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Bridging Generation Gaps In Retirement Planning Behaviour: Insights from Financial Literacy, Risk Tolerance, Self-Efficacy and Goal Clarity in Malaysia

Cheng Boon-Liat[1], Lee Teck-Heang[2], Wong Siew-Chin[3], Angeline Yap Kiew-Heong[4], Har Wai-Mun[5]

[1]Sunway Business School, Sunway University, Malaysia, [2,4]Faculty of Business, Economics and Accounting, HELP University, Malaysia, [3]Faculty of Accountancy, Business and Finance, Tunku Abdul Rahman University of Management and Technology, Malaysia, [4]Faculty of Accountancy and Management, Universiti Tunku Abdul Rahman, Malaysia

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Abstract

Using the Life Course Theory and Theory of Planned Behaviour as the theoretical framework, the study examines the effect of financial literacy, risk tolerance, self-efficacy, goal clarity, and retirement planning behaviour among generations X, Y, and Z in Malaysia. A questionnaire survey was conducted and 169 responses were obtained. The study found that financial literacy and goal clarity are significant for retirement preparedness across the three age groups, but risk tolerance is only significantly relevant to Generation X, and it is statistically very high among them. Besides, self-efficacy and risk tolerance and are significant for retirement saving intentions across all three generations. This study contributes to the Malaysian policymakers and educators in gaining understanding on how sub-group characteristics can affect retirement planning behaviour. Such information is important in ensuring the continuity of the social welfare system over time. In addition, the results have crucial implications for age-specific financial literacy workshops in identifying planning strategy to employ over time to ensure economic stability and a better quality of life.

Keywords: Retirement Planning Behaviour, Financial Literacy, Risk Tolerance, Self-Efficacy & Goal Clarity

Introduction

Despite the potential economic influence of retirement financing and related concerns, it is evident that the most significant socioeconomic factor is the progress made in lifestyle and economic development plans. Given the status of retirement planning in Malaysia, together with increased financial literacy, risk tolerance, self-efficacy, and goal certainty, it appears to be a complicated process (Aziz & Kassim, 2020; Kaur & Hassan, 2018). Compared to where

planned retirement financing is located, its appeal from a larger socioeconomic dynamics determinant suggests specifically age-group-based saving/investment patterns from across the population. This phenomenon should be assessed relative to the socio-dynamic pressure for change and the current realities of successful retirement. (Kaur & Hassan, 2018; Mahdzan et al., 2020a,b). Yet, despite a clearer assessment of what retirement planning should be, there is still limited understanding of how these intersecting socioeconomic determinants push-pull factors operate across Malaysia's age groups. However, there has been a greater awareness among individuals over the age of 50 of planning for their future careers. This gap may reduce the effectiveness of policymakers and financial educators in creating targeted interventions to help different age groups prepare for retirement (Mahdzan et al., 2020a,b; Mohd Fadil et al., 2022).

The main objective of this paper is to examine how financial literacy, risk tolerance, self-efficacy and goal clarity interplay and how the combination of all four plays a role in shaping the retirement planning behaviour of generations X, Y and Z in Malaysia. To this end, the study seeks to learn from the experiences of different age groups how financial literacy leads people toward saving in their retirement years. On the other hand, it tries to understand the roles played by risk tolerance and self-efficacy in the determination of retirement decisions; at the same time, to assess how goal clarity motivates effective retirement planning of people from different generations to engage in the behaviour (such as saving or not saving) under various conditions (Ramli & Shariff, 2023; Ghadwan, Ahmad, & Hanifa, 2022). Explaining these goals in detail would have enabled the study to provide a comprehensive rationale for why generations approach retirement differently and why this difference varies by age.

The Theory of Planned Behaviour and Life Course Theory apply to this research. The Theory of Planned Behaviour suggests that someone's own retirement planning serves as a guide to their intentions as a retiree, and that these intentions are influenced by the attitudes held toward this entity and by the subjective norms or customs of the group to which one belongs. More specifically, the Theory of Planned Behaviour involves attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991) regarding retirement planning. Life Course Theory is a more expansive realm through which to assess how one's financial decisions are influenced based on transitions (Elder, 1985; Kumaraguru, Geetha, & Mohidin, 2022; Yusof et al., 2018), which is all the more true of the Malaysian context and its socioculturally disparate structure that supports life course based retirement planning within years, even decades, of such intention. Thus, these theories complement one another to create a coherent picture of all factors influencing retirement planning and how such distinctions emerge from age cohort to age cohort.

This study possesses theoretical and practical contributions. On a theoretical level, financial literacy, risk tolerance, self-efficacy, and goal clarity help people with financial planning for their retirement. In addition, this study's results could contribute a realistic message for mediation intentions for policies aimed at financial education. They relate it to developing a diverse range of protected mode setups for retirement across different generations living in Malaysia (Hassan et al., 2016; Mahdzan et al., 2020a,b; Mohd Fadil et al., 2022). By addressing the precise needs and challenges each age group faces, these strategies can help improve financial outcomes for retirees and strengthen the resilience of the social security systems, thereby contributing to economic stability and the wellbeing of society.

Literature Review

Retirement Planning

Retirement planning has interested scholars from many fields. According to Mahdzan et al., (2020a,b), issues and factors influencing one's saving behaviour and retirement planning include psychological factors (financial risk tolerance and financial literacy etc), social/cultural factors (family, income base etc), financial/economic factors (social security system, education etc) and circumstantial factors (health issues and sudden inheritance etc). Phases of retirement begin with pre-retirement, when one starts thinking about planning saving behaviour; the transition phase, when one retires; and retirement adaptation is the last phase when one must adjust to retirement. This paper focuses on the first phase, which is the planning stage, the most important phase as one must ensure one can live a desirable, comfortable life.

