



Factors Affecting Retirement Planning Behaviour among Working Adults in the Private Sector: The Case of Pulau Pinang, Kuala Lumpur, and Johor

Chong, Heng Xu¹, Chow, Whye Shing², K. Vasu, Divya Sri³

¹ Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Jalan Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia.

² Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Jalan Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia.

³ Faculty of Business and Finance, Universiti Tunku Abdul Rahman, Jalan Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia

chonghengxu@lutar.my

Abstract. Nowadays, the topic of private sector workers' retirement has drawn a lot of attention on a global scale. This study will examine the relationship between retirement planning behaviour and variables including family education, financial literacy, and goal clarity in the context of working adults in the private sector. The results of this study can be used by policymakers and retirement planning service providers to enhance awareness and encourage better retirement planning among citizens. A total of 411 surveys had been gathered from Kuala Lumpur, Pulau Pinang, and Johor states. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 27.0, employing multiple linear regression analysis. The results revealed that financial literacy and goal clarity had significant influences on retirement planning behaviour. However, family education is reported to be insignificantly related to retirement planning behaviour. Therefore, this study provides practical implications that relevant institutions can utilize to promote awareness and education among individuals, thereby enhancing their retirement planning behaviour.

Keyword: Retirement Planning Behaviour, Family Education, Financial Literacy, Goal Clarity

1 Research Overview

1.1 Research Background

The subject matter of private sector workers' retirement has gained significant attention globally over the past few years. Retirement planning is often shaped by an individual's personal values, knowledge and the surrounding environment.

Retiring is a multifaceted process that involves pre-retirement planning to ensure a smooth adjustment and transition. According to [1], retirement planning requires a solid financial plan that consists of investing, saving, and allocating funds for one's own golden years.

In a global context, retirement planning is a crucial issue as populations age and pension systems are put under strain. [2] estimates a \$400 trillion gap in global retirement savings by 2050, indicating a significant financial gap between retirement needs and saved funds. Hence, many people will experience financial difficulties in retirement due to inadequate savings, leading to a lower quality of life, increased reliance on government assistance, and struggles with basic expenses.

Despite the importance of retirement planning, a significant number of working adults in Malaysia are unprepared for their retirement as approximately 3.6 million members of the Employees Provident Fund (EPF), have balances of less than RM1,000 in their accounts as of November 2021 [3]. As such, it is concerning that most Malaysian retirees who solely depend on EPF for retirement savings encounter severe financial difficulties.

This study focuses on the private sector primarily due to the current ongoing debate regarding the social safety net for employees in the private sector. Private sector workers do not have pension schemes and the only social security net they have is EPF contributions.

Apart from that, three states in Malaysia, namely, Wilayah Persekutuan Kuala Lumpur, Pulau Pinang and Johor have been selected for this research. These states are known as national economic hubs and have a high concentration of private sector companies, which in turn, employ a large number of Malaysians [4]. Therefore, as elucidated, the private sector employees from these three states will be the centre of this study in identifying the factors that affect retirement planning among working adults.

The challenge is that neither the government nor private organizations are able to provide sufficient support for retirees. This is because retirees aim to maintain or improve their post-retirement lifestyle, meanwhile the Malaysian government is tasked with ensuring the well-being of its growing population. Nonetheless, there are several concerns and issues that Malaysians must confront in order to achieve a sustainable retirement lifestyle [5].

For instance, according to EPF statistics in 2020, merely 19 per cent of the total membership have succeeded in saving the recommended minimum amount of retirement fund, which is RM240,000, by the age of 55 [6]. Finding showed that

major Malaysian individuals may lack the financial capability to achieve this retirement fund benchmark by the time of their retirement. Additionally, stagnant incomes and increased consumption, driven by factors like inflation and rising costs, pose further challenges to retirement planning and financial security in Malaysia.

Apart from that, Malaysia will suffer poverty among the elderly population, given that the insufficient retirement savings, 81 percent of the EPF contributors will not live above the poverty line after their retirement which ultimately leads to the need to continue working after retirement age to support their daily expenses [7]. As mentioned by [8], 80 percent of workers within the age of 50 to 60 years old seek to return to the workforce.

To address the issue of insufficient retirement funds among Malaysian retirees, the national budget will incorporate the expenses related to the retirement phases, however, this approach may increase the government's financial burden as evidenced by the government spending approximately RM26.6 billion on the pensioners in 2019 [9].

Furthermore, many Malaysians possess low levels of financial capability, roughly 36 per cent of Malaysians have a low retirement savings. This inadequacy in financial capability may confront insufficient financial resources and inadequate healthcare provisions during their retirement phase [10]. Since the medical costs for an 80-year-old are twice as high as for a 60-year-old.

[11] highlighted that younger employed individuals currently view retirement planning as a daunting task given its long-term nature. [12] indicated the importance of initiating retirement planning early to guarantee sufficient savings for post-retirement living expenses. Late retirement planning can result in physical and cognitive challenges for the elderly. Although retirement planning may present difficulties, proactive early planning and setting achievable objectives can enhance the likelihood of enjoying a comfortable retirement [13].

Besides that, [14] mentioned the significant influence of early childhood experiences and interactions within peer groups, such as family members on the future goals and motivations required to successfully accomplish tasks. The financial planning of individuals is partially shaped by the knowledge and experiences gained from close relatives.

