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# Financial literacy and behavioural disposition in retirement saving – A study on employee's preparedness for a fully defined contribution pension scheme in Malaysia

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**Abstract**

This paper provides vital results on employee's preparedness towards government proposal in substituting the traditional pension system for a fully Defined Contribution Retirement scheme. By offering a distinct financial literacy measurement index and extending the Theory of Planned Behaviour analysis, this study found that individuals with higher financial literacy, alongside positive behavioural, normative, and controlled beliefs are more likely to have informed financial decision particularly in retirement savings. Thus, the government and various stakeholders should intensify an advanced financial educational programme, as well as establish more appropriate retirement schemes to increase employee's financial adequacy and pension benefits.



## Introduction

Malaysia has considered transforming the retirement policy by implementing a fully Defined Contribution Scheme (DC Scheme) amongst 65 percent largest source of paid employment in Malaysia (Asher, 2012; Department of Statistics Malaysia [DOS], 2014; Nambiar, 2016). This is part of an initiative to reduce the financial burden that the government has to bear, besides a failure of the Defined Benefit Scheme (DB Scheme) to maintain its performance due to global phenomenon that reacts to world economic performances (Park, 2011). The proposed changes also conform to the tremendous worldwide transition towards the DC Scheme (Benartzi & Thaler, 2007).

The DC Scheme is a pension plan in which employer and employees contribute a proportional monthly income for retirement benefit. It contrasts with a widely preferred DB Scheme that is solely funded by an employer. Although the transition to the DC Scheme offers an advantage to both parties, there are also unnoticed requirements for contributors to generate extra savings for their own retirement adequacy. The responsibility to accumulate financial sufficiency during retirement is also placed entirely on the employees. Besides that, it also

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requires them to supervise their own money for investment, regardless of their individual proficiency and decision-making process (Bailey et al., 2003).

Previous findings have shown that most Malaysians have failed to save. Khazanah Research Institute (KRI, 2016) reported that the household total savings is only 1.4 percent which is described as the poorest in Asia. The amount of debt is also excessively high with 89.9 percent of the Gross Domestic Product (Teng, 2016). Over 60 percent of DC Scheme holders have less than RM50 thousand compared to RM228 thousand as targeted, and most of them will spend their saving within five years of their retirement (New Straits Times, 2016). Demographic changes driven by the failures of prevailing retirement schemes force Malaysians to work hard to accommodate needs during their retirement (Caraher, 2007). Besides, this also makes them extremely vulnerable to financial market risks that might affect their savings balances especially among young and modest wage employees (Devaney, 1995).

There are two factors related to better financial decision and behavioural disposition particularly in savings and investment practices. The most significant determinant is financial literacy, which will guide persons to make an informed decision (Lusardi & Mitchell, 2005; 2007; 2008; 2011; Rooij, Lusardi, & Alessie, 2011). The other factor is psychological influences, which refer to Behavioural Attitudes, Subjective Norms, and Perceived Behavioural Control that normally influence and lead individuals to perform or reject the intention or behaviour in question (Ajzen, 1991).

Therefore, this research explored the degree of financial knowledge and psychological influences among DB and DC scheme holders, particularly in retirement savings. This will provide a beneficial overview before proceeding with a mandatory DC Scheme. As such, it will give benefits to the policy maker by providing notable results especially the impact on transformation and substantial changes that occur, and finally recommendations for an effective approach and improvement for retirement financial adequacy among public and private employees in Malaysia.

## Literature Review

Several theories are related to the importance of savings particularly in retirement confidence and future planning perspectives. Under Keynesian Theory (Keynes, 1936), savings which is an excess of income over expenditure on consumption, are segregated into eight main motives, with two of them related to retirement saving. Saving for precautionary motive were mainly to build up a stock against unexpected contingencies, and foresight motive is to provide for expected future monetary needs particularly in old age. Both motives are important and must be considered for future wealth, even though the strength will vary immensely according to household economics and standards of living.

Based on the Permanent Income Hypotheses (PIH), savings are a main decisive factor for an individual to maintain their consumption pattern during retirement, besides being available for unforeseen expenditures such as contingency expenses, medical treatment, and others (Friedman, 1957). Individual willingness to retain earnings from present usage for future use, specifically for retirement purposes, is usually decided thoughtfully, with careful plans, using techniques that are most rewarding, and performed at the minimum effort but at the most profitable yield. They usually save a higher portion of income when approaching retiring age. The planned consumption period is also infinity and bequeathed to the next generation. It is also in line with the Life Cycle Hypotheses (LCH), which explains that individuals are working constantly to maximise their utility by generating more income and savings for old age consumption (Yoong et al., 2012). The main justification is to establish a fund to protect themselves from further deterioration when the amount of income is decreasing during their retiring age.