Life Course Theory

This section sees Elder's (1985) Life Course Theory employed as the theoretical basis for exploring how people in Malaysia would plan their retirement. Elder's theory is ingenious in the ways it treats the dynamics among financial behaviours, which makes its lens into more extensive social-economic settings a good platform for people at various age stages. It illustrates differing trajectories of financial behaviour growth and the influence of age on making educated decisions about retirement preparedness. Life Course Theory (Elder, 1985) links disparate events from both personal and distant perspectives that can change someone's financial trajectory/life course. It engages us to acknowledge different occurrences and transitions over time (in careers, family growth, and education); the theory illustrates how specific subgroups are financially prepared for, and learn to better prepare themselves financially, over time due to age-related differences during critical periods.

The theoretical framework is relevant to the study in Malaysia because external forces may drive financial behaviour (Elder, 1985; Hutchison. 2011) and influence its form. This has been indispensable in Malaysia's changing economic climate and demographic structure. Hence, this framework creates the background landscape for our research on retirement planning in Malaysia, facilitating understanding and generalising our conclusions. From this theoretical framework, we can now push beyond family or individual levels to comprehend the process within a broader socioeconomic context.

Theory of Planned Behaviour

Ajzen and Fishbein (2000) introduced the Theory of Planned Behaviour (TPB) (Ajzen, 1991), which was an extension of the Theory of Reasoned Action (TRA) model by adding perceived behaviour control, which describes one's belief and conduct due to perceived strain and comfort through coordinated behaviour. Therefore, this TPB asserts that one's behavioural intentions are formed by 1. Positive or negative attitude towards a goal behaviour based on their belief, 2. Subjective norms refer to a person's perception of whether those surrounding them would agree or disagree with their behaviour, and 3. Perceived behaviour control evaluates the level to which a person controls the behaviour. Behaviour under careful investigation must be voluntary; for example, when a person starts retirement planning, hence it was used to examine the effect of attitudes toward retirement planning behaviour and saving intentions (Rameli & Marimuthu, 2018) and goals clarity from social influence and perceived behavioural control based on subjective norms (Ramli & Shariff,

2023). When individuals exhibit positive behaviour, they are more willing to plan for retirement.

Previous researchers used this theory for financial-related subjects because of its predictive power of financial behaviour change (Ozmete & Hira, 2011; Lajuni, et al., 2019; Goyal & Kumar, 2021; Kumaraguru, Geetha, & Mohidin, 2022). In addition, the theory permits the inclusion of moderating variables (Ahmed et al., 2019; Lajuni et al., 2019). Past research on retirement planning needs to consider the influence of self-efficacy, risk tolerance, and goal clarity. This study includes these factors in the TPB model to identify whether they influence retirement planning behaviour. Moreover, even though socio-demographic factors have been identified as relevant in influencing retirement planning behaviour, limited research has been conducted to verify whether the inclusion of age as a moderating variable may improve the capability of TPB to predict retirement planning behaviour since age can influence attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991) of the theory of planned behaviour.

Financial self-efficacy (capacity)

Self-efficacy is an individual's awareness and expertise to determine, undertake, and influence a few areas of life to achieve goals (Bandura, 2006) within a wider range of tasks (Stajkovic & Luthans, 1998). It included one's cognitive, social, behavioural, and emotional ability for retirement self-efficacy. Hence, the higher oneself efficacy, the greater one's ability to overcome obstacles to achieve efficacy anticipation (Ghadwan, Wan Ahmad, & Hanifa, 2023).

Abidin, Zainuddin, and Rahim (2023) argued that the capacity to grasp numbers and have a passion for numbers might improve financial literacy. Individuals with financial self-efficacy are confident to accomplish financial expectations and manage wealth to enjoy a better life (Mindra, et al., 2017). They also experienced lower financial stress (Heckman, Lim, & Montalco, 2014) and had financial wellbeing (Robb, 2017) to do financial planning activities successfully (Ghadwan, Wan Ahmad, & Hanifa, 2023). Investors with higher financial self-efficacy tend to control their financial circumstances (Asebedo & Payne, 2019) and invest in low-risk financial schemes (Cho & Lee, 2006).

Financial Literacy

The OECD expresses financial literacy as a blend of awareness, knowledge, skill, attitude and behaviour needed to make good financial decisions and therefore attained individual financial health (Atkinson & Messy, 2012; OECD, 2023). It means financial literacy includes all five elements to make favorable financial results. It falls under cognition domain of psychology as one needs to process financial knowledge into resolutions and undertaking.

Firli (2017) defines financial literacy as a framework that include personal savings and loans, computes costs, understands economic and financial issues and concepts, and knows financial products/services, considering risks and opportunities (Abdullah & Chong, 2014) before investing. Financial literacy has been proven to strongly predict retirement saving behaviour (Mahdzan, et al., (2020b). It is strongly related to savings behaviours (Mahdzan & Tabiani 2013; Jappelli, Marino, & Padula, 2021; Mahdzan, et al., 2020b), borrowing behaviours (Lusardi & Tufano, 2015; Davis, et al., 2019), and investment behaviours (Mahdzan, Mohd-Any, & Chan, 2017; Bandopadhyay, 2023). They suggested that higher

financial literacy would lead one to higher savings, better borrowing behaviour, and more diversified investment portfolios. These individuals are more confident as they understand the importance of saving as a means of retirement preparation (Ramli & Shariff, 2023).

Financial Risk Tolerance

Financial risk tolerance exhibits the level to which individuals' ability to decide on investments for their portfolios (Bayar, et al., 2020). Financial risk tolerance varies by age, education level, occupation, marital status, cultural setting, and economic assumption (Grable & Lytton, 1999; Grable, 2000). Past studies found that financial risk tolerance was positive (Jacob-Lawson & Hershey, 2005) and negative (Larson et al., 2016. (Tomar, et al., 2021) significantly associated with retirement planning. Financial risk tolerance can influence attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991) as factors of retirement planning under the Theory of Planned Behaviour.

