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## Article

# Viability of Islamic health protection retirement plan (i-HPRP) among Malaysian public and private employees

ISRA international journal of islamic finance

## Provided in Cooperation with:

International Shari'ah Research Academy for Islamic Finance, Kuala Lumpur

*Reference:* Marhanum Che Mohd Salleh/Nurdianawati Irwani Abdullah et. al. (2023). Viability of Islamic health protection retirement plan (i-HPRP) among Malaysian public and private employees. In: ISRA international journal of islamic finance 15 (1), S. 73 - 90.  
<https://journal.inceif.edu.my/index.php/ijif/article/download/486/395>.  
doi:10.55188/ijif.v15i1.486.

This Version is available at:

<http://hdl.handle.net/11159/703259>

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# VIABILITY OF ISLAMIC HEALTH PROTECTION RETIREMENT PLAN (I-HPRP) AMONG MALAYSIAN PUBLIC AND PRIVATE EMPLOYEES

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**Received**  
13 June 2021

**Revised**  
16 July 2021  
12 August 2022  
23 September 2022  
8 November 2022

**Accepted**  
8 November 2022

## ABSTRACT

**Purpose** — The main objective of this research is to examine the viability of the proposed Islamic health protection retirement plan (i-HPRP) among public and private employees in terms of their perceived benefits, future commitment, and preferences.

**Design/Methodology/Approach** — Quantitative research design is chosen to achieve the purpose of the research. A total of 498 Malaysians located in different states were surveyed, and partial least squares-structural equation modelling (PLS-SEM) analysis was conducted for data analysis.

**Findings** — Results of the analysis indicate that most of the respondents believed that the suggested plan is viable in terms of the benefits it provides and in line with their future commitment. In addition, both public and private employees have high interest in the proposed plan that appears to suit their retirement plans and health protection needs during that period.

**Originality/Value** — This study structured an original illustrative retirement health protection plan to test its viability among public and private employees.

**Research Implications/Limitations** — Results of this research are significant in proving that the suggested model of i-HPRP is attractive and would have positive acceptance among Malaysians once offered in the *takāful* (Islamic insurance) market. It would motivate *takāful* operators to develop this model as currently there are limited annuity *takāful* products offered in the market.

**Keywords** — Annuity *takāful* product, Islamic health protection retirement plan (i-HPRP), Malaysian *takāful* market, Retirement planning, Savings behaviour

**Article Classification** — Research paper



**ISRA International  
Journal of Islamic  
Finance (IJIF)**  
Vol. 15 • No. 1 • 2023  
pp. 73-90

**eISSN:**  
2289-4365

**DOI:**  
doi.org/10.55188/  
ijif.v15i1.486

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## INTRODUCTION

It is undeniable that there are various products in the insurance market that provide options for retirement planning. They include investment and savings products offered by the government as well as by private agencies. In Malaysia, government servants have been covered under the government pension scheme since 1968 via the Pensions Act 1980. Meanwhile, the Employees Provident Fund (EPF) is the statutory body that falls under the purview of the Ministry of Finance and is responsible for managing the compulsory savings plan and retirement planning for private sector employees. Section 43(1) of the EPF Act 1991 requires both private employers and employees to make monthly retirement contributions to the EPF based on the amount of monthly salary stated under Schedule 3. Due to the conditions of COVID-19, which have affected the economic well-being of Malaysians, the EPF decided to reduce the monthly rate of contribution of employees from 11 per cent to 9 per cent in order to allow them to have a larger portion of their salaries, starting from January 2021 (KWSP, 2021). This is basically in line with the objective of the EPF, which is to ensure sustainable and equitable well-being for all Malaysian citizens.

The benefits for both types of retirement planning are mostly financial such as monthly cash payments, service gratuity, or cash awards for retired government officers and lump sum cash payments for retirees from the private sector. In addition to this, the EPF has laid out investment options for its members via the Members Investment Scheme (MIS), whereby members who have enough savings have an option to invest their funds in Account 1 through appointed Fund Management Institutions (KWSP, 2021).

These promised benefits give peace of mind to future retirees when there is no economic influence on the funds and institutions. However, issues arise in the event the institutions are affected by unexpected economic conditions such as the COVID-19 pandemic, where there has been an increase in government expenses, a decrease in investment profits, and inability to deliver the promised benefits to future retirees. It is therefore important for the government to initiate necessary actions to mitigate these challenges while taking measures that impose mandatory retirement savings on employees, either via EPF or pension schemes. The need to re-assess the existing retirement plan in the light of changing economic, social and demographic variables as well as to find additional retirement benefits thus remains significant.

A retirement plan may be formed by employers, the government, insurance companies and other institutions (for instance, trade unions or employer associations). Thus, a reformation of any retirement or pension system is not an easy task for any nation. An increase in an elderly population requires the government to re-balance the retirement income facility to guarantee the competence and sustainability of the system. Meanwhile, the knowledge gained from examples of upright practices from other nations can aid policymakers in identifying mechanisms to reform or provide robust and updated pension and retirement systems.

Accordingly, further review and enhancement of the existing structure of the pension scheme would require deep analysis and research in terms of its viability among Malaysians and also an opinion from the authority. This research proposes an Islamic Health Protection Retirement Plan (i-HPRP) and examines its viability among Malaysians for their future retirement planning. The paper is structured as follows: the first part is the research background, which is followed by a literature review and research methodology. Next are the data analysis and research findings. It concludes with a discussion of the research findings.

## LITERATURE REVIEW

### Current Scenario on Retirement Expectation

Statistics from the EPF posited that 70 per cent of contributors who withdraw EPF funds at the age of 55 use their remaining EPF savings within less than 10 years (Heong, 2020). Besides, Paul Selvaraj (Chief Executive, Federation of Malaysian Consumers Associations) stated that a total of 67 per cent of Malaysians were unable to save the minimum amount required to ensure sustained funds over the retirement period (New Straits Times, 2021a). It is further reported that nearly 30 per cent of EPF members have withdrawn almost all their retirement savings from Account 1 since 2000 (New Straits Times, 2021a). Datuk Seri Rina Mohd Harun (Women, Family and Community Development Minister, Malaysia) also pointed out that around 23 per cent, or 538,000 of the 2.4 million elderly citizens in Malaysia are economically distressed parents whose children have grown up and left home) (News Straits Times, 2021b). These numbers are expected to increase due to lack of awareness and effort by Malaysian households to develop a culture of saving for the future. It is also found that young people are reluctant to engage in saving for their future retirement, although developing a saving culture at a young age and learning to manage financial matters is deemed crucial in preparing for the retirement period (Liew, 2020).

Meanwhile, similar to other countries, Malaysia is exhibiting a gradual growth in its ageing population (Department of Statistics Malaysia, 2020). This will put significant pressure on national savings due to the government's increased spending on welfare and health facilities for the ageing population. It will also lead to higher non-productive government spending, if there are inadequate and ineffective retirement policy and health investments.

