
ECONOMIC LITERACY: HOW WELL IS MALAYSIA?

Roza Hazli Zakaria¹,

NurulHuda Mohd Satar²,

Department of Economics, Faculty of Economics & Administration, University Malaya, Kuala Lumpur, Malaysia

Nur Annizah Ishak³,

Department of Development Studies, Faculty of Economics & Administration, University Malaya, Kuala Lumpur, Malaysia

Hanira Hanafi⁴,

Nor Hasniah Kasim⁵

Department of Economics, Faculty of Economics & Administration, University Malaya, Kuala Lumpur, Malaysia

Abstract

Economic literacy can be considered an important skill for individuals to guide them in making the right decision. The importance of having an economically literate society is not only necessary due to the possibility that it would allow individuals and households to optimize their resources and enhance their well-being, but more importantly to alleviate the negative externalities of society's economic illiteracy that could adversely affect the well-being of the nation at large. Therefore, this exploratory study aims to provide some indication on the level of economic literacy or awareness among Malaysians. A survey is conducted using a set of questions on economic knowledge, known as Test of Economic Literacy (TEL) on 2,358 Malaysian adults. The finding reveals that Malaysian economic literacy rate is at 40%, indicative of significant ignorant on basic economics understanding. It also shows that economic literacy among Malaysians increase with the level of education and exposure to formal economic education. Hence, policies should be introduced to offer economics courses at an early stage of education and making high school economics

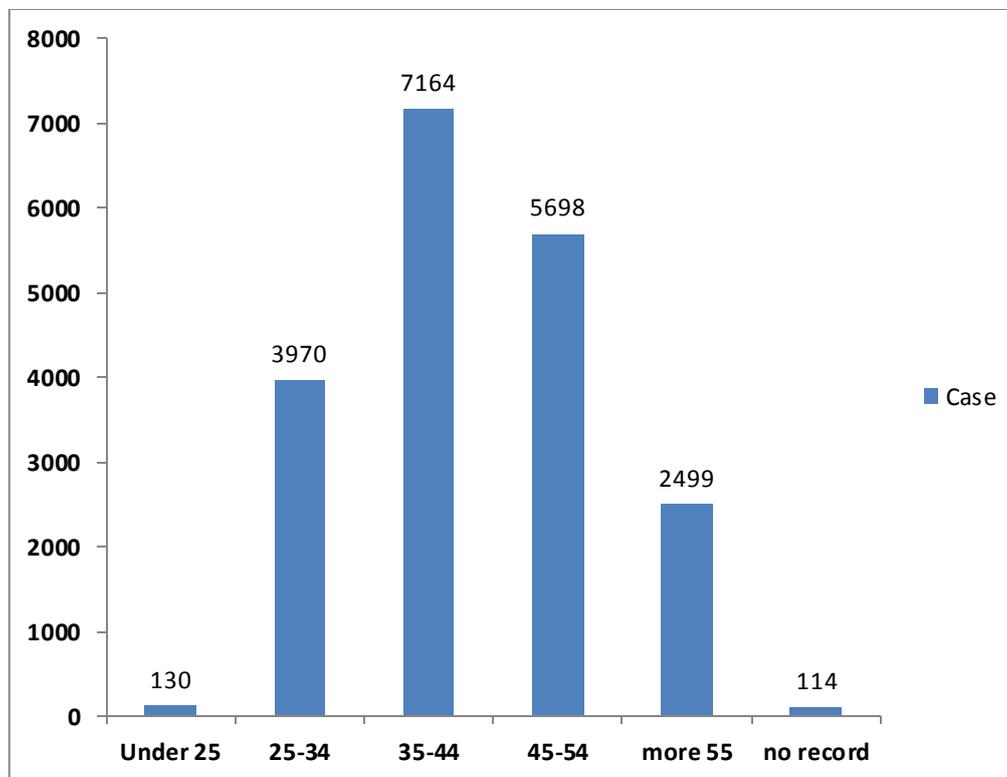
Keywords: Economic Literacy, Economic Education, Awareness

1.0 INTRODUCTION

This study aims to provide some indication on the level of economic literacy or awareness among Malaysians. This concern is brought about by several alarming statistics that to a certain extent dictate Malaysians generally are unaware of the basic of economic principles, economic issues and more importantly, its consequences. According to Central Bank, Malaysia's household debt are among the highest in the region with RM1.03 trillion or 89.1% of gross domestic product (GDP). Substantiated growth of household debt to GDP ratio rose by 20% in 2014 from 68.8% in 2006 (Bank Negara Malaysia, 2016). Furthermore, household debt to disposable income ratio shows similar trends, rose from 136% in 2009 to 146% in the second quarter of 2014. It means, in average, each Malaysian household take loan 1.4 times higher than their household income. Exceeding US (99%) and China (57%) even worse compare to crucial indebtedness countries; which are South Korea (144%) and Thailand (121%) respectively (WSJ, 2016).