A review of literature found that age significantly influenced the degree of risk-taking behaviour, where older people incline towards lower risk taking relative to younger people (Riley & Chow, 1992; Baksi & Chen, 1994; Wahab, et al., 2023). Younger ones are more risk-seeking relative to older ones, meaning they will favour retirement contribution plans over retirement benefit plans. Under the benefit plans, employers bear the risks related to the benefit plans, whereby retirees receive regular fixed pay. In contrast, retirees will have to bear the risk related to retirement contribution plans. Due to the sustainability of the retirement benefits plan, younger people will favour the contribution plans as the old-age dependency ratio is increasing rapidly (Wahab, et al., 2023). Older people tend to depend on rewards from their savings, which keep them from risk-seeking. Hence, they will prefer to have a retirement benefits plan.

Retirement Goal Clarity

Past literature reviewed that retirement goals are important in retirement planning behaviours (Friedman & Scholnick, 1998; Hershey, Jacobs-Lawson, & McArdle, 2007; Mahdzan, et al., 2020a,b). Two contrasting intention driving one's retirement saving decission worth further attention. Firstly, fear may delay a person from their future retirement planning (Neukam, 2002). They are fearful of the uncertainties for the future, i.e. having inadequate savings for retirement and having to depend on family, friends or social welfare. Secondly, goal motives encourage one to plan for a comfortable retirement. Therefore, the psychological domain of motivation pushes one to planning retirement (Mahdzan et al., 2020a,b).

Goal clarity is measured as how deep thought one has perceived, how is living after retired, and whether crystalline goals have been put down. It also led to larger sums of savings amounts set aside (Stawski, Hershey, & Jacobs-Lawson, 2007). Subsequently, one will execute planning activities, analysing their financial needs during retirement to achieve well-defined retirement goals (Adam & Rau, 2011; Mahdzan, et al., 2020a,b). Past Malaysian studies proved that goal clarity positively relates to retirement planning (Hassan, et al., 2016; Shanmugam & Abidin, 2013). Individuals with positive goal clarity are prone to be more optimistic when planning for their retirement (Ramli & Shariff, 2023). The theory of planning behaviour emphasises the role of behavioural intentions. Clear goals intensify the acting intention of retirement planning.

Age Group Differences

Age is among those main aspects influencing retirement planning behaviour (Richardson & Kilty, 1989; Kaur & Hassan, 2018). Other factors, such as increased income (Lee & Law, 2004), higher education level (DeVaney, 1995), and increased review of retirement information (Montalto, Yuh, & Hanna, 2000), also have a positive impact on retirement planning behaviour. As one grows older, they gain more financial knowledge, which helps with retirement planning (Ramli & Shariff, 2023).

During early working life, individuals contributed little to their retirement savings (Erlandzon, 2008). They only realise it is important when they need more retirement saving for living after retirement (Wahab, et al., 2023). Xiao (1995) found perception of retirement income sufficiency for different age groups of pre-retirees influenced their saving practices. Pre-retirees tend to retire on average three years before the statutory retirement age (Zappala, et al., 2008) and other factors affecting the preferred retirement age include work situation, chronological age, and perception of income sufficiency (Mansor, et al., 2015). Age significantly predicts retirement planning (Evans, Ekerdt, & Bosse, 1985; Taylor & Shore, 1995; Sousa, Ramos, & Carvalho, 2019). Thus, different age groups (i.e., generation) will influence the relationship between retirement planning and its determinants. We hypothesized:

H1: Financial self-efficacy has a positive relationship with retirement planning behaviour in age groups.
H2: Financial literacy has a positive relationship with retirement planning behaviour in age groups.
H3: Financial risk tolerance has a positive relationship with retirement planning behaviour in age groups.
H4: Goal clarity has a positive relationship with retirement planning behaviour in age groups.

Methodology

The survey distributed was intended for adult respondents from Generations X, Y, and Z residing in Malaysia and involved in retirement and investment decisions. This is because these people will most likely have some retirement investment accounts, given their long tenure of employment (20-30 years). Therefore, as these people are on the cusp of retirement, their goals will be more aligned with a conservative approach to investing and saving, as they have learned throughout their lives that the time to be prepared for retirement is now. Surveys were distributed via convenience and snowball sampling, with participants asked to send the survey to anyone they knew who met the criteria. Surveys were distributed online via popular social media platforms, including WhatsApp, Facebook, WeChat, and Instagram.

The sample size is influenced by model complexity and calculated based on the desired power of the analysis (Hair et al., 2021). Following the guidelines from Gefen et al. (2011), a minimum sample size of 85 was established for this study, assuming an 80% power, a medium effect size, and a significance level of $p = 0.05$. Ultimately, data was collected from 169 respondents and among the 169 responses collected, 42.6 percent were from males and 57.4 percent from females. Of these respondents, 49.11 percent were from the Gen Y and Z cohorts, while 50.89 percent belonged to Gen X. Regarding marital status, 37.87 percent were

single, and 62.13 percent were married. In terms of education, about 53.25 percent had tertiary qualifications, 31.36 percent held postgraduate degrees, and 7.1 percent possessed professional qualifications. A significant 87.62 per cent of respondents lived in towns and major cities. Regarding investment schemes, nearly 75.74 percent contributed to the Employee Provident Fund (EPF), and 66.86 percent also maintained personal savings for retirement. Additionally, 26.04 percent of respondents participated in annuity or insurance-based retirement plans, and 48.52 percent invested in portfolios that included stocks, bonds, mutual funds, and real estate (Table 1).