A rise in the elderly population will also put pressure on the Malaysian retirement systems. This will impose a greater risk in safeguarding an adequate income for the elderly. More so, the tradition of getting support from the family is no longer a dependable source of care for the elderly population—implying a greater dependency of the elderly on the pension system. Presently, the public pension scheme is founded on the Pay-as-You-Go (PAYG) principle. This traditional pension scheme is funded by the government, and following an increase in the life expectancy of retirees, an increase in public expenditure is expected to follow as well.

Overall, therefore, a long-term strategy to prepare for an improved retirement system is urgently needed by including the participation of the corporate sector through the corporate welfare concept (Nayan & Othman, 2019).

### Social Protection Systems in Malaysia

A variety of social protection schemes that were available in Malaysia are the Public Sector Pension Scheme, the Social Security Scheme, the Employees Provident Fund, the Workmen's Compensation Scheme, and the Employer Liability Scheme. The schemes basically differ for the public and private sectors' employees; public employees would receive pensions upon retirement, while private employees need to contribute a compulsory savings amount in the EPF. In order to give more options to prepare towards retirement, the government introduced the Private Retirement Scheme (PRS) in 2012. This arrangement, deemed more robust, is a voluntary plan for saving and investment which is open to both public and private employees. In comparison to the existing schemes, PRS is regulated by Securities Commission Malaysia as it focuses on providing long-term returns from various investment platforms.

Prior to its suspension in 2001, the EPF Annuity Scheme was attractive to EPF members due to certain benefits, such as the direct deduction of contributions from the EPF account and tax exemption on investment returns. In addition, as informed by agents, this scheme also attracted nearly retired members, the young generation below 35 years old, and working wives who wanted to have income during retirement without burdening their husbands.

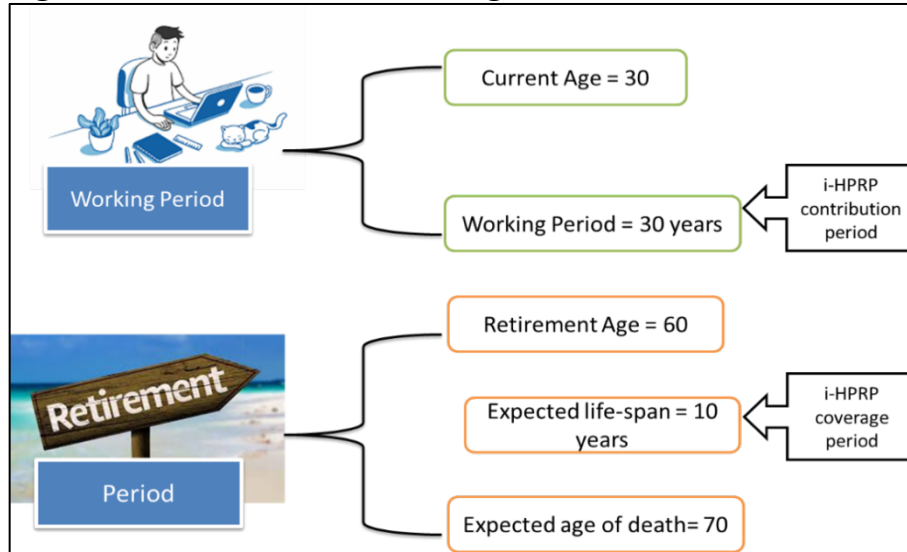
Since the suspension of the EPF Annuity Scheme, insurers have tried to offer new annuity schemes in the market. These have, however, become more expensive since 2007 when Bank Negara Malaysia imposed the Risk-Based Capital (RBC) framework. A new annuity scheme was thereafter offered in the market in 2012 as a consequence of the Malaysian Government Budget 2012, which guaranteed yearly retirement income for 10 or 15 years on top of health coverage. This new annuity, however, has been challenged by the Private Retirement Scheme (PRS) which was equally launched in 2012. The PRS became a popular retirement plan as it provides an attractive return for long-term investment. More importantly, members can benefit from tax relief for a RM3,000 yearly contribution.

Besides EPF and pension schemes, voluntary retirement can be a substitute vehicle among the financial sources for retirement (Mohd Salleh *et al.*, 2020a). It can be an alternative private scheme similar to the personal/commercial/voluntary scheme. It may be a means of participating in private annuities and family *takāful* (Islamic insurance) products offered by *takāful* operators.

### **Islamic Health Protection Retirement Plan (i-HPRP)**

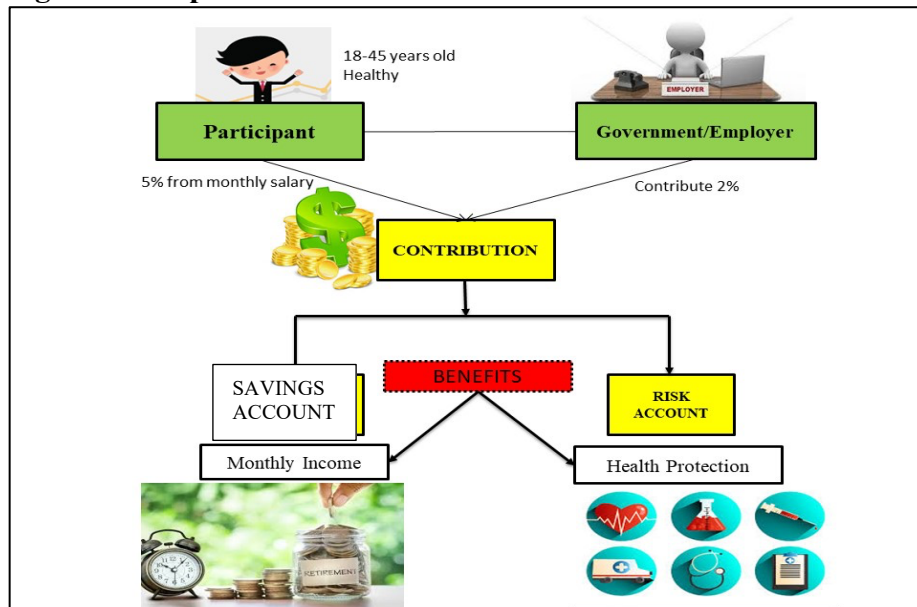
Chowdhury (2021) proposed an Islamic retirement product which aimed to integrate medical benefits along with a stream of regular retirement income. The plan was designed according to an exchange mechanism whereby contributors make a regular contribution during their working life through a commitment to donation (*iltizām bi al-tabarru'*) (Johari *et al.*, 2014). **Figures 1 and 2** exhibit the mechanism of the proposed plan formulated by Chowdhury *et al.* (2022). **Figure 1** depicts the expected period of working and retirement for a normal individual in general. Basically, to enjoy retirement benefits, people need to start saving or contribute to a *takāful* or annuity plan at a young age. For example, the period of contribution for the proposed plan may be 30 years, and the benefits of this plan would be enjoyed at retirement age which is 60 years old. The benefits of this plan, as suggested in this research, consist of two aspects: monthly income and health protection, as shown in **Figure 2**. This would become a replacement income for the retirees when they stop working and also represent health coverage in case they suffer from any illnesses. Hence, to enjoy this plan, they have to start making contributions earlier when they are still working. In terms of contribution for the proposed plan, the mechanism is slightly similar to the EPF compulsory salary deduction scheme whereby there will be a 5 per cent deduction from the employee's monthly salary besides the contribution from employers of 2 per cent. This plan would represent an additional financial preparation for retirement in case retirees face a shortage of savings from their EPF. More importantly, compared with the current EPF scheme, health protection is offered to the retirees. It is emphasised that this is an Islamic plan where the funds collected will be invested in Shari'ah-compliant investment instruments and monitored by the Shariah Advisory Council of Bank Negara Malaysia.

