مجلة جامعة الشارقة للعلوم الإنسانية والاجتماعية

جامعة الشارقة
UNIVERSITY OF SHARJAH

University of Sharjah Journal

A Refereed Scientific journal

of

Humanities & Social Sciences

Vol. 21, No. 3
Rabi' al-Awwal 1445 A.H. / September 2024 A.D

ISSN : 1996 - 2339

https//:doi.org/10.36394/jhss/21/3/2

Retirement Saving Behaviour: the Moderating Effect of Socio-Demographics

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Received on: 14-01-2023 **Accepted on: 03-07-2023**

Abstract:

This study was conducted to examine the relationship between future time perspective (FTP), financial risk tolerance (FRT), knowledge of financial planning for retirement (KFPR), and retirement saving behaviour (RSB), as well as the moderating effect of demographics, on the relationship between these variables. Data was collected primarily through non-probability judgmental sampling. 312 United Arab Emirates (UAE) individuals working at universities participated in the study. Data analysis was carried out using Smart-PLS and SPSS software packages. It was found that FTP positively influenced RSB, while FRT was insignificant. Moreover, age, gender, nationality, education level, and monthly income played moderating roles in the model. Policymakers should implement policies to include personal finance and financial planning in school and university curricula to improve people's awareness of the importance of retirement planning. Education resources can be wisely channeled to address insufficient retirement planning by regulators and policymakers.

Keywords: Retirement saving behaviour, financial risk tolerance, Future time perspective, Knowledge of Financial Planning.

JEL: D1, D14, E2, E21

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1. Introduction

The retirement saving level has been influential in relevant theoretical research and policy formulations across different economies over the last few years. Not saving conscientiously in the early stages of life would leave people with a shortage of savings later in life, causing them to be unable to retire and potentially, in turn, leading them to be in distress (Bareket-Bojmel et al., 2021). As per Murphy *et al.* (2009), optimizing their assets and income should be the top priority for those planning their retirement so that they will not run short of income throughout their lives and during their retirement. The Under United Arab Emirates (UAE) Pension Law, UAE citizens who have worked for at least 20 years or have reached retirement age are eligible for pensions and different retirement benefits. Conversely, foreign individuals may earn end-of-contract service benefits equal to two years' salary while not entitled to any pension. If approved by the Minister of Human Resources and Emiratization, they can work up to 65. Some foreigners may spend most of their lives working in UAE, leaving them unable to contribute to their homeland's social security system (El Sawy, 2020). Financial Risk Solutions' Chief Marketing Officer, Frank Carr, proposed that ensuring guaranteed pensions for all employees could make the UAE a leading country in providing retirement benefits (Al Rifai, 2019). Although the UAE and the rest of the Gulf Cooperation Council take pride in providing generous retirement plans, securing a financially secure future is costly for any government (Gulf News, 2018, December 10). Sheikh Mohammed Al Khalifa, president of the Supreme Council of Health in UAE, mentioned that: fewer children would be born in future years, life expectancy will continue to climb, and the ratio of retirees to workers will triple by the end of the century, and this put pressure on public finances.

Additionally, according to the Savings Index from the National Bonds Corporation, as the cost of living increases, eight in ten UAE residents think they are saving too little for the future (Gulf News, 2018, June 5). El Sawy (2020) reported that 37% of the UAE's foreign workers planned to work far beyond the retirement age to meet their needs at that stage. Therefore, the present study's objectives were as follows. First, this study examined the link between the future time perspective (FTP), financial risk tolerance (FRT), knowledge of financial planning for retirement (KFPR), and retirement saving behaviour (RSB). The second objective was to investigate the moderating effect of sociodemographic factors (Age, Education, Gender, Income, and Nationality) on the link between; FTP, FRT, KFPR, and RSB.

The initial focus of this study was to raise awareness of society by determining the general tendency towards factors such as saving and knowledge level and by offering appropriate suggestions for the results. This study has contributed to understanding individuals' saving behaviour for retirement by examining the effect of different factors in the UAE. This study contributes to retirement saving behavior in the following ways. First, this study is among the few that explores factors influencing retirement saving behavior in the UAE. The UAE has experienced tremendous growth in the past three decades, transforming from an oil-dependent economy to a service and industrial economy.