2 Literature Review

2.1 Underlying Theories

Theory of Planned Behaviour

This theory proposes that an individual's intention to exhibit a behaviour is influenced by their perceptions of behavioural control, subjective standards, and attitude towards the behaviour. In the context of retirement planning, an individual's attitude towards retirement planning, the influence of social norms, and their perceived control over planning for retirement may affect their intention to engage

in retirement planning. [15]

Family Education Theory

The theory suggested that parent education programmes, especially using behavioural techniques, are effective in improving the behaviour of pre-adolescent children. In retirement planning, Those with family education who are more aware about how early the future will arrive tend to be more prepared in terms of saving and taking proactive planning measures. [16]

Financial Literacy Theory

This theory suggests that individuals with higher levels of financial literacy have better financial decision-making abilities and behaviours. In retirement planning, financial literacy may influence an individual's ability to plan for retirement, understand the risks associated with various investment options, and make informed decisions regarding retirement savings. [17]

Goal Setting Theory

This theory proposes that individuals who set specific and challenging goals are more likely to achieve them. In the context of retirement planning, individuals who set clear and specific retirement goals may be more motivated to engage in retirement planning activities and save for retirement. [18]

2.2 Review of the variables

Dependent variable – Retirement Planning Behaviour

Retirement planning behaviour pertains to the actions, choices, and attitudes individuals adopt when preparing for their financial stability during retirement [19]. [20] mentioned that engagement in retirement planning behaviour is important for individuals to achieve financial security after retirement. It empowers individuals to assume control over their financial future, mitigates stress, and fosters overall well-being. In addition, [21] show effective retirement planning provides a reduction in the need for welfare programs and the encouragement of financial stability.

Retirement planning behavior is a lifelong endeavor crucial for financial stability, influenced by various factors. Many Malaysians start planning for retirement too late, resulting in inadequate savings [22], while proper retirement planning can boost confidence and security [23]. In the face of financial market changes, inflation, and rising medical costs, there's an urgent need for retirement planning, but a significant portion of Malaysians lack sufficient savings. Identifying the factors affecting retirement planning success is essential.

This research addresses the gap in retirement planning studies by focusing on the Malaysian private sector, aiming to understand the factors influencing retirement planning behavior among private sector employees and inform policies for

nationwide improvement.

Independent variable – Family Education

Family education is the systematic teaching of essential life topics like mental health, well-being, and interpersonal relationships to family members. It's about parents guiding their children in family interactions to improve overall well-being and relationships. Research highlights a positive link between family education and retirement planning behavior, as parental influence on children's financial habits is crucial, emphasizing the significance of childhood financial education [24, 25, 26, 27, 28].

Family education plays a crucial role in promoting retirement savings and overall financial management, fostering a forward-looking perspective and encouraging proactive planning behaviors [16, 29, 30]. It enhances financial literacy, equips individuals with essential knowledge and skills for retirement planning, and instills a sense of responsibility toward securing a stable financial future in retirement.

In contrast, [31] study suggests that family education isn't a significant factor in retirement planning, as some participants were prompted to plan for their own financial future due to their parents' lack of retirement preparedness.

Given the limited research on this topic and mixed results, further investigation is needed to understand how family education influences working adults' retirement planning, which is the aim of this research.

Independent variable – Financial literacy

Financial literacy, defined as the ability to understand and utilize personal finance information for future planning, plays a pivotal role in influencing retirement planning behavior and effectiveness, with studies like those by [32, 33, 34, 35] demonstrating its positive impact on retirement savings and financial preparation for retirement in Malaysia.

[20] suggest that employees with strong investment knowledge tend to embrace risk-taking behavior, impacting their retirement saving attitudes. Enhanced financial literacy boosts planning efficiency and confidence, whereas [36] found that lower financial literacy is linked to reduced participation in retirement planning and savings decisions. [37] highlight a positive correlation between high financial literacy and engagement in retirement schemes, underscoring the potential for suboptimal financial decisions with lower financial literacy.

However, [38] found that while actively seeking financial information is crucial for retirement planning, having general financial knowledge does not significantly impact retirement planning behavior. In other words, being financially literate about retirement savings doesn't guarantee a comprehensive understanding of pension features and overall retirement savings.

Independent variable – Goal Clarity

Retirement goal clarity is essential for predicting an individual's retirement planning

and savings behavior. Those with clear retirement goals are more confident in their planning efforts, and setting precise financial objectives increases their diligence in saving to achieve those goals [39]. Goal clarity plays a significant role in guiding Malaysians towards a fulfilling retirement [22], and studies by [14, 40], and [41] emphasize its impact on retirement planning and savings.

In Malaysia, [42] highlight the positive link between goal clarity and retirement planning, suggesting that establishing realistic retirement goals enhances confidence and readiness. [39]'s research, conducted during the pandemic, reinforces this relationship, but the pandemic's increased risks and uncertainties have made retirement planning more challenging, underlining the need for greater sensitivity and proactive planning due to economic disruptions and reduced income levels.

[43] discovered that retirement goal clarity doesn't significantly explain retirement planning among 200 youths in Malacca, likely due to the youth's tendency to have vague retirement goals and less comprehensive retirement planning.

2.3 Conceptual Framework

An extensive review of journal articles was conducted to carefully select the variables for this research. A conceptual framework was developed, drawing from the theories.

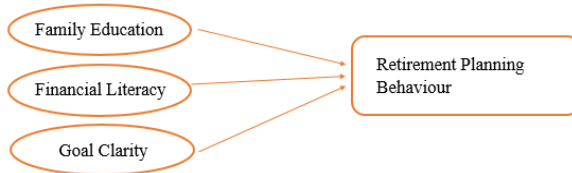


Fig. 1. Research Model

Note: Developed for this research

This conceptual framework explores the relationships between financial literacy, family education, goal clarity, and retirement planning. It predicts that higher values of these variables correspond to increased retirement planning, establishing a positive linear relationship. The research will use this framework to test these relationships and formulate hypothesis.

2.4 Hypothesis

Family Education and Retirement Planning behaviour:

Hypothesis 1:

Ho: There is no significant relationship between family education and retirement planning behaviour.

H1: There is a significant relationship between family education and retirement planning behaviour.

Financial Literacy and Retirement Planning behaviour:

Hypothesis 2:

Ho: There is no significant relationship between financial literacy and retirement planning behaviour.

H1: There is a significant relationship between financial literacy and retirement planning behaviour.

Goal Clarity and Retirement Planning behaviour:

Hypothesis 3:

Ho: There is no significant relationship between goal clarity and retirement planning behaviour.

H1: There is a significant relationship between goal clarity and retirement planning behaviour.

3 Methodology

3.1 Research Design

This study uses a quantitative method to examine retirement planning behavior among working individuals in Malaysia, enabling a clear explanation of causal effects and relationship understanding.