**Figure 1: Contribution and Coverage Period of i-HPRP**



Source: Drawn from Chowdhury (2021)

**Figure 2: Proposed i-HPRP**



Source: Drawn from Chowdhury (2021)

**THEORETICAL BACKGROUND**

According to Statman (2017), life-cycle theory (Friedman, 1957) along with portfolio theory explain the act of transforming liquid money into investments throughout the working period and transforming investments into cash during the retirement period. The life-cycle hypothesis posits that people who are particular in their consumption and have positive savings behaviour would continue their habit until retirement age (Modigliani & Brumberg, 1954). Hence, life-cycle theory

has been developed based on rational expectations of individuals' behaviour derived from traditional economic theory (Hardcastle, 2012).

Social exchange theory (Homans, 1958) captured both the psychological and economic behaviour of individuals related to transactional exchanges in society. An individual engages in a contractual relationship by exchanging value with perceived benefits (Homans, 1958). Besides, the values offered by particular products or services create a sense of obligation (commitment) to establish a connection between parties (Bhasin, 2018). Under these circumstances, it can be argued that individuals' financial planning serves as an influence to engage in retirement schemes while savings behaviour, perceived benefits, and commitment affect the preferences for retirement schemes, directly or indirectly.

### **Future Planning**

Individuals make retirement decisions based on their planning for the future, depending on their income level, mortality, and risk attitudes (Alonso-garcía & Sherris, 2019). Furthermore, life expectancy among individuals influences their future planning, and it then affects their expected retirement preferences that lead to investing in annuities (Liu *et al.*, 2021; Owadally *et al.*, 2021; Panyagometh, 2021). In addition, past experiences of financial crisis have a great impact on individuals as they have observed how their financial capacity declined because of job crises and uncertain events that affected their planning (Greenglass *et al.*, 2013; Fiksenbaum *et al.*, 2017). Meanwhile, preparation for retirement has become a crucial component in future planning. The purpose of future planning is not only to secure one's retirement period but also to leave some savings or properties for one's heirs (Aribawa, 2016).

Additionally, public policies and private retirement products influence individuals' future expectations (Alonso-garcía & Sherris, 2019). Consequently, future planning is also an important part of individuals' lives due to the unpredictability of the job market, pandemic crises and economic recessions, which may lead to financial constraints in the future. Prior studies discussed the importance of future planning among individuals during their current financial, retirement decisions and the significance of choosing deferred annuities (Anderson *et al.*, 2017; Mohd Salleh *et al.*, 2020b; Panyagometh, 2021). Individuals' intention to participate in retirement products is likely to depend on how aware they are of future expectations or needs (Hentzen *et al.*, 2021). Therefore, future planning has a direct influence on the acceptance of an annuity and thus participation in a retirement plan. It is thus hypothesised that:

H1: Future planning would have a significant and direct relationship with retirement product preferences.

### **Savings Behaviour**

Individuals generally spend more on unnecessary things that lead them to regret later because they have savings too small for retirement (Lusardi, 1999; Sotiropoulos & d'Astous, 2013). Savings behaviour is developed through a repetitive routine that represents the well-being of individuals (Shim *et al.*, 2012; Chowdhury *et al.*, 2022). It influences individuals to set future objectives, especially with regard to financial needs such as retirement products and insurance coverage (Cude *et al.*, 2006; Croy *et al.*, 2010). Individuals who have a clear vision of their future life preparation are prone to save and accumulate wealth for future survival (Kieren & Weber, 2021). Current studies, including Afthanorhan *et al.* (2020) and Kadir *et al.* (2020), have shown that there is a

significant and positive effect of savings behaviour on retirement planning. A survey by RinggitPlus (2018) reported that 47 per cent of Malaysian employees (age 35 and above) have not yet started to save for their retirement age. Savings enable individuals to forecast the future benefits (in terms of financial benefits, protection and security) that drive the planning for the future and influence participation in a scheme that provides retirement benefits and protection. Therefore, it is hypothesised that:

H2: Savings behaviour would have a significant and direct effect on retirement product preferences.

H3: Future planning mediates the relationship between savings behaviour and retirement products.

### **Perceived Benefit**

Perceived benefit is defined as a relative advantage offered by a product or service which is showed by a positive response from the consumer (Rogers, 1995). Likewise, Wu *et al.* (2014) mentioned perceived benefits as the sum of benefits that meet individuals' needs or demands. In detail, the consumer anticipates financial profitability, societal status, and/or other advantages as perceived benefits to accept an innovated product or service (Rogers, 1995). Individuals' purchase decisions on new products or services will be influenced by their belief in the future benefits of those products or services (Featherman *et al.*, 2021). Some scholars agreed that an individual plans to take part in a relationship due to expected benefits or advantages that they will receive in the future (Sumner *et al.*, 2009; Wan & Antonucci, 2017). Among the previous studies that have agreed on the crucial impact of perceived benefits on the purchase of new products or services are Perry *et al.* (2008), Wang and Midha (2012), Barakat *et al.* (2013), Chao *et al.* (2013), Esmailzadeh *et al.* (2013), Yan *et al.* (2016), and Featherman *et al.* (2021). Therefore, this study hypothesises that:

H4: Perceived benefits would have a significant and direct influence on the retirement plan.

H5: Future planning mediates the relationship between perceived benefits and retirement products.

### **Commitment**

Commitment refers to a steady decision or a promise to do something or remain with an organisation (Cambridge University Press, 2021). Similarly, a committed individual engages in a purchase or participates in a plan with the assurance to abide by the terms. Hence, commitment plays a persuasive factor in a successful long-term relationship (Lai *et al.*, 2009). Barksdale *et al.* (1997) theorised that commitment plays a vigorous role among patients in upholding the relationship with fee-for-service health care.

