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FOR FINANCIAL KNOWLEDGE AND RETIREMENT PREPAREDNESS IN KLANG VALLEY: THE MODERATING ROLE OF FUTURE TIME PERSPECTIVE

Shim Pui Sen¹, Yamunah Vaicondam^{2*}, Sukjeet Kaur Sandhu³

¹*School of Accounting & Finance, Asia Pacific University of Technology & Innovation, Malaysia*

²*School of Accounting & Finance, Taylor's University, Malaysia*

²*Centre for Sustainable Societies, Taylor's University, Malaysia*

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Corresponding Author: Yamunah Vaicondam
(yamzz2003@gmail.com)

ABSTRACT

The different household income groups might alter the impact of factors on retirement preparedness (RP). Financial knowledge has been believed as the most significant factor affecting RP. However, its impact is not consistent in the previous literature, which has led to the needs on identifying factor that improve beyond intention but to act. This is the research gap in the previous literature that this study tries to fill. Therefore, this study has investigated the relationship between financial knowledge for retirement and RP with other additional factors included in the research model. It includes the attitude towards RP, self-control, and future time perspective (FTP). It is product from integration between Knowledge Attitude Behaviour model, unlimited resource theory and socioemotional selectivity theory. The targeted sample consists of pre-retiree in the age between 30 to 50 years old Malaysian citizens who live in Klang Valley, Malaysia. It is the most representative area of Malaysia as it has a higher number of people and above 40% of gross domestic product is generated from that area. The sampling technique used for this research is purposive convenience sampling with the total samples of 182 respondents for the data analysis. This means that the researchers have distribute the questionnaire based on their judgement to identify respondents that match the study frame and whoever is available in the platform. This is to avoid collecting those respondents that are out of the sampling scope, such as those below 30 years old or above 50 years old. The questionnaires are distributed physically and online at those representative area and social media. The data obtained by this study is primary data and analysed by SPSS and smart PLS software. The expected outcome is financial knowledge for retirement (FKR) has a positive relationship with RP. Self-control has a mediating impact on attitude towards retirement preparedness and RP. FTP positively moderates the positive relationship between self-control and RP. The sequential mediation effect of attitude towards RP and self-control is formed between FKR and RP. In this study, there are only three out of four expected outcomes are supported. FKR and RP are validated as having a positive relationship between the two variables. Self-control is confirmed to be able to mediate the relationship between the attitude towards RP and RP. The role of FTP as moderator is confirmed and it is a negative relationship. Then the sequential relationship between the attitude towards RP and self-control is supported. In terms of different income group wise, the lower-income groups' (B40) RP are more affected by factors such as FTP and FKR as compared to higher-income groups (M40). The impact of self-control is consistent across both income groups. Policymakers should include FTP, self-control, and income classification into consideration while forming

policy to support the preparation of retirement. They can structure guidelines to the retirement plan advisor to structure the plan with the element that support self-control and FTP.

KEYWORDS: Retirement Preparedness, Self-control, Future Time Perspectives, Financial Knowledge, Income Group Classification, B40 and M40.

INTRODUCTION

Retirement is a huge transition in a person's life with a lot of changes including loss of active income and a daily busy routine. Loss of income will lead to a lot of things that an individual needs to prepare and consider. An inadequate amount of planning will lead to a troublesome retirement life that requires living under low living standards (Uzorka, Ekenedo, & Onyeaso, 2024). Retirement is not an end of life, but it can continue for twenty years or more (Qi, Chatterjee, & Liu, 2022; Uzorka et al., 2024; Yuan, Chong, Hii, & Li, 2023). It is a totally new phase of life with a lot of changes that individuals need to adjust to. Life continues, which mean various expenses continue, it includes daily expenses for groceries, medical care and other (Qi et al., 2022). Therefore, preparation is necessary and important. It needs to begin as early as possible for better preparation to turn a stressful stage into a fulfilment stage (Tahreem Noor, 2022). The retirement income system is setup to ensure the nation able to be prepared for retirement. It included offering different kind of program or benefit in accumulate adequate retirement income. Based on the sustainable development goal created by the United Nations. The first three goals are aimed to end poverty, hunger, good health and well-being (United Nations, 2025). It is highly related to create a well-prepared nation to their retirement. As the goal is aimed to create a sustainable and better country or planet for all. To be prepared for retirement are ensuring the people able to continue live a comfortable life. Financially prepared also indicated lower risk of run into poverty and hunger. The ability to continue to receive high quality medical support is the way to have good health and well-being. It is not the goals for any country but globally for all to achieve.

The retirement preparedness in Asia is impact by various factor such as the changes of demographic or economic of those countries. Aging population is the major demographic shift that significantly impacting the structure of all the Asian countries. It is the present situation and expected to be continue increasing older generation. The economic status also has significant impact on the retirement preparedness of the nation. Better economic indicated better employment and high-quality living standard. All this will be helpful in preparing for retirement with those better financial sources. It is expected that in 2050, the older generation will make up to 25.2% of the population in those Asian countries (Kikkawa, Pelli, Reiners, & Rhein, 2024). The statistic also shows that only Philippines (43%) and South Korea (37%) still supporting their nation

with pensions. The other weaker pension countries are Bangladesh (4%), India (7%), and Thailand (4%). Retirement preparedness also measures by asset ownership, for Bangladesh (93%) and India (91%) have higher ownership. Generally, the retirement preparedness in Asia countries is inadequate in various factors consideration.

Being prepared for retirement is not something easy, and a lot of people are unprepared around the world (Mohd Isa & Daukin, 2023). There are a lot of people who cannot afford to retire on time. It is the situation in Indonesia that nine out of ten Indonesians need to work after retiring to sustain their daily expenses (Juwita et al., 2024). The same goes for the United State; almost half of Americans in a survey feel that it is impossible for them to be prepared for retirement (Ramli, Husain, & Rosnan, 2023). The retirement preparedness rates are also quite low among them and some even do not have any savings allocated for retirement (Qi et al., 2022). They believed that it is only possible when there are some extraordinary efforts. Preparing for retirement indeed requires some extra effort and ability. There are a lot of changes that need to be considered and prepared for (Tahreem Noor, 2022). Then they need to actively set aside income and adjust their plan to the changes of the financial world.

The issue of lack of retirement savings is the problem of many developing countries, and Malaysia is one of them (Chek & Ismail, 2023; Zulfaka & Kassim, 2022). This issue persists and is expected to get worse in the future (Mohd Isa & Daukin, 2023). They have the risk of not having enough savings to afford their basic standard of living expenses. Malaysian are tending to spend money rather than saving it (Ramli et al., 2023). Preparing for retirement is not something simple but requires a long-term strategy to plan it out and execute it. Based on the statistics, it is shown that most Malaysians lack long-term financial planning, and only forty percent of them were ready for retirement in the year 2017 (Muda et al., 2024).

There are a few factors that have raised the concern for Malaysian preparedness for retirement. It includes over or only relying on Employee Provident Fund (EPF) as their source of retirement income. Then the habit of heavily involved in debt, being over optimistic, or being overly dependent on support from others like family members or government. Malaysia has relatively low pension coverage as compared to Philippines and South Korea (Kikkawa et al., 2024). But Malaysia is better than Bangladesh and India. The system that with similar condition as Malaysia are Thailand and the challenge they faced.

Majority of Malaysian retiree has the need to continue to work after retirement. This indicated that they have insufficient retirement income to sustain their life. The savings in EPF have been facing criticism that it is not enough to sustain a person's retirement (Basar & Sapuan, 2023; Che Mohamed, Ahmad Nasharuddin, Mohamed Yussof, & Basir, 2023; A. S. Ghadwan, Wan Ahmad, & Hisham Hanifa, 2023). This concern is happening, as shown by the statistics that most of the retired person use up their EPF savings within three to five years after they retire. Due to all the changes in rising living costs, medical expenses, and life expectancy coupled with low income (Chek & Ismail, 2023; A. S. Ghadwan et al., 2023; Sabri et al., 2023; Yuan et al., 2023; Zulfaka & Kassim, 2022), all of this has raised the minimum requirement for saving to sustain retirement. Hence, extra effort is needed from the individual to increase their retirement savings. It will become an issue when individuals rely on EPF (Chek & Ismail, 2023; A. S. Ghadwan et al., 2023; Ramli et al., 2023). Due to that special withdrawal allowed, the savings in EPF has further depleted. There are only three percent of the EPF member who can afford retirement and most of them have critically low savings (Muda et al., 2024). Malaysian are not only inadequate in preparing for retirement, but they are also spending more than they earn (She, Rasiah, Weissmann, & Kaur, 2024). Those with the habit of taking out loans to sustain their basic living expenses will be in trouble in retirement. During the time when they are active in working, they can pay off those debts. But in retirement, they will not have active income for to support their debt payments. They are unable to save any money, not even for retirement (Vieira, Matheis, & Maciel, 2023). The situation can be even worse if they do not manage their repayment of debt and interest well. They might end up going into bankruptcy. According to the insolvency department of Malaysia, there are a total 1,392 bankruptcy cases in the year 2023 (Ramli et al., 2023). In the records, there are thirteen percent of them in the younger age group between 25 and 34. This indicates that at such a young age, they are already in debt; thus, it is impossible to expect them to prepare for retirement.

Surprisingly, Malaysia is classified as the country with a higher percentage of active savers (Yiing Jia, Phaik Nie, & Sahul Hamid, 2022). The low retirement preparedness is also shown in the situation that retirees are forced to continue to work to support their lives (Zulfaka & Kassim, 2022). Based on the retirement preparedness situation in Malaysia, we can only conclude that Malaysians do not save for their retirement even though they do have savings.

Those savings can be for other financial purposes. This situation absolutely calls for financial knowledge and a future-oriented mindset. It enables them to realise the needs and importance of saving for retirement. Some people are even not concerned or worried about their retirement. This causes them not to have any plan for retirement (She et al., 2024).