3.2 Sampling Design

Target Population

A population comprises a sizeable group with shared characteristics, but researchers commonly use a more manageable sample to collect data [44]. In this study, the target population includes Malaysian citizens residing in Kuala Lumpur, Pulau Pinang, and Johor, particularly working adults in the private sector, who are of ages 25 to 59 years old.

Sampling Size

Sample size is the number of observations used to estimate a population, is a critical part of statistical analysis. Selecting the right sample size is crucial to ensure accurate and valid results that represent the entire population. In this study, the Yamane formula will be used to determine the appropriate sample size.

$$n = \frac{N}{1 + N(e^2)}$$

N = Population Size
 e = Acceptable Sampling error
 n = Sample size

The researchers will use a 95% confidence level and a 0.05 sampling error. In the specified age group of 25 to 59 years in 2021, there were 2,875,400 employed individuals in Johor, Kuala Lumpur, and Penang combined. The study substitutes all the information above into the formula as shown below:

$$n = \frac{2,875,400}{1 + 2,875,400(0.05^2)}$$

n= 399.999
 n≈400

The minimum sample size needed is 399.99 people. We have rounded up the sample size to 400 respondents, So total 400 of respondents is the minimum requirements for this research.

Sampling Technique

This research employs stratified sampling, according to [45] is a form of probability sampling where the population is divided into groups (strata) based on shared characteristics, which can vary depending on the study's objectives. This research sample of 400 respondents was divided into 3 strata based on the selected states of Kuala Lumpur, Pulau Pinang and Johor respectively, as shown below:

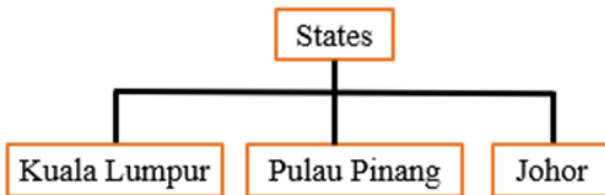


Fig. 2. Stratified sampling adopted for this research

This study uses proportionate stratified random sampling, with a minimum of 400 respondents divided proportionally among the three states (at least 134 per state) to ensure equal representation. Surveys were conducted using Google Forms, distributed through social media and in-person interactions to collect responses from these three states.

3.3 Research Instrument

Questionnaire Design

The questionnaire is in 3 languages – English, Bahasa Melayu and Mandrin- and is

catagorised into 6 different sections. Section one collects demographic data with eight questions. Section two to section five each address a specific variable, covering retirement planning behavior, family education, financial literacy, and goal clarity, with five to seven questions in each section.

Table 1. Summary of sources of questions

Variable	Source of Question
Retirement Planning	[28]
Family Education	[28]
Financial literacy	[32, 46, 47]
Goal Clarity	[14]

The questionnaire consists of 28 questions, with section two to section five using a five-point Likert scale for responses. This scale helps generate a composite score by summing up results from each questionnaire item, measuring a single attribute overall. Respondents choose from 1 for Strongly Disagree to 5 for Strongly Agree when responding to the questions.

3.4 Data Analysis Tools

Descriptive Analysis

Descriptive statistics, as explained by [48], are fundamental for understanding data in a study, providing graphical analysis, sample summaries, and demographic comparisons. This study employs descriptive analysis to showcase demographic data and utilizes pie charts for information on gender, age, marital status, employment location, education level, and monthly salary. For Likert-scale questions in sections B through F, mean, standard deviation, skewness, and kurtosis are used to describe respondents' responses.

Reliability Test

Reliability analysis examines the consistency and reliability of ratings on Likert-scale questions (1 to 5). This study uses SPSS software to assess internal consistency, primarily through Cronbach's alpha. A value of 0.70 or higher is considered good, while 0.90 or higher is excellent [49]. The general guidelines for interpreting Cronbach's alpha coefficient value are as follows:

Table 2. The rule of thumb for Cronbach's alpha coefficient value

Alpha (α) Coefficient Range	Strength of Association
<0.60	Poor
0.60 to 0.70	Moderate
0.70 to 0.80	Good
0.80 to 0.90	Very Good

>0.90	Excellent
-------	-----------

Source: [50]

Preliminary Data Screening

Multicollinearity

Preliminary data screening involves checking for multicollinearity, defined as the association between independent variables, which can compromise regression analysis results due to increased standard errors. Multicollinearity is assessed using the tolerance value and variance inflation factor (VIF), with VIF values between 1 and 10 indicating no multicollinearity issues in the model [51].

Normality Test

In preliminary data screening, normality tests are essential for statistical analysis and structural equation models, as highlighted by [51]. This study uses skewness and kurtosis to assess normality, with values between -2 and +2 for skewness and -7 and +7 for kurtosis considered normal when the survey has over 300 respondents, according to [52]. Data normality is also checked through the shape of the histogram, which should be symmetrical and bell-shaped for normal distribution, with the highest frequency in the middle. The third method is the normal probability plot, or normal Q-Q plot, where a linear pattern indicates normal distribution by comparing observed and expected values.

Inferential Analysis

Using inferential analysis, researchers draw logical conclusions and generalize findings from a sample to the broader population. This study employs multiple linear regression as a statistical technique to evaluate and analyze the collected data.

Multiple Linear Regression

Multiple linear regression is a statistical method used to estimate a dependent variable's outcome based on several independent variables. It helps determine the significance, magnitude, and direction of the beta coefficient while analyzing the influence of one variable while controlling for others, making it a powerful tool for understanding complex relationships among multiple variables in statistical analysis. The expression for the multiple linear regression model is as follows:

$$\widehat{R\overline{P}B}_i = \beta_0 + \beta_1 FE_i + \beta_2 FL_i + \beta_3 GC_i + \mu_i$$

Where,

RPB = Retirement Planning Behaviour

FE = Family Education

FL = Financial Literacy

GC = Goal Clarity

β = Coefficient value

μ = Error Term

Based on the equation above, the multiple linear regression analysis will be conducted. It is assumed that all the independent variables have a significant influence to the dependent variable.