Table 1
Respondents' Profiles

Demographic	Frequency	Percentage
Gender		
Male	72	42.6
Female	97	57.4
Age		
Gen Y and Z (18-43)	83	49.11
Gen X (44-59)	86	50.89
Marital status		
Single	64	37.87
Married	105	62.13
Education level		
Secondary school	14	8.28
Tertiary	90	53.25
Postgraduate	53	31.36
Professional	12	7.1
Residential Area		
Rural Area	3	1.78
Village	5	2.96
Suburb	12	7.1
Town	77	45.56
Major City	72	42.6
Retirement scheme (engaged > 1 item)		
Pension scheme	18	10.65
EPF (Employees Provident Fund)	128	75.74
Personal savings	113	66.86
Annuity or insurance-based retirement plan	44	26.04
Investment portfolio (e.g., stocks, bonds, mutual funds)	55	32.54
Real estate investments	27	15.98
Family support	14	8.28
Inheritance	8	4.73
IRA (Individual Retirement Account)	6	3.55

Source: Authors own work

Instrumentations

Instruments in this study are selected from past literature based on relevance and reliability. A 5-point Likert scale was used for all instruments, where "1" indicated "Strongly Disagree," "2" indicated "Disagree," "3" indicated "Neither Agree nor Disagree," "4" indicated "Agree," and "5" indicated "Strongly Agree." The instruments chosen for the study included:

- Retirement Planning Behaviour (8 items) from Mohd Fadil et al. (2022)
- Retirement Goal Clarity (5 items) from Ghadwan et al. (2023)
- Financial Literacy (3 items) from Kiso et al. (2019) and this variable was named as Perceived Financial Knowledge in Kiso et al. (2019)
- Financial Risk Tolerance (5 items) from Mohd Fadil et al. (2022)
- Financial Self Efficacy (12 items) from Ghadwan et al. (2023)

This careful selection and adaptation process aimed to maintain the validity and consistency of the instruments, ensuring they robustly measured the targeted constructs.

Control Variables

The study incorporated several controlled variables, including gender, age, and marital status. These control variables were introduced to account for the dependent variable's additional variation.

Common method variance (CMV)

The research employed a correlation matrix technique to assess common method variance (CMV). Bagozzi et al. (1991) suggest that CMV can be evaluated by analyzing the correlations among latent variables. If the correlations between significant constructs are exceedingly high ($r > 0.9$), it suggests the existence of common method bias. Table 2 demonstrates that all construct correlations were under 0.9, indicating that CMV did not pose a problem in this study (Tehseen et al., 2017).

This study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) for data analysis. The analysis was grounded in Life Course Theory and incorporated both individual and contextual measurement items in the structural path.

Table 2
Correlations among Latent Variables

	Financial Risk tolerance	Financial self-efficacy	Goal Clarity	Perceived financial knowledge	Retirement planning
Financial risk tolerance	1.000	0.109	0.063	0.158	0.205
Financial self-efficacy	0.109	1.000	0.647	0.642	0.571
Goal clarity	0.063	0.647	1.000	0.662	0.741
Financial literacy	0.158	0.642	0.662	1.000	0.758
Retirement planning behaviour	0.205	0.571	0.741	0.758	1.000

Source: Authors own work

Measurement Model

This study assesses two types of validity: convergent validity and discriminant validity in the measurement model. A measurement model can be determined when convergent validity and discriminant validity are established. Factor loadings and composite reliability (CR) must be ≥0.7, and the average variance extracted (AVE) must be ≥0.5 to establish convergent validity (Hair et al., 2021). Table 3 shows the findings for convergent validity test for Generation X and Generation Y & Z cohorts. FRT4, FRT5, FSE 1, FSE2, FSE4, FSE5, FSE11 and FSE 12 were excluded from the analysis because their factor loadings did not meet the acceptable threshold of 0.70. Based on all the loadings, AVE, and CR were bigger than the threshold values, convergent validity for both groups was not an issue for the present study.

Discriminant validity implies the extent to which a construct is distinct from other constructs within the structural model (Hair et al., 2021). The Heterotrait-Monotrait ratio of correlations (HTMT) was used to assess this validity. An HTMT value below 0.85 is deemed acceptable, suggesting that the construct is conceptually distinct (Kline, 2011). Table 4 presents the HTMT assessments, confirming the discriminant validity in this paper.

During the initial evaluation of the structural model, it is essential to address potential lateral collinearity issues. This involves examining each group of predictor constructs separately for each subset of the structural model. Specifically, a Variance Inflation Factor (VIF) value of 5 or higher (Hair et al., 2021) suggests possible collinearity problems. Table 5 presents the results of the full collinearity test, which show that the VIF scores for each construct are below the 5 thresholds, indicating that collinearity is not a concern (Hair et al., 2021).

Table 3
Assessment of Measurement Model

		Combined data (n=169)			Generation Y & Z (n=83)			Generation X (n=86)		
Constructs	Items	Loadings	CR	AVE	Loadings	CR	AVE	Loadings	CR	AVE
Retirement Planning Behaviour	RPB 1	0.785	0.910	0.650	0.806	0.928	0.686	0.761	0.898	0.624
	RPB 2	0.812			0.811			0.814		
	RPB 4	0.808			0.815			0.81		
	RPB 5	0.851			0.891			0.824		
	RPB 6	0.820			0.869			0.783		
	RPB 7	0.830			0.814			0.854		
	RPB 8	0.731			0.788			0.669		
Financial Literacy	FL1	0.893	0.860	0.781	0.921	0.885	0.813	0.862	0.843	0.760
	FL2	0.888			0.899			0.892		
	FL3	0.870			0.833			0.862		

Goal Clarity	GC1	0.844			0.818	0.880	0.676	0.866	0.895	0.706
	GC2	0.831			0.786			0.872		
	GC3	0.878			0.888			0.869		
	GC4	0.853			0.86			0.845		
	GC5	0.749			0.753			0.742		
Financial Self-Efficacy	FSE3	0.821	0.900	0.664	0.765	0.883	0.630	0.878	0.917	0.706
	FSE6	0.826			0.790			0.856		
	FSE7	0.861			0.860			0.867		
	FSE8	0.773			0.726			0.831		
	FSE9	0.842			0.837			0.847		
	FSE10	0.763			0.776			0.755		
Financial Risk Tolerance	FRT1	0.917	0.892	0.819	0.904	0.907	0.844	0.982	0.855	0.682
	FRT2	0.914			0.939			0.728		
	FRT3	0.883			0.912			0.743		