Additionally, research on how individuals consider retirement in UAE and how they save for retirement is lacking. This study's results shed light on the important factors influencing retirement saving behavior in UAE. Second, it contributes to the knowledge of saving behavior among skilled employees since the sample is higher education employees. This

also helps reduce some of the burdens on the government by guaranteeing financial well-being for its citizens once they retire. Third, this paper examines how demographic factors can moderate the link between time perspective, risk tolerance, retirement planning knowledge, and retirement saving behavior. Previous studies examined demographic variables as control variables or factors directly influencing saving behavior (Amari et al., 2020). Many studies have used demographic characteristics to measure individual differences in saving behaviour (Hamurcu & Çamurcu, 2016; Sulaiman, 2012). However while identifying the key factors that influence saving behavior is essential, these factors are conceptually linked to saving behavior through a series of relationships that involve demographic factors. Still, they do not directly determine saving behavior (Amari et al., 2020).

2. Literature Review

2.1. Retirement saving behaviour

Saving is putting aside part of one's present earnings for future needs. Saving strategies vary and include cash savings, deposits, investments, stocks, and pension schemes (Kotlikoff, 1993). In other words, an economic agent deliberately decides to invest some of their current income or wealth and increase their earning capacity by saving. Economists define savings as spending less than a given amount of money at a given time and allowing such a money to be spent in the future Mori (2019). Since, after retirement, individuals need to replace their wages with savings, it is necessary to find out which factors most affect RSB. Ng *et al.*, 2011, suggested that; factors influencing psychological processes, including environmental influences and individual differences, highly influenced the ability and the desire to save for retirement. Individuals ' attitudinal features might affect decisions regarding their behaviour toward retirement savings (Salleh *et al.*, 2018).

A Study by Hershey et al., 2007) showed that higher FTP, FRT, and KFPR levels contributed to more aggressive saving profiles.

Similarly, Gutierrez and Hershey (2014) discussed saving behaviour among younger and middle-aged adults. For both groups, KFPR was found to be positively related to RSB. Among the young, FRT were significantly and positively associated with RSB, while FTP was insignificantly related to RSB. The opposite case was true regarding FRT and FTP among the middle-aged group.

2.2. Future time perspective

FTP has been identified as the passion of humans for future planning (Adams and Rau, 2011). According to Bandura (1986), goal-based motivation and social-cognitive theories emphasised the predicted future as a key predictor of behaviour (Khan *et al.*, 2020). An individual's future experience is ultimately expected to significantly affect the formation of objectives and plans that influence actions and results (Eastman *et al.*, 2020). Despite having different objectives, several previous studies have investigated almost the same issue, as each has examined the influence of FTP on RSB (Hershey and Mowen, 2000; Hershey *et al.*, 2007; Hershey *et al.*, 2010 and Kooij *et al.*, 2018).

Hershey *et al.* (2010a) found that FTP was the most important predictor of saving practices for retirement. Furthermore, other studies have also found that FTP was positively linked to RSB, contributing to a more constructive approach to planning and retirement saving with a longer FTP (Lusardi, 1999; Svartdal *et al.*, 2018). Conversely, Yang and Devaney (2011) and Caines *et al.* (2019) found that FTP was negatively related to RSB. This relationship was interpreted as being that people, who felt that

the future was short, were much more ready for retirement since it meant they were not required to work in the future.

Thus, the first hypothesis of this study is:

H_1: FTP is positively related to RSB.

2.3. Financial risk tolerance

Retirement investment decisions are important decisions a person can make, thus, underlining the importance of recognising the guidance factors for individual investment decision-making. According to Jacobs-Lawson and Hershey (2005), few studies have investigated individuals' retirement saving decisions concerning risk tolerance, while most have focused on financial investment decisions. Larson *et al.* (2016) and Pinjisakikool (2018) identified FRT as the highest possible uncertainty someone could bear when making a financial decision. Individuals' propensity to plan and willingness to save and invest was significantly correlated with risk tolerance (Magendans *et al.*, 2017). Additionally, a recent study by Shah *et al.* (2020) found a positive link between demographic factors and financial risk tolerance in Pakistan. Stawski *et al.*, 2007 and Larson *et al.* (2016) found that FRT was positively related to RSB. Conversely, Wang (2009) and Gutierrez and Hershey (2014) found no link between FRT and RSB.