4 Data Analysis

4.1 Descriptive Analysis

65.4 percent of the respondents have started retirement planning and the remaining have not yet prepared for retirement planning. 18.5 percent of respondents range from 55 to 59. Next, 50.5 percent of respondents are male and female respondents with 49.5 percent. 52.7 percent of respondents are married as well as 32.4 percent of respondents work in Pulau Pinang and 34.9 percent of respondents work in Kuala Lumpur and 32.7 percent of respondents work in Johor. 31.2 percent of respondents' income range is RM3,000 to RM4,999. 35.6 percent of respondents is bachelor degree holder. 34.1 percent of the respondents plan to retirement at the age of 55 to 60. 66.3 percent of respondents do not acquire financial advisor. Moreover, 31.7 percent of respondents have over RM300,000 in their EPF account. 54.4 percent of the respondents do not have other retirement savings programme and 50.7 percent of the respondents require RM1,000,001 to RM2,000,000 for their retirement fund. (Refer to Table 3)

Table 3. Demographic Group

Demographic Group	Demographic Category	Distribution Frequency	Distribution Percentage (%)
Age Group	25-29	58	14.1
	30-34	51	12.4
	35-39	57	13.9
	40-44	57	13.9
	45-49	61	14.9
	50-54	50	12.2
	55-59	76	18.5
Gender	Male	207	50.5
	Female	203	49.5
Marital Status	Married	216	52.7
	Widowed	18	4.4
	Separated	33	8.0
	Divorced	34	8.3
	Single	109	26.6
Working States	Pulau Pinang	133	32.4
	Kuala Lumpur	143	34.9
	Johor	134	32.7
Monthly Income Range	Below RM2,999	56	13.7
	RM3,000-RM4,999	128	31.2
	RM5,000-RM6,999	127	31.0
	RM7,000-RM8,999	77	18.8

	Above RM9,000	22	5.4	
Education Level	No any Certificate	13	3.2	
	Primary	16	3.9	
	Secondary	81	19.8	
	Diploma, STPM or Equivalent	101	24.6	
	Bachelor's Degree	146	35.6	
	Master's Degree and above	46	11.2	
	Doctorate and Above	7	1.7	
Retirement Planning	Yes	268	65.4	
	No	142	34.6	
Planned Retirement Age	Under 55 years old	54	13.2	
	55 – 60 years old	140	34.1	
	61 – 65 years old	135	32.9	
	Over 65 years old	81	19.8	
Financial Advisor	Yes	100	24.4	
	No	272	66.3	
	Not Sure	38	9.3	
EPF Savings Amount	Below RM10,000	41	10.0	
	RM10,000 – RM99,999	57	13.9	
	RM100,000 – RM199,999	67	16.3	
	RM200,000 – RM299,999	115	28.0	
	Above RM300,000	130	31.7	
	Retirement Saving Programme	Yes	151	36.8
		No	223	54.4
Not Sure		36	8.8	
Required Retirement Funds	Less than RM500,000	32	7.8	
	RM500,001 – RM1,000,000	82	20.0	
	RM1,000,001 – RM2,000,000	208	50.7	
	More than RM2,000,000	88	21.5	

4.2 Preliminary Data Screening

The purpose of conducting preliminary data analysis is to make sure the study's findings are reliable. Therefore, the multicollinearity test and normality test are employed in the preliminary data analysis.

Multicollinearity Test

Multicollinearity happens when the correlation between the independent variables is exceptionally high [53]. The multicollinearity issue in the model will cause the results to be unreliable because of the high error term. Therefore, this study employs two methods to detect the multicollinearity problem, such as variance inflation factor (VIF) and tolerance value. [53] reported that if VIF is above

10 and the tolerance value is below 0.1, then, it is enough evidence to prove that model is suffered from the multicollinearity issue.

Table 4. Tolerance Value and Variance Inflation Factor (VIF)

Independent variables	Collinearity statistics	
	VIF	Tolerance
Family education	1.247	0.802
Financial Literacy	1.895	0.528
Goal Clarity	1.625	0.615

According to Table 4, VIF values of all the independent variables are below 10. Besides that, their tolerance values are above 0.1. Therefore, there is sufficient evidence to demonstrate that the independent variables do not exhibit multicollinearity.

Normality Test

After that, normality tests are conducted to evaluate the data normality. In this study, three methods, including the values of skewness and kurtosis, histogram as well as a normal Q-Q plot, are employed to determine the data normality.

Table 5. Normality Test Result

Variables	Skewness	Kurtosis
Dependent variable: Retirement Planning Behaviour	(0.625)	(0.736)
Independent variable 1: Family Education	(0.813)	0.400
Independent variable 2: Financial Literacy	(0.695)	0.124
Independent variable 3: Goal Clarity	(0.759)	(0.390)

Firstly, the data normality is determined by observing the value of skewness and the value of kurtosis in the data. Given that the sample size exceeds 300, the data is normally distributed if the value of skewness falls within the range of -2 to +2, while the value of kurtosis is within the range of -7 to +7 [52]. As stated in Table 5, all the values of skewness are within the range of -2 to +2. In addition, retirement planning behaviour obtains the highest skewness value of -0.625, on the other hand, family education has the lowest skewness value of -0.813. Next, all the kurtosis values also fall within the range of -7 to +7. Family education obtains the highest kurtosis value of 0.400, on the other hand, retirement planning behaviour records the lowest value of kurtosis, -0.736. Because all skewness values are within the range of -2 to +2 and all kurtosis values are within the range of -7 to +7, the data for all the variables has a normal distribution.