Retirement savings involve complex and challenging decisions that require individuals' long-term financial commitment. Malaysia is in line with global aspiration, which is to encourage savings activities amongst their employees to supplement socio-economic weaknesses, particularly in retirement adequacy. However, such efforts still need to be improved, as most employees cannot save properly. They are less interested in the concept of micro-economic fundamentals and thus give problems and implications of savings performances, retirement plans, and other financial activities (Lusardi & Mitchell, 2007; Moorthy et al., 2012). The younger generation, especially GenY, thinks they are still too young to save and presume it as complicated and cumbersome because of a relatively low income and high cost of living. They prefer to borrow money to increase

purchasing power and purchase goods and luxury items such as homes, automobiles, furnishings, jewellery, and others rather than saving.

One factor that leads to retirement savings is having proper financial literacy. This combines with an individual's competency to make an informed decision. Financial literacy refers to an ability of consideration and effective assessment in fund management. Literacy measures a person's understanding of financial information, using such knowledge in correct judgement. A positive association between financial literacy and retirement preparation and confidence will lead to savings accumulation for the golden years (Lusardi & Mitchell, 2005; 2007; 2008; 2011). Literacy psychologically will bring an individual to a positive attitude, motivate them to increase household economic performance, and improve and control their expenditure behaviour in making an effective choice. Financial literacy will shape an individual's personality to be more responsible with their selection, and thus would enable them to make profitable savings and wise investment decisions (Hilgert et al., 2003).

However, several studies have shown variances of basic and advanced level of literacy in financial decision and behavioural disposition (Rooij et al., 2011, Brahmana et al., 2012). Individuals who possess advanced financial literacy, refers to the high level of knowledge and skills of financial instruments such as stocks, bonds, and public funds having more positive behaviour, and such individuals normally take part in the financial stock market. Literacy inspires them to seek advice from financial consultants. This contrasts to those who only have basic financial literacy levels that obviously depend more on the source of information they have learned from family, friends, and such individuals rarely have savings or specific plans. Based on Rooij et al. (2011), financial decision and behavioural disposition particularly in retirement savings only related to advance literacy but not to basic literacy, which only tests the cognitive ability using simple math, rather than advanced literacy, that involves better knowledge and financial skills.

Besides financial literacy, the behavioural disposition factors that are represented by individual attitudes, social influence, and control factors also influence financial well-being. Based on Ajzen (1991), an individual's behaviour is driven by three main factors, which is a belief about the existence of a difference of attitudes that occur, belief in occurrence of normative views, and belief in the existence of an obstacle or incentive factor of perspective control. Subjective assessment of a person's attitude is based on confidence in an object, attribute, and the benefits that they would get through a particular context (Davis & Hustvedt, 2012). Attitude represents a positive or negative individual behavioural assessment following three key elements, namely, cognitive, affective, and conative (Fishbein & Ajzen, 1975). Cognitive refers to individual's beliefs based on knowledge, understanding, and experience. Affective shows feelings that lead to assessment according to their respective individual emotions. Conative is an outcome behaviour that exists from cognitive and affective assessment.

Subjective Norms (SN) refers to a social influence given by a specified person or group that significantly influences individual financial decisions and behavioural dispositions. Proactive behaviour will motivate a household to get advice and views from a member of the immediate family, friends, or professional agencies who have in-depth knowledge of specific behaviour. According to Ajzen (1991), social influence is divided into two aspects; normative beliefs involving the views of the community on the targeted behaviour, and motivation of compliance, which responds subjectively in individuals' acceptance or rejection towards behaviour under normative beliefs. Positive correlation will occur between social influence behaviour when individuals are convinced that activities can gain the trust of normative beliefs and are motivated to comply and implement the behaviour under consideration, and vice versa.