This study contends that commitment has a direct influence on the preference for a retirement plan. It encourages employees to plan and thus engage in investment decisions or deferred annuities. Conn and Wright (2018) identified the crucial role of commitment in retirement planning. Specifically, commitment to future planning leads to subscription to a retirement plan or to product preferences. Therefore, this study hypothesised that:

H6: Commitment would have a significant and direct effect on retirement plan preferences.

H7: Future planning mediates the relationship between commitment and retirement plans.



## METHODOLOGY

This research is designed based on the quantitative approach whereby data were collected through an online survey of public and private employees located in all states in Malaysia. The survey was conducted between October 2020 and January 2021. A convenient sampling method was chosen to select respondents for this research. After the removal of outliers, a total of 498 respondents were chosen for analysis. Overall, based on the literature, five variables were selected in this research, notably savings behaviour, perceived benefits, and commitment as independent variables, future planning as a mediator, and i-HPRP preferences as the dependent variable. All variables were measured by measurement items which were adopted from past studies, with some modification to fit the context of the study, for instance, savings behaviour (five items), commitment (four items) (Salleh, 2014), perceived benefits (seven items) (Lovell *et al.*, 2010), future planning (five items), and i-HPRP (five items) (Harun-Or-Rashid *et al.*, 2011). A five-point Likert scale was used to measure the items from the respondents. A few statistical analyses were conducted to achieve the research objectives, which include descriptive and partial least squares-structural equation modelling (PLS-SEM) using the SmartPLS version 3.0 statistical software.

## FINDINGS AND ANALYSIS

### Demographic Background of Respondents

Based on the descriptive analysis, males represented 43.2 per cent (totalling 215) while females comprised 56.8 per cent (totalling 283) of the total respondents. Among the respondents, 48 per cent were government employees and 52 per cent were non-government employees, while 30.9 per cent were in the 18–29 years age group, 38.4 per cent in the 30–39 years age group, 24.3 per cent in the 40–49 years age group, and the remaining 6.4 per cent in the 50–59 years age group. A plurality of the respondents (31.9 per cent) were from the RM2,000 to RM4,000 monthly income bracket. With regard to the preferences for i-HPRP, the majority of the respondents treated it as important (mean value of 4.26). Accordingly, Malaysian employees demonstrated that i-HPRP is important.

### PLS-SEM Model

Social science researchers have adopted PLS-SEM as a standard methodology for analysing multifaceted interrelationships between exogenous and endogenous variables (Sarstedt *et al.*, 2020). This method provides various beneficial features that enhanced its applicability in several research sectors in the current decade (Sarstedt *et al.*, 2020); for example, the ability to handle complex models for relatively small data (Hair *et al.*, 2017), to assess definite extent models (Sarstedt *et al.*, 2016), and to identify the scores for a determinate endogenous variable (Rigdon *et al.*, 2019). According to prior published papers, PLS-SEM is an appealing method, particularly for applied sciences, for hypotheses testing through a constructed theoretical model (Carrión *et al.*, 2016; Evermann & Tate, 2016).

In this research, a structural model is formed to test the effect of savings behaviour, perceived benefits, and commitment on retirement preparation, and to gauge the importance of each of these factors in the preferences towards i-HPRP, thus establishing the viability of the proposed model.

**RESULTS**

The fit indices confirmed the model fitness for this study, which validates for structural analysis (refer to **Table 1**). **Figure 3** shows the structural model that was tested. The R<sup>2</sup> (0.48 and 0.182) indicate that the variables of the model could explain 48 per cent and 18.2 per cent of the dependent variables substantially (Cohen, 1988). Further, the path-coefficient was examined by using the bootstrap resampling (5000) technique to assess the significance level of the hypotheses. According to Hair *et al.* (2017), a t-value higher than 1.96 is significant at p-value<0.05, and a t-value higher than 2.58 is significant at p-value<0.01. The t-value, β (path coefficient), and p-value are displayed in **Figure 3**, and the hypotheses results are presented in **Table 2**.

**Table 1: Model fit**

| Fit Indices | Obtained Value | Ideal Threshold |
|-------------|----------------|-----------------|
| SRMR        | 0.046          | <0.08           |
| Chi-Square  | 1991.036       | Upper is better |
| NFI         | 0.865          | >0.9            |

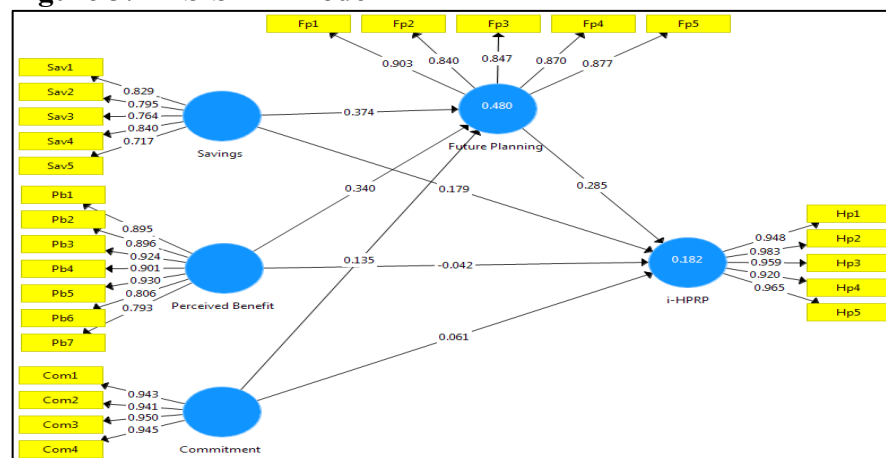
Source: Authors' own

**Table 2: Hypotheses Testing**

| Hypothesis                                   | β      | P-Values | Result            |
|--|--------|----------|-------------------|
| Future Planning → i-HPRP                     | 0.285  | 0.000    | Accepted          |
| Savings → i-HPRP                             | 0.179  | 0.003    | Accepted          |
| Savings → Future Planning                    | 0.374  | 0.000    | Accepted          |
| Perceived Benefit → i-HPRP                   | -0.042 | 0.516    | Rejected          |
| Perceived Benefit → Future Planning          | 0.340  | 0.000    | Accepted          |
| Commitment → i-HPRP                          | 0.061  | 0.291    | Rejected          |
| Commitment → Future Planning                 | 0.135  | 0.002    | Accepted          |
| Savings → Future Planning → i-HPRP           | 0.107  | 0.001    | Partial Mediation |
| Perceived Benefit → Future Planning → i-HPRP | 0.097  | 0.003    | Full Mediation    |
| Commitment → Future Planning → i-HPRP        | 0.039  | 0.024    | Full Mediation    |