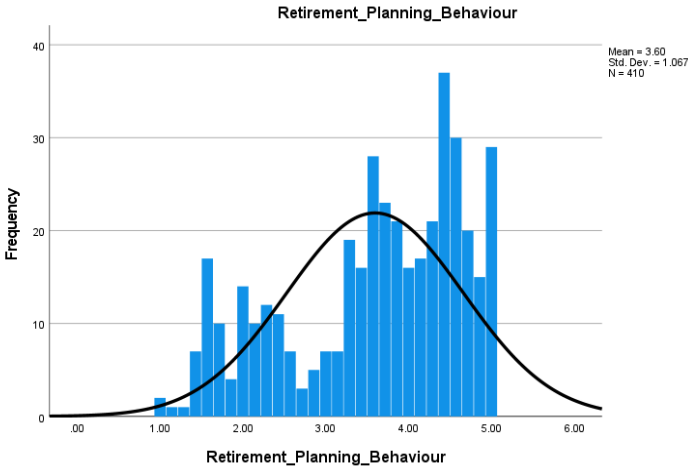


Fig. 3. Histogram

A histogram is used in the second section to check if the acquired data corresponds to the normality assumption. In many study studies, the quantitative data are presented using a histogram [54]. [55] stated that data distribution is considered normal if the histogram exhibits a substantially bell-shaped and symmetric pattern around the mean. Figure 3 reports the histogram created according to the data of the dependent variable, which is retirement planning behaviour. This histogram's distribution plot and overlay normal distribution curve are both constructed. Notably, the distribution plot matches the normal distribution curve in terms of its overall shape. Thus, the data is considered a normality distribution.

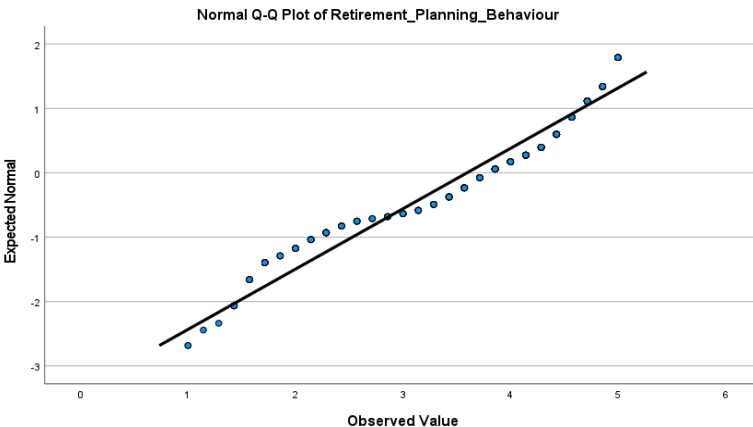


Fig. 4. Normal Q-Q plot

Thirdly, to illustrate the degree to which the data correspond to a normal distribution, a normal probability plot, such as a normal Q-Q plot, is used. The

standard Q-Q plot is a scatterplot that contrasts the theoretical and empirical quantiles on the X and Y axes, respectively [56]. The theoretical quantile corresponds to the normal distribution, but the distribution of the observed or obtained data is followed by the empirical quantile. The quantiles also display a similar trend when the two distributions are almost identical (Ramachandran & Tsokos, 2015) [57]. [49] came to the conclusion that a straight line in a normal Q-Q plot denotes a normal distribution. As a result, according to Figure 4, the data points are clustered together close to the diagonal line, forming an almost straight-line pattern. As a result, it is concluded that the data is normally distributed.

4.3 Inferential Analysis

Multiple Linear Regression

Table 6. Coefficients to Retirement Planning Behaviour

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	Beta	Std.Error	Beta		
Constant	-0.032	0.175		-0.181	0.857
FE	0.045	0.043	0.033	1.046	0.296
FL	0.172	0.050	0.132	3.415***	<0.001
GC	0.741	0.037	0.725	20.190***	<0.001

H0: There is no significant relationship between the dependent variable (retirement planning behaviour) and the respective independent variable (family education, financial literacy, and goal clarity).

H1: There is a significant relationship between the dependent variable (retirement planning behaviour) and the respective independent variable (family education, financial literacy, and goal clarity).

Multiple Linear Regression Equation

Based on the coefficient value (β) in Table 4.22:

$$RPBi = -0.032 + 0.045FEi + 0.172FLi + 0.741GCi$$

Where,

RPB = Retirement Planning Behaviour

FE = Family Education

FL = Financial Literacy

GC = Goal Clarity

According to Table 6, family education is not significant while financial literacy and goal clarity are significant to contribute toward DV (retirement planning behaviour) at a 1% significance level. In addition, the p-value of family education (0.296) had not fulfilled the 99% confidence level, while the p-value of financial literacy (0.001) and goal clarity (0.001) had fulfilled the 99% confidence level. The results conclude that H0 for family education is not rejected while H0 financial

literacy and goal clarity is rejected. Furthermore, the study examined the relationship between the three independent variables, including family education (FE), financial literacy (FL), and goal clarity (GC) as well as the dependent variable, which is retirement planning behaviour (RPB). According to the equation above, it concluded that the coefficient of family education, 0.045 indicates that a one-unit increase in family education leads to a 0.045 unit increase in retirement planning behaviour, *ceteris paribus*. Then, the coefficient of financial literacy, 0.172 indicates that a one-unit increase in financial literacy results in a 0.172 unit increase in retirement planning behaviour, *ceteris paribus*. Meanwhile, the coefficient of goal clarity, 0.741 indicates that a one-unit increase in goal clarity leads to a 0.741 unit increase in retirement planning behaviour, *ceteris paribus*. And, the constant term of retirement planning behaviour, -0.032 represents the baseline value of retirement planning behaviour when all independent variables are zero.

Table 7. Ranking on Coefficient of Independent Variables

Variable	Coefficient	Rank
Family Education	0.033	3
Financial Literacy	0.132	2
Goal Clarity	0.725	1

Table 7 indicates that the standardized coefficient contribution levels of each independent variable (IV) to the dependent variable (DV) are ranked to enable comparative analysis. Among the independent variables, goal clarity is the most influential factor affecting retirement planning behaviour, with the highest standardized coefficient value of 0.725. Then, the second-highest rank of contribution belonged to financial literacy with a standardized coefficient of 0.132. In contrast, family education has the least influence on retirement planning behaviour with a standardized coefficient value of 0.033.