Individuals can enjoy their lives with good financial well-being in the future if they well prepared for retirement (Vieira et al., 2023). The situation can be even worse because Malaysians have savings that are below what is necessary to maintain a comfortable lifestyle in Malaysia that leads to hardship and struggle to fulfil their basic needs (Chek & Ismail, 2023; Zulfaka & Kassim, 2022). The other cause of such a situation can be because they lack financial knowledge needed for retirement planning (Chek & Ismail, 2023; She et al., 2024). As reported by the Malaysia's government statutory body, Malaysians encountered challenges in savings or retirement planning (Chek & Ismail, 2023; Ramli et al., 2023). They expected that they will be unable to maintain a satisfactory living standard. Low financial knowledge is an issue faced by many countries around the world. It even includes those with developed financial market like the United States, German, Netherlands, Sweden, Japan, Italy, and New Zealand (Yiing Jia et al., 2022). Many Malaysians have found a lack of financial knowledge, which is reflected in their low savings and unsatisfactory retirement lives (Ramli et al., 2023; Yiing Jia et al., 2022). There is an update regarding the financial knowledge status of the world from the OECD (INFE) Survey of 2015 to 2018 (OECD, 2020). Hong Kong is the most financially knowledgeable country among those participating. Malaysia, Indonesia, and Romania have the lowest financial knowledge score. However, Malaysians are considered active savers compared to other countries (Yiing Jia et al., 2022). They set long-term financial goals and manage their financial resources. However, they are still classified as financially vulnerable or having weak financial knowledge that needs education on fundamental financial concepts. There were improvements from 2015 to 2018. They set long-term goals but not specifically for retirement, and they are not good at utilizing the retirement planning strategies.

From the discussion above, it has hinted that the important of a future oriented mindset leads to successful preparation for retirement. Thinking of the future will become necessary for them when they have high future time perspective. A study found that financial literacy has no impact on retirement

preparedness (Resani, Haryanto, & Yuniarti, 2023). This means that even if individuals know how to prepare for a retirement plan, they are not compelled to do so. Hence, addressing the lack of financial knowledge, weak saving behaviour, or short-sighted mindset will help the policy maker to identify the technic that improve those causes. Individual can gain the necessary behaviour on preparing for retirement. For Malaysia, retirement preparedness is mainly cause by lacks sustainable behaviour. They need to have the strength and ability to persistently in implementing the retirement plan. The other Asian countries also facing the challenge of aging population. The retirement preparedness as well with the similar situation as Malaysia. Those countries that with the comparable characteristic included Thailand then Philippines and South Korean have slightly better than Malaysia. The individual factor plays the more significant role in improving the retirement preparedness of all those Asian countries and Malaysia. Through this study we will get to identify the better way in supporting individual on preparing for retirement. The improvement not only focus on individual level but included the support for all other parties in contributing to better retirement preparedness.

Savings is defined as the act of reducing consumption from what resources have been gained and then keeping those extra funds for future consumption (Juwita et al., 2024). Retirement preparedness is all about good saving behaviour (Resani et al., 2023). Good saving behaviour leads to higher preparedness for retirement. Good saving behaviour stems from mindset that recognises the need for planning for the future. They might not have the mindset regarding the importance of saving or may have a short-sighted perspective. Overconfidence in the Employee Provident Fund can also be a reason they are not saving for their retirement. They think that it is not their responsibility to save for retirement since Employee Provident Fund is sufficient. Due to the increase in living costs and life expectancy, the required retirement income has increased. It is estimated that an individual retiring in 20 to 30 years will need to have at least RM900,000 (Luqman Amin, 2023). This concern is widespread globally; however, those unconcerned still take no action. This may be due to either a lack of financial knowledge or future-oriented mindset. Many Malaysians have been reported as having a short-term mindset in managing finances (Cheong, 2023; Daily Express, 2023). This mindset can be identified by their careless attitude towards managing financial risk or unforeseen

situations. They do not have the habit of saving for emergencies or any form of savings. The lack of interest to understand insurance also can be a sign of a short-sighted mindset (Cheong, 2023). As they do not care or worry about their future, in case of any emergency, they have to go into debt to get the money they need. This action shows that they did not prepare for the future and do not even worry about whether they can pay off those debts. They are even spending their future money to pay for their daily expenses. This means that they risk not being able to pay off those debts.

Self-control also links to the situation of struggle to save and irrational spending. When we can control our behaviour, then we can be very disciplined in achieving our life goals or managing our finances. Research has found that self-control is associated with financial and emotional status (Malay Mail, 2024). This indicates that those who go into debt or struggle with financial difficulties might have issue with limited self-control. The lack of self-control behaviour among Malaysians also can be identified from their saving habits. They are unable to set aside RM1000 in case of an emergency and struggle to save RM500 or less (Cheong, 2023; Nurul Atikah Sarji, 2023). A less future-oriented mindset person would not worry about their future or retirement. They only face issues when they approach retirement but cannot only start preparing for retirement when they are already retired. That mindset believes that their retirement will be supported by their children after retirement (Juwita et al., 2024). This is a real-life example of a lack of a future-oriented mindset. It is a lack of adequate mindset that misses the issue that their children will be the sandwich generation. They will have the financial burden of providing for both their parents and children at the same time (Juwita et al., 2024).

The formation of behaviour has been analysed by the Knowledge Attitude Behaviour Model. This study will extend to the factor that improve that relationship on building the behaviour. This is the originality of this study, as the factor of attitude and knowledge is rationally acceptable but lack of strength. There is a need for extra factor in connecting the two factors to behaviour. This study had tested the self-control and future oriented mindset for that relationship.

This study has contributed by extending the understanding of the KAB model into the context of retirement. As this model was created for environmental behaviour. From the outcome, we know that the theory that the KAB model holds can be applied for the formation of retirement

preparedness behaviour. We get to understand that the formation of retirement behaviour can be impacted by knowledge and attitude. There is a connection between the three elements, and they impact each other in a systematic manner. This study also extends the KAB model by including the integration with two theories. It includes the theory of unlimited resources and the socioemotional selectivity theory. The integration adding two variables, self-control as the mediator between attitude and behaviour. Then future time perspectives as the moderator between self-control and behaviour. This study is the first to integrate those theories. Theoretically, it means that personality and mindset have manipulated the behaviour of a person. Those with a high self-control personality and a strong future-oriented mindset will actively prepare for retirement or a positive behaviour. This study has highlighted future time perspective and self-control as significant factors that can advance interventions. Policy makers can focus on utilizing them to improve the retirement preparedness of pre-retirees or Malaysians in the age range of 30 to 50. Especially, consideration should be given to the different income group factors, which have a significant impact on the strength of the intervention, as they have different needs or support to help them improve their retirement preparedness. Practically, to include self-control training in the retirement preparedness policy. This intervention might have a significant improvement on Malaysians' retirement preparedness, especially for those who have failed to prepare for retirement due to a lack of self-control. Policymakers can outline a set of guidelines based on the outcomes of this study. To influence retirement planning service providers to include the consideration of self-control and a future-oriented mindset. They need to support their customer in building a retirement plan with the support of altering their self-control level and future-oriented mindset. In that case, the findings of this study help the service provider to form a customised product for their customer. It can better address the individual's ability to prepare for retirement. Avoid the risk of not following the retirement plan without consistent monitoring by a third party. This study found that the income groups classifications played a significant role in impacting the influence of intervention. It will be more effective when developing policies depending on the different needs of individuals from different income groups. B40 is unable to use the same retirement plan as T20, as there is a huge difference in income, expenses, skills, and financial knowledge. They might need different

types of support such as financial knowledge, monetary resources, etc. However, this study also found that the policymakers also highlighted the urgency of solving the issue of poverty and B40's challenges in the Eleventh Malaysian Plan. As Malaysia is having a 6.2% poverty rate in 2022, which means an estimated 6 out of 100 households have challenges in meeting basic needs for food (Lim, 2023). In the 11th Malaysian Plan, it included support for assisting children in B40 households to get an education (Eleventh Malaysia Plan 2016-2020, 2015). This is a plan that will help B40's parents monetarily. For this reason, the researchers suggest it will be helpful to include retirement planning skills and not just basic education. It is helpful to solve the issue of low retirement preparedness in the next generation. Retirement planning also suggests starting early rather than at an old age.

LITERATURE REVIEW

Retirement Preparedness

Retirement preparedness has been defined by the literature as being financially prepared for retirement with almost a similar amount of income to that received prior to retirement (Kim & Hanna, 2015; Segel-Karpas & Werner, 2014; Shanmugam & Zainal Abidin, 2013). It can also include the involvement in retirement preparation activities such as saving, setting aside money, making plans, investing, or setting a retirement goal (Douglas. A. Hershey & Mowen, 2000; Koh, Mitchell, & Fong, 2021). Hence, it is about how prepared they are in terms of their retirement income. It is to study from their perception, ability, and behaviour to achieve high retirement preparedness. In general, retirement preparedness is mainly focused on financial preparedness, either in terms of post-retirement living standards or income. Retirement preparedness is defined as being able to be prepared for retirement in terms of finances, which means they can maintain almost the same level of income as compared to prior retirement (Agnew, Bateman, & Thorp, 2013; Bačová & Kostovičová, 2018; DeVaney, 1995; D. A. Hershey, Henkens, & Van Dalen, 2007; Juliá, Kilty, & Richardson, 1995; Rasiah *et al.*, 2020). The financial measurements for retirement preparedness can be based on their projected investment return during retirement, whether they have 70% of their income in retirement (Kim & Hanna, 2015). It can also be based on whether they can meet the retirement expenses (Douglas. A. Hershey & Mowen, 2000). However, retirement preparedness can also be based on their actions in preparing for retirement, specifically if

they are actively setting aside money for retirement (Koh et al., 2021) and whether that savings can continue to generate income similar to pre-retirement levels of consumption or living standards (Segel-Karpas & Werner, 2014; Shanmugam & Zainal Abidin, 2013). They should have actively measured the adequate amount of money needed for retirement (Douglas. A. Hershey & Mowen, 2000). For this study, we will consider retirement preparedness as active involvement in financial resource accumulation planning and whether they are able to understand the procedure and are aware of the needs to prepare for retirement. Retirement preparedness has been examined by various factors such as trust, which impacts the willingness to prepare for retirement by accepting the risks from investment (Koh et al., 2021). If they can trust the investment or financial institution, then they are willing to entrust their money to them. The increase in willingness for investment will lead to higher retirement preparedness. Time preference, risk preference, and perception of retirement also can impact retirement preparedness (Kim & Hanna, 2015). If the retirement plan meets all their preferences, then they are only willing to be involved. The higher the risk tolerance, the higher the willingness to invest. Then they can receive a higher return for their retirement income. Financial knowledge or literacy also plays a role in impacting retirement preparedness (Hassan et al., 2016; Rasiah et al., 2020; Segel-Karpas & Werner, 2014). Lacking financial knowledge or literacy will lead to challenges in preparing for retirement. They might face challenges in identifying the type of retirement plan, which might seriously affect their retirement preparedness.