Moreover, excessive growth of debt exposes them to the economic volatility and insolvency during economic crisis. For instance, Malaysia Department of Insolvency (MDI, 2016) recorded about 50 percent increase in total bankruptcy number to 19,575 cases in 2012 compared to year 2008. These are mainly due to failure to serve their housing and personal loans. In addition to that, a significant number of those who are declared bankrupt are among the younger citizens. Table 1 shows about 20% (4,100 cases) of bankruptcy occurred among young adults' age below 35 years old (MDI, 2016). To a certain extent, this indicates the short-sightedness of individuals in making their consumption and borrowing decisions. Lack of economic knowledge and awareness on factors such as possible income volatility, possible increase in interest rates or minimum required repayment amount and other risks that could possibly affect the ability to service loans and credit expenses could possibly explain why households or individuals tend to borrow excessively.

Table 1: Total Bankruptcy Cases by Age, 2012



Source: Malaysia Department of Insolvency, 2016

Similarly, a research by Citibank (2008) finds that few Malaysians are aware of the benefit of savings and fewer have enough set aside for the future. The survey shows that only 39% of Malaysians saved consistently, but less than 28% of Malaysians made and committed to a monthly budget. Consequently, consistent with the fact that most individuals ignore the importance of savings and financial management, the survey also reveals that 20% of Malaysians could survive only four weeks should they face any unexpected shocks such as job loss. Another study found that Indian and Malay households are more prone to financial vulnerability at 32% and 29% respectively, compared to Chinese with only 7.7%. This household are unable to secure RM10,000 from any source within a month if unexpected need arises (Yusof et.al, 2015). Again, these findings suggest that majority Malaysians are not aware that households need to have savings at least for precautionary motives. The ignorance on the importance of savings could possibly explain why less than half of the households make it a point to save consistently and lesser than that budget their income and spending.

At the society level, ill-advised economic decisions may also register adverse consequences. For instance consumption decision, Malaysian wasted 15,000 tonnes of food daily and even worse during Ramadhan month. During this month, 270,000 tonnes of food went to trash and 30% of it are still good for consumption and should not be discarded. This amount of food could have fed 180 million people, six times the country's population of 27 million (The

Star, 2015). Though it is not related with financial management, consumption is also an economic decision as it involves scarce resources. Preparing or purchasing food in such a manner that nearly half ended up in the trash points towards inefficient utilization of resources and uneconomical behaviour.

Aside from pointing the ignorance of basic economic knowledge hence awareness, these statistics also warns on how individuals' economic decisions would then affect the nation at large, for instance collective ignorance on retirement plan would later pressure the government into the need to set up an expensive social security system; and high non-performing loans threatened the stability of the financial system. Excessive consumption also increases demand in the market and would lead to unnecessary price increase, hence making things more expensive and less accessible to the poor. Hence, having an economically literate society is not only necessary due to the possibility that it would allow individuals and households to optimize their resources and enhance their well-being; but more importantly to alleviate the negative externalities of society's economic illiteracy that could adversely affect the well-being of the nation at large.

In the case of Malaysia, despite the prevalence of those economic literacy related problems, there is no specific study to date in Malaysia that assesses the level of economic literacy of the general public. This motivates us to undertake this exploratory study, which is to provide an indicator on the state of economic awareness among Malaysians. The results could point out whether there is a case for introducing economic education as a universal skill to help individuals navigate their lives better by including economic as a mandatory course in the national education system.

1.1 The State of Formal Economic Education in Malaysia

Beginning in 2001, Malaysia is enthusiastic to steer its economy into knowledge-based economy. The country ranked at place 17 out of 21 countries in the Knowledge-based Economy Development Index (KDI). It shows that Malaysia are ready and capable to move towards k-economy (Third Outline Perspective Plan, 2001-2010). Consistent with the aim to become a developed nation by 2020, it is a crucial task to ensure this country experience sustain and rapid economic growth as well as competitive at the global level. The Third Long Term Plan (2001-2010) outlines the objectives and approaches towards equipping the Malaysian society with economic knowledge (EPU, 2001). Among the components of the knowledge-based economy development index are worldwide accessibility of computer infrastructure and telecommunication, enhance education and training for manpower, encourage research and development and having high technology export (Third Outline Perspective Plan, 2001-2010).

The developed nations, particularly United States is very concerned about the state of economic literacy among its citizens. This is evidenced by the establishment of Joint Council of Economic Education (JCEE) as early as in 1949, extensive researches being conducted on economic literacy and the fact that economics has been incorporated as a course since K1,

alongside with reading, writing and arithmetic. In United States, college and university students are exposed to course regarding basic economic concepts to help making the right economic decision. Individual without economic literacy will have the tendency to have wrong decision syndrome (Salemi, 2005, Rivlin, 1999).

Unfortunately, the situation is very much different in the case of developing nations. Judging from the education structure, economics is not anywhere on the list for primary or even lower secondary school syllabus. In the case of Malaysia, economics as a subject used to be introduced only at the matriculation level, but only as an alternative course. Only recently, in 1995, Basic Economics was introduced but then again, as an elective course at the Malaysian Certificate Examination (which is equivalent to O-Level). In other words, economics is treated as a subject only to the discerning few.