Perceived Behavioural Control (PBC) is dealt with as the potential ability of the individual to perform the behaviour under their experience and respective beliefs. PBC refers to individual perception of the ease or complication in executing its pertinent behaviour (Ajzen, 1991). It is treated as a series of continuum that progresses continuously to a simple and routine behaviour, but not to a highly complicated response that generally combines with environmental influences or internal factors, which are normally associated with cognitive, affective, patents, and relationship with another proxy in a broader context. The more positive the perception or attitude behaviour based on the opinion of a thing, the better the view of normative and individual motivation to comply, the greater to control the perception based on experience or expected challenges, then the higher the psychology to influence individual intention to perform the behaviour, notably, in retirement savings.

Therefore, this study had a threefold contribution. First, it examined the ability of an individuals' financial literacy based on two different indexes, that were basic and advanced financial levels. Next, the study further assessed the extent to the significant effect of basic and advanced financial literacy in associating the decision making and behavioural process, particularly in retirement savings. Subsequently, this study assessed the degree to which individual attitude, subjective norms, and perspective control an intention and behavioural of retirement savings. Those elements will serve as benchmarks in understanding the perceptions, implications, suitability of Scheme DC conversion, and necessary policy improvement to ensure that the changes would benefit both parties to improve the delivery system and social security to the public. Failure would not merely pose adverse implications to retirees, but indirectly to the Government, which will need to provide additional funds to the retirees to enable them to get through economic hardship.

## Methodology

This study used quantitative survey techniques by administering a questionnaire to prospective respondents in Malaysia. This technique was adopted because of its approach with wider potential respondents, being user friendly, efficient, and generalised to represent the whole population (Fowler, 2009).

A total of 350 questionnaires were distributed amongst public and private employees in urban areas such as Kuala Lumpur, Selangor, Sabah, and Sarawak. They were DB and DC Scheme employees serving in numerous departments and sectors that represented 65% of the largest sources of household income in Malaysia. They were selected by using stratified random sampling techniques. This enabled each small group of people within the population to be selected as samples. Besides, these techniques are used in various fields of social science and are more practical in attaining a sample size with a minimal time and cost, and quality for a sample to be generalised to the larger population size.

As a result, 200 samples representing 57% successful feedback were received and set for data analysis. PLS-SEM multivariate method was applied for its capabilities in scrutinizing various model estimations, complex correlations, moderating and mediating relationship, and multiple constructs regardless of any sample size. The preliminary scrutiny of missing data, outliers, normality, and common method variance were performed prior to the prime analysis procedure

### *Measurement of Variables*

This study used five independent variables (IV), namely, Basic Financial Literacy (FLB.), Advanced Financial Literacy (FLA), Attitude Towards Behaviour (ATT), Subjective Norms (SN), and Perceived Behavioural Control (PBC), where Retirement Savings (SAV) acted as dependent variables (DV).

The financial literacy questions were adapted from Mandell (2008), Rooij et al. (2011), and Ali et al. (2014). They comprised of 12 questions and were divided into two categories. The first segment aimed to access basic financial literacy related to daily transactions and routine money activities such as interest rates, discounting price, impact of inflation, Automated Teller Machine (ATM), real versus discounting and nominal values, and financial consultation services. The second part contained more challenging questions that aimed to evaluate higher financial wisdom and literacy levels notably in money markets and advanced financial instruments. Each correct response carried a point. Hence, the overall score for 6 questions was scaled between 0 - 6 for each category.

This study also improves the Theory of Planned Behaviour (TPB), by adding additional variables of FLB and FLA into the conceptual framework. According to Ajzen (1991), TPB's theoretically can be expanded by inserting an extra antecedent and variables that are related to human behaviour, or able to describe and measure directly individual responses either through objectives, activities, context, or elements of the time. Besides, the mediating roles of intention could also be excluded and merged with the dependent variables. Thus, this study formulated intention to replace behaviour rather than as an intermediate variable, as it appears on the primary models of the TPB.

There were four questions to assess the behavioural intention of retirement savings. Questions were formulated based on an individual's willingness to implement consistent monthly savings from payroll deduction to overcome the financial inadequacy that might occur in future days. In addition, there were three

factors to exemplify psychological influences; ATT refers to the views or acts based on positive or negative opinions on a behavioural question, SN relates to an individual's perception towards conduct of the intentions and certain behaviour that is influenced by the results of the other parties, and PBC refers to the perceived control, whether easy or difficult, against perspective behaviour (Ajzen, 1991).