Source: Authors own work

Table 4
HTMT Criterion

Constructs (Combined)	Financial Literacy	Financial Risk Tolerance	Financial Self-Efficacy	Goal Clarity	Retirement Planning
Financial Literacy					
Financial Risk Tolerance	0.142				
Financial Self-Efficacy	0.692	0.117			
Goal Clarity	0.800	0.077	0.696		
Retirement Planning Behaviour	0.576	0.193	0.576	0.800	

Constructs (Gen Y&Z)	Financial Literacy	Financial Risk Tolerance	Financial Self-Efficacy	Goal Clarity	Retirement Planning
Financial Literacy					
Financial Risk Tolerance	0.228				
Financial Self-Efficacy	0.601	0.215			
Goal Clarity	0.824	0.192	0.696		
Retirement Planning Behaviour	0.804	0.288	0.574	0.839	

Constructs (Gen X)	Financial Literacy	Financial Risk Tolerance	Financial Self-Efficacy	Goal Clarity	Retirement Planning

Financial Literacy				
Financial Risk Tolerance	0.154			
Financial Self-Efficacy	0.775	0.104		
Goal Clarity	0.680	0.146	0.690	
Retirement Planning Behaviour	0.791	0.124	0.582	0.812

Source: Authors own work

Structural Model

The structural model outlines the causal relationships among the constructs in the model, including path coefficients and the R^2 value (Hair et al., 2021). To evaluate the significance of the path coefficients, the bootstrapping method with 10,000 samples was employed (Hair et al., 2021). Firstly, the path coefficients are positively significant ($p<0.05$ and $p<0.10$) for the Combined Gen X and Gen Y&Z datasets, except for the relationship between financial self-efficacy and retirement planning (see Table 5). Noteworthy to highlight that goal clarity ($\beta = 0.574$) is the most important variable in explaining retirement planning in Gen X. Comparatively, Gen Y and Z found that financial literacy ($\beta = 0.548$) is the most important predictor in retirement planning. Thus, H2-H4 are supported.

Albeit the significant findings, it is important to explore the effect sizes of the paths' (f^2) (Cohen, 1988). As reported in Table 5, the combined data ($f^2 = 0.336$), Gen X ($f^2 = 0.213$), and Gen Y &Z ($f^2 = 0.517$) indicate a modest to substantial effect on the relationship between financial literacy and retirement planning. On the other hand, the Combined data ($f^2 = 0.333$) and Gen Y&Z data ($f^2 = 0.178$) indicate a modest effect between goal clarity and retirement planning nexus except for Gen X data ($f^2 = 0.514$), which exhibits a substantial effect size. Nonetheless, the combined data ($f^2 = 0.046$), Gen X ($f^2 = 0.066$), and Gen Y&Z ($f^2 = 0.034$) demonstrated a weak effect on the relationship between financial risk-taking and retirement planning. Table 5 also shows the R^2 values for each sample to illustrate the variance explained. The combined data ($R^2 = 69.2\%$), Gen X data ($R^2 = 67.0\%$), and Gen Y &Z ($R^2 = 74.3\%$) indicated that all data have the substantial capacity to explain the retirement planning behaviour in local context.

Measurement of Invariance

A major point prior to compare group-specific parameter estimates for significant differences applying a multigroup analysis (MGA) is ensuring measurement invariance. By establishing measurement invariance, researchers can be confident that group differences in model estimates do not result from the distinctive content and /or meanings of latent variables across groups (Hair et al., 2021). When measurement invariance is not present, it can reduce the power of statistical tests, influence the precision of estimators, and provide misleading results. Hence, measurement invariance of composite models (MICOM) procedures was employed to ensure the validity of outcomes. The MICOM procedures involves three steps : (1) configural invariance, (2) compositional invariance, and (3) equality of composite mean values and variances. The three steps are hierarchically inter-related. If configural invariance (Step-1) and compositional invariance (Step-2) are established, partial measurement invariance is confirmed. Additionally, the composites have equal mean values and variances across the group (Step-3), and full measurement invariance is confirmed.

For configural invariance assessment. The measurement models engage the same indicators across the groups in terms of numbers, item content, data treatment as well as algorithm settings. Additionally, 1,000 permutations were conducted to evaluate Steps-2 and Steps-3 of the MICOM procedures. According to the results in Table 6, all permutation p-values were above 0.05, indicating that the correlations between composite scores were not significantly different from 1, thus confirming compositional invariance. However, the study did not achieve full measurement invariance in step 3. The permutation-based confidence intervals for the differences in means and variances did not encompass the original differences in mean values and variance for the financial risk tolerance construct (Hair et al., 2021).

Table 5
Assessment of Structural Model

						Percentile 95% CI				
Data Set	Relationship	Std beta	Std Error	t-value	p values	LB	UB	VIF	f^2	R^2
(Combined Gen X, Y & Z)	Financial Self-Efficacy --> Retirement Planning	-0.047	0.069	0.680	0.248	-0.147	0.08	1.900	0.004	0.692
	Financial Literacy --> Retirement Planning	0.464	0.072	6.418**	0.000	0.348	0.584	2.077	0.336	
	Financial Risk Tolerance --> Retirement Planning	0.122	0.052	2.354**	0.009	0.039	0.206	1.028	0.046	
	Goal Clarity --> Retirement Planning	0.464	0.086	5.400**	0.000	0.293	0.577	2.096	0.333	
Gen X	Financial Self-Efficacy --> Retirement Planning	-0.092	0.111	0.828	0.204	-0.289	0.074	2.249	0.011	0.670
	Financial Literacy --> Retirement Planning	0.394	0.096	4.122**	0.000	0.219	0.539	2.210	0.213	
	Financial Risk Tolerance --> Retirement Planning	0.155	0.106	1.460*	0.072	-0.034	0.305	1.100	0.066	