Thus, the second hypothesis of this study is:

H_2: FRT is positively or negatively related to RSB.

2.4. Knowledge of Financial Planning for retirement

According to Palaci *et al.* (2017) and Palaci *et al.* (2018), people must have adequate knowledge regarding retirement savings and investment

plans to ensure a better life in retirement. Knowledge-based planning reduces the consistency of a plan's uncertainty and enhances the feasibility of Planning (Faught *et al.*, 2018). Gaurav & Singh (2012) identified financial knowledge as a standard set of systematically discovered and collected financial information. The set of wealth accumulation activities that lead to meeting post-retirement needs is known as retirement financial planning (Topa *et al.*, 2018). Kim *et al.*, 2014 claimed that a lack of adequate awareness had caused the failure of individuals to prepare for retirement.

Individuals' financial planning knowledge impacts their retirement-saving decisions' efficiency, as Palaci et al. (2017) claimed. Focusing on middle-aged adults, Palaci *et al.* (2017) and Palaci *et al.* (2018) examined the relationship between perceived financial planning knowledge and RSB. A positive link exists between expected financial planning knowledge and pre-retirement saving (Jiménez *et al.*, 2019). Participants with a better understanding of financial planning were thought to be the most financially ready for retirement.

Thus, the third hypothesis of this study is:

H_3: KFPR is positively related to RSB.

2.5. Demographics

Many financial planning and investment studies have used demographic factors to measure individual differences in saving behaviour (Hershey *et al.*, 2007). The psychographic method, which identifies the motivations behind the saving actions of individuals, predicting psychographic and demographic variables through a mixture of variables, has been used in retirement saving literature by Afthanorhan *et al.* (2020) and Ketkaew *et al.* (2022). Age, level of education, gender, monthly income, and nationality

have been examined among the factors related to retirement planning and saving plans. These are the most important demographic factors in preparation for individual retirement.

2.5.1. Age

Joo and Grable (2005) found that age significantly affected saving for the future. The same was stated by Joo and Pauwals (2002), who confirmed the influence of age on an individual's actions regarding retirement planning. Phua & McNally (2008) indicated that as individuals became older, they were more motivated to act toward retirement. Afthanorhan *et al.* (2020) research showed that retirement saving increased with age, whereby older individuals tended to save more for retirement.

Furthermore, Duasa and Yusof (2013) and Afthanorhan *et al.* (2020) found a positive relationship between age and FTP, whereby older individuals had a long future orientation. Additionally, Joo and Grable (2005) found a positive relationship between age and FRT. They stated that older individuals were more risk-tolerant. At the same time, Duasa and Yusof (2013), and Mishra and Mishra (2016) found that age and FRT are negatively correlated, with younger individuals being more risk-tolerant. Finally, Gutierrez and Hershey (2014) found a positive relationship between age and KFPR, whereby older individuals were more knowledgeable about retirement financial planning. Conversely, Hershey and Mowen (2000) found a negative relationship between age and KFPR, whereby younger individuals were more knowledgeable about retirement financial planning.

Studies have found that age has been a significant predictor of RSB, FTP, FRT, and KFPR (e. g. Mansor *et al.*, 2015; Kerry and Embretson, 2018). Therefore, it was hypothesised that age moderated the link between RSB and the variables in the study.

2.5.2. Education Level

The findings of Hassan *et al.*, 2016 suggested that education was one of the critical factors that influenced an individual's readiness for retirement planning. Robertson-Rose (2019) found that education significantly affects an individual's future savings level. Individuals were more likely to be concerned about preparing for retirement and acting toward retirement when their level of education was higher. Harrison *et al.* (2017) found a positive relationship between an individual's education level and retirement savings, whereby individuals with a higher level of education tended to save more for their retirement.

Prior research has found that the education level has been a significant predictor of RSB, FTP, FRT, and KFPR (e. g. Hershey and Mowen, 2000; Mansor *et al.*, 2015). Hence, the present study's authors hypothesised that education moderates the link between RSB, FRT, FTP, and KFPR.

2.5.3. Gender

Recent findings by Marinelli *et al.* (2017) suggested that men and women did not think, perceive, or behave similarly regarding retirement planning. Joo and Grable (2005) and Hibbert *et al.* (2013) found that gender significantly affected saving for the future. Males were found to invest more to save for retirement (Marinelli *et al.*, 2017; Belaounia *et al.*, 2020).