Furthermore, six questions were developed for each variable using Likert scale, which represents the minimum of 1 for "strongly disagree", to a maximum of 7 which is "strongly agree". A Cronbach's Alpha validity test was performed on all variables, and it was found the results ranged from 0.765–0.838, which exhibited an optimal index and was recommended for internal consistency (Nunnally, 1978).

### *Hypotheses*

There were five hypotheses to be tested between five independent variables namely FLB, FLA, ATT, SN, and PBC towards dependent variables, which is SAV, as follows: -

$H_1$: There is a significant positive association between FLB and SAV (+).

$H_2$: There is a significant positive association between FLA and SAV (+).

$H_3$: There is a significant positive association between ATT and SAV (+).

$H_4$: There is a significant positive association between SN and SAV (+).

$H_5$: There is a significant positive association between PBC and SAV (+).

## Results

The data analysis was divided into four main categories, which were respondent profiles, measurement of financial literacy, measurement and structural model analysis, and hypothesis testing based on IV and DV in the theoretical framework.

### *Respondent Profiles*

The analysis was made from the respondent demographic profile. Based on 200 responses, 136 samples were born after 1979. The result was in accordance with a total presence of global employment which is dominated by Generation Y. Women represented the largest cluster with 105 compared to 95 of men while 138 respondents were married, and the remaining 62 persons were single or separated. A total of 160 respondents recorded a good educational achievement from diploma / high school to PhD level and currently served in government or private departments in urban areas. This reflected the majority of employees' academic achievements, regardless of their current working position.

In addition, 119 respondents were from individuals who contributed to the DC Scheme, and the remaining 81 from public servants who chose the DB Scheme. Overall, the data showed a balanced result and in line with the population distribution issued by DOS (2014), especially most Generation Y representing the job industry, the highest number of DC Scheme contributors compared to the DB Scheme, and the satisfactory educational level amongst Malaysian forthwith.

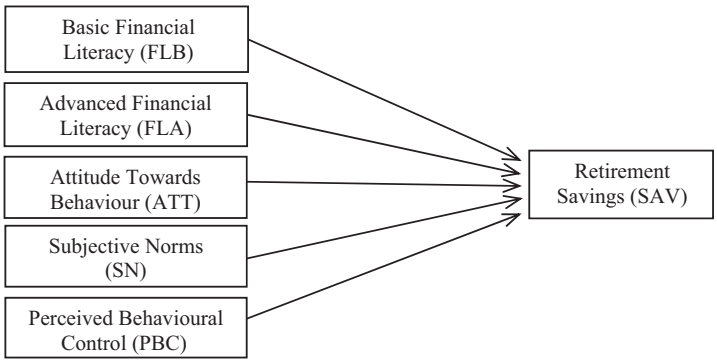


**Figure 1** Theoretical framework

*Measurement of Financial Literacy*

The measurement of financial literacy was done using different levels. Six questions for each index were asked for measuring individual literacy, notably basic financial literacy associated with a simple calculation of the discounted price, interest rates, and daily routine transactions. Conversely, there were six questions for analysing advanced level of financial knowledge such as shares, bonds, public mutual, and risk diversifications.

Based on the feedback in Table 1, most respondents were found to accurately answer the questions involving basic financial literacy. The mean value derived from the central tendency of the data ($\bar{x}$ = 64) shows that knowledge about basic and daily financial transactions amongst respondents were good and satisfactory. The highest correct answer with 157 people (78%) was for a question related to the institution which helps individuals to take control of the financial situation. The lowest percentage of correct answers was due to the impact of an increase in the aggregate of income that occurs in tandem with the rising price of goods, which saw only 86 respondents (43%) being able to give the correct answer, whereas 114 (57%) either gave the wrong answer and did not know the consequences of inflation decreasing household purchasing power. Answers to the other questions pertaining to the discounted price, interest rates, electronic banking, and compounding interest showed the correct answer of 55.5–75.5 percent respectively, thus implying that basic financial literacy amongst public and private employees is widespread.

The vast majority of respondents were less informed about issues related to the higher levels of literacy. This study suggests that most respondents failed to achieve over 50% correct answers, thus showing the lower mean level of ($\bar{x}$ = 30) compared to basic literacy. The highest proportion was for a question about bond characteristics, with 38 percent of them answering that question correctly whereas many of them displayed difficulties in grasping the concept of risk diversification with a lower 10 percent correct answers, as the pattern of responses and wording demonstrated in Table 2. Besides, most respondents only gave 1–2 correct answers compared to basic financial literacy, where they managed to correctly answer 4–5 in aggregate. Moreover, there were 25 (12.5%) respondents unexpectedly unable to provide any mark for advance literacy, as shown in Table 3.