	Goal Clarity --> Retirement Planning	0.574	0.112	5.134**	0.000	0.385	0.741	1.940	0.514
Gen Y & Z	Financial Self-Efficacy --> Retirement Planning	0.015	0.094	0.155	0.438	-0.119	0.174	1.696	0.000	0.743
	Financial Literacy --> Retirement Planning	0.548	0.101	5.433**	0.000	0.373	0.709	2.259	0.517	
	Financial Risk Tolerance --> Retirement Planning	0.096	0.063	1.522*	0.064	-0.020	0.190	1.052	0.034	
	Goal Clarity --> Retirement Planning	0.339	0.125	2.706**	0.003	0.131	0.533	2.512	0.178	

**p<0.05, *p<0.10
Source: Authors own work

Table 6
Assessment of Measurement Invariance

Construct	Configural Invariance	Composition Invariance (Correlation = 1)		Equal Mean Value Invariance		Equal Variance	
	C=1 Confidence Interval	Partial Measurement Invariance	Differences Confidence Interval	Confidence Interval	Differences Measurement Invariance	Full Measurement Invariance Established	
Financial Risk Tolerance	Yes	0.945 [0.764, 1.000]	Yes	0.583	[-0.303, 0.300]	0.245 [-0.328, 0.361]	No
Financial Self-Efficacy	Yes	0.998 [0.992 ,1.000]	Yes	-0.119	[-0.286, 0,297]	-0.115 [-0.433, 0.406]	Yes

Financial Literacy	Yes	0.999	[0.998, 1.000]	Yes	-0.136	[-0.295, 0.290]	0.181 [-0.462, 0.439] Yes
Goal Clarity	Yes	0.999	[0.997, 1.000]	Yes	-0.169	[-0.296, 0.309]	-0.077 [-0,440, 0,381] Yes
Retirement Planning Behaviour	Yes	0.999	[0.998, 1.000]	Yes	0.000	[-0.296, 0.309]	0.152 [-0.361, 0.383] Yes

Source: Authors own work

MGA Analysis

PLS-MGA was used to investigate differences between Gen X and Gen Y&Z data sets by applying MGA and the Welch-Satterthwaite test (Sarstedt et al., 2011). Table 7, Figure 1 and Figure 2 present the differences in path coefficients between these generations. Out of four MGA hypotheses, only one was validated: the association between goal clarity and retirement planning was significantly stronger for Gen X than for Gen Y and Z. The coefficient difference between Gen X and Gen Y&Z was -0.235, with p-values of 0.080 for MGA and 0.081 for the Welch-Satterthwaite test. Given the small sample sizes (Gen X: n = 86, Gen Y&Z: n = 83), a 90% confidence interval (p=0.10) was used in this analysis (Hair et al., 2009).

Table 7
MGA Analysis

		Bootstrap MGA	Welch-Satterthwaite	
	Differences	p value	p value	Decision
Financial Self-Efficacy -->Retirement Planning	0.106	0.232	0.232	Unsupported
Financial Literacy -->Retirement Planning	0.154	0.134	0.135	Unsupported
Financial Risk Tolerance -->Retirement Planning	-0.059	0.296	0.315	Unsupported
Goal Clarity -->Retirement Planning	-0.235	0.080	0.081	Supported