Prior studies have found that gender has been a significant predictor of RSB, FTP, FRT, and KFPR (e. g., Hershey and Mowen, 2000; Joo and Grable, 2005; Petkoska and Earl, 2009; Duasa and Yusof, 2013; Marinelli *et al.*, 2017; Belaounia *et al.*, 2020; Baeckström *et al.*, 2021). Thus, the authors of this study hypothesised that gender moderates the link between RSB on the one hand and FTP, FRT, and KFPR on the other.

2.5.4. Income

According to Kim *et al.* (2005) and Lee *et al.* (2018), attitude and retirement behaviour were generally affected by income. In matters relating to retirement, income was a crucial and necessary indicator. Joo and Grable (2005) and Ketkaew *et al.* (2019) found that income significantly affected saving for the future. Yao *et al.* (2003) found that low-income earners were less likely to be ready to retire. Mansor *et al.* (2015) and Ketkaew *et al.* (2019) found a positive relationship between monthly income and retirement savings, whereby individuals with higher incomes saved more for retirement.

Previous studies have found that income was an essential predictor of; RSB, FTP, FRT, and KFPR (e. g. Petkoska and Earl, 2009; Feng, 2018). Therefore, this study hypothesised that monthly income moderates the link between RSB on the one hand and FTP, FRT, and KFPR on the other.

2.5.5. Nationality

For studies conducted in multiracial societies, examining the influence of ethnicity or nationality is essential. Kimiyaghalam *et al.* (2017) claimed that individuals from different ethnic groups had diverse views, perceptions, and practices due to their cultural and ethnic roots, affecting their retirement planning and saving practices. Yuh and DeVaney (1996) found that ethnicity significantly predicted retirement planning. Furthermore, Perry and Morris (2005) confirmed the significant link between race and financial behaviour. For example, Rajna *et al.* (2011) found that Chinese individuals approached financial management more optimistically than individuals from Malaysia and India. In the same context, Kimiyaghalam and Yap (2017) found that ethnic Chinese had a higher level of financial literacy than ethnic Malays.

Also, Duasa and Yusof (2013) studied risk tolerance and found that Malays were more risk-averse than Chinese.

Based on the findings of Duasa and Yusof (2013), and Kimiyaghalam and Yap (2017), it is believed that nationality is one of the most significant demographic predictors of RSB, FTP, FRT, and KFPR. Thus, it is hypothesised that nationality moderates the link between RSB and all the variables.

Thus, the present study hypothesised the following:

H_4: Age, Education, Gender, Income, and Nationality moderate the link between FTP and RSB.

H_5: Age, Education, Gender, Income, and Nationality moderate the link between FRT and RSB.

H_6: Age, Education, Gender, Income, and Nationality moderate the link between KFPR and RSB.

3. Data and Methods

3.1. Sampling procedures

This study investigated the direct links between; RSB and FTP, FRT and KFPR, and the moderating effect of selected demographic variables among university employees. This study targeted working individuals in the UAE employed in higher education institutions. The population, therefore, was university employees in local higher education institutions. The sampling technique used was judgmental sampling, which is considered a non-probability sampling technique. Rahi (2017) stated that judgmental sampling was appropriate when a specific group of respondents is targeted

due to their involvement with the studied issue. Five hundred questionnaires were distributed by hand between January 2019 and June 2019. Only 370 questionnaires were returned; only 312 were complete and usable for the analysis.

University employees were selected for the following reasons; first, their level of knowledge, compared to others, is relatively higher. University employees are typically more knowledgeable in retirement and financial decision-making matters. Additionally, there is a knowledge-sharing trait that university employees have, which is greater than in other workplaces, that has been found to increase development and retention (Alkhawaja & Albaity, 2020). Lastly, university employees were selected due to their accessibility to the researcher since data could be obtained far more easily than for other sectors. The questionnaire was in English since most of the targeted sample respondents speak English.

3.2. Measurements

3.2.1. Dependent variable

3.2.1.1. Retirement saving behaviour

Retirement saving behaviour is defined as setting aside part of an individual's income or wealth for retirement purposes. This variable was measured using Neukam and Hershey's (2002) five-item questions, answered using a 7-point Likert scale ranging from 1=strongly disagree to 7=strongly agree.