Source: Authors' own

**Figure 3: PLS-SEM Model**



Source: Authors' own

Among seven hypotheses, five hypotheses were supported and had signposted direct positive relationships. Specifically, the H1 ( $\beta=0.285$ ,  $t=3.735$ ) path predicts that future planning and retirement plan (i-HPRP) indicate a significant positive relationship where the  $p$ -value $<0.01$ . Similarly, H2 ( $\beta=0.179$ ,  $t=2.984$ ) indicates the path between savings attitude and retirement plan; it depicts a significant positive relationship at  $p$ -value $<0.01$ . H3 is also accepted ( $\beta=0.374$ ,  $t=9.327$ ,  $p<0.01$ ), which presents the relationship between savings attitude and future planning. Meanwhile, H4 ( $\beta=-0.042$ ,  $t=0.649$ ,  $p=0.516$ ) is not supported. In other words, there is no significant relationship between perceived benefits and retirement plans. Hence, H5 ( $\beta=0.340$ ,  $t=6.895$ ) exhibits a significant positive relationship between perceived benefits and future planning. H6 ( $\beta=0.061$ ,  $t=1.057$ ,  $p=0.291$ ) rejects the path that hypothesises the effect of commitment on retirement plan. H6 ( $\beta=0.135$ ,  $t=3.113$ ,  $p=0.002$ ) describes the significant positive relationship between commitment and future planning.

### Mediation Effect

Mediation tests predict the mediation effect of independent variables on the dependent variable. Likewise, this test is conducted to identify the ability of mediator variables to carry an independent variable to a dependent variable (Ramayah *et al.*, 2011). Several techniques were introduced by past studies (Hayes & Preacher, 2010), such as; the Sobel test (Sobel, 1982) or simple methods which entail the causal step methods (Baron & Kenny, 1986), the distribution of product method (MacKinnon *et al.*, 2010), and bootstrapping (Bollen & Stine, 1990). This study applied the PLS-SEM technique to examine the hypotheses (Wold, 1985), while the mediation test was carried out by the bootstrapping 5000 resampling approach (Hair *et al.*, 2012).

The results exhibit the existence of mediation effects for three paths. The first path (H8) ( $\beta=0.107$ ,  $p=0.001$ ) shows a partial mediation effect. In other words, future planning (FP) mediates the relationship between savings attitudes (Sav) and retirement plan (i-HPRP) partially, as savings attitudes have both direct and indirect relationships with a retirement plan. Meanwhile, H9 ( $\beta=0.097$ ,  $p=0.003$ ) is supported and shows the full mediation effect. Needless to say, future planning fully mediates the relationship between perceived benefits and retirement plans. Similarly, H3 ( $\beta=0.039$ ,  $p=0.024$ ) is also supported and indicates the full mediation effect of future planning to commitment to retirement planning.

## DISCUSSION

Based on deep investigation and observation of the existing schemes on retirement offered in Malaysia, it is found that Malaysians mainly rely on EPF savings to secure their retirement. Unfortunately, many have suffered from insufficient income syndrome upon reaching their retirement age. Participation in retirement products is important to ensure financial capability and retirement well-being (Deetlefs *et al.*, 2019). Besides, middle-aged employees prefer to invest to ensure retirement security (Faustino *et al.*, 2020). However, individuals need to make complex decisions in order to combine retirement goals and future needs (Hentzen *et al.*, 2021). In other words, to participate in a retirement scheme or product, individuals often face challenges relating to the amount to be saved, future expectations, benefits, and obligations. Moreover, many people fail to even choose an appropriate retirement plan due to the lack of basic economic concepts (Lusardi *et al.*, 2020). Therefore, the proposed i-HPRP demonstrates a complementary retirement scheme that is Shari'ah compliant and, at the same time, provides an income replacement to the

retirees with at least 50 per cent of their working income. The scheme will not only secure the retirees' monthly income but will also provide investment returns as an additional income and, most importantly, will offer financial protection in case of total permanent disability, illness, and death.

Based on the descriptive results, the preferences toward the proposed i-HPRP are reasonably acceptable. Both public and private employees have shown positive responses to the preferences. Therefore, the findings clearly demonstrate that the proposed model is marketable and able to satisfy the employees' future retirement needs. In other words, consumers deemed it as a useful plan that is able to fulfil their retirement planning. Furthermore, the features of the proposed model—which include health protection along with retirement income—are deemed attractive to employees. Moreover, the plan is designed based on Islamic principles that fulfil the social demands of the majority of the employees in Malaysia. The findings aligned with the past study conducted by Mohd Kassim (2003), who stressed the need for an annuity product. The result is also consistent with Owadally *et al.* (2021), who considered deferred annuities as an optimal strategy for the purpose of enhancing expected retirement income. Meanwhile, the proposed plan may have a crucial impact on the development of the annuities scheme. In terms of the value of money, the proposed plan has indicated two separate accounts to provide the benefits. Moreover, the study proposed *takāful* operators as institutional agents to operate the funds based on Shari'ah contracts such as *wakālah*, *muḍārabah*, *mushārah*, *hibah*, and *waqf*. Under these circumstances, it is expected that the plan is totally Shari'ah-compliant in terms of structure, operations and investment. *Takāful* operators should also comply with the Takaful Operational Framework (TOF) and Shariah Governance Policy Document (SGPD) of Bank Negara Malaysia to ensure proper execution and governance of the plan, similar to other products.

Nevertheless, the responses of current retirees demonstrated that there are other important factors to be considered in the proposed model. For instance, the savings behaviour of respondents exhibited a dominant factor in the preference for the proposed plan. Employees are prone to adopt the proposed plan for the purpose of savings for retirement. Similarly, employees' future planning influenced them to accept the proposed plan. This finding is consistent with previous studies (Liu *et al.*, 2021; Owadally *et al.*, 2021; Panyagometh, 2021), but it also supports the socially practised concept that is preferable in a retirement plan. Employees concerned about the future are influenced to participate in the proposed model. In other words, the proposed plan was able to cover the employees' planning for the future. On the other hand, the perceived benefit did not directly influence the preference for the proposed plan, but the perceived benefit did motivate future planning. This finding contradicts a previous study (Hentzen *et al.*, 2021), where perceived usefulness directly influences the engagement in a retirement mobile app. However, the findings of this study clarified that perceived benefit motivates employees to plan for the future while future planning leads to choosing the proposed plan. Similarly, commitment is directly associated with future planning while it does not directly persuade in the preferences towards the proposed plan. Overall, savings behaviour directly and indirectly influences the preferences for i-HPRPs while perceived benefit and commitment indirectly influence the preferences for the proposed plan.

Based on the overall findings, the proposed i-HPRP can be executed in the market. The viability of the proposed plan is considered valid, and with government intervention, it will be a noteworthy retirement plan. The plan will help to sustain the economic growth of the country by enhancing the market share of the *takāful* industry as well as employees' retirement income

growth. Since savings behaviour is an important factor, the employees will be interested in securing their retirement income by participating in a risk-free Sharī'ah-compliant product.