This education structure results in a misconception on the relevancy of economics in every day's life. When economics is introduced at a higher level, the course becomes more formal and complex, and it appears to be unattached to daily life. Hence, the dominant paradigm of economics in developing nation is, it is an abstract and theoretical subject altogether. Or economics is a specific subject that is only meant for those who would like to pursue economics at a higher level. The society is blinded by the perception that economics is simply a discipline of formal study that does not have any real life application. Economic knowledge and understanding are important to help society make a wise decision in daily activities especially when it's involve economic transaction.

2.0 LITERATURE REVIEW

Naturally, the importance of economic knowledge and its far reaching impact on nation well-being has spurred a lot of researches, investigating the state of economic literacy in respective countries, particularly in United States. Apparently, testing the state of economic literacy or awareness on economic issues among economic agents is complicated. Nonetheless, researches have resorted to using a standardized tool, a formal test comprising standard questions on basic economic knowledge. The test, known as Test of Economic Literacy (TEL) was developed by the Joint Council of Economics Education in the United States (Soper & Walstad, 1987). Score from the test has been used as the indicator or measure of economic literacy.

Given that in many instances, this type of studies was initiated to examine the effectiveness of economic instructions in school and universities, a large number of researches concern students' population. Studies on economic literacy among students at least are equally available for other countries such as in Germany (Beck and Krumm, 1994); in UK (Whitehead and Halil, 1991), South Korea (Kim, 1994) and Australia (McKenna, 1994; Lietz et. al, 1998).

In addition, there are also researches that examine the state of economic awareness among the general public. The major ones are those being carried out in the United States to test

the incidence of economic literacy among the Americans, conducted by National Centre for Research in Economic Education (NCEE). The first one was carried out in 1992 followed by another in 1998 and latest in 2005. The findings indicate that the level of economic literacy among American adults is improving, from 35% in 1992, to 45% in 1998 and to 70% in 2005. According to Walstad and Rebeck (1999) the fact that only 45% of Americans adults are economic literate in 1998, is an indication of major deficiencies. Although there is a large improvement in adult literacy rate over time, findings reveal that high school students' economic grasp remains at around 50%. This dictates that majority high school students do not understand basic economics.

Apart from examining the incidence of economic literacy, studies on this issue are also extended to capture factors that affect economic literacy such as gender, and more importantly whether formal economic education has any merits on individual's economic knowledge. Using the same method to measure economic literacy, regression analysis usually is applied to identify factors that affect the state of economic literacy. Findings however are mixed. Where gender is concern, in most cases, the males outperformed the females where economic knowledge is concern, [Walstad (1997), Gleason and Van Scyoc (1995), Wood and Doyle (2002)]. However, Williams et al (1992) report that their findings deny the existence of significant gender differences in economic performance among college students. Caplan (2001; 2002) provides evident that are consistent with the observation that male are more economic literate than female. He claims that this is due to selective curiosity where male and female have interest in different issues; and economics, just as politics is a field which interests an average male more than an average female.

Another factor that has been highlighted in generally all literature related to economic literacy is the role of economics education. Researchers have documented the positive effect of having formal economic education on the ability to better understand the workings of the economy, [Walstad and Allgood (1999); Walstad (1997), Gleason and Van Scyoc (1995), Wood and Doyle (2002)]. Collectively, findings from these separate researches reach a consensus that all else equal, individuals that have taken at least one economic course possess better economic knowledge as opposed to those who have not. This highlights the need to incorporate economics as a mandatory subject in high school curriculum if a country aims to have citizens that are economic literate.

As for the case of Malaysia, to the best of our knowledge the only specific study on economic literacy in Malaysia is by Chee (1997). Test of Economic Literacy (TEL) was conducted on 18 training teachers in one of the teaching institutions. The study concludes that the performance of the respondents is, on average, acceptable. However, comparing the findings with studies from other countries raises an interesting observation. The findings imply that Malaysian economic teachers' grasp of economic knowledge is lower than that of the UK and Australian students.

3.0 METHODOLOGY AND ANALYSIS

3.1 Survey Design

In testing the level of economic literacy in Malaysia, we adopted the method that is widely employed by previous studies. A survey is conducted using a set of questions on economic knowledge, known as Test of Economic Literacy (TEL). The questionnaire consists of 20 questions. The questions are based on economic literacy test developed by the Joint Council on Economic Education and the Standards in Economic Survey by The National Council on Economic Education (NCEE). This TEL is selected based on previous studies that have validated the ability of TEL in assessing economic knowledge, particularly among students, (Walstad and Soper, 1998; Krumm and Beck, 1990; Whitehead and Halil, 1991).

Some minor modifications are done to reflect the Malaysian environment as well as to avoid any confusion among respondents. For instance, Federal Reserve has been changed to the Malaysian Central Bank while, US Dollar was replaced by Ringgit Malaysia (RM). Questionnaire is prepared in dual language, Malay and English so that respondents could choose the language that they are comfortable with. This is to avoid biases attributed to language barrier that could affect respondents' comprehension of the survey questions.