3.2.2. Independent variables

3.2.2.1. Future time perspective

Future time preference is defined as the need for individual planning in the long term (Tomar *et al.*, 2021). This variable was measured using four-item questions from Hershey and Mowen (2000). The scale was modified to fit the context of this study. A sample question was "The distant future is too uncertain to plan for." measured using a 7-point Likert scale.

3.2.2.2. Financial risk tolerance

Financial risk tolerance is defined as the extent of the level of uncertainty that an individual is willing to accept in financial decisions (Grable, 2000; Larson *et al.*, 2016). This variable was measured using four-item questions adopted from Jacobs-Lawson and Hershey (2005) and modified accordingly to fit the context of this study. A sample item was "I prefer investments that have higher returns even though they are riskier." measured using a 7-point Likert scale.

3.2.2.3. Knowledge of financial planning for retirement

Knowledge of financial planning is defined as the set of activities designed to fulfill post-retirement needs through wealth accumulation (Topa *et al.*, 2018). This variable was adopted from Hershey and Mowen (2000), comprising six-item questions. A sample question, "I am very knowledgeable about financial planning for retirement, " was measured using a 7-point Likert scale.

3.2.3. Moderating variables

The respondents were asked to indicate their age, education level, gender, monthly income, and nationality. Age was divided into four main

groups: 21–30, 31–40, 41–50, and older than 50. The dummy variable for age equaled one if the respondent was older than 40 and 0 if the respondent was younger than 40. Education level was categorised into four groups: (High School, Bachelor's and Equivalent Degree, Master's, and Ph.D.). Thus, the dummy variable for education level equaled one if the respondent had a master's or PhD. and 0 if the respondent had a high school, bachelor's, or equivalent degree. Gender was a dummy variable equal to 1 if the respondent was a female, and 0, if otherwise. Monthly income was classified into five main groups: (less than 5,000, 5,001-10,000, 10,001-25,000, 25,001-50,000, and more than 50,000 AED). Thus, the dummy variable for monthly income equaled one if the respondent earned more than 25,000 AED, and 0, if otherwise. Nationality was restricted to two main groups: local and foreign. Therefore, the dummy variable for nationality equaled one if the respondent was foreign and 0 if otherwise.

3.3. Data analysis technique

The SPSS and Smart-PLS software packages were used to test the hypotheses of this study. Smart-PLS was used to generate the confirmatory factor analysis to check the validity of the measures (Hair *et al.*, 2011). Before doing so, the data were checked for out-of-range answers or typos, as well as outliers, by using SPSS. The model's reliability was then checked, and lastly, the confirmatory factor analysis was conducted. Finally, a regression analysis was run for the model.

3.4. Theoretical framework

Financial behavior, especially savings behavior, has been explained by the life-cycle theory. It proposes that saving increases with income, marital status, and age and that younger people borrow money from the future for

current consumption, while middle-aged people tend to save and accumulate wealth (Mitchell & Utkus, 2006; Ahmad et al., 2014). Additionally, they argue that other factors are associated with saving behaviors, including education and total wealth, and real-world behavior with saving appears at odds with the theory. Similarly, Goal-based motivation theory and social-cognitive theory indicate that future expectations and personal knowledge are common important factors in explaining saving behavior (Bandura, 1986; Khan *et al.*, 2020)

The following econometric model was used to test the study's hypothesis,

$$RSB_i = \alpha_0 + \alpha_1 FTP_i + \alpha_2 FRT_i + \alpha_3 KFPR_i + \alpha_4 M_i + \epsilon_i$$

Where RSB is Retirement Saving Behaviour, FTP is the Future Time Perspective, FRT is the Financial Risk Tolerance, KFPR is the Knowledge of Financial Planning for retirement, and M is each demographic variable (Age, Education, Gender, Income, and Nationality) as a moderator. - are the coefficients and is the disturbance term. The above model was expanded to investigate the moderating effect of the demographic variables on the direct link as below,

$$RSB_i = \alpha_0 + \alpha_1 FTP_i * M_i + \alpha_2 FRT_i * M_i + \alpha_3 KFPR_i * M_i + \epsilon_i$$

The variables are as above, and the model looks at the moderating effect of each demographic variable (Age, Education, Gender, Income, and Nationality) on the link between FTP, FRT, and KFPR with RSB. These links are depicted in the theoretical framework in Figure 1 below.