Source: Authors own work

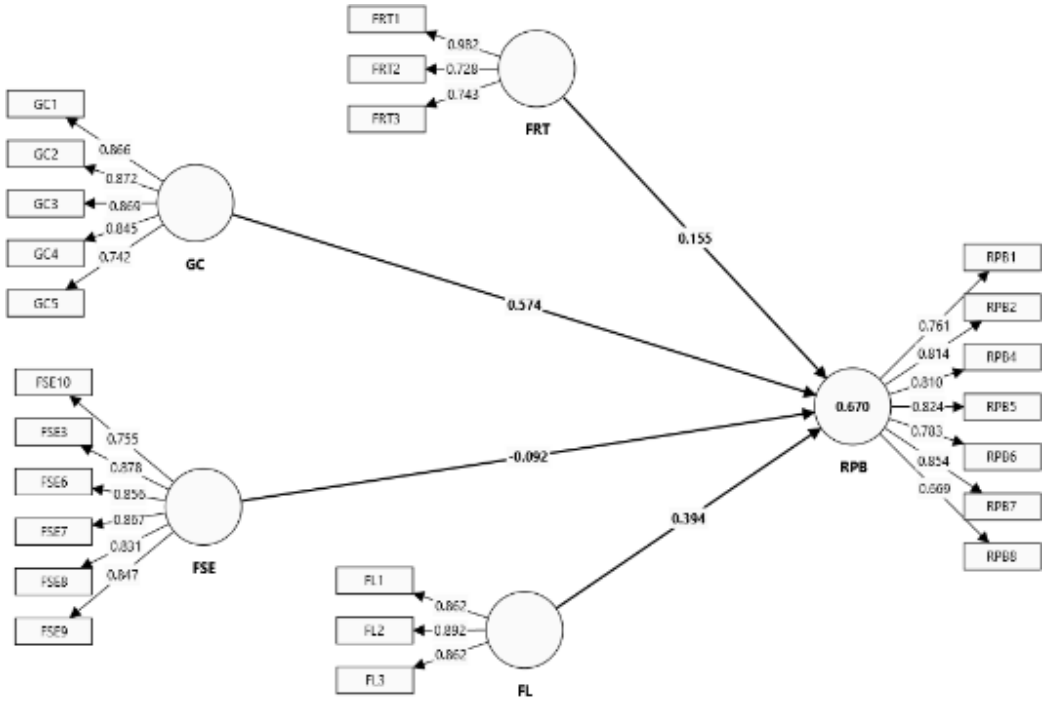

Figure 1: Structural Model for Gen X
Source: Authors own work

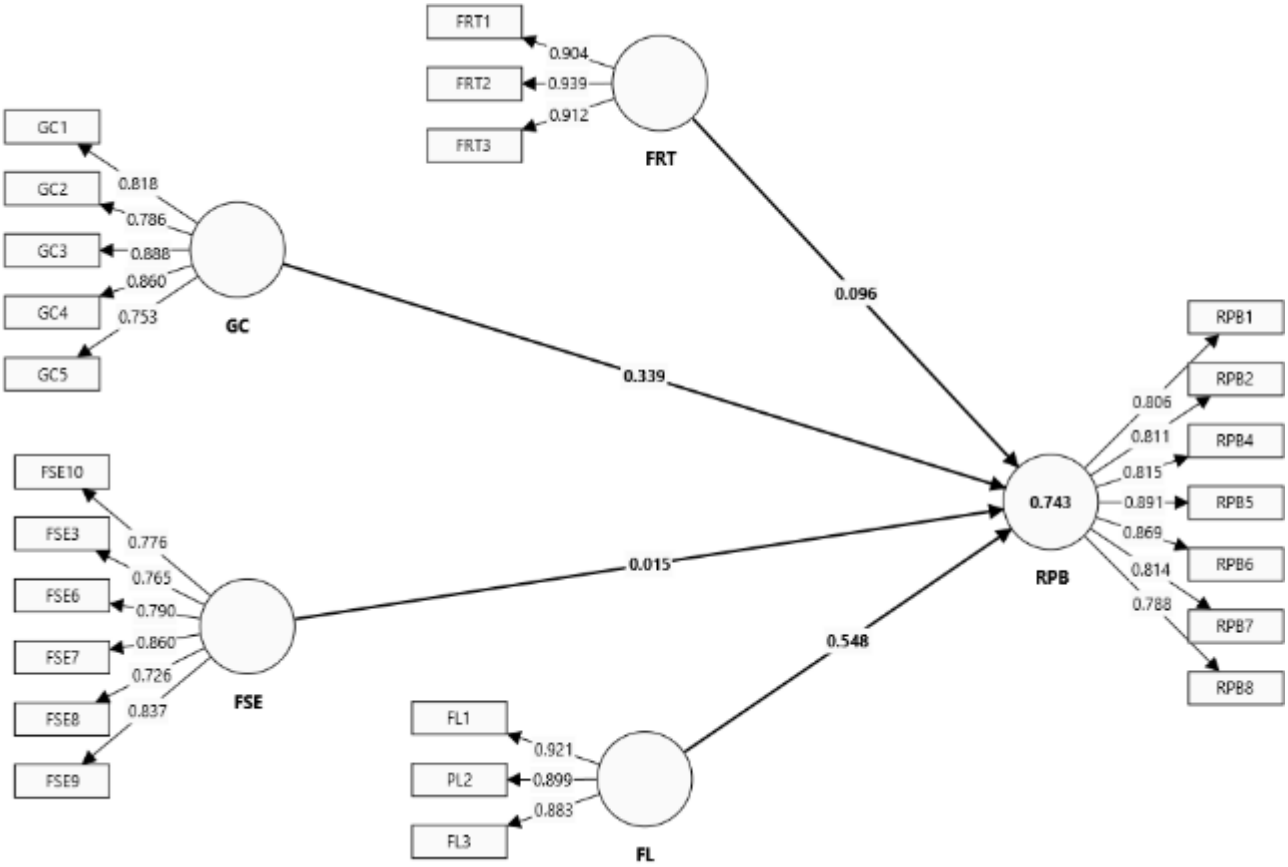

Figure 2: Structural Model for Gen Y and Z
Source: Authors own work

PLS Predict Analysis

This study also employed PLS prediction, commonly known as out-of-sample prediction (Hair et al., 2021), to evaluate the predictive accuracy of the research model. As depicted in Table 8, all indicators display Q^2 values above zero. Additionally, the root mean squared error (RMSE) values for the PLS model are consistently lower than those of the linear model (LM) for both the Gen X and Y & Z groups, demonstrating strong predictive capability. However, the combined model shows only medium predictive power (Shmueli et al., 2019). The endogenous latent variables also exhibit values greater than zero, confirming that all datasets hold appropriate predictive accuracy. This not only strengthens the generalizability and predictive validity of the findings from the sample to the target population but also implies that the research model effectively predicts retirement planning behaviour across different age groups from a local perspective.

Table 8
PLS Predict

		PLS Predict		LM	
Data Set		Q^2predict	RMSE	RMSE	$RMSE_{PLS}$- $RMSE_{LM}$
(Combined Gen X, Y & Z)	RPB1	0.512	0.751	0.77	-0.019
	RPB2	0.407	0.855	0.889	-0.034
	RPB4	0.372	0.904	0.97	-0.066
	RPB5	0.49	0.872	0.919	-0.047
	RPB6	0.451	0.839	0.885	-0.046
	RPB7	0.419	0.774	0.815	-0.041
	RPB8	0.33	0.991	0.964	0.027
(Gen X)	RPB1	0.454	0.762	0.782	-0.020
	RPB2	0.467	0.791	0.931	-0.140
	RPB4	0.346	0.923	1.100	-0.177
	RPB5	0.400	0.978	1.090	-0.112
	RPB6	0.376	0.886	1.073	-0.187
	RPB7	0.392	0.777	0.897	-0.120
	RPB8	0.184	1.074	1.184	-0.110
(Gen Y & Z)	RPB1	0.544	0.763	0.825	-0.062
	RPB2	0.34	0.936	1.035	-0.099
	RPB4	0.373	0.913	1.146	-0.233
	RPB5	0.633	0.715	0.778	-0.063
	RPB6	0.517	0.793	0.941	-0.148
	RPB7	0.4	0.807	0.944	-0.137
	RPB8	0.46	0.91	0.987	-0.077

Source: Authors own work

Discussion

This study explored the interrelationships among financial self-efficacy, financial literacy, financial risk tolerance, and goal clarity, and their impact on retirement planning

behaviour in a cross-generational Malaysian context (Gen X, Y, and Z). The results found that the impact on retirement planning behaviour significantly varies across generations, with large differences between groups. Such findings apply to research and practical contexts. The study hypothesized that financial self-efficacy would significantly affect retirement planning behaviour. However, results indicated that financial self-efficacy did not significantly influence retirement planning behaviour across any generational cohorts (Combined Gen X, Y & Z; Gen X; Gen Y and Z). This finding is inconsistent with much of the existing literature, which suggests that people with high self-efficacy are more likely to carry out certain proactive financial behaviours, including retirement savings (Asebedo & Payne, 2019; Sabri, Wijekoon, & Rahim, 2020). The absence of signs in this particular case could be attributed to cultural factors or ability with other financial planning tools in Malaysia that make high self-efficacy unnecessary. These findings suggest that although self-efficacy is an important factor, it is not such a critical need in the Malaysian context for promoting retirement planning behaviour.