3.2 Sampling

The test was administered on 2,358 Malaysian adults (18 years and older). Respondents were selected following proportionate quota sampling. In order to ensure that the selected individuals could give an unbiased estimate on the Malaysian economic literacy, samples are taken to represent all the 14 states in Malaysia, and the number of samples in each state is selected according to the population of the states as a percentage of the Malaysian population. Then, the sample chosen from each state must reflect the level of education of the Malaysian population. Level of education is chosen as the control factor as this factor is deemed important in reflecting the level of economic literacy. The underlying hypothesis is the level of economic literacy is to a certain extent, positively related to level of education, (Walstad, 1997). A sample which comprises of a higher percentage of the highly educated could possibly provide a bias observation that Malaysians are highly economic literate. On the contrary, a sample which consists of too many uneducated respondents could possibly results in a bias estimate that level of economic literacy among Malaysians are too low. Hence, samples chosen should reflect the Malaysians' education level.

Having determined the numbers of respondents to be taken from every states and its composition according to highest education attained, questionnaires were distributed at various residential areas. This is to capture a more diverse pool of respondents such as those who are employed and those who are not; involvement in various economic sectors, various ethnic and age groups. Respondents' profile is provided in Table 2. This study is represented by

respondents from diverse socio-economic backgrounds such as gender, age, ethnic groups and employment status.

Table 2: Profile of Adult Sample (N= 2355)

Characteristic	Percentage
TEL Score	8.24 (average)
Gender	
Male	52.1
Race	
Malay	75.2
Chinese	9.7
Indian	8.0
Others	7.5
Employment	
Students	31
Employed	45.4
Unemployed	13.8
Self-employed	8.7
Age	
18 – 24	48.9
25 – 34	20.6
35 – 44	15.2
45 – 54	10
More than 54 years old	4.9
Education Level	
Lower than SPM	23.0
SPM	40.5
Higher than SPM	36.3

3.3 Measuring Economic Literacy

We used Gleason and Van Scyoc (1995) method of analyzing economic literacy in our Malaysian study. The rationale is our study is similar to theirs where target group is concerned. As mentioned above, most studies focus on specific group such as students or professionals such as teachers, government servants or corporate employees. However, we are interested to examine the state of economic literacy on Malaysians at large, just as Gleason and Van Scyoc (1995) aim to find out the level of economic literacy among the general public.

3.4 Test Performance

Each respondent was asked to answer the questionnaire, and then was given a score from the 20 questions answered correctly. The average score of each individual serves as the benchmark to determine the relative level of economic literacy among the respondents. The average score

of the respondents is 8.24 or 40% with a standard deviation of 3 correct responses. Table 3 reports the results of each questions posed to the respondents.

Table 3: Score on TEL by Questions

Question	Answers Distribution
1. An increase from 5% to 8% in the interest rates charged by banks would most likely encourage:	
a. Businesses to invest.	20.34
b. People to purchase housing.	8.26
c. People to save money.**	55.96
d. Don't Know.	15.44
2. The manufacturers of XYZ winter sportswear have their manufacturing plants running night and day, but they are unable to produce enough sportswear to satisfy demand. If XYZ manufacturers cannot increase production and demand continues to increase, the price of XYZ winter sportswear will:	62.88
a. Increase.**	16.57
b. Decrease.	16.57
c. Stay the same.	10.90
d. Don't Know.	
3. The stock market is an example of an institution within our economy that exists to help people achieve their economic goals. The existence of this institution:	16.20
a. Results in an increase in the price of stocks.	
b. Brings people who want to buy stocks together with those who want to sell stocks.**	39.51 25.25
c. Helps predict stock earnings.	19.04
d. Don't Know	
4. When deciding which of the two items to purchase, one should always:	
a. Choose the item that costs less.	10.65
b. Choose the item with the greatest benefits.	12.11
c. Choose an item after comparing the costs and benefits of both items.**	67.93
d. Don't Know.	9.32
5. A large increase in the number of fast-food restaurants in a community is most likely to result in:	
a. Lower prices and higher quality.**	53.32
b. Lower prices and lower quality.	18.57
c. Higher prices and higher quality.	14.46
d. Don't Know	13.64
6. Which of the following occurs when one country trades wheat to another	

country in exchange for oil?	
a. Both countries gain.**	44.05
b. Both countries lose.	11.43
c. The country that trades wheat gains, the country that trades oil loses.	28.71
d. The country that trades oil gains, the country that trades wheat loses.	15.81
7. What is the most important task of all economics?	
a. To balance imports and exports.	21.25
b. To balance the government's budget.	32.39
c. To make the best use of scarce resources.**	35.05
d. To save money to reduce the national debt.	11.31
8. When a country's people and its other resources are fully employed, which of the following must be true before more of any one item can be produced?	
a. Private enterprise has to produce it rather than the government.	10.56
b. There has to be less production of other products.**	27.07
c. There has to be a general decrease in prices.	32.07
d. Don't Know.	30.30
9. When industries or countries specialize in producing goods and services, this results in ... ?	
a. Increased price inflation.	19.07
b. Less output per hour worked.	15.38
c. Greater economic interdependence.**	40.01
d. More equal distribution of income.	25.54
10. What is the most essential characteristic of a market economy?	
a. Effective labor unions.	11.50
b. Good government regulation.	19.66
c. Responsible action by business leaders.	16.85
d. Active competition in the marketplace.**	51.99
11. In a market economy, individuals pursue their own self-interest. This serves the public interest because of the	
a. Operation of competitive markets. **	17.18
b. Social responsibility of business leaders.	18.36
c. Careful planning and coordination of market activity.	26.95
d. Individuals understand what is in the public interest.	37.51
12. What would happen to employment if the government mandated a minimum wage above what employers currently pay?	
a. Employment would go up.	44.08
b. Employment would go down. **	28.50
c. Employment would stay the same.	9.69
d. Don't Know.	17.74