Table 8. Model Summary

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	0.824	0.678	0.676	0.60740

Table 8 is a model summary that provides the overall strength of the independent variables (IV), family education, financial literacy, and goal clarity in explaining the dependent variable (DV), retirement planning behaviour. Firstly, R is 0.824 supporting a strong correlation between the dependent variable (DV) and the independent variables (IV). Furthermore, the R-Square value of 0.678 shows that approximately 67.80% of the variation in retirement planning behaviour can be defined by the variations in the independent variables. Meanwhile, it is important to note that 32.20% of the total variation in retirement planning remains unexplainable by the independent variables, including family education, financial literacy, and goal clarity. Thus, it concluded that there may be other significant variables that play a critical role in interpreting retirement planning, yet to be explored in this

study. Moreover, the adjusted R-Square value of 0.676 is used to demonstrate the variation in the dependent variable (DV) impacted by the variation in the independent variables (IV), taking into account of the degrees of freedom. This adjusted R-Square represents 67.60% of the variation in retirement planning behaviour accounted for by the independent variables (IV), taking into consideration the model's possible complexity and constraints.

5 Discussion, Conclusion, and Implications

5.1 Summary of Statistical Analysis

According to Table 9, Family education is the only variable that has an insignificant relationship with the retirement planning behaviour. While, financial literacy and goal clarity have significant relationships with retirement planning behaviour. Therefore, these two independent variables are strong factors affecting retirement planning behaviour among working adults in the private sector, the case of Pulau Pinang, Kuala Lumpur and Johor.

Table 9. Summary of the statistical findings

Independent Variables	T-statistic	P-Value	Result
Family Education	1.046	0.296	Insignificant
Financial Literacy	3.415***	>0.01	Significant
Goal Clarity	20.190***	>0.01	Significant

Note: Developed for this research

5.2 Conclusion

This research analyzed the relationships between family education, financial literacy, goal clarity, and retirement planning behavior among working adults in Malaysia. The findings indicated that financial literacy and goal clarity significantly influenced retirement planning, whereas family education did not. These results highlight the importance of financial literacy programs and emphasizing goal clarity in retirement planning initiatives.

The findings indicate the government should focus on nationwide financial literacy programs and integrate financial education into the education system, especially for young generations. Private sector employers should consider incorporating retirement planning into their training programs to address the financial literacy gap. Individuals are encouraged to prioritize their own financial education, seek professional guidance, and focus on early planning, as family education alone does not significantly impact retirement planning behavior. However, it is essential to acknowledge the limitations of this study, such as its cross-sectional nature, reliance on predominantly quantitative methods, and the limited geographic focus. Future research should adopt a longitudinal approach, incorporate mixed-methods, and expand the geographic scope to gain a more comprehensive understanding of retirement planning behavior in Malaysia.

Overall, this research provides valuable insights into the complex factors influencing retirement planning and offers practical recommendations for individuals, organizations, and policymakers to enhance retirement readiness among working adults in Malaysia.

References

1. Kagan, J. (2023). What is retirement planning? Steps, stages, and what to consider. Investopedia. <https://www.investopedia.com/terms/r/retirement-planning.asp>
2. World Economic Forum. (2017). We'll Live to 100 – How Can We Afford It? Retrieved from World Economic Forum: <https://www.weforum.org/whitepapers/well-live-to-100-how-can-we-afford-it/>
3. Saieed, Z. (2022). Malaysians saving less, most do not have enough in retirement funds: Survey. Retrieved from The Straits Times: <https://www.straitstimes.com/asia/se-asia/malaysians-saving-less-most-do-not-have-enough-in-retirement-funds-survey#:~:text=But%20what%20is%20even%20more,accounts%20as%20at%20November%202021.>
4. Department of Statistics Malaysia. (2020). Current Population Estimates, Malaysia, 2020. Department of Statistics Malaysia Official Portal. <https://www.dosm.gov.my/site/downloadrelease?id=current-population-estimates-malaysia-2020&lang=English#:~:text=Citizens%20growth%20rate%20remained%20stable,rate%20of%200.4%20per%20cent.>
5. Teh, T. L., & Sapuan, N. M. (2018). Retirement planning in Malaysia: Issues and challenges to achieve sustainable lifestyle. *The Turkish Online Journal of Design Art and Communication*, 8(SEPT), 1222–1229. <https://doi.org/10.7456/1080sse/164>
6. The Star Online. (2022, July 12). Do you have enough for a comfortable retirement? Toronto Star. <https://www.thestar.com.my/business/business-news/2022/07/12/do-you-have-enough-for-a-comfortable-retirement>
7. Huong, T. (2022, April 14). Impact of an ageing society. Toronto Star. <https://www.thestar.com.my/news/nation/2022/04/14/impact-of-an-ageing-society>
8. Iskandar, I. M. (2022, August 2). Done with retirement, back to work. Toronto Star. <https://www.thestar.com.my/news/nation/2022/08/02/done-with-retirement-back-to-work>
9. Zulfaka, A., & Kassim, S. (2021). Retirement Awareness Among The Working Population Below 40 In Malaysia. *Journal of Islamic Finance*, 10, 101-110. https://www.researchgate.net/publication/344727727_RETIREMENT_AWARENESS_AMONG_THE_WORKING_POPULATION_BELOW_40_IN_MALAYSIA
10. brell-Vogel, C., & Rowold, J. (2014). Leaders' commitment to change and their effective- ness in change - a multilevel investigation. *Journal of Organisational Change Manage- ment*, 27(6), 900-921.
10. Business Today. (2022, January 10). Low EPF Savings Due To Lack Of Financial Literacy. Retrieved from <https://www.businesstoday.com.my/2022/01/10/low-epf-savings-due-to-lack-of-financial-literacy/>
11. Moorthy, M. K., Durai, T., Chelliah, L., Sien, C. S., Leong, L. C., Kai, N. Z., ...& Teng, W. Y. (2012). A Study on the retirement planning behaviour of working