Financial Knowledge of Retirement

Financial knowledge is the essential element for planning for retirement (A. S. Ghadwan et al., 2023; Ramli et al., 2023; Tahreem Noor, 2022; Yiing Jia et al., 2022). Retirement planning is a daunting and complicated process (She et al., 2024). With financial knowledge, an individual will be able to be aware of the needs to plan and start planning for retirement. People's lack of awareness is due to a lack of knowledge about identifying the needs (Muda et al., 2024). The most common misconception about the preparation for retirement is that early retirement planning is unnecessary (Muda et al., 2024). Most people only concern themselves about retirement planning when they are retiring soon. This is a problematic mindset which might cause them to be unable to prepare for retirement, as there is limited time to prepare a big chunk of money to sustain a

long period of retirement. It includes the funds needed for any emergency medical needs, fulfilling basic life expenses, fulfilling their life goals, becoming less dependent on others, or even being able to contribute to the family (Muda et al., 2024). This is why financial knowledge is important to let them understand their financial status and future financial needs. Those that have financial knowledge will naturally be involved in saving or financial planning (Basar & Sapuan, 2023; Juwita et al., 2024; She et al., 2024). Once they have the knowledge, their attitude and behaviour will follow, as the knowledge helps them to understand their financial status and be aware of the consequences of their financial practices. Those lacking financial knowledge will easily go into debt or have financial issues like overspending (She et al., 2024). It is not only for the consideration of retirement, but daily expenses also need financial knowledge to manage them. The use of credit cards can also be risky, and a lot of people misuse them and go into bankruptcy. Basic knowledge of finance is needed for managing daily life finances (She et al., 2024).

This study proposes that knowledge has an impact on retirement preparedness. This relationship was formed based on the concept of the Knowledge Attitude Behaviour model. We believe that while a person has accumulated a certain amount of knowledge regarding retirement, then, in the end, it will lead to a change in behaviour in terms of preparedness for retirement. This study has defined financial knowledge for retirement as understanding the economic concepts regarding preparing for retirement and including those changes in financial resources during retirement, including expenses. This means that they need to be aware of the changes in income structure after they retire, as there will not be an inflow of income. It also includes knowledge regarding expenses, as growing older means that their health worsens, and they need medical support, which can be a huge expense. This is different from the previous literature, which focuses more on retirement plans and does not include financial knowledge regarding daily life. It is supported by the recommendation of future studies, which support including other financial variables or characteristics (Park & Martin, 2021). Hence, we hypothesise that there is a relationship between financial knowledge for retirement and retirement preparedness.

The reason to form this objective is due to the argument for the relationship between knowledge and behaviour from the literature has various explanations. There are few studies that argue that higher financial knowledge cannot directly lead to

better retirement preparedness (García & Vila, 2020). An author found both significant and insignificant relationships for knowledge and retirement preparedness but in different years (Tharayil & Walstad, 2022). This indicates that there is a need for more than just knowledge and awareness for individuals to act, which can include behavioural interventions (García & Vila, 2020). This explains the missing connections between knowledge and behaviour. High financial knowledge without the urge to act is useless. There is a belief that to perform financial decisions, they just require some basic understanding and simple calculations (Tharayil & Walstad, 2022). They just need to ensure that during retirement they have an almost similar income to maintain their living standards. There are arguments that financial knowledge will only be beneficial for retirement preparedness when it leads to changes in behaviour (García & Vila, 2020). Without changes in behaviour, even how high the knowledge is, it is unable to lead to higher retirement preparedness.

Surprisingly, even though there are results showing that financial literacy and knowledge are not a factor for retirement preparedness (Shanmugam & Zainal Abidin, 2013), they are unable to explain the changes in retirement preparedness when knowledge remains the same, but retirement preparedness is changing. It is unacceptable to say that financial knowledge does not impact retirement preparedness, as financial illiteracy will lead to a lack of understanding of simple economic concepts and the inability to perform basic financial transactions (Hastings & Mitchell, 2020). In the worst case, they might be unable to calculate their current available financial resources for investment, their retirement needs, or available interest income. This situation will lead to suboptimal financial decision-making, which causes people to be unprepared for retirement. Low financial knowledge is the cause of people saving less for retirement, withdrawing retirement funds before retirement, or making poor financial decisions (Tharayil & Walstad, 2022). As they are unable to identify how much is enough for retirement and simply refer to total retirement funds, they can have the illusion that it is more than enough for retirement. The influence of knowledge might be affected by other factors. It can be any internal factors such as risk tolerance or impatience (Hastings & Mitchell, 2020; Park & Martin, 2021). Due to a lack of patience, they might choose immediate gratification or even have lower payoffs (Hastings & Mitchell, 2020). This is the reason why they cannot generate enough retirement income. Impatience causes them to be unable to think rationally and misbehave in

their financial decisions. Then risk tolerance can impact the ability of knowledge on behaviour (Park & Martin, 2021). For those with high risk tolerance, they will have high retirement preparedness as they are able to accept more risk from investing more funds for retirement. An individual with high financial knowledge but low risk tolerance can be the reason why they are so reluctant to invest their funds for retirement. Procrastination can be another factor that impacts the financial knowledge leading to high retirement preparedness. An individual who is not actively preparing for retirement, even if they are high in financial knowledge, can be due to demotivation by procrastination (García & Vila, 2020). They do not have the urgency to prepare for retirement and try to delay acting. However, the delay becomes an excuse for not preparing for retirement.

H1: There is a relationship between FKR and RP.

Attitude towards Retirement Preparedness

Attitude is defined as an individual act of reflecting their evaluation of a behaviour or their philosophy of the behaviour (Muda et al., 2024; Zulfaka & Kassim, 2022). This means that attitude decides the behaviour of a person. It also is a sign of any formation of behaviour. Specifically, financial attitudes have different definitions; they reflect their objectives towards financial matters and their ability to plan (Muda et al., 2024). A negative attitude will lead to bad financial behaviour. However, a positive attitude does not always lead to good behaviour but just has a higher chance. There are studies that believe that financial knowledge is not enough to result in high retirement preparedness and that we need to consider other factors (Zulfaka & Kassim, 2022). It is believed that attitude is as essential as knowledge in preparing for retirement (Zulfaka & Kassim, 2022). There is a study that found that attitude is the main factor impacting Malaysian retirement planning behaviour (Muda et al., 2024). Those who prioritise financial planning or saving will have a higher possibility of achieving high retirement preparedness. This indicates that their mindset plays a role in impacting their attitude, of which future time perspective is one. As the mindset decides the priority of a person, there is a need to start saving for retirement as early as possible to increase the possibility of high retirement preparedness (Tahreem Noor, 2022). That is why a future-oriented mindset is needed.

This study defines retirement preparedness attitudes as the anticipated enjoyment of retirement preparedness, awareness of retirement preparedness,

or their confidence in retirement preparedness. Ideas about preparing for retirement are pleasurable, achievable, and necessary. There are commonly known three types of attitudes towards retirement, which are refusal, forced acceptance, and acceptance (Resani et al., 2023). They have a refusal attitude when they do not want to think about retirement. It is either because retirement is daunting to plan, or it is not a pleasurable moment for that individual. Then forced acceptance is the moment when they are near retirement and end up accepting it. Preparing for their retirement cannot be forced upon others. This measurement will help us accurately identify the factors that lead a person to act, an essential part of a sound retirement planning system.

Attitude toward retirement preparedness has a significant role in directing an individual's actions, which directly impacts their retirement preparedness. There are researchers who have found that relying only on knowledge is not enough to change a person's behaviour if they do not have the right attitude (Hutabarat & Wijaya, 2020). It is like a person having the knowledge of preparation for retirement, but they are not interested in preparing for it. Then their behaviour would not correlate with their knowledge, which leads to low retirement preparedness. They are either not feeling positive about preparing for retirement or they are not urged to prepare for it. Attitude can impact retirement preparedness when the attitude is about the intention to retire (Wata, Kamau, & Bett, 2015). It is like an individual who intends to retire and looks forward to life after retirement; then their attitude toward retirement preparedness will be positive. However, it can be due to various reasons that cause that individual to intend to retire. For example, they are tired of working life, value quality time with family, have attachment to the organisation, or have other reasons (Wata et al., 2015). Due to those reasons, they will have positive attitude toward retirement preparedness, which leads to high retirement preparedness.

Attitude also plays an important role when an individual is low in financial knowledge. A lot of consumers tend to avoid preparing for retirement in the case of low financial knowledge (Park & Martin, 2021). It is the attitude that hinders a person from preparing for retirement. They have a negative attitude towards preparing for retirement. If they have a positive attitude, then they will try to improve their financial knowledge or learn to prepare for retirement. There is a belief that a strong financial attitude will lead to an individual actively setting financial-related goals, planning, decision-making,

and managing their funds greatly (Hutabarat & Wijaya, 2020). This also means that a strong financial attitude will lead to changes in financial behaviour like preparing for retirement. Attitude and behaviour are interrelated; they impact each other closely and go in similar directions together. There is a study that found that the relationship of attitude toward retirement preparedness might interchange with each other. The attitude toward retirement preparedness might change to positive when the individual is high in preparedness for retirement (Wata et al., 2015). It is the situation when they are confident to retire; then they will have a positive perspective on retirement.