The results revealed that financial literacy is positively and significant correlation with retirement planning behaviour across all groups combined data (β= 0.464, P < 0.05), generation X (β = 0.394, p < 0.05) and generations Y and Z (β = 0.548, p < 0.05). These results align with the current literature, which indicates that financial literacy is more prevalent among the Y and Z generations, suggesting that greater financial literacy is needed and that younger, more financially aware populations are due to their current circumstances. They're probably in a more financially complicated situation. In addition, the results indicated that limited financial literacy in a short time will vastly improve one's chances of living peacefully in one's golden years, especially among younger populations who have neither aged nor established careers nor refined financial skills and subsequent behaviours.

Furthermore, the findings also revealed that financial risk tolerance has a sustained and healthy relationship with retirement planning. This hypothesis was verified by the results, which showed significant impacts on combined data (β = 0.122, P < 0.05) and generation X alone (β = 0.155, P < 0.10). In contrast, generations Y and Z were marginally significant at a 90% confidence level (β = 0.096, P < 0.10), and both well exceeded conventional significance levels of 1% or 5%. These findings suggest that people with higher risk tolerance for money management will most probably engage in retirement planning; the strength of this connection, however, fluctuates along generational lines. Earlier studies have produced various results on the role of risk tolerance in retirement planning. Some of them support what has been said earlier: that there are positive relationships (e.g., Jacobs-Lawson et al., 2005) found out series withdrawals over many years without new infusions into life annuities to be precisely this sort of ticklish situation subjecting you to substantial losses as well as loss of interest accumulations. While other research suggested less influential in this connection (e.g., Grable, 2000; Park & Martin, 2022). The present study contributes to this body of work by arguing that while risk tolerance is crucial, how it affects people may be influenced by other factors, such as financial education or different stages in life.

According to the findings, it is found that goal clarity has a positive and significant correlation with retirement planning that is across all groups: combined data (β = 0.464, p < 0. 05), generation X (β = 0.574, p < 0.05) and generations Y & Z (β = 0.339, p < 0.05). Interest in goal clarity was particularly strong among generation X retirees. This took the most

significant portion of prediction for preparing for retirement. This finding supports Stawski et al. (2007) and Moorthy et al. (2012) stated, (i.e. well-defined, concrete goals are necessary for successful retirement preparation), and a person's retirement planning can be enhanced by specific goals (Bellamkonda, Santhanam, & Pattusamy, 2021). How the most significant effect of goal clarity in Generation X can be related to the phase of life is easily understood: at this time, people are more likely to have concrete goals, and they are busy trying hard to achieve them. This is also the view of the Life Course Theory (Elder, 1985), which sees life as a process in which individuals accumulate energy along the way and results from various aspects of behaviour and finance. Collectively, the discussion above is particularly true regarding retirement planning.

Implications of the Study

Theoretical Implications

The study results contribute to the Theory of Planned Behaviour and Life Course Theory. Firstly, in terms of the Theory of Planned Behaviour, the study's results confirm that financial literacy, risk tolerance, and goal clarity positively impact attitudes and perceived behavioural control. This suggests that they enhance retirement planning behaviour. Specifically, the findings imply that understanding financial planning helps one plan for retirement while comfort with financial risk due to risk tolerance improves the attitude toward retirement planning. In addition, having a clear, determined and specific goal may enhance attitude and perceived behavioural control, which helps in more effective retirement planning.

According to the life course theory, timing and different stages in an individual's life generally affect a person's decision. The study results (refer to Standard Beta in Table 5) confirm this assertion because financial literacy is perceived to be most important among the respondents of Generations Y and Z. At the same time, goal clarity is ranked the highest among the respondents of Generation X. This can be interpreted by the fact that younger generation is more well informed and exposed to financial information. Hence, they will have better financial knowledge to plan for their retirement. In the case of the older generation, they have gained more life experiences to determine their goal, and therefore, they have better goal clarity in planning for their retirement.

Practical implications

The findings on the interaction of the variables in the study may provide helpful information for individuals to plan and save for retirement more effectively. This helps to reduce financial stress and anxiety in retirement and eventually improves the well-being of retirees and their families. In addition, these findings from this study provides useful information to enhance effective strategies to improve the quality of life of retirees and national equity. In short, effectively planning and learning may help to mitigate future financial challenges on the nation..

Limitations and Suggestions for Future Studies

The study is conducted purely for academic purposes and the 69.2% R-squared value for the study suggests that H1 to H4 explain a large part of the retirement planning phenomenon in Malaysia, but unfortunately, many other variables that weren't tested could also contribute to retirement planning in Malaysia. Thus, future researchers should explore

factors that could explain a greater share of the retirement planning phenomenon. The second limitation of the study is that it has only conducted a questionnaire survey to measure retirement planning in Malaysia, future studies may include semi-structured interviews to assess sentiment from Malaysian for this area of research.

Conclusion

The situation of retirees and elderly persons with poor financial security may increase the reliance on the social safety net as such highlighting the importance of planning before retirement. Therefore, sufficient financial considerations mapping out pre- and post-retirement are very much needed as the average life expectancy of Malaysians has increased and Malaysia has reached an aging country (New Straits Times, 2024). The study adopted an integrative theoretical approach to retirement planning and found that financial literacy, risk tolerance, and goal clarity are positively correlated and significantly associated with retirement planning. In addition, MGA findings reveal an age gap in the differences of opinion between Gen X and Gen Y regarding goal clarity.

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