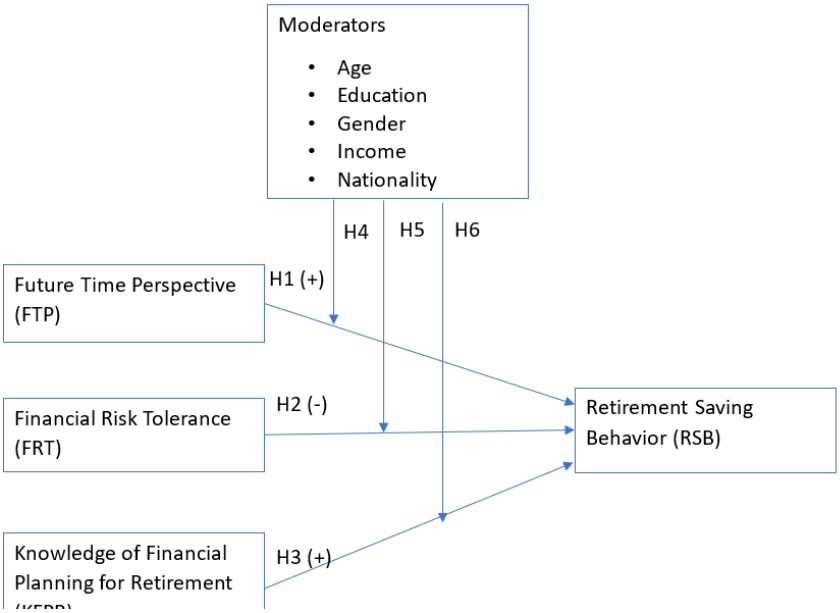


Figure 1: Theoretical framework

4. Results and Analysis

The data was screened for; errors made during input, outliers, missing values, and out-of-range responses. Incomplete responses were instantly ignored to ensure their reliability and validity. Starting with 370 completed responses, five were unusable due to missing data, and fifty-three were noted as outliers, leading to 312 usable responses.

5. Demographic profile

Table 1 indicates that 56.7% of the respondents were females, 20.8% were UAE citizens, 47.1% were aged between 31 and 40 years old, 57.4% had a bachelor's degree, 60.3% earned between AED10,001 and AED25,000, 50% had been employed between less than five years and ten years, and 82.4% were administrative staff.

Table 1: Respondents' Profile

Profile	Frequency	Percentage
By Gender		
Male	135	43.3
Female	177	56.7
By Nationality		
Local	65	20.8
Foreign	247	79.2
By Age		
21-30	75	24
31-40	147	47.1
41-50	71	22.7
More than 50	19	6.1
By Education Level		
High School	1	0.32
Bachelor's & equivalent Degree	179	57.4
Master's	82	26.3
PhD	50	16
By Monthly Income		
Less than 5,000	7	2.3
to 10,000 5,001	4	1.3
to 25,000 10,001	188	60.3
to 50,000 25,001	111	35.6
More than 50,000	2	0.6
By Experience		

Years 5 - 0	66	21.2
Years 10 - 6	89	28.5
Years 15 - 11	90	28.9
Years 20 - 16	43	13.8
Years or More 21	24	7.7
By Position		
Academic	55	17.6
Administrative	257	82.4
Total	312	100

5.1. Descriptive statistics

Table 2 illustrates the descriptive statistics. Each of the demographic variables was measured on a 2-scale basis. The mean age score was 0.29, whereby 0 represented individuals aged between 21 and 40, and 1 represented individuals older than 40. The mean score of the education level was 0.42, whereby 0 represented the individuals who held a bachelor's degree or a high school diploma. In contrast, 1 represented a master's degree or Ph.D. holder. The mean gender score was 0.57, whereby 0 represented males and 1 represented females. The mean score of monthly income was 0.36, whereby 0 represented the individuals who earned less than, or equal to, 25,000 AED, while 1 represented the individuals who earned more than 25,000 AED. The mean score of nationality was 0.79, whereby 0 represented locals, and 1, represented foreigners. Thus, the means indicated that the sample consisted mostly of foreign females, aged between 21-40, holding a bachelor's degree or a high school diploma and earning less than, or equal to, 25,000 AED.