- 13. Why do professional sports players generally earn more than farmers and steelworkers?**
- a. Team owners are monopolists. 21.02
 - b. Sports players are really entertainers rather than producers. 14.24
 - c. There are fewer professional sports players than farmers or steelworkers. 30.56
 - d. Good sports players are more scarce, given the demand for their services.** 34.18
- 14. Which of the following approaches to pollution control makes the best use of a country's economic resources?**
- a. Abolishing the use of toxic chemicals. 15.81
 - b. Using resources to reduce all pollution damage. 18.31
 - c. Controlling pollution as long as the extra benefits are greater than the extra costs. ** 31.59
 - d. Prohibiting economic activities that cause pollution or harm the environment. 34.29
- 15. Which of the following limits an economy's potential output?**
- a. The quantity and quality of labor, capital, and natural resources. ** 39.04
 - b. Business demand for final goods and services. 18.43
 - c. Government regulations and spending. 23.31
 - d. The amount of money in circulation. 19.22
- 16. If your annual income rises by five percent while prices of the things you buy rise by ten percent ...**
- a. You are better off. 10.49
 - b. You are worse off. ** 63.96
 - c. You are unaffected. 12.04
 - d. Don't Know. 13.51
- 17. What must the government do to reduce high inflation?**
- a. Increase both spending and the money supply. 12.39
 - b. Decrease both spending and the money supply. ** 24.39
 - c. Decrease spending and increase the money supply. 43.09
 - d. Increase spending and decrease the money supply. 20.13
- 18. Why are private businesses not likely to operate a lighthouse?**
- a. Ship owners buy insurance policies to protect themselves from losses so they won't pay for lighthouses. 14.27
 - b. The light from the lighthouse can be used even by ships that do not pay a fee for the service. ** 33.52
 - c. It would cost private business more to operate a lighthouse than it costs the government. 29.76
 - d. The cost of operating a lighthouse is too high. 22.45
-

19. If RM increases in value, what will most likely to be the effect on Malaysia's exports of goods to other countries?

- | | |
|--------------------------------|-------|
| a. Exports would increase | 33.52 |
| b. Exports would decrease** | 39.46 |
| c. Exports would stay the same | 9.90 |
| d. Don't know. | 17.13 |

20. There is a deficit in the federal budget when

- | | |
|-----------------------------------------------------------------------|-------|
| a. federal government spending is greater than federal tax revenue.** | 46.54 |
| b. our exports are greater than our imports | 15.87 |
| c. total demand for money is greater than total supply for money. | 13.51 |
| d. Don't know. | 24.09 |

Notes: ** denotes the correct answer.

The pattern of respondents' performance on each question reveals one observation: Malaysians understand the function of markets and its direct consequences on their everyday lives, in cases which are much related to their well-being such as prices and rewards. This behavior is similar with several studies' conclusion that test takers do better with questions that concern their day-to-day lives and microeconomic issues, among others Harris (1999) and Gleason and Van Scyoc (1995).

For instance, questions 1, 2, 4, 5 and 16. These questions concern with the effect of changes in the market on variables that are directly related to individuals, for instance the increase in interest rates could increase the motivation to save, the impact of an increase in the number of sellers (restaurants) on price and quality; and the effect of increase in demand relative to supply on product price. In other words, Malaysians understand the interactions of demand, supply and its impact on equilibrium price. They also understand the principle of making decision that is by comparing cost and benefit as well as the impact of an increase of cost of living on purchasing power.

Nonetheless, they perform poorly on questions that concern economic policy. For instance, only 28.5% of total respondents understand that minimum wage law could adversely affect employment (Question 12). Majority have the notion that minimum wage law would increase employment. Similarly, majority of respondents think that the best way to control pollution is by prohibiting economic activities that pollute the environment. As for question 17 which concern government role to reduce high inflation, more than 75 percent failed to recognize that ideally the government should decrease both spending and money supply. In fact, more than 40% of the respondents think that government should increase money supply. In addition, more than 50% of the respondents (question no. 20) do not know what federal deficit means.

The score on questions that judge the understanding of scarcity and trade-off is equally poor. More than 70% of respondents answered Question 8 that tests on the concept of scarcity and trade-off, wrong. Worst, majority thinks that deflation could increase production once full employment has been reached. Only 39% comprehend what limits an economy's potential output, as tested by Question 15.

