). Binary logistic regression analysis uses maximum likelihood as its estimation technique by which it requires a larger sample size as compared to multiple regression analysis. According to Hair et al. (2010), a sample size greater than 400 is preferable and each variable is required to have at least 10 observations per estimated parameter. Therefore, a larger sample size will be needed for better results in future study.

6.0 CONCLUSIONS

Life insurance market penetration rate (both conventional and Takaful) of Malaysia is still considered low and almost half (45.6%) of the population is still uninsured. Therefore, the life insurance market of Malaysia has not been fully tapped yet. Therefore, this study has been conducted around Alor Setar (as a preliminary study) to investigate the demographic background of individuals and their life insurance ownership to identify the demographic variables that have a significant relationship with life insurance ownership. By doing so, appropriate actions can be taken to encourage those who have not owned life insurance to purchase it.

The major findings of this study show that ethnicity and income have a significant relationship with life insurance ownership. Life insurance policyholders in Alor Setar are more likely to be Chinese who has higher levels of income as compared to Malay and low income earners. Life insurance is mostly purchased by the Chinese who is more financially capable.

For the case of Malaysia, the Malay being Muslim is hesitant to purchase (conventional) life insurance due to their Islamic teachings and beliefs. As family Takaful can serve as an alternative to conventional life insurance for a country with a significant Muslim population, Takaful products which are Shariah compliance could be promoted to the Malay in encouraging greater life insurance ownership among them. On the other hand, in order to raise life insurance ownership among low income earners, an affordable life insurance product should be promoted to them so that low income will no longer become an excuse 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 proposed to this targeted group.

Other demographic variables (i.e. gender, age, education, marital status and number of dependents) are found to have no significant relationship with life insurance ownership among Alor Setar city folk. As this study is confined to Alor Setar only and has a small sample size, it is suggested that future study be conducted to cover a wider range of areas and to include many respondents (a greater sample size) in order to obtain more reliable findings and to enable the generalization of findings.

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