## CONCLUSION

The main purpose of this study is to examine the viability of the proposed i-HPRP. Based on the findings, it is confirmed that the plan is viable where the majority of the employees, both from the public and private sectors, have shown their interest in the plan. The plan is mostly viable among employees with good savings behaviour who were thinking about their future plans.

The findings of this study have several limitations. Firstly, the data were collected online during the pandemic COVID-19. Therefore, some employees might not have fully understood the product as it was not explained verbally by the enumerator. Secondly, the analysis could be further enhanced by using another statistical method to confirm its robustness. Finally, the data collected during the pandemic situation might have received some variations in responses. Therefore, a future study may collect data in the post-pandemic situation, which can bring more robustness to the results.

Overall, the results of this study have several implications. First of all, the proposed plan would inspire individuals to start planning for their retirement through a risk-free retirement product that combines both medical benefits and income for retirement. Secondly, the proposed plan would give some input to *takāful* operators in Malaysia to introduce a new annuity plan. Such plans are currently very limited in the industry. Among the special features of the plan are that it will add to the existing EPF scheme, and the contribution will be subsidised partly by employers/government. It is expected that the proposed plan will mitigate the stress of employees who are mostly concerned about income and the cost of health care during retirement. In addition, the findings will be useful to the related government agencies in the effort to reduce the high numbers of poor retirees as well as to reduce the health expenditure of public hospitals. Overall, the findings reveal the necessity of public education on future awareness of the retirement plan by both the government and private sector. The private sector, especially *takāful* operators, should develop more inclusive retirement products rather than only concentrate on financial protection.

## ACKNOWLEDGEMENT

The research team would like to acknowledge the Ministry of Higher Education and International Islamic University for a research grant under FRGS19-016-0624/UIAM/02/2.

## REFERENCES

- Afthanorhan, A., Al-Mamun, A., Zainol, N.R., Foziah, H. & Awang, Z. (2020), 'Framing the retirement planning behavior model towards sustainable wellbeing among youth: the moderating effect of public profiles', *Sustainability (Switzerland)*, Vol. 12 No. 21, pp. 1–24.
- Alonso-garcía, J. & Sherris, M. (2019), 'One size fits all ? Drawdown structures in Australia and The Netherlands', *The Journal of the Economics of Ageing*, Vol. 13, pp. 14–27.

- Anderson, A., Baker, F. & Robinson, D.T. (2017), 'Precautionary savings, retirement planning and misperceptions of financial literacy', *Journal of Financial Economics*, Vol. 126 No. 2, pp. 383–398.
- Aribawa, D. (2016), 'Pengaruh literasi keuangan terhadap kinerja dan keberlangsungan UMKM di Jawa Tengah', *Jurnal Siasat Bisnis*, Vol. 20 No. 1, pp. 1–13.
- Barakat, L.P., Patterson, C.A., Mondestin, V., Chavez, V., Austin, T., Robinson, M.R. & Li, Y. (2013), 'Initial development of a questionnaire evaluating perceived benefits and barriers to pediatric clinical trials participation', *Contemporary Clinical Trials*, Vol. 34 No. 2, pp. 218–226.
- Barksdale, H.C., Johnson, J.T. & Suh, M. (1997), 'A relationship maintenance model: a comparison between managed health care and traditional fee-for-service', *Journal of Business Research*, Vol. 40, pp. 237–247.
- Baron, R.M. & Kenny, D.A. (1986), 'The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations', *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173–1182, <https://doi.org/10.1037/0022-3514.51.6.1173>.
- Bhasin, H. (2018), 'Social exchange theory in business', *Marketing91*, available at: <https://www.marketing91.com/social-exchange-theory-in-business/> (accessed 18 July 2019).
- Bollen, K.A. & Stine, R. (1990), 'Direct and indirect effects: classical and bootstrap estimates of variability', *Sociological Methodology*, Vol. 20, pp. 115–140, <https://doi.org/10.2307/271084>.
- Cambridge University Press (2021), 'Commitment', *Cambridge Dictionary*, available at: <https://dictionary.cambridge.org/dictionary/english/commitment> (accessed 18 July 2019).
- Carrión, G.C., Henseler, J., Ringle, C.M. & Roldán, J.L. (2016), 'Prediction-oriented modeling in business research by means of PLS path modeling: introduction to a JBR special section', *Journal of Business Research*, Vol. 69 No. 10, pp. 4545–4551.
- Chao, C., Yu, C., Cheng, B. & Chuang, P. (2013), 'Trust and commitment in relationships among medical equipment suppliers: transaction cost and social exchange theories', *Social Behaviour and Personality*, Vol. 41 No. 7, pp. 1057–1070.
- Chowdhury, M.A.M. (2021), 'Islamic health protection retirement plan for Malaysian employees: an investigation from a behavioural approach', International Islamic University Malaysia, Kuala Lumpur.
- Chowdhury, M.A.M., Embi, N.A.C., Laksana, N.N.M., Mohd Salleh, M.C. & Razali, S.S. (2022), 'Moderating effect of gender, income and age towards an Islamic health protection retirement plan (i-HPRP)', *American Journal of Economics and Business Innovation (AJEBI)*, Vol. 1 No. 1, pp. 19–29.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, 2nd Edn., Routledge, New York, NY.
- Conn, L.G. & Wright, F.C. (2018), 'Retirement plans and perspectives among general surgeons: a qualitative assessment', *Canadian Journal of Surgery*, Vol. 61 No. 5, pp. 319–325.
- Croy, G., Gerrans, P. & Speelman, C. (2010), 'The role and relevance of domain knowledge, perceptions of planning importance, and risk tolerance in predicting savings intentions', *Journal of Economic Psychology*, Vol. 31 No. 6, pp. 860–871.