Collectively, this indicates four highlights on the state of economic knowledge in Malaysia. First, on average, Malaysians are aware of the consequences of market activities on their immediate well-being. Second, this awareness is very much short-sighted. For instance, they failed to understand the far reaching consequences of minimum wage law. Despite the fact that they know remarkably well the need to weigh cost and benefit before purchasing a good (Question 4), they do not have equal understanding of the need to apply optimization principle in government policy making such as controlling pollution. Third, Malaysians on average are very ignorant when it comes to the economics of the government. They are not aware of what deficit is all about and it is therefore fair to doubt as to whether they know its implications. They are not aware of how government should react to reduce inflation. Fourth, Malaysians on average do not have a good understanding of the basic economic concepts which are trade-off and scarcity.

The above findings should be of great concern especially given that Malaysia is a country where democracy rules. Short-sightedness on government policies and lack of understanding on economic phenomena such as inflation and deficit could lead to misjudgments in choosing the right representatives. At the individual level, results dictate that Malaysians, on average, are aware of the consequences of the interactions of demand and supply on price. However, the fact that they are ignorant on underlying economic concepts, scarcity and trade-off might results in failure to optimize their scarce resources, be it time or money.

3.5 Factors Affecting Economic Literacy

Since there is no studies in Malaysia to date that explain economic literacy, we adopted previous researches in US as the benchmark model in exploring factors that affect economic knowledge among Malaysians. Our hypothesis is economic knowledge and education is universal. Therefore, the factors that affect the state of economic knowledge among Americans could most probably explain that of the Malaysians.

Table 4: Descriptions of Variables for Economic Literacy Regression

Variable	Descriptions	Mean	Standard Deviation
ECONLIT	Score on TEL (number of correct answers)	8.2424	3.20882
AGE	Age cohort		
	0 = 18 -24	.4841	.49985
	1 = 25 -34	.2038	.40292
	2 = 35 -44	.1499	.35704
	3 = 45 -54	.0989	.29864
SEX/GENDER	4 = more than 55	.0488	.21556
	Respondent Sex	.4845	.50326
RACE	0 = male		
	1 = female		
	Respondent's Race	.7478	.43438
	0 = Malay	.0964	.29519
	1=Chinese	.0803	.27174
EDUCATED	2= Indian	.0752	.26370
	3 = Others		
	Highest education attained	.2306	.42129
	0 = Lower than SPM	.4051	.49101
ECONED	1 = SPM	.3631	.48098
	2 = Higher than SPM		
	Formal economics education	.6934	.46118
	0 = had taken at least one economic course		
	1 = had not taken any economic course at all		

Note: Except ECONLIT, all other variables are dummy variables. The categories represented by 0 refer to the omitted category for each variable.

We set up a regression model to analyze the factors that explain the level of economic literacy. Economic literacy, which is proxied by test score of TEL served as the dependent variable. A set of explanatory variables is included to capture the effect of personal characteristics and economic education on the state of economic knowledge. The inclusion of the explanatory variables is based on previous research in the area of economic literacy such as Gleason and Van Scyoc (1995), Walstad (1997) and Wood and Doyle, (2002). The means, standard deviation and definitions of the variables employed in the regressions are summarized in Table 4.

The model specified to explain economic literacy was:

$$\begin{aligned}
 \text{ECONLIT} = & \beta_0 + \beta_1 \text{AGE1} + \beta_2 \text{AGE2} + \beta_3 \text{AGE3} + \beta_4 \text{AGE4} + \beta_5 \text{GENDER} + \beta_6 \text{CHINESE} \\
 & + \beta_7 \text{INDIAN} + \beta_8 \text{OTHERS} + \beta_9 \text{SPM} + \beta_{10} \text{HIGHSPM} \\
 & + \beta_{11} \text{ECONCOURSE}
 \end{aligned}$$

Theoretically, age could positively influence the state of economic knowledge. The hypothesis is as age increases, economic understanding would also increase due to increasing exposure to economic news as well as own dealing with economic issues. Hence, we expect a positive relationship between age and economic score. However, as opposed to Walstad (1997)

and Gleason and Van Scyoc (1995), who measure age in years, we follow Wood and Doyle (2002) in measuring age according to cohort and employ dummies to represent each different age categories. This is to minimize bias since respondents; especially adults in general tend to underreport age.

Gender and race both have been found to have significant impacts on economic knowledge. In most cases, the males outperformed the females where economic knowledge is concern, (Walstad (1997), Gleason and Van Scyoc (1995), Wood and Doyle (2002)). However, Williams et al (1992) report that their findings deny the existence of significant gender differences in economic performance among college students. As for the case of race, most studies find that the white possess a better understanding of the economics as opposed to blacks, (Walstad and Allgood, 1999; Walstad (1997), Gleason and Van Scyoc (1995), Wood and Doyle (2002)). Malaysia is a multi-ethnic country, with three major ethnic groups, Malays, Chinese and Indian. It is interesting to see whether differences in race have any merit on level of economic understanding. Given the diverse culture among ethnic groups, we expect some variations exist in the level of economic literacy with respect to different ethnic group. To cater for this, we include three dummies, Chinese, Indian and Others. The effect of being Malay is captured in the constant term.