**Table 1** Summary of basic financial literacy

| Item | Questions | *n* (%) |
|---|---|---|
| Q1. | Suppose you have RM100 in a savings account and the interest rate is 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? | 151 (75) |
| Q2. | If a household received RM1,400 a month and 50 % of this goes on rent, what is their monthly rent? | 120 (60) |
| Q3. | Suppose the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? | 143 (71) |
| Q4. | Which of the following statements is NOT CORRECT about Automated Teller Machine (ATM) cards? | 111 (55) |
| Q5. | Suppose that in the year 2020, your income has doubled and prices of all goods have doubled too. In 2020, how much will you be able to buy with your income? | 86 (43) |
| Q6. | The institution that helps individuals to take control of financial situations and gain peace of mind that comes from the wise use of credit is: | 157 (78) |

**Source:** Adapted from Rooij et al. (2011)

**Table 2** Summary of advanced financial literacy

| Item | Questions | *n* (%) |
|---|---|---|
| Q1. | Which of the following statements is correct? If somebody buys STOCK of firm ABC in the stock market: | 72 (36) |
| Q2. | Which of the following statements is correct? If somebody buys a BOND of firm DEF: | 76 (38) |
| Q3. | Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return? | 71 (35) |
| Q4. | When an investor spreads his money among different assets, risk of losing money becomes: - | 20 (10) |
| Q5. | Ahmad and Zamri are the same age. At age 25, Zamri began saving RM2,000 a year while Ahmad saved nothing. At age 45, Ahmad realised that he needed money for retirement and started saving RM4,000 per year while Zamri kept saving RM2,000. Now, they are both 65 years old. Who has the most money in his or her retirement account? | 74 (37) |
| Q6. | Stocks are normally riskier than bonds. True or false? | 48 (24) |

**Source:** Adapted from Rooij et al. (2011)

**Table 3** Summary of total financial literacy scores

| Variables | Total Financial Literacy Scores | | | | | | |
|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| Basic Financial Literacy [*n* (%)] | 0 (0) | 2 (1) | 16 (8) | 47 (23) | 85 (42) | 47 (23) | 3 (1) |
| Advanced Financial Literacy [*n* (%)] | 25 (12) | 61 (30) | 64 (32) | 32 (16) | 14 (7) | 4 (2) | 0 (0) |

### *Measurement and Structural Model Analysis*

Next, the study examined path correlations within latent constructs outer and inner model that include unilateral predictive association between latent and observed indicators. It comprised measurement models of internal consistency reliability, indicator reliability, convergent validity, and discriminant validity, as well as collinearity assessment, path coefficients, $R^2$, $f^2$, blindfolding and predictive relevance $Q^2$, and effect size $q^2$ in structural model analysis (Hair et al., 2017).

The composite reliability demonstrated 0.78–0.86 Cronbach's alpha with an outer loading higher than 0.70, thus showing a satisfactory internal consistency (Nunnally, 1978). The Average Variance Extracted (AVE) to measure convergent validity was between 0.58–0.63, which explains more than half of the variance of its indicators. Besides, the discriminant validity showed higher indicator loading against all of its cross-loadings with other constructs, with a valid Fornell-Larcker criterion, established Heterotrait-Monotrait (HTMT) ratio, and composite reliability of 0.85–0.90 greater than 0.70 to demonstrate an adequate consistency (Hair et al., 2017). Thus, the measurement model suggests the association between latent variables and their measures is empirically unique and valid for following analysis.

Moreover, results of structural analysis manifested an inner Variance Inflation Factor (VIF) of 1.05–1.98, which is less than 5.0, showing no multi-collinearity issues between endogenous and exogenous constructs. The $R^2$ value represents 39 percent variance proportions in SAV that is predictable from IV, following rule of thumb of 0.02, 0.15, and 0.35, which indicate weak, moderate, and strong exogenous effect (Hair et al., 2017). Besides, PBC has a strongest $f^2$ size with 0.05, which indicates individual controls based on its experiences or expected challenges have influence more SAV compared to other exogenous FLB, FLA, ATT, and SN constructs. In addition, the estimated model in Standardised Root Mean Residuals was SRMR = 0.07 following Goodness-of-fit (GoF) measurement threshold of < 0.08 (Henseler et al., 2014).