- Cude, B., Lawrence, F., Lyons, A., Metzger, K., LeJeune, E., Marks, L. & Machtmes, K. (2006), 'College students and financial literacy: what they know and what we need to learn', *Eastern Family Economics and Resource Management Association*, pp. 102–109.
- Deetlefs, A.M.J., Bateman, H., Dobrescu, L.I., Newell, B.R., Ortmann, A. & Thorp, S. (2019), 'Engagement with retirement savings: it is a matter of trust', *Journal of Consumer Affairs*, Vol. 53 No. 3, pp. 917–945.
- Department of Statistics Malaysia (2020), 'Population projection (revised), Malaysia, 2010-2040', available at: [https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul\\_id=Y3kwU2tSNVFDOWp1YmtZYnhUeVBEdz09&menu\\_id=L0pheU43NWJwRWVVSZklWdzQ4TlhUT09](https://www.dosm.gov.my/v1/index.php?r=column/cthemByCat&cat=118&bul_id=Y3kwU2tSNVFDOWp1YmtZYnhUeVBEdz09&menu_id=L0pheU43NWJwRWVVSZklWdzQ4TlhUT09) (accessed 20 April 2021).
- Esmailzadeh, P., Sambasivan, M., Nezakati, H. & Kumar, N. (2013), 'How social exchange in hospitals can influence adoption of clinical IT?', *Journal of Business Administration and Education*, Vol. 2 No. 2, pp. 35–64.
- Evermann, J. & Tate, M. (2016), 'Assessing the predictive performance of structural equation model estimators', *Journal of Business Research*, Vol. 69 No. 10, pp. 4565–4582.
- Faustino, J.A.C., Serrano, J.O. & de Guzman, A.B. (2020), 'What's on your bucket list? Utility and importance of the retirement preferences of 40–70-year-old Filipino teachers using discrete choice estimation', *Educational Gerontology*, Vol. 46 No. 11, pp. 668–677.
- Featherman, M., Jia, S. (Jasper), Califf, C.B. & Hajli, N. (2021), 'The impact of new technologies on consumers beliefs: reducing the perceived risks of electric vehicle adoption', *Technological Forecasting and Social Change*, Vol. 169, p. 120847.
- Fiksenbaum, L., Marjanovic, Z. & Greenglass, E. (2017), 'Financial threat and individuals' willingness to change financial behavior', *Review of Behavioral Finance*, Vol. 9 No. 2, pp. 128–147.
- Friedman, M. (1957), 'The permanent income hypothesis', *A Theory of the Consumption Function*, Vol. I, Princeton University Press, pp. 20–37.
- Greenglass, E., Marjanovic, Z. & Fiksenbaum, L. (2013), 'The impact of the recession and its aftermath on individual health and well-being', in Antoniou, A.-S.G. & Cooper, C. (Eds.), *The Psychology of the Recession in the Workplace*, Edward Elgar, Cheltenham, pp. 42–58.
- Hair, J.F., Sarstedt, M., Ringle, C.M. & Mena, J.A. (2012), 'An assessment of the use of partial least squares structural equation modeling in marketing research', *Journal of the Academy of Marketing Science*, Vol. 40 No. 3, pp. 414–433, <https://doi.org/10.1007/s11747-011-0261-6>.
- Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. & Thiele, K.O. (2017), 'Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods', *Journal of the Academy of Marketing Science*, Vol. 45 No. 5, pp. 616–632.
- Hardcastle, R. (2012), 'How can we incentivise pension saving? A behavioural perspective', Working Paper No. 109, Department for Work and Pensions, available at: <http://statistics.dwp.gov.uk/asd/asd5/WP109.pdf> (accessed 20 April 2020).
- Harun-Or-Rashid, M., Yoshida, Y., Rashid, M.A., Nahar, S. & Sakamoto, J. (2011), 'Perceptions of the Muslim religious leaders and their attitudes on herbal medicine in Bangladesh: a cross-sectional study', *BMC Research Notes*, Vol. 4 No. 1, p. 366.

- Hayes, A.F. & Preacher, K.J. (2010), ‘Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear’, *Multivariate Behavioral Research*, Vol. 45 No. 4, pp. 627–660, <https://doi.org/10.1080/00273171.2010.498290>.
- Hentzen, J.K., Hoffmann, A.O.I. & Dolan, R.M. (2021), ‘Which consumers are more likely to adopt a retirement app and how does it explain mobile technology-enabled retirement engagement?’, *International Journal of Consumer Studies*, pp. 1–23.
- Heong, Y.S. (2020), ‘A better safety net for senior citizens’, *New Straits Times*, available at: <https://www.nst.com.my/opinion/columnists/2020/01/558585/better-safety-net-senior-citizens> (accessed 19 April 2021).
- Homans, G.C. (1958), ‘Social behavior as exchange’, *The American Journal of Sociology*, pp. 597–606.
- Johari, A.H., Zai, F.H., Hussain, L. & Ali, M.M. (2014), ‘Exploring a Shari’ah-compliant model for retirement annuity plans’, *I-FIKR*, available at: <https://ifikr.isra.my/library/pub/4912/exploring-a-shariah-compliant-model-for-retirement-annuity-plans> (accessed 8 September 2022).
- Kadir, J.M.A., Zainon, S., Ismail, R.F., Aziz, S.N.A. & Amran, A.A.I. (2020), ‘Retirement planning and its impact on working individuals’, *European Journal of Molecular and Clinical Medicine*, Vol. 7 No. 6, pp. 1550–1559.
- Kieren, P. & Weber, M. (2021), ‘When saving is not enough: wealth decumulation in retirement’, *Journal of Pension Economics and Finance*, pp. 1–28.
- KWAP (2021), ‘Malaysia provident/pension fund value chain’, *Kumpulan Wang Persaraan*, available at: <https://www.kwap.gov.my/EN/Pages/AboutKwapPensionFundValueChain.aspx> (accessed 5 April 2021).
- KWSP (2021), ‘Know your responsibilities as an employer’, *KWSP/EPF*, available at: <https://www.kwsp.gov.my/employer/contribution/all-about-your-responsibility> (accessed 3 May 2021).
- Lai, C., Pai, D., Yang, C. & Lin, H. (2009), ‘The effects of market orientation on relationship learning and relationship performance in industrial marketing: the dyadic perspectives’, *Industrial Marketing Management*, Vol. 38 No. 2, pp. 166–172.
- Liew, H. (2020), ‘EPF alone won’t be enough for retirement. here’s how you can save more for the future’, *Rojak Daily*, available at: <https://rojakdaily.com/lifestyle/article/10878/epf-alone-won-t-be-enough-for-retirement-here-s-how-you-can-save-more-for-the-future> (accessed 3 May 2021).
- Liu, C., Bai, X. & Knapp, M. (2021), ‘Multidimensional retirement planning behaviors, retirement confidence, and post-retirement health and well-being among Chinese older adults in Hong Kong’, *Applied Research in Quality of Life*, Vol. 17 No. 2, pp. 833–849, <https://doi.org/10.1007/s11482-020-09901-7>.
- Lovell, G.P., El-Ansari, W. & Parker, J.K. (2010), ‘Perceived exercise benefits and barriers of non-exercising female university students in the United Kingdom’, *International Journal of Environmental Research and Public Health*, Vol. 7, pp. 784–798.
- Lusardi, A. (1999), ‘Information, expectations, and savings for retirement’, in Aaron, H. (Ed.), *Behavioral Dimensions of Retirement Economics*, Brookings Institution Press and Russell Sage Foundation, Washington, D.C., pp. 81–115.