Another factor that has been highlighted in generally all literature related to economic literacy is the role of economics education. Researchers have documented the positive effect of having formal economic education on the ability to better understand the workings of the economy, (Walstad and Allgood, 1999; Walstad (1997), Gleason and Van Scyoc (1995), Wood and Doyle (2002)). All else equal, individuals that have taken at least one economic course possess better economic knowledge as opposed to those who have not. In the regression specified above, we expect a positive relationship between economic literacy and the state of economic knowledge.

Equally important in explaining economic literacy is individual's level of education completed, measured by highest education level attained. Following Walstad (1997), the higher level of education attained would lead to a better capability of understanding economic events, issues and policies. Thus, it is expected that the more educated an individual is, the more economic literate he or she is. Level of education is entered using two dummy variables, SPM (Malaysian qualification which is equivalent to US High School) and higher than SPM, with lower than SPM being the omitted category.

4.0 REGRESSION RESULTS AND DISCUSSION

The result of the regression is summarized in Table 5 below:

Table 5: Regression Results

Variable	Coefficient	t-statistics
CONSTANT	7.877	36.221
AGE1	.001	.032
AGE2	.002	.083
AGE3	.060	2.791*
AGE4	-.010	-.460
GENDER	.032	1.622
CHINESE	-.047	-2.360*
INDIAN	-.057	-2.905*
OTHERS	.004	.227
SPM	.159	5.942*
HIGHER THAN SPM	.356	12.525*
ECONED	-.184	-8.636*
N	2355	
R-Squared	0.160	
F-statistics	38.515	

*Denotes statistically significant at 0.05 level

The regression results suggest that economic literacy among Malaysians rest upon level of education, exposure to formal economic education and race. Ceteris paribus, being Malay in the age group of 45-54, having higher education and having taken at least one formal economic course positively and significantly contribute to the state of economic literacy. However, the result should be cited with a careful interpretation, since the study only focus on education attainments rather than racial composition in our random sampling methodology.

Although age positively influence literacy as indicated by the dummies' coefficients, but significant age effect seems to be present only at a very matured level in life, which is 45-54. This age effect even declined after the age of 55, though not significant. This finding is in contrast with previous researches. It could be attributed to the fact that previous studies reflect the case of the US, a developed economy. Malaysia, on the other hand, is a developing economy. The older generation, on average might not be very mature in the sense of ability to understand economics per se. Hence, the adage older means economically wiser is not applicable in the Malaysian society at large. The result also suggests that there is no statistically significant evidence that gender matters where economic literacy is concern.

As expected, level of education makes greater different in explaining the state of economic knowledge. In terms of magnitude, the positive effect of level of education on economic knowledge with education level. More importantly, this regression reveals that economic education does make a different in economic literacy. Adults who had formal

economic education have a better chance to be economic literate, all else equal. Hence, introducing economic education at earlier age or making economics a mandatory course to high school students might be able to increase economic awareness among Malaysians.

5.0 CONCLUSIONS

This exploratory study on economic literacy in Malaysia reveals few findings as well as raises few issues that merit further research. Firstly, since we employ the test that is widely used by others in testing economic knowledge, this allows us to compare the state of economics knowledge of Malaysians as opposed to others. Among studies that measure general public economic literacy rate are Gleason and Van Scyoc (1995) who report that literacy rate in US was 54.6%. A relatively recent and larger study conducted by NCEE reveals that current literacy rate in the US economy is 70%. Meanwhile, the findings from this survey claim that Malaysian economic literacy rate is at 40%, indicative of significant ignorant on basic economics understanding. In other words, the state of economic awareness among Malaysians is far behind that of the Americans. Possibly, this represents the difference in educational or human capital development between developed and developing economics.

Secondly, the universal role of education in influencing economic literacy holds in Malaysia. Given the relatively lower rate of economic literacy and the positive role of education, this suggest that the gap could be addressed by introducing economics at an early stage of education and making high school economics mandatory just as we made history a compulsory course.

The need to equip Malaysians with economic knowledge is more persistent since the survey also indicates that Malaysians are relatively ignorant when it comes to policy issues and the economics of the government. Given the fact that Malaysia is a democratic country, it is important to ensure that voters are economic literate especially in understanding economic events and issues, the choice of policies available and the consequences of economic policy implemented. Then only voters could make an informed decision in choosing their representatives.

References

- Beck, K., & Krumm, V. (1994). Economic Literacy in German-Speaking Countries and the United States: Methods and First Results of a Comparative Study. In *An International Perspective on Economic Education* (pp. 183-201). Springer Netherlands.
- Caplan, B. (2001). What Makes People Think Like Economists? Evidence on Economic Cognition from The "Survey Of Americans And Economists On The Economy". *Journal of Law and Economics*, 44(2), 395-426.

Caplan, B. (2002). Systematically Biased Beliefs about Economics: Robust Evidence of Judgemental Anomalies from The Survey Of Americans And Economists On The Economy. *The Economic Journal*, 112(479), 433-458.