Finally, the predictive relevance $Q^2$ from blindfolding Construct Cross-validated Redundancy procedure accurately predicts non-utilise data in the path model. The $Q^2$ value of ATT (0.22), SN (0.26), PBC (0.19), and SAV (0.21) were larger than 0 and have predictive power for endogenous construct. The $q^2$ effect size, which assesses exogenous contribution toward endogenous latent variable, also displayed a variation of FLB, FLA, ATT, SN, and PBC effect from $q^2 = 0.00$ to 0.02, with $q^2$ values of 0.02, 0.15, and 0.35 suggesting that exogenous executes a small, medium, or large predictive power (Hair et al., 2017).

### *Hypothesis Testing*

Following structural model analysis, the study found a positive influence of FLA towards SAV with a significance level of $a > 1.645$. The $t$-value of FLA – SAV was $t = 1.899$, $\beta = 0.109$, $\sigma = 0.058$, and bootstrap lower limit confidence interval of BootLLCI = 0.013, and bootstrap upper limit confidence interval of BootULCI = 0.204, as presented in Table 4.

Similarly, the study found psychological influences of ATT and SN in promoting SAV amongst public and private employees in Malaysia. ATT – SAV had $t = 2.079$, $\beta = 0.153$, $\sigma = 0.074$, BootLLCI = 0.029, BootULCI = 0.273, and SN – SAV with $t = 2.083$, $\beta = 0.160$, $\sigma = 0.077$, BootLLCI = 0.032, and BootULCI = 0.283, which do not straddle between zero. Thus $H_2$, $H_3$, and $H_4$ were supported. The result endorsed previous finding of Rooij et al. (2011), and Brahmana et al. (2012) about significant relationship of FLA and retirement preparation in terms of the importance of ATT and SN in decision making and individual behavioural disposition (Griffin et al., 2012). In a nutshell, the more positive the person's ATT and SN, the more strengthened should be the individual intention in performing the behaviour in question.

Furthermore, PBC – SAV had a more robust relationship with $t = 2.457$, $\beta = 0.223$, $\sigma = 0.091$, BootLLCI = 0.073, BootULCI = 0.372 for significance level of $a > 2.333$. Thus, perceived control positively influenced individual's higher intention and behaviour to

**Table 4** Summary of hypothesis testing

| H | Standard Beta | Standard Error | *t*-value | $f^2$ | $q^2$ | Boot LLCI | Boot ULCI | Decision |
|---|---|---|---|---|---|---|---|---|
| $H_1$ | 0.054 | 0.065 | 0.831 | 0.00 | 0.00 | -0.051 | 0.160 | Not supported |
| $H_2$ | 0.109 | 0.058 | 1.899* | 0.01 | 0.01 | 0.013 | 0.204 | Supported |
| $H_3$ | 0.153 | 0.074 | 2.079* | 0.02 | 0.01 | 0.029 | 0.273 | Supported |
| $H_4$ | 0.160 | 0.077 | 2.083* | 0.02 | 0.01 | 0.032 | 0.283 | Supported |
| $H_5$ | 0.223 | 0.091 | 2.457** | 0.05 | 0.02 | 0.073 | 0.372 | Supported |

*Note:* $t > 1.645$* ($p \leq .05$); $t > 2.333$** ($p \leq .01$).,
$R^2$ (SAV: 0.39). $f^2$ impact indicator are 0.02 (small), 0.15 (medium), and 0.35 (large) (Henseler et al., 2014),
$Q^2$ (SAV: 0.21). $q^2$ of exogenous latent variables are 0.02 (small), 0.15 (medium), and 0.35 (large) (Henseler et al., 2014).

save. PBC became the strongest predictor for SAV and played an important role in influencing respondents to allocate part of their earnings for retirement adequacy. $H_5$ was supported. The result is in line with research by Griffin et al. (2012) and Davis & Hustvedt (2012), which found PBC as the main motivator and having a substantial part in predicting the saving decision. Positive PBC will promote individuals to accumulate higher savings for financial propensity. Failure to control may give unfavourable impact to their financial management, thus resulting in further difficulties especially in retirement adequacy.