Self-Control

In this study, we define self-control as a personality trait. Being a personality trait means being consistent and stable over time (Matthews, Deary, & Whiteman, 2009). If a person has strong self-control, they will have strong willpower to regulate their behaviour. Therefore, they follow any goal set by themselves and would not easily be tempted to act differently. Conversely, a low self-control person will act differently; they will tend to follow their feelings while doing anything. They will easily be tempted to act out of their previously set goals. The literature has an almost similar explanation of self-control, which regulates a person's behaviour, especially while making decisions. Researchers have defined self-control as a response pattern that switches attention from something desired to another (Siswanti, 2020). They can guide themselves in a better direction when faced with temptation (Finke & Huston, 2013; Siswanti, 2020). An individual's ability to control their emotions ensures they make decisions based on ideal standards, moral values, and social expectations (Finke & Huston, 2013; Siswanti, 2020). It sums up that the better a person's control, the more desirable behaviour will be formed.

Saving is an act that requires self-control, a positive attitude, and financial knowledge (Ramli et al., 2023). They need to have a positive attitude towards saving money; then it would not be a struggle to save. Then financial knowledge is the understanding and awareness of the importance of saving. Self-control is the ability to regulate their behaviour to set aside money and avoid the temptation to spend money. Retirement planning is a stressful task that causes individuals to easily give up halfway (Basar & Sapuan, 2023). Self-control will play a role in sustaining them from being defeated by the toughness of saving for retirement. A strong self-

controlled person will be able to self-regulate their behaviour to prevent themselves from overspending or avoiding saving money (Basar & Sapuan, 2023).

This study want to identify the mediating role of self-control between attitude and retirement preparedness. This indicates that we believe that attitude can impact self-control, and self-control can impact retirement preparedness. Significantly, previous literature has found a relationship between knowledge, attitude, and behaviour, but it is not consistent. Dewi *et al.* reported that the relationship is not significant (Dewi, Febrian, Effendi, & Anwar, 2020). A higher level of knowledge does not necessarily lead to prudent financial behaviour (Peach & Yuan, 2017). People with a business educational background are less likely to pay off their debt than those from other academic backgrounds (Peach & Yuan, 2017). Understanding and knowing the financial concepts does not lead to advisable financial behaviour because there is no direct impact on the willingness to behave. Knowledge and behaviour have an indirect relationship, but understanding those financial concepts is needed to perform financial transactions. This situation has brought out the need to have a factor that can connect higher financial knowledge to prudent financial behaviour. Furthermore, the example from previous Knowledge Attitude Behaviour model studies found that people have the knowledge and are favourable towards nutrition, but their meal selection behaviour does not always reflect that relationship. Hence, we believe that there is a need for a connector, which we assume self-control can play.

From the discussion above, we can be aware that self-control plays a significant role while making decisions, ensuring that a person would not be easily tempted or act out of their means. Self-control is a key to understanding and forming human behaviour (Roy F. Baumeister, Vohs, & Tice, 2007). As the theory treats self-control as an internal human resource for responding to a decision. We assume that attitude can impact self-control as self-control is a trait that cannot be forced; the person must intend to perform that behaviour (Gupta, Sharma, & Srivastava, 2021). The goal can only be achieved if it is the true conviction of the goal achiever. Therefore, while facing temptation, they will have a conviction to resist it. Self-control is the key factor for successfully preparing for retirement (Ramli *et al.*, 2023). Being disciplined is needed to save money, reduce expenses, and delay consumption. Self-control is also one of the recommended factors to study retirement savings. It is a significant psychological factor that

forms a person's behaviour, including financially and for retirement (Basar & Sapuan, 2023). To succeed in financial planning or preparing for retirement, an individual needs to be good at resisting temptation to spend (Basar & Sapuan, 2023).

People with high self-control will tend to act disciplined, such as making consistent savings and not being involved in irresponsible purchases (Siswanti, 2020). It reflects how strongly a person holds on to their values and beliefs while acting or deciding. Acting in a disciplined manner means a person can control their actions by resisting the desire to act irrationally (Siswanti, 2020). They will act based on their wants and not needs. It is hard to set aside money for the future in finance while facing the temptation for current satisfaction. People with strong self-control will focus on their long-term goals and control their spending behaviour. Self-control is influenced by cognitive factors, in which knowledge is a factor (Siswanti, 2020). Financial knowledge can affect self-control in financial behaviour. It also can be a motivational factor that links intentions to actual behaviour (Hoffmann & Plotkina, 2020). This indicates that self-control is the connector for intentions and actual behaviours. However, they only act when there is enough self-control to motivate themselves to behave in that way. This explains why a person has a high intention towards that behaviour but does not behave in that way. Hence, it can be the mediator from thought to action (Hoffmann & Plotkina, 2020). We hypothesise that self-control could mediate attitude and retirement preparedness based on the above discussion, forming Hypothesis 2.

H2: Self-control could mediate attitude and RP.

Future Time Perspective

Future time perspective (FTP) is a psychological factor that is defined as the mindset focused on the future (Juwita *et al.*, 2024). It is also defined as an individual thinking, believing, or doing so with focus on the future (A. Ghadwan, Wan Ahmad, & Hanifa, 2022). A high FTP person will tend to be more concerned about the future rather than the present or past. They like to plan for the future or long period of events and are not bothered by what has happened or is happening. It is the motivation or worry about their future that leads to taking action to ensure their future will go well. It is believed that future time perspective has an impact on saving and preparing for retirement (Basar & Sapuan, 2023; A. Ghadwan *et al.*, 2022; Juwita *et al.*, 2024). As it is an act to prepare for the future, especially when they are aware there is a need to plan and prepare. A high future time

perspective person has a lower possibility of getting into trouble when there is an economic shock. As they will consistently check on their financial status and might be prepared with enough emergency funds to handle such situations (Basar & Sapuan, 2023; Yiing Jia et al., 2022).

Self-control may play an essential role in individuals' attitudes towards retirement when they view their time horizon as open-ended. They will tend to focus on the future, as retirement is a future event. Weak self-control might lead to individuals negatively perceiving retirement and then impacting their willingness to prepare for retirement. In this situation, they will end up unprepared for retirement and struggle to reduce their living standard. With strong self-control, individuals will be disciplined in terms of managing their finances. They would not be involved in irrational spending behaviour but can prepare for retirement even if it seems unbeneficial for the present time. Self-control plays the role of guiding the mind towards the future outcome and avoiding being directed by the immediate outcome (Upadhyay, 2021). This situation becomes more convincing while they have a robust future-oriented mindset; they will prioritise the future. The benefit for the present is not as crucial as that for the future. The moderation impact of future time perspectives will depend on whether individuals perceive the time to be open-ended or limited. If they perceive the time to be open-ended, their attitude towards retirement will be primarily positive or neglectful. Self-control can be strong or weak. This indicates that the combination of solid self-control and open-ended future time perception could significantly impact attitudes towards retirement. However, when they perceive the time to be limited, it will not benefit retirement as they focus on the immediate future. Weak self-control combined with limited future time perception might lead to a negative attitude towards retirement. Hence, this study proposes a relationship between future time perspective, self-control, and attitude towards retirement.

We assume that future time perspective can moderate the impact of self-control on retirement preparedness. This means that a person with a future-oriented mindset and strong self-control will lead to a higher retirement preparedness. The person might focus more on the future and set most of their goals related to building the future, such as planning for their retirement. As a strong self-control person, he will be very disciplined in achieving the goals set, which means he will set aside a fund for retirement even while facing the temptation of spending it on their wants to live a luxurious life. This is a good

combination, as the person could not stop at the point of setting the goals but must practice self-control to achieve them. Then the future-oriented mindset has directed the goal to be focused more on the future or the long term. Based on the discussion above, we have concluded that hypothesis 3 suggests that future time perspective moderate self-control and retirement preparedness.

H3: FTP moderate self-control and RP.

KAB Model

The KAB model is the anchor theory for our study and supports the objective of this study. Kallgren and Wood formed the KAB model in 1986 based on the findings of their study. It is developed based on the factor that influences the consistent relationship between attitude and behaviour. That factor is information that is readily accessible, defined as knowledge that has been learned and understood by the person. It was first formed to explain the relationship of knowledge, attitude, and behaviour in an environmental context. To examine their behaviour while being asked to sign and distribute pro-environment petitions and participate in a recycling project. The findings showed that high levels of accessibility of knowledge will improve attitude-behaviour consistency, but the detailed mechanism to accomplish this relationship is unclear. This indicates that there is still room for improvement in the KAB model. However, it has provided a well-structured framework for understanding behaviour in terms of theory, as discussed below.

As a person's behaviour is mainly formed based on the knowledge they learn, they need to understand something before doing it. In objective 1, this study believes that knowledge regarding retirement and the behaviour of retirement preparedness have a relationship. A person must have the understanding regarding retirement then only have the attitude to know more about retirement. That attitude will help that individual to have the behaviour on aware and preform retirement action. This relationship is logically acceptable, and it is the way for the forming of behaviour. The Firstly, the Knowledge Attitude Behaviour model proposes a relationship between knowledge, attitude, and behaviour (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003). It suggests that while knowledge accumulates at some level, attitude will begin to change, and behaviour will gradually change. An individual has certain level of understanding regarding retirement will either to encourage or demotivate theme to behave toward

preparing retirement. The preparation of retirement can be necessary but also tough, as it required certain skill to perform the task. It included different level of task, from the simple one of depositing money to earn some interest. To the higher level of investing in different category of investment instrument to form a diversified portfolio. Knowledge can generate the essential logic that leads to the intention to perform a particular behaviour, as it can influence a person's decision (Baranowski et al., 2003). It also the source on giving the ability and skills for person to perform or make wise decision. This can be understood as meaning that when a person knows a task, they will have a positive perspective towards performing it. It can be included the needs of the task, the impact of the task, or way to perform the task. Secondly, the Knowledge Attitude Behaviour model also highlights a gap in knowledge and behaviour, which is like this study (Dhir, Sadiq, Talwar, Sakashita, & Kaur, 2021). This study supports the idea that knowledge alone cannot directly impact a person's behaviour. This is because simply knowing how to perform a task would not lead to performing it, even if they have a positive intention.