- Lusardi, A., Mitchell, O.S. & Oggero, N. (2020), 'Debt and financial vulnerability on the verge of retirement', *Journal of Money, Credit and Banking*, Vol. 52, pp. 1005–34.
- MacKinnon, D.P., Lockwood, C.M. & Williams, J. (2010), 'Confidence limits for the indirect effect: distribution of the product and resampling methods', *Multivariate Behavioral Research*, Vol. 39 No. 1, pp. 1–24, <https://doi.org/10.1207/s15327906mbr3901>.
- Modigliani, F. & Brumberg, R. (1954), 'Utility analysis and the consumption function: an interpretation of cross section data', in K.K. Kurihara (Ed.), *Post Keynesian Economics*, Ruthers University Press, New Brunswick, New Jersey.
- Mohd Kassim, Z.A. (2003), 'Pension design and marketing the annuity Malaysia experience', available at: <http://www.oecd.org/finance/financial-markets/2638128.pdf> (accessed 20 April 2021).
- Mohd Salleh, M.C., Chowdhury, M.A.M., Nasarudin, A.F.B.M. & Ratnasari, R.T. (2020a), 'The impact of cognitive factors on individuals' financial decisions', *Management & Accounting Review*, Vol. 19 No. 3, pp. 69–88.
- Mohd Salleh, M.C., Chowdhury, M.A.M., Razali, S.S. & Megat Laksana, N.N. (2020b), 'Retirement schemes, its challenges and ways of reformation: a cross-border study', *International Journal of Asian Social Science*, Vol. 10 No. 9, pp. 507–520.
- Nayan, M.A. & Othman, Y.H. (2019), 'The importance of Islamic retirement planning in Malaysia', *Contemporary Issues in Islamic Management, Finance & Laws*, pp. 7–9.
- New Straits Times* (2021a), 'Lack of savings a major concern', 2 March, available at: <https://www.nst.com.my/news/nation/2021/03/670207/lack-savings-major-concern> (accessed 20 April 2021).
- New Straits Times* (2021b), 'Rina: Malaysia prepares for ageing nation status by 2030', 9 April, available at: <https://www.nst.com.my/news/nation/2021/04/680972/rina-malaysia-prepares-ageing-nation-status-2030> (accessed 30 April 2021).
- Owadally, I., Jang, C. & Clare, A. (2021), 'Optimal investment for a retirement plan with deferred annuities', *Insurance: Mathematics and Economics*, Vol. 98, pp. 51–62.
- Panyagometh, K. (2021), 'Dynamic spending and risk-based simulation in retirement planning', *Asian Economic and Financial Review*, Vol. 11 No. 4, pp. 337–346.
- Perry, M., Williams, R.L., Wallerstein, N. & Waitzkin, H. (2008), 'Social capital and health care experiences among low-income individuals', *American Journal of Public Health*, Vol. 98 No. 2, pp. 330–336.
- Ramayah, T., Lee, J.W.C. & In, J.B.C. (2011), 'Network collaboration and performance in the tourism sector', *Service Business*, Vol. 5 No. 4, pp. 411–428, <https://doi.org/10.1007/s11628-011-0120-z>.
- Rigdon, E.E., Becker, J.M. & Sarstedt, M. (2019), 'Factor indeterminacy as metrological uncertainty: implications for advancing psychological measurement', *Multivariate Behavioral Research*, Vol. 54 No. 3, pp. 429–443.
- RinggitPlus (2018), 'Government and private hospitals in Malaysia: how much do they really cost?', available at: <https://ringgitplus.com/en/blog/Insurance/Government-and-Private-Hospitals-in-Malaysia-How-Much-Do-They-Really-Cost.html> (accessed 20 April 2021).
- Rogers, E. (1995), *Diffusion of Innovations*, Fourth, Free Press, New York, NY.

- Salleh, M.C.M. (2014), *Developing a Model of Measuring Islamic Relationship Marketing Practice among Takaful Agents: Exploring Its Implications on Customer Retention*, PhD Thesis, International Islamic University Malaysia, Kuala Lumpur.
- Sarstedt, M., Hair, J.F., Ringle, C.M., Thiele, K.O. & Gudergan, S.P. (2016), 'Estimation issues with PLS and CBSEM: Where the bias lies!', *Journal of Business Research*, Vol. 69 No. 10, pp. 3998–4010.
- Sarstedt, M., Ringle, C.M., Cheah, J.H., Ting, H., Moisescu, O.I. & Radomir, L. (2020), 'Structural model robustness checks in PLS-SEM', *Tourism Economics*, Vol. 26 No. 4, pp. 531–554.
- Shim, S., Serido, J. & Tang, C. (2012), 'The ant and the grasshopper revisited: the present psychological benefits of saving and future oriented financial behaviors', *Journal of Economic Psychology*, Vol. 33 No. 1, pp. 155–165.
- Sobel, M.E. (1982), 'Asymptotic confidence intervals for indirect effects in structural equation models', *Sociological Methodology*, Vol. 13, pp. 290–312, <https://doi.org/10.2307/270723>.
- Sotiropoulos, V. & d'Astous, A. (2013), 'Attitudinal, self-efficacy, and social norms determinants of young consumers' propensity to overspend on credit cards', *Journal of Consumer Policy*, Vol. 36 No. 2, pp. 179–196.
- Statman, M. (2017), 'Standard and behavioral life-cycle theories and public policy', *The Journal of Retirement*, Vol. 5 No. 2, pp. 12–25.
- Sumner, J., Liberman, A., Rotarius, T., Wan, T.T.H. & Eaglin, R. (2009), 'Health care communication networks disseminating employee information for hospital security', *The Health Care Manager*, Vol. 28 No. 4, pp. 287–298.
- Tahiri Jouti, A. (2019), 'An integrated approach for building sustainable Islamic social finance ecosystems', *ISRA International Journal of Islamic Finance*, Vol. 11 No. 2, pp. 246–266.
- Wan, W.H. & Antonucci, T.C. (2017), 'Social exchange theory and aging', in Pachana, N.A. (Ed.), *Encyclopedia of Geropsychology*, <https://doi.org/10.1007/978-981-287-080-3>.
- Wang, Y. & Midha, V. (2012), 'User self-disclosure on health social networks: a social exchange perspective', *Thirty Third International Conference on Information Systems*, IT for Health Care Management, Orlando, pp. 1–11.
- Wold, H. (1985), 'Partial least squares', in S. Kotz & N. Johnson (Eds.), *Encyclopedia of Statistical Sciences*, pp. 581–591, John Wiley & Sons, Inc., <https://doi.org/10.2307/2965452>.
- Wu, L.Y., Chen, K.Y., Chen, P.Y. & Cheng, S.L. (2014), 'Perceived value, transaction cost, and repurchase-intention in online shopping: a relational exchange perspective', *Journal of Business Research*, Vol. 67 No. 1, pp. 2768–2776.
- Yan, Z., Wang, T., Chen, Y. & Zhang, H. (2016), 'Knowledge sharing in online health communities: a social exchange theory perspective', *Information & Management*, Vol. 53 No. 5, pp. 1–18.

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