The results scored a negative association between FLB and SAV. The t-value was low ($t = 0.831$), $\beta = 0.054$, $\sigma = 0.065$, and was between BootLLCI = -0.051 and BootULCI = 0.160 from zero. Despite being able to get the highest marks in basic financial questions, the regression results somehow suggested that an individual's ability to measure simple calculations and routine financial transactions provided no relevant impact on financial decision making. The weakest $f^2$ and $q^2$ (0.00) of FLB further reaffirmed the diminutive effect of size and predictive relevance towards SAV, thus $H_1$ was not supported. The result is consistent with research by Rooij et al. (2011) and Brahmana et al. (2012), which revealed the incapability of basic literacy to contribute any significant correlation due to its main function in measuring cognitive and logic reasoning rather than knowledge competency.

## Discussion and Conclusion

Malaysia is an emerging country that pursues a high-income status with a quality of living within contemporary technology infrastructures. Various development programs were formulated as a catalyst to economic growth that would enable people to enjoy wealth that meets present needs without compromising dreams of future generations. Among them is providing sufficient retirement plans that can support lives through old age.

However, there are several challenges that need to be addressed before the Government can make further improvements, notably in transforming retirement benefits toward a fully DC scheme. Although basic financial literacy is widespread amongst public and private employees in Malaysia, this advantage somehow does not assist them for complex financial and behavioural decisions particularly in retirement saving. This study has recorded a negative influence of FLB and SAV. Ability to do simple calculations and routine transactions may not give any advantage for them to make wise decisions. In other words, basic financial literacy would not be appropriate for DC scheme holders, as a pre-requisite requirement for financial adequacy under this retirement plan is placed solely on the employee's responsibility.

Interestingly, individuals with advanced financial literacy are more likely to have proper financial understanding that guides to greater income accumulation and investment decisions. The findings have shown a significant association of FLA and SAV with higher statistical internal reliability and construct validity. This suggests individuals with advanced knowledge related to financial market (stock, bonds, public mutual) are more likely to take part in the stock market and save more. They rely on formal sources of newspaper and journal magazines, consult professional representatives, and search for more information before concluding. Unfortunately, the results show that the majority of Malaysian are still struggling for better financial knowledge, which restricts their ability to make informed decisions particularly in retirement saving.

Behavioural disposition of attitudes, normative, and control beliefs are substantial for individuals' financial decision process. These can be proven by significance influence amongst individual ATT, SN, and PBC towards

behavioural intention of SAV. Besides, PBC corresponds to individual beliefs about existence factors that may contribute or inhibit behavioural performance to exhibit more robust effect, thus indicating that employees are expected to execute their intention to save through their individual perceived control when opportunity arises. The more positive the belief about consequences of the behaviour, the more favourable the normative anticipations, the greater the control beliefs, then the stronger the intention to perform to accomplish the behaviour under consideration (Ajzen, 2010).

Various stakeholders, especially fund providers, should know recent development and make necessary efforts for a way forward. This can be done by intensifying higher financial literacy focusing more on advanced capital market, financial instruments, and wealth management through seminars, coursework, and continuous educational programmes. This is essential considering that higher financial knowledge will lead individuals to better decision-making, thus encouraging them to actively take part in legitimate financial markets (Brahmana et al., 2012; Rooij et al., 2011; Sang et al., 2018). Simultaneously, this will promote higher financial literacy amongst public and private employees and help them make a proper and rewarding financial decision and behavioural process especially in saving and investing for retirement adequacy.

Furthermore, the Government as policymaker could establish a new regulation of voluntary incremental deduction for employees to improve their total retirement balances. Monthly commitment can be projected by applying a progressive formula that comprises higher deduction for every subsequent year upon reaching the specific rate as per initial agreement. For example, predetermined contribution of 11 percent can be increased by 1 percent for the following years until obtaining the maximum intended percentage. This will significantly enhance saving performance and influence financial decisions for individuals with a strong tendency to remain at default contribution rates, which is mainly due to psychological restriction of inertia that leads them to procrastinate their retirement saving and investment decision (Bailey et al., 2003).

Finally, it is suggested for future study to utilise a longitudinal technique which permits the data to be gathered for a longer period, notably for a cause-and-effect relationship amongst prospective respondents. Also, it is recommended to include other predictable variables with a larger sample size that could positively affect the financial decision and behavioural disposition, particularly in retirement saving.

## Conflicts of Interest

There is no conflict of interest.

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