From the discussion above, we can identify that the Knowledge Attitude Behaviour model has been widely used in various contexts in the previous studies but not in the financial context. This means that by using the Knowledge Attitude Behaviour model, we might get to discover new information in the context of finance. Nevertheless, those previous studies have a similarity, which is that they investigated a beneficial behaviour, but they struggled to perform it. As for this study, we are studying the behaviour of preparing for retirement, which is for the benefit of the future, and most people struggle to perform it. Likewise, the Knowledge Attitude Behaviour model has a well-structured construct for the relationship between knowledge, attitude, and behaviour. This construct includes the basic formation of behaviour from the internal thought of the mind to the external expressions towards the behaviour, then ends with the action of executing it. This flow of relationship sounds so logically acceptable; that is why we decided to use the Knowledge Attitude Behaviour model as the anchor theory.

Unlimited Resources Theory

Unlimited resource theory is the latest theory for explaining self-control in the existing literature (Gupta et al., 2021). This indicates that it is an improved theoretical explanation from previous theories of self-control. It includes different angles

to explain self-control after considering various situations. This transformation involves the shift from emotion to psychological characteristics or abilities. This theory defines self-control as a personality trait that helps shape a person's behaviour (Miller et al., 2012). Self-control is an essential strength a person needs to attend to various life activities, including making decisions, taking responsibility, forming behaviours, or carrying out a plan (R. F. Baumeister, Bratslavsky, Muraven, & Tice, 1998). It is the situation in which a person consciously and intentionally controls themselves. It involves dealing with the conflict between inner and outer pressures (R. F. Baumeister et al., 1998). This theory describes a person's ability to sustain self-control, especially while performing a challenging task that requires persistence (Miller et al., 2012). Self-control is a non-limited capacity that can function well regardless of any situation. Self-control can be strengthened after practising it, like a muscle or skill that can be trained (R. F. Baumeister et al., 1998; Bernecker & Job, 2020). The application of unlimited resource theory and self-control in the context of this study will guide the role of self-control in the relationship between knowledge, attitude, and behaviour. The unlimited resource theory believes that self-control is an unlimited resource and with the characteristics of a capability. It is the missing ingredient to build a high retirement preparedness behaviour. Even with the knowledge of what is important to prepare for retirement. They still have the challenge of making the right decision when enjoying spending rather than saving. The current needs become more significant than the future needs. It is the things that they can feel now and see the immediate impact of it.

Socioemotional Selectivity Theory

This study helps explain the shift in personal goals or behaviour with the changes in time or age, based on the concept of future time perspective (Cleveland, Huebner, Anderson, & Agbeke, 2019). The socioemotional selectivity theory believes that the selection of goals, activities, behaviours, and preferences can be impacted by the subjective perception of time remaining (Allemand, Hill, Ghaemmaghami, & Martin, 2012; Carstensen, Isaacowitz, & Charles, 1999). People who have the perception of limited time will change their priorities (Allemand et al., 2012). When they perceive future time as open-ended or during the younger life stage, they are motivated to focus on

the future (Allemand et al., 2012; Carstensen et al., 1999). They will focus more on their current action' consequences in the future. They will be willing to put more effort into learning and gathering the information that benefits their future before taking any action (Upadhyay, 2021). They will prioritise social goals to pursue growth, information, and knowledge rather than seeking emotional rewards, which are beneficial in the future (Bal et al., 2015). They aim to help expand their network that is helpful for their career growth. However, when they perceive that time is limited, they will focus on the present value, such as positive emotional experiences (Allemand et al., 2012; Carstensen et al., 1999). They will focus more on the immediate consequences of their behaviour, guided by the immediate outcomes and gains (Upadhyay, 2021). They will prioritise goals related to immediate emotional well-being or what is meaningful for them, like deepening relationships with people they care for (Charles & Carstensen, 2010). Socioemotional selectivity theory has positioned future time perspective as the orientation of a person's mindset. It either moves towards the future or the present. Those with a mindset that moves towards the future they will tend to think about the future. The things that happened in the future become more important than the present. To be prepared for the future will become their priority in life rather than enjoying the present life. In the relationship of self-control to desirable behaviour, future time perspective becomes the purpose that gives a reason for putting effort into controlling. The retirement preparedness becomes the thing that individuals are concerned about. Having a high retirement preparedness behaviour is something they want.

METHODOLOGY

To examine the hypotheses, the researchers gathered the data from a self-administered questionnaire conducted within the targeted demographic of working adults aged 30 to 50 years old, currently employed and holding an EPF (Employees Provident Fund) account, was adequately represented. In total, there were 182 respondents with Malaysian nationality who were enrolled in EPF. Most of them were employed in full-time jobs (84.1%). Also, those respondents were predominantly female (52.7%). Most of the respondents had as low as primary school education level, but the majority earned a bachelor's degree (51.6%) and were related to business (51.6%). As for ethnicity, there was almost an equal number of

Malays (40.7%) and Chinese (44.5%), while a small part was from Indian (14.8%) ethnicity. For marital status, there were similar amounts of single and married persons in the study, which was 47.8%. All of them were from the age range between 30 to 50 years, but the majority were in their 30s (61.5%). All the respondents had various years of experience from none to more than 20 years, but more than 10 years of experience occupied most of the individuals. Then, for financial dependents under their responsibility, none (40.1%) took first place, while those with less than 5 (38.5%) took second place. The income ranges included for the income groups of B40 (50.5%), M40 (40.1%), and T20 (9.3%). B40 had the highest proportion, but for the higher range, it was between RM85,212 to RM131,640 (21.4%). This income range indicated that the respondents were mostly from the income groups of B40 and M40. However, based on the household income range, it was a bit different as it equally included all income groups: B40 (47.2%), M40 (28%), and T20 (24.7%).

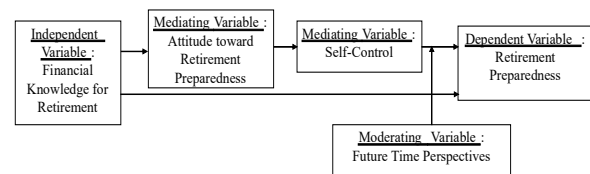


Figure 1: Research Model of Retirement Preparedness

All the constructs and items were adapted from the existing literature and was modified to suit the purpose of this study. This study uses a questionnaire's measurement with a 5-point Likert scale, from strongly disagree to strongly agree, with a neutral choice. Retirement preparedness with four items adopted from Rasiah et al. (2020) and another three items from Hershey and Mowen (2000). Financial knowledge for retirement with four items adopted from Hershey and Mowen (Douglas. A. Hershey & Mowen, 2000) and additional three items were adapted with modification to assess financial knowledge, not limited to retirement planning. Retirement preparedness attitude with two items adopted from Hassan et al., 2016, four items from Lai et al., 2009 and another one item from Hassan et al., 2016. Self-control with seven items from Tangney, Boone, and Baumeister (Tangney, Boone, & Baumeister, 2018). Future time perspective with seven items adapted from (Zimbardo & Boyd, 2015).

RESULTS

The normality test has been done to identify whether the data is normally or abnormally

distributed. It has 2 types of normality which include univariate for single-level model and multivariate for multi-level model. This test is performed by a website called "Web Power" (Curran, West, & Finch, 1996). The cutoff value for skewness is less than positive or negative three, and kurtosis is less than positive or negative twenty (Cain, Zhang, & Yuan, 2017). As shown in the result, it was found that the data is abnormally distributed as it had a skewness of 176.92 and kurtosis of 7.28. It is normal for survey research to have an asymmetric distribution, which is due to the multiple Likert scale choices (Bollen & Stinet, 1990; Chin, Marcolin, & Newsted, 2003; Hayes, 2009). This indicates that the researcher needs to perform the procedure of bootstrapping through Smart PLS (PLS) software (Hayes, 2009). As partial least squares modeling is suitable for abnormality assumptions (Chin et al., 2003). However, for individual constructs or univariate normality, it was indicated that all the constructs have passed the cutoff point for skewness and kurtosis.

As data were collected from a single source, there is a need to perform the single source bias test, which addresses the issue of being unable to capture the big picture. It concerns single source bias, which means that the same respondent has responded to the whole questionnaire. The collected data becomes unreliable and incorrect. Hence, running the test is to prove that the collected data does not have that issue, even if collected from a single source. The test will be performed in SPSS; the study chooses the full collinearity technique to examine the single source bias. The full collinearity technique has been used by studies that included structural equation modelling and used the partial least squares method. These characteristics are similar to this study. This test with the strength of simplicity and efficiency. It does not require complex procedures and uses a variance inflation factor (VIF) value that is easy to calculate and interpret. It with high robustness in identifying common method bias, even if the model passes standard validity assessment. This indicated that the full collinearity technique test is a comprehensive assessment that leads to more accurate and trustworthy results. The criteria include meeting the VIF value of less than 3.3 or 5 (Kock, 2015; Kock & Lynn, 2012). Next, we will refer to the beta value, which the lower, the better. Based on the output in Table 11, all the VIF numbers are less than 3.3, which indicates that there is no bias. The beta for the variables is also very low, which concludes that there is no issue of collinearity for this study. Hence, there is no bias from the source of data collection, and it proves that the outcome is reliable.