- individuals in Malaysia. *International Journal of Academic Research in Economics and Management Sciences*, 1(2), 54. <https://silo.tips/download/a-study-on-the-retirement-planning-behaviour-of-working-individuals-in-malaysia>
12. Mooney, A., Tsotsoros, C. E., Earl, J. K., Hershey, D. A., & Mooney, C. H. (2021). Enhancing planning behavior during retirement: effects of a time perspective based training intervention. *Social Sciences*, 10(8), 306.
 13. Li, J., Yuan, B., & Lan, J. (2021). The influence of late retirement on health outcomes among older adults in the policy context of delayed retirement initiative: an empirical attempt of clarifying identification bias. *Archives Belges de Sante Publique [Archives of Public Health]*, 79(1). <https://doi.org/10.1186/s13690-021-00582-8>
 14. Tomar, S., Baker, H. K., Kumar, S., & Hoffmann, A. O. (2021). Psychological determinants of retirement financial planning behavior. *Journal of Business Research*, 133, 432-449. <http://dx.doi.org/10.1016/j.jbusres.2021.05.007>
 15. Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211. [http://dx.doi.org/10.1016/0749-5978\(91\)90020-T](http://dx.doi.org/10.1016/0749-5978(91)90020-T)
 16. Supoyo, Ulupui, I. G. K. A., & Buchdadi, A. D. (2022). Influence of financial literacy and family education on retirement planning with saving behavior as intervening variable: Case study at employees of angkasa pura company. *The International Journal of Social Sciences World (TIJOSSW)*, 4(1), 352-364. <https://doi.org/10.5281/zenodo.6926544>
 17. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *American Economic Journal: Journal of Economic Literature*, 52(1), 5-44. <http://dx.doi.org/10.2139/ssrn.2243635>
 18. Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American psychologist*, 57(9), 705. <http://dx.doi.org/10.1037/0003-066X.57.9.705>
 19. Hassan, K. H., Rahim, R. A., Ahmad, F., Zainuddin, T. N. A. T., Merican, R. R., & Bahari, S. K. (2016). Retirement planning behaviour of working individuals and legal proposition for new pension system in Malaysia. *J. Pol. & L.*, 9, 43. <http://dx.doi.org/10.5539/jpl.v9n4p43>
 20. Murari, K., Shukla, S., & Adhikari, B. (2021). Do psychological social and financial perceptions of post-retirement life and demography influence the retirement planning behaviour? *International Journal of Social Economics*, 48(11), 1545-1566. <http://dx.doi.org/10.1108/IJSE-08-2020-0581>
 21. Lal, T., & Singh, V. (2022). Examining the Impact of Economic Factors on Retirement Planning Behaviour of Salaried Employees. *Asian Journal of Economics and Finance*, 4(1), 117-136. <http://dx.doi.org/10.56209/jommerce.v2i4.40>
 22. Fan, Y. E., Foo, Q. Y., Hoh, S. N., & Khor, Y. P. (2022). The effect of covid-19 pandemic on retirement planning. Evidence from private employed persons (Doctoral dissertation, UTAR). <https://www.researchconnections.org/research-tools/study-design-and-analysis/descriptive-research-studies>
 23. Faezah, N., & Talib, M. (2017). Attitude towards retirement planning behaviour among employee's. *International Journal of Business and Management*, 1(1), 12-17. <https://www.ijbmjournal.com/uploads/2/6/8/1/26810285/004-ijbm-12-17.pdf>
 24. Härkönen, J., Bernardi, F., & Boertien, D. (2017). Family dynamics and child outcomes: An overview of research and open questions. *Revue Européenne de Démographie [European Journal of Population]*, 33(2), 163-184. <https://doi.org/10.1007/s10680-017-9424-6>

25. Liu, Y., & Yang, C. (2018). Analysis of sino-American family education differences: Collectivistic or individualistic?—taking the Glass Castle as an example. *International Education Studies*, 11(8), 51. <https://doi.org/10.5539/ies.v11n8p51>
26. Widyaningtya, R. C., & Suhartono, S. (2021). The influence of income level, family education, financial literature on retirement planning mediated by saving behavior. *Journal of Business Studies and Management Review*, 5(1), 74-78. <https://doi.org/10.22437/jbsmr.v5i1.15237>
27. Kimiyaghalam, F., Mansori, S., Safari, M., & Yap, S. (2017). Parents' influence on retirement planning in Malaysia. *Family and Consumer Sciences Research Journal*, 45(3), 315-325. <http://dx.doi.org/10.1111/fcsr.12203>
28. Kimiyagahlam, F., Safari, M., & Mansori, S. (2019). Influential behavioral factors on retirement planning behavior: The case of Malaysia. *Journal of Financial Counseling and Planning*, 30(2), 244-261. <http://dx.doi.org/10.1891/1052-3073.30.2.244>
29. Kopusko, J. L. (2014). Parental and early influences on expectations of financial planning for retirement. *Journal of Personal Finance*, 13(2), 17. https://www.researchgate.net/publication/283211970_Parental_and_Early_Influences_on_Expectations_of_Financial_Planning_for_Retirement
30. Sundarasan, S. D. D., Rahman, M. S., Othman, N. S., & Danaraj, J. (2016). Impact of financial literacy, financial socialization agents, and parental norms on money management. *Journal of Business Studies Quarterly*, 8(1), 137. https://www.researchgate.net/publication/315816479_Impact_of_Financial_Literacy_Financial_Socialization_Agents_and_Parental_Norms_on_Money_Management
31. Robertson-Rose, L. (2020). "because my father told me to": Exploratory insights into parental influence on the retirement savings behavior of adult children. *Journal of Family and Economic Issues*, 41(2), 364–376. <https://doi.org/10.1007/s10834-019-09643-1>
32. Harahap, S., Thoyib, A., Sumiati, S., & Djazuli, A. (2022). The Impact of Financial literacy on Retirement Planning with Serial Mediation of Financial Risk Tolerance and Saving Behavior: Evidence of Medium Entrepreneurs in Indonesia. *International Journal of Financial Studies*, 10(3), 66. <https://doi.org/10.3390/ijfs10030066>
33. Nga, J. K. H. (2018). An exploratory model on retirement savings behaviour: A Malaysian study. *International Journal of Business and Society*, 19(3), 637-659. https://www.researchgate.net/publication/329943973_An_exploratory_model_on_retirement_savings_behaviour_A_Malaysian_study
34. Agung Mourine, A. (2017). Financial Literacy and Financial Preparedness for Retirement among Permanent and Pensionable Employees in State Owned Corporations in Nairobi, Kenya. *International Journal of Business and Social Science*, 8(11). https://www.researchgate.net/publication/326866515_Effect_of_financial_literacy_on_financial_preparedness_for_retirement_among_permanent_and_pensionable_employees_in_state_owned_corporations_in_nairobi_kenya
35. Selvadurai, V., Kenyathulla, H. B., & Siraj, S. (2018). Financial literacy education and retirement planning in Malaysia. *MOJEM: Malaysian Online Journal of Educational Management*, 6(2), 41-66. <http://dx.doi.org/10.22452/mojem.vol6no2.3>
36. Anderson, A., Baker, F., & Robinson, D. T. (2017). Precautionary savings, retirement planning and misperceptions of financial literacy. *Journal of financial economics*, 126(2), 383-398. <https://econpapers.repec.org/scripts/redir.pf?u=https%3A%2F%2Fdoi.org%2F10.1016%252Fj.jfineco.2017.07.008;h=repec:eee:jfinec:v:126:y:2017:i:2:p:383-398>