Chee, K. M., 1997. "Literasi Ekonomi di Malaysia: Satu Kajian Kes di Maktab Perguruan Persekutuan Pulau Pinang.

Citi Fin-Q Report, 11 Nation Comparison, September 2008. Accessed from <https://www.citibank.com.au/aus/newsroom/pdf/CitiFinQReport.pdf>

Consumer Association of Penang. Household Debt in Malaysia – Is it Sustainable? Accessed from <http://www.consumer.org.my/index.php/personal-finance/debt/465-household-debt-in-malaysia-is-it-sustainable>

Gleason, J., and L. J., van Scyoc, 1995. "A Report on the Economic Literacy of Adults", *Journal of Economics Education* 26 (3) : 203-210

Greenspan, Alan, 2003. "The Importance of Financial and Economic Education and Literacy", *Social Education*. Vol. 67.

Gupta, A. K., 2006. "Why Johnny Can't Choose: Economic Illiteracy in America", *Mid-American Journal of Business* 21(1):3-5

Kim, Kyung-keun. 1994. Economic Literacy in the Republic of Korea and the United States. In *An International Perspective on Economic Education*. Walstad, William B., ed., Dordrecht and Boston: Kluwer Academic: 203-18.

Lietz, P., Kotte, D., & Hebers, D. 1998. Levels of economic literacy: from items to global indicators.

McKenna, K. (1994). High school economics in Australia. In *An international perspective on economic education* (pp. 219-232). Springer Netherlands.

Malaysia, B. N. (2015). *Financial Stability and Payment Systems Report 2014*. Bank Negara Malaysia.

Malaysia, B. N. Various reports. Bank Negara Malaysia.

Malaysia Department of Insolvency. Various reports. Accessed July 27, 2016 from <http://www.insolvensi.gov.my/>

Malaysian Digest. Below 25 and Bankrupt: An Alarming Issue among Malaysian Youth. Accessed July 30, 2016 from <http://www.malaysiandigest.com/features/525082-below-25-and-bankrupt-an-alarming-issue-among-malaysian-youth.html>

Plan, Eight Malaysian. (2001). Kuala Lumpur: Economic Planning Unit. Prime Minister's Department.

Rivlin, A. 1999. On Economic Literacy. Pembentangan Kertas Kerja di Symposium, Economic Literacy, 13 May 1999.

Salemi, M., K. 2005. Teaching economic literacy: why, what and how. International Review of Economics Education, 4(2), 46-57.

Soper, J. C., and Walstad, W., 1987. "Test of Economic Literacy (2nd edition)", New York: Joint Council on Economic Education.

The Star. 2016. Household Debt on the Rise. Accessed August 3, 2016 from <http://www.thestar.com.my/business/business-news/2016/04/02/household-debt-on-the-rise/>

The Wall Street Journal. 2015. Asian Central Banks' Dilemma: Balancing Debt and Growth, Accessed August 4, 2016 from <http://blogs.wsj.com/economics/2015/03/11/asian-central-banks-dilemma-balancing-debt-and-growth/>

Unit, E. P. 2001. The third outline perspective plan (2001-2010). Prime Minister's Department, Putrajaya, Malaysia.

Walstad, W., 1992. "Economics Instruction in High Schools", Journal of Economic Literature, 30:4, pp. 2019-2051.

Walstad, W., 1992. "The Effects of Economic Knowledge on Public Opinion on Economic Issues", Journal of Economic Education, 28:3, pp. 195-205

Walstad, W., and Soper, J. C., 1988. "A Report Card on the Economic Literacy of U.S. High School Students", American Economic Review 78:2, pp. 251-256

Walstad, W., and Allgood, S., 1999. "What Do College Seniors Know About Economics?" American Economic Review, 89:2, pp. 350-354.

Walstad, W., and Larsen, M., 1992. "Overview: A National Survey of American Economic Literacy. National Council on Economic Education, September.

Walstad, W., and Rebeck, K., 1999. "How Does Economic Education Impact Economic Literacy? The Region. Federal Reserve Bank of Minneapolis.

Walstad, W., and Rebeck, K., 1999. "Assessing the economic Understanding of U.S. high School Students. AEA Papers and Proceedings, May, pp. 452-457.

Whitehead, D. J., & Halil, T. (1991). Economic literacy in the United Kingdom and the United States: A comparative study. *The Journal of Economic Education*, 22(2), 101-110.

Williams, M. L., Waldauer C., and Duggal, V. G., 1992. "Gender difference in Economic Knowledge: An Extension of the Analysis, *Journal of Economic Education*.

Wood, W. C., and Doyle, J. M., 2002. "Economic Literacy among Corporate Employees", *Journal of Economic Education* 33(3):195-205.

Yunus, N. K. Y., Ishak, S., & Jalil, N. 2010. *Information Management and Business Review*.

Yusof, S. A., Rokis, R. A., & Jusoh, W. J. W. (2015). Financial Fragility of Urban Households in Malaysia. *Jurnal Ekonomi Malaysia*, 49 (1), 15-24.