Table 1: Full Collinearity Testing

Construct	FKR	ATRP	SC	FTP	RP
VIF	2.011	1.834	1.973	1.950	2.099
Beta					

Note: FKR = Financial knowledge for retirement, ATRP = Attitude towards Retirement Preparedness, SC = self-control, FTP = Future Time Perspectives, RP = Retirement Preparedness.

Measurement model

To examine the measurement model to ensure it is valid and reliable, by assessing the values of loadings, Cronbach alpha (CA), composite reliability (CR), and average variance extracted (AVE). It starts with checking the loading value to ensure all the items meet the minimum loading value of 0.5 (Henseler, Ringle, & Sarstedt, 2015). The low loading indicates that the item in one construct is not correlated. From figure 14 and table 12 shows that all the loadings are more than 0.5. Next, we will ensure that CA and CR meet the minimum of 0.7, and AVE has a minimum of 0.5 (Henseler et al., 2015). Based on Table 12, it shows that the measurement model has met all those criteria except for attitude's CA, but when rounded up, it still has 0.7. This can be concluded that all 5 constructs are valid and reliable.

Table 2: Measurement Model for the Constructs

Constructs	Items	Loadings	AVE	CR	CA
FKR	B1	0.777	0.663	0.908	0.874
	B2	0.827			
	B3	0.826			
	B4	0.782			
	B5	0.856			
ATRP	C1	0.774	0.511	0.806	0.682
	C2	0.747			
	C4	0.728			
	C5	0.599			
SC	D1	0.786	0.597	0.881	0.832
	D2	0.691			
	D3	0.787			
	D4	0.840			
	D5	0.750			
FTP	E1	0.652	0.514	0.862	0.808
	E2	0.785			
	E3	0.785			
	E4	0.800			
	E5	0.732			
	E6	0.572			
RP	F1	0.727	0.541	0.891	0.855
	F2	0.853			
	F3	0.874			
	F4	0.673			
	F5	0.702			
	F6	0.664			
	F7	0.620			

Note: AVE = Average Variance Extracted, CR = Composite Reliability, CA = Cronbach alpha. FKR = Financial knowledge for retirement, ATRP = Attitude towards Retirement Preparedness, SC = self-control, FTP = Future Time Perspectives, RP = Retirement Preparedness.

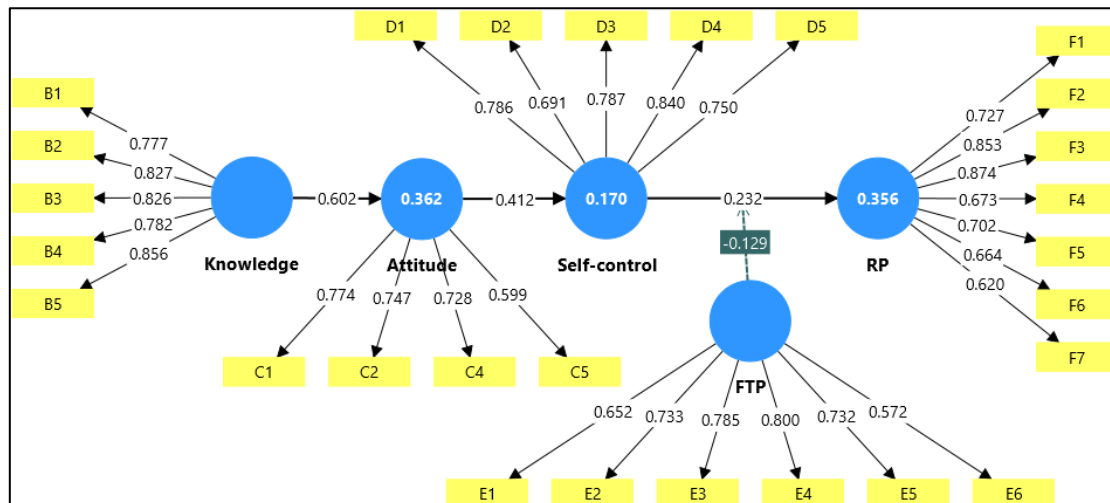


Figure 2: Smart PLS Output of SEM Model diagram

The measurement model also needs to be examined based on the discriminant validity of the Heterotrait-monotrait (HTMT) ratio. This is to identify the validity of the questionnaire in terms of the understanding of the respondents (Franke & Sarstedt, 2019). To see whether they are aware of the difference between all the variables in the model, we assess the validation to ensure no overlapping, as the variables must not have too high a correlation. It refers to the HTMT value, which needs to be less than 0.85 (Franke & Sarstedt, 2019). Based on the HTMT output from Smart PLS in Table 13, it is shown that all the values are also less than 0.85. This can be concluded that the measurement model is valid and reliable.

Table 3: Discriminant validity - Heterotrait-monotrait ratio (HTMT)

	1	2	3	4	5	6
1. ATRP						
2. FTP	0.386					
3. FKR	0.763	0.391				
4. RP	0.685	0.639	0.683			
5. SC	0.526	0.753	0.566	0.554		
6. FTP x SC	0.439	0.298	0.261	0.342	0.273	

Note: Percentile bootstrap; 10000 subsamples; 95% confidence interval. FKR = Financial knowledge for retirement, ATRP = Attitude towards Retirement Preparedness, SC = self-control, FTP = Future Time Perspectives, RP = Retirement Preparedness.

Structural Model

To examine the structural model is to ensure the robustness of the model. The first value that can identify the strength of the relationship between variables in the model is the beta values (Hair, Hult, Ringle, & Sarstedt, 2022). It ranges from a weak relationship of 0 to 0.1, which indicates not significant. Then the marginal level is from 0.11 to

0.19, indicating a not very strong and weak relationship, which needs bootstrapping to confirm the relationship. The significance level starts from 0.2 and above, at which point the strength is confirmed with no further test needed. Based on Table 14, most of the direct relationships have values higher than 0.2. This indicates that all the strength for all direct relationships is strong and significant.

The second step is to examine the p-value from the path coefficient output to ensure there is a relationship between the variables. It uses the suggested bootstrapping procedure of a 95% confidence interval with a bootstrapping of 10,000 (Becker, Cheah, Gholamzade, Ringle, & Sarstedt, 2023). The p-value can prove statistical significance, and then f-square and effect size can prove substantive significance, which provides a higher reliable measurement (Becker et al., 2023). Based on the path coefficient output, it is shown that the p-values for all relationships are significant. The p-value of less than 0.001 indicates that the direct relationship between financial knowledge for retirement and retirement preparedness is highly statistically significant. To double-confirm the significance, the researchers need to refer to the confidence interval output. All values for lower and upper levels of confidence value have small differences and the same positive and negative signs, which confirms that all relationships are significant.

The R-squared of 0.366 represents the proportion of variance in retirement preparedness that is explained by the model included financial knowledge for retirement. It indicates that 36.6 per cent of the variance in retirement preparedness is explained by the predictors in the model. It is a sign of good explanatory power of the model. Financial knowledge for retirement is a strong predictor of

retirement preparedness. This percentage is considered large and significant for the predictor of retirement preparedness. The changes in retirement preparedness are 36.6 per cent impacted by financial knowledge for retirement. More than a quarter change is accounted for by the changes in financial knowledge for retirement.

Then, for f-square, it also indicates the same situation, with all relationships being significant. Particularly for three of the relationships with a large effect size, which are financial knowledge for retirement to attitude toward retirement preparedness and financial knowledge for retirement to the dependent variable of retirement preparedness.

The f-square of 0.4196 also signifies the effect size, which is categorised as large. This indicated that the financial knowledge for retirement has a strong impact on retirement preparedness. This means that financial knowledge for retirement plays a crucial role in enhancing retirement preparedness. This suggests that financial knowledge for retirement can have a significant impact on an individual's ability to prepare for retirement. Even a small improvement in financial knowledge for retirement can lead to meaningful increases in retirement preparedness. Hence, Hypothesis 1 is supported, concluded that financial knowledge for retirement has a significant direct impact on retirement preparedness.

Table 4: Direct Effects

		Std Beta	t-values	p-values	PCI LL	PCI UL	f ²	r ²	Effect size	VIF
H1	FKR -> RP	0.467	7.939	P<.001	0.366	0.559	0.4196	0.366	L	1.685

Note: This study uses 95% confidence interval with a bootstrapping of 10,000. Effect size: M = Medium, L = Large FKR = Financial knowledge for retirement, ATRP = Attitude towards Retirement Preparedness, SC = self-control, FTP = Future Time Perspectives, RP = Retirement Preparedness.

Table 5: Indirect Effects

		Std Beta	t-values	p-values	PCI LL	PCI UL	v ²	effect size
	FKR -> ATRP -> SC	0.274	4.725	p<.001	0.188	0.377	0.0751	small
H2	ATRP -> SC -> RP	0.111	2.779	0.003	0.054	0.184	0.0123	small

Note: This study uses 95% confidence interval with a bootstrapping of 10,000

Mediation Analysis

To test the indirect relationship involving mediation in PLS, this study needs to run the bootstrapping procedure in Smart PLS (Hayes, 2009; Zhao et al., 2010). The bootstrap test is more powerful than the Sobel test, and it can complement the flaws of the Sobel test (Zhao et al., 2010). The validity of the outcome from the bootstrap test is also confirmed. The guideline is to examine whether the p-value is significant, and the confidence interval does not straddle zero (Hayes, 2013). This study proposes mediation effects in the model, which is the effect that the impact of the independent variable on the dependent variable is defined through the intervention of a mediator (Hayes, 2009).

In this study, the researchers examine the relationship between attitude toward retirement preparedness and retirement preparedness, with self-control as a potential mediator. The analysis reveals statistically significant results for the proposed mediation relationships. It is still crucial to consider the practical significance of these findings. Statistical significance is determined by the p-value, which indicates the probability that the observed effect occurred by chance. It examines whether there is a relationship between the tested variables, but not the strength of the relationship.