37. Bongini, P., & Cucinelli, D. (2019). University students and retirement planning: never too early. *International Journal of Bank Marketing*, 37(3), 775-797. <http://dx.doi.org/10.1108/IJBM-03-2018-0066>
38. Meir, A., Mugerman, Y., & Sade, O. (2016). Financial literacy and retirement planning: Evidence from Israel. *Israel Economic Review*, 14(1), 75–95. <https://ideas.repec.org/a/boi/isrerv/v14y2016i1p75-95.html>
39. Lim, S. M., Tenk, T., Teoh, M., & Lee, T. H. (2021). Employees' retirement saving behaviour during the Covid19 pandemic in Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 11(3), 1099-1116. <http://dx.doi.org/10.6007/IJARBS/v11-i3/8855>
40. Jiménez, I., Chiesa, R., & Topa, G. (2019). Financial planning for retirement: age-related differences among Spanish workers. *Journal of Career Development*, 46. 089484531880209. <http://dx.doi.org/10.1177/0894845318802093>
41. Herrador-Alcaide, T. C., Hernández-Solís, M., & Topa, G. (2021). A model for personal financial planning towards retirement. *Journal of Business Economics and Management* . 22. 482-502. <http://dx.doi.org/10.3846/jbem.2020.13978>
42. Shanmugam, A., & Zainal Abidin, F. (2013). Retirement confidence and preparedness: A study among working adults in a northern state in Malaysia. *Conference on Business Management Research 2013*. <https://repo.uum.edu.my/id/eprint/16366/>
43. Shafee, N. B., Mohamed, Z. S. S., Suhaimi, S., & Ahmad, N. N. (2018). Future Retirement Planning Among Malacca Youth. *Global Business & Management Research*, 10(3). https://web.s.ebscohost.com/abstract?direct=true&profile=ehost&scope=site&authType=crawler&jrnl=19475667&AN=133618132&h=aqE6bbD8hJbqBlB8PupvGn6FdwaatCaetkolhNOtOdvx3EN%2bRyefUbHqQbChOkh5VvRPhTR822RUFolj7hGDuQ%3d%3d&url=c&casa_token=idbmr5vc4MAAAAA%3ahRXKDiC5uBjrXlkOSexhfzT9nWocuvl2313Q15qabxRKLTAz-bbvrkWSxwK9z8nnYCSJY9wnwe01C8A&resultNs=AdminWebAuth&resultLocal=ErrCrlNotAuth&crlhashurl=login.aspx%3fdirect%3dtrue%26profile%3dehost%26scope%3dsite%26authType%3dcrawler%26jrnl%3d19475667%26AN%3d133618132
44. Momoh, O. (2022). Population Definition in Statistics and How to Measure It. Retrieved from Investopedia: <https://www.investopedia.com/terms/p/population.asp>
45. Dudovskiy, J. (n.d.). Stratified sampling - research methodology. *Business Research Methodology*. <https://research-methodology.net/sampling-in-primary-data-collection/stratified-sampling/>
46. Van Rooij, M. C. J., Lusardi, A., & Alessie, R. J. M. (2011a). Financial Literacy and Retirement Planning in the Netherlands. *Journal of Economic Psychology*, 32(4), 593–608. <https://doi.org/10.1016/j.joep.2011.02.004>
47. Hamza, N., & Arif, I. (2019). Impact of financial literacy on investment decisions: The mediating effect of big-five personality traits model. *Market Forces*, 14(1).
48. Aldrich, J. O. (2019). *Using IBM SPSS statistics (3rd ed.)*. Los Angeles, CA: SAGE Publications, Inc.
49. Pallant, J. (2013). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS (5th ed.)*. Berkshire, England: McGraw-Hill Education.
50. Hair, J. F., Babin, B. Jr., Money, A. H., & Samouel, P. (2003). *Essential of business research methods*. John Wiley & Sons
51. Aminu, I., & Shariff, M. N. M. (2014). *Strategic Orientation, Access to Finance*,

- Business Environment and SMEs Performance in Nigeria: Data Screening and Preliminary Analysis. *European Journal of Business and Management*, 6(35), 124–131. <https://www.iiste.org/Journals/index.php/EJBM/article/download/17186/17977>
52. Kim, H. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry and Endodontics*, 38(1), 52-54. <http://dx.doi.org/10.5395/rde.2013.38.1.52>
 53. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill-building approach* (6th ed.). West Sussex, United Kingdom: John Wiley & Sons, Inc
 54. Kaplan, J. J., Gabrosek, J. G., Curtiss, P., & Malone, C. (2014). Investigating student understanding of histograms. *Journal of Statistics Education*, 22(2), 1-30 <http://dx.doi.org/10.1080/10691898.2014.11889701>
 55. Mishra, P., Pandey, C. K., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67. http://dx.doi.org/10.4103/aca.ACA_157_18
 56. Almeida, A., Loy, A., & Hofmann, H. (2018). Ggplot2 compatible quantilequantile plots in R. *The R Journal*, 10(2), 248-261 <http://dx.doi.org/10.32614/RJ-2018-051>
 57. Ramachandran, K. M., & Tsokos, C. P. (2015). *Mathematical statistics with applications in R* (2nd ed.) Elsevier Academic Press.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