Based on Table 16 shows that there are 2 indirect

relationships in this study. All of the relationships are statistically significant based on the p-value and percentile confidence interval. The commonly accepted p-values are 0.05 or below. The analysis outcome shows that both relationships have 0.003 and 0.006 as the p-value, which is below the commonly accepted value. This suggests that the mediation effect is statistically significant. The percentile confidence interval (PCI) is another value to measure statistical significance. The analysis reviewed a confidence interval for the indirect effect that does not include zero, which further supports the conclusion that the mediation effect is significant. The range of the confidence interval indicating the true indirect effect is likely between that range. Self-control as the mediator will have the range of 0.054 and 0.184 for the relationship between attitude towards retirement preparedness and retirement preparedness.

Practical significance is an additional measure to examine the strength of the mediation relationship. It also refers to the real-world importance or impact of the effect. This measure considers whether the size of the effect is large enough to be meaningful in practical terms. The statistical significance tells us that an effect exists, practical significance tells us how important that effect is in that context. Minimal practical significance occurs when an effect is

statistically significant but has a small effect size. From the analysis output, the effect size and the v-square for indirect effects show that it is small for financial knowledge for retirement to self-control, with attitude toward retirement preparedness as a mediator and attitude toward retirement preparedness to retirement preparedness with self-control as a mediator. This indicated that self-control has statistical and practical significance mediator for the relationship between attitude towards retirement preparedness and retirement preparedness. The attitude towards retirement preparedness also has the same strength as self-control in impacting the relationship between financial knowledge for retirement and self-control.

The mediation effect of self-control on the relationship between attitude towards retirement preparedness and retirement preparedness is statistically significant (p-value = 0.003) and practically significant. It has an effect size of small; this category for mediation effect can still be considered strong in certain contexts. This is because small changes in behaviour or outcomes can accumulate over time, leading to significant overall impacts. The v-square value of 0.0123 indicates that the mediator explains 1.23 per cent of the variance in the dependent variable.

Hence, this study concludes that there is a mediation effect for self-control in the direct

relationship of financial knowledge for retirement and retirement preparedness. Attitude toward retirement preparedness also has a mediation effect for the relationship of financial knowledge for retirement and self-control. Hypotheses H2 supported in this study.

Moderation Analysis

This study proposed future time perspective as the moderator of the relationship between self-control and retirement preparedness. The r-square for self-control and retirement without the moderator is 0.263, but with the moderator, it is 0.360. This indicates that the moderator has strengthened the relationship by 9.7% to explain the variance in preparedness. This indicates that the moderation effect and hypothesis 3 are supported by this study. Based on Table 17, the moderation relationship is significant and negative. The strength of the relationship between self-control and retirement preparedness also substantially changes after the interaction of future time perspective. It changes from 0.233 to -0.128, and the confidence interval has a smaller range.

H3: Future Time Perspective moderates the positive relationship between self-control and Retirement Preparedness such that increased future time perspective weakens the relationship between self-control and retirement preparedness.

Table 6: Moderation Analysis

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	PCI LL	PCI UL
H3	FTP x SC -> RP	-0.128	0.047	2.722	0.003	-0.201	-0.045
	FTP -> RP	0.35	0.099	3.55	p< .001	0.189	0.512
	SC -> RP	0.233	0.07	3.344	p< .001	0.125	0.353

To examine the moderation effect, the researchers can also base it on simple slope analysis. The moderator is future time perspective, which is a continuous moderator with low and high values. The simple slope analysis in diagram 4.1 shows that it is a positive relationship for IV and DV and has a slope, which is a good sign. Based on the steepness of the two slopes, it shows that low future time perspective is steeper. This indicates that when increasing self-control, there will be a higher level of retirement preparedness achieved for those with low future time perspective individuals. However, in the case of high future time perspective individuals, although increasing self-control, the increase in retirement preparedness is not as much as for those with low future time perspective. Hence, those with low future time perspective will lead to a stronger impact of self-control on preparedness.

The moderation effect can also be examined based on the f square size, which is calculated from both

inclusion and exclusion of the moderator's r square. The value was 0.152, which is a large effect size (Cohen, 1977; Lakens, 2013). To conclude, there is a moderation effect for future time perspective on the relationship between self-control and retirement preparedness.

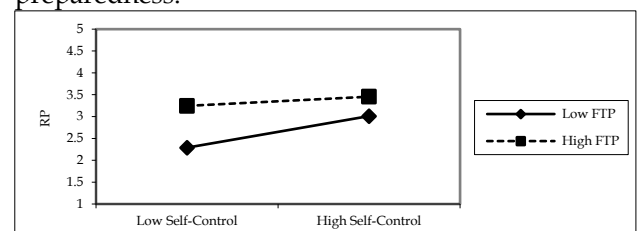


Figure 3: Simple Slope Analysis

Importance Performance Matrix Analysis (IPMA)

The importance-performance matrix analysis (IPMA) is a useful test for identifying the most

important variable or the higher impact on the dependent variable. It is more focused on the practical side of the model rather than the theoretical part, as it will identify the variable that needs to be prioritized or focused on to achieve a better level of the dependent variable. This analysis will be displayed in a graph of importance versus performance, with the lower right side being the most important quadrant. It is important but not performing well.

From the Importance of Performance Matrix Analysis graph, it shows that financial knowledge for retirement and attitude toward retirement

preparedness are not that important but are performing well. This shows that to improve retirement preparedness, we should not over-allocate resources solely on improving financial knowledge for retirement and attitude toward retirement preparedness. It seems that self-control and future time perspective play a big role in improving retirement preparedness. Even though the level of self-control and future time perspective is not considered the worst, it does reach the tipping point of the upper right side of the quadrant. This indicates there is a need to improve self-control and future time perspective.

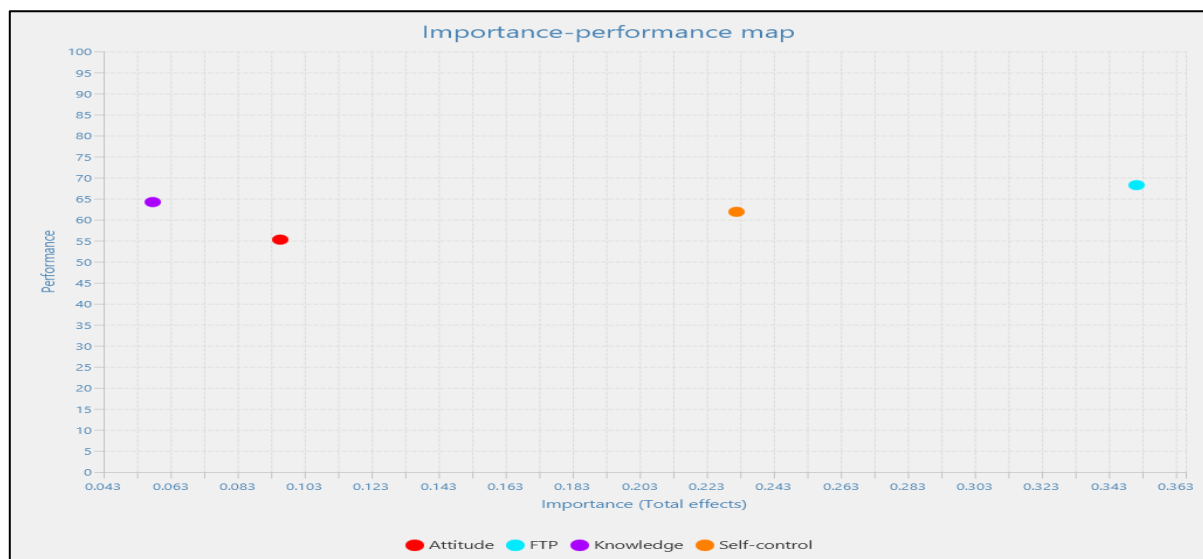


Figure 4: The importance of performance matrix analysis.

Multiple Group Analysis

Multiple group analysis is performed by the Smart PLS 4 software. This test aims to compare based on multiple groups, which for this study will compare between the income groups of B40 and M40. The income group was chosen for the multiple group analysis due to its representativeness of the behaviour. Based on the discussion in the literature review, it is shown that analysing the situation with the consideration of different income groups will produce more insight. Income group is considered one of the most important categories in understanding the differences between behaviour. Then, the multiple group analysis only included the two categories of income groups because they are the majority of people in the workforce. Those that from the income group of the top twenty per cent might influence the outcome of this study. They with significantly different characteristics from all the other income groups. Higher income sources might pose no challenge for preparing for retirement. The objective of this study is to identify the hindrances to

building a high retirement preparedness behaviour. Hence, the income group for B40 and M40 will be more relevant to the context of this study. They are with a low to moderate level of income, which with a higher risk of facing the issue of low retirement preparedness.

This test has a prerequisite, which requires you to pass the permutation test of MICOM step one to three before running Multiple Group Analysis. The permutation test identifies whether the measurement works the same for the two groups. There is a guideline for reporting: if the measurement passes MICOM step 2, then the result can be compared while reporting it. Then, next, you will need to refer to MICOM step 3a and b to decide whether the result can be combined for reporting.

Based on the Smart PLS 4 outputs of table 22, it shows that there is no significant difference between path coefficients of group 1 and 2, which passed MICOM step 2. The Multiple Group Analysis can be compared while reporting. Then, for MICOM step 3a for means, there are two out of five that are

significantly different for the two income groups. As for MICOM step 3b in terms of variance, there is one out of five that is significantly different for the two income groups. This indicates that this study failed MICOM step 3, meaning that the Multiple Group Analysis result cannot be combined while reporting it.

The test of bootstrap Multiple Group Analysis is to identify the difference between groups on those various relationships in the study. As shown in the Smart PLS 4 output, there are three relationships that are significantly different between the two income groups: it includes the path from future time perspective to preparedness, financial knowledge for retirement to attitude toward retirement preparedness, and the interaction between future time perspective and self-control to retirement preparedness. This indicates that the impact of future time perspective on retirement preparedness is stronger for the income group of B3 as compared to the income group of M2. This indicates that the lower

income group's retirement preparedness is more impacted by future time perspective than the higher income group. The impact of financial knowledge for retirement on attitude toward retirement preparedness also has the same phenomenon; B3 is stronger. Financial knowledge for retirement plays a bigger role in impacting attitude toward retirement preparedness for low-income groups. This means that low-income groups need financial knowledge for retirement to help them improve their attitude toward retirement preparedness more than high-income groups. However, the impact of the interaction between future time perspective and self-control on retirement preparedness is stronger for M2 as compared to B3. The impact of attitude toward retirement preparedness on self-control is similar for both income groups. This indicates that the level of income does not change the impact of attitude toward retirement preparedness. The same situation applies to the impact of self-control on retirement preparedness.

Table 7: MICOM - Step 2

	Original correlation	Correlation permutation mean	5.0%	Permutation p value
Attitude	0.956	0.947	0.823	0.377
FTP	0.947	0.970	0.916	0.074
Knowledge	0.997	0.996	0.987	0.571
Preparedness	0.989	0.990	0.975	0.299
Self-control	0.996	0.995	0.988	0.413

Table 8: MICOM - Step 3a (mean)

	Original difference	Permutation mean difference	2.5%	97.5%	Permutation p value
Attitude	-0.488	-0.012	-0.436	0.447	0.028
FTP	-0.340	-0.009	-0.463	0.430	0.143
Knowledge	-0.541	-0.013	-0.433	0.422	0.016
Preparedness	-0.096	0.004	-0.452	0.464	0.671
Self-control	-0.180	-0.009	-0.434	0.435	0.435

Table 9: MICOM - Step 3b (variance)

	Original difference	Permutation mean difference	2.5%	97.5%	Permutation p value
Attitude	-0.143	-0.002	-0.595	0.544	0.597
FTP	0.406	-0.002	-0.876	0.941	0.352
Knowledge	0.494	0.010	-0.425	0.438	0.026
Preparedness	0.107	-0.013	-0.782	0.775	0.806
Self-control	0.270	0.005	-0.497	0.492	0.275

Table 10: Path Coefficient - Bootstrap Multiple Group Analysis

	Difference (B3 - M2)	1-tailed (B3 vs M2) p value	2-tailed (B3 vs M2) p value
Attitude -> Self-control	0.227	0.113	0.113
FTP -> Preparedness	0.612	0.048	0.048
Knowledge -> Attitude	0.281	0.008	0.008
Self-control -> Preparedness	-0.318	0.890	0.110
FTP x Self-control -> Preparedness	-0.497	0.950	0.050

DISCUSSION

Based on the outcome of this study, the researchers concluded that retirement preparedness is mainly impacted by self-control and future time

perspective. Those individuals with high self-control will have a higher possibility of being prepared for retirement. Self-control plays an important mediating role in forming retirement preparedness from attitude toward retirement preparedness. The

possibility will be higher when the individual has a future-oriented mindset towards retirement and no other purposes. The role of financial knowledge for retirement remains significant for retirement preparedness but needs to reconsider the type of financial knowledge they need. Specifically, based on the income group, the relationship between those variables has different interactions. For the lower income group (B3), their retirement preparedness is more impacted by financial knowledge for retirement and future time perspective. The interaction of future time perspective and self-control has a higher impact on the higher income group (M2). The impact of attitude toward retirement preparedness and self-control is the same for both income groups.

This study concluded that self-control and future time perspectives is the two main factors that need to be focus on. It is the main reason that impacting an individual retirement preparedness. As for the factor of financial knowledge for retirement, it has remained as necessary factor to support an individual on preparing themselves for retirement. It is also found that financial knowledge for retirement as a sole source of improving retirement preparedness is not enough. There is a need for additional support to lead to a high retirement preparedness behaviour. As in this study, the other factors can fill in those gaps between knowledge to behaviour. It is the factor of self-control and future time perspectives.

The factor of income groups classification also plays a significant role in improving the quality of the outcomes of this study. The inclusion of income groups into the data analysis have found some useful information between the groups. This study found that the lower income group individuals need more support on financial knowledge to support them for the preparation of retirement. They might need the support in terms of providing the education to them on increasing their financial knowledge regarding retirement.

Then the lower income group individuals also found to be more impacted by future time perspectives. They have the need for support on improving their mindset more towards the future. If they able to concern more on the future, they will be able to have higher preparedness for retirement. In other words, they need to improve their planning skills also for becoming more prepared for retirement. It is one of the significant characteristics that they need to gain on ensuring their readiness for retirement. This is a valuable information on guiding the direction for policy making and better

understanding the situation of retirement preparedness.

The middle-income group individuals are found to be impact by the interaction of future time perspective and self-control. It is the factor that improve or weaken the retirement preparedness of those middle-income group individuals. They either need to focus on their retirement planning goals or have a better financial plan. That financial plan needs to prioritize their retirement planning to ensure they can have a high retirement preparedness. Then, after achieving their retirement goals only can divided their financial resources for other financial goals. They need to ensure their planning habits will not become hinders for them to prepare for retirement. They should fully utilize that skills to help them secure a comfortable retirement.

CONCLUSION

This study has reconfirmed the perspective of past research findings regarding the role of financial knowledge on retirement preparedness. Financial knowledge is essential for preparing for retirement. It is needed from the initial part of having awareness of the need for retirement planning, which then leads to willingness and acting. From the discussion of the findings, this study formed an assumption that the type of financial knowledge might have a more significant role than its level. A higher level of financial knowledge might lead to irrational confidence in involving oneself in risky financial investments.

Moreover, the outcomes have highlighted the role of self-control and a future-oriented mindset in improving behaviour related to preparing for retirement. A person with higher self-control has a greater ability to manage their behaviour towards retirement preparation. Those with low self-control might face challenges in meeting their plans. They are more easily tempted to act out of emotion and recklessly in terms of spending behaviour. It is not just about the conviction to prepare for retirement but more about managing the battle between emotion and rationality. Based on the relationship with attitude that self-control has, this study concludes that self-control is a trait and not just a pool of limited resources.

This study found that a future-oriented mindset has a negative impact on retirement preparedness. Those who are sensitive to time and who will make plans for each of the day will lead to a lower chance of preparing for retirement. There is a contradiction between those who are good at planning and hard to control or redirect their planning direction. But those

without any plan are comparatively easy to convince to prepare for retirement. Based on the discussion of the findings, this study concludes that a higher future-oriented person will have too much commitment to different financial plans. Hence, the retirement plan has been neglected by them. They might tend to focus on the near future and not the end of the cycle like retirement. Hence, those individuals who can focus on retirement planning only will have higher preparedness for retirement. Retirement plans need to be prioritised as the first area to allocate funds at every distribution of income. It needs to be started early even if there are other financial plans for various purchases such as buying a house or car. They still need to allocate some amount of funds for their retirement plan and should not only start it when they are nearer to retirement. As there are limited time and too much uncertainty, which might lead to failure in preparedness for retirement.

Specifically, in Malaysia, the role of income group has added more thorough information to the findings and understanding in the context of retirement preparedness. With the same model, individuals act differently in different income groups. For better application, it is better to take into consideration the different income groups. The income group of B40 needs more financial knowledge and a future-oriented mindset to help them prepare for retirement. Based on the discussion, this study concludes that B40 need the basic financial knowledge to enable them to be aware and perform necessary financial transactions for retirement planning. Then, as for a future-oriented mindset, B40 need it to be able to focus on their preparedness for retirement. They need to be more sensitive to time and have the habit of planning their lives. This study assumes that it is due to limited funds that make them need to plan wisely. Maybe they are the group of people that lack planning, which is the reason they need to improve their planning skills. This study also found that the income group of M40 consists of those with a lower future-oriented mindset. It has heavily impacted the preparation for retirement of M40 with the changes in self-control levels. As from the discussion, this study concluded that those with a low future-oriented mindset find it easier to control themselves to prepare for retirement. Hence, it indicates that M40 need to improve their self-control for better retirement preparedness.

Limitation

This study might have limitation in providing the generalisability of the outcome. As the data are

collected in the whole Klang Valley of Malaysia, this is considered limited as it does not include the whole of Malaysia or other countries. Generalizability is meant to ensure that the outcome of this study can be applied to the same situation but in different places. However, Klang Valley is considered the most representative area of Malaysia. It includes all people from across Malaysia due to working opportunities. It is also the area with the highest economic activity in Malaysia, accompanied by a high percentage of gross domestic product. Even though there is always the issue with convenient samples, which are unable to meet the criteria of generalisability. However, there are a few researchers who argue that it might not be an issue if the population is homogeneous (Jager, Putnick, & Bornstein, 2017). This means that if the population has similar characteristics among all the people in the population (Jager et al., 2017). As our study is aimed at studying the issue of low retirement preparedness and this issue is faced by most of the Malaysians, this factor can make the sample a homogeneous sample, which allows for generalisation.

Recommendation for Future Research

The researchers suggest that future researchers can seek to establish the type of financial knowledge needed for retirement, as this study identified that different levels of knowledge might have an influence on a person's retirement preparedness. The impact of basic financial knowledge should be compared to different higher levels of financial knowledge to identify whether good retirement preparedness behaviour requires higher-level financial knowledge or if basic financial knowledge is sufficient. The higher level of financial knowledge can also be divided into several categories. It can start with the ability to invest in basic investments like stocks and then progress to investing in high-risk investments like foreign currency and warrants. The researchers believe this will be an informative study and will help create a direction for financial education, as financial education has been the focus of policy and relevant entities. The next factor is future time perspective; the researchers propose that future research can study the direction of a future-oriented mindset. It would be more meaningful to understand the type of planning they are heading towards rather than just the general concept of time. This will help identify whether their planning is more oriented towards retirement, investment, or expenses. It will help answer why this study found a negative moderation effect on the relationship between self-control and retirement preparedness.

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