A 7-point Likert scale was used to assess KFPR, FTP, FRT, and RSB, with 7 = "strongly agree" and 1 = "strongly disagree" RSB, FRT, and KFPR had mean values of less than 3.20, representing low retirement savings, risk tolerance, and retirement financial planning knowledge. Conversely, FTP had a mean score of about 4.30, indicating a moderate level of FTP.

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation
Age	0.29	0.45
Education Level	0.42	0.49
Gender	0.57	0.50
Monthly Income	0.36	0.48
Nationality	0.79	0.40
RSB	3.15	1.37
FTP	4.25	1.32
FRT	2.99	1.54
KFPR	3.18	1.38

Note: from Alkhawaja and Albaity (2020)

5.2. Reliability and Factor analysis

The confirmatory factor analysis and factor loadings are shown in Table 3. Factor loadings close to ±1 infer a strong impact of the factor (Kline, 2014). The factor loadings of RSB, KFPR, and FTP items were higher than 0.6. This result was also true for the indicators of FRT, except for FRT1, which had a loading of 0.55 and was removed to improve the factor loadings.

Furthermore, Table 3 demonstrates the reliability using Cronbach's Alpha, composite reliability (construct reliability), and the Average Variance Extracted (AVE). Cronbach's alpha and composite reliability measure the internal consistency of indicators (Croasmun & Ostrom, 2011). The Cronbach's Alpha value and the composite values of all the constructs must be above 0.7 for the construct to be reliable (Raykov, 1998). The Cronbach's alpha and composite reliability of; RSB, FTP, FRT, and KFPR were much higher than 0.7, indicating reliable measures. The AVE determines how much the specific constructs converge by a high variance proportion an AVE of 0.5 and above is acceptable (Ping, 2009). The AVE of the study measures exceeded 0.5, indicating the construct's convergent validity.

Table 3: Factor Loadings, Construct Reliability, and Validity

Variable	Items	Initial		Revised			
		Factor Loadings	Cronbach's alpha	Factor Loadings	Cronbach's alpha	Composite Reliability	AVE
RSB							
	RSB1	0.906		0.906			
	RSB2	0.908		0.908			
	RSB3	0.933		0.933			
	RSB4	0.89		0.89			
	RSB5	0.907		0.907			
	RSB		**0.947**		**0.947**	**0.96**	**0.826**

FTP							
	FTP1	0.842		0.842			
	FTP2	0.836		0.836			
	FTP3	0.904		0.904			
	FTP4	0.85		0.85			
	FTP		**0.885**		**0.885**	**0.918**	**0.736**
FRT							
	FRT1	0.554		Dropped			
	FRT2	0.897		0.891			
	FRT3	0.923		0.925			
	FRT4	0.917		0.923			
	FRT5	0.898		0.904			
	FRT		**0.901**		**0.933**	**0.951**	**0.83**
KFPR							
	KFP1	0.891		0.891			
	KFP2	0.919		0.919			
	KFP3	0.918		0.918			
	KFP4	0.884		0.884			
	KFP5	0.866		0.866			
	KFP6	0.878		0.878			

	KFP		**0.949**		**0.949**	**0.959**	**0.797**

Note: from Alkhawaja and Albaity (2020)

Discriminant validity is the extent to which a measure is genuinely new and not merely a reflection of some other factor (Churchill, 1979). Farrell and Rudd (2009) discussed that discriminant validity is generated when the square root of the AVE for the constructs surpasses the correlation between the constructs. Table 4 shows that the AVE's square root constantly exceeded the correlation values below it. These findings indicated an acceptable discriminant validity for the measures used in this study.

Table 4: Discriminant Validity

	RSB	FTP	FRT	KFPR
RSB	**0.909**			
FTP	0.309	**0.858**		
FRT	0.157	-0.428	**0.911**	
KFPR	0.741	0.209	0.357	**0.893**

Note: from Alkhawaja and Albaity (2020)

5.3. The Structural Model

5.3.1. Structural model without a moderator

Table 5 (Figure 2) presents the parameter estimation that resulted from the bootstrap simulation. Hypothesis H_1 was supported, as a significant positive link was found between financial time perspective (FTP) and retirement saving behaviour ($\beta = 0.14$, $t = 2.98$, $p < 0.01$), which was also similar to the findings of Howlett *et al.* (2008), and Kooij *et al.* (2018). According to Bandura (1986), Goal-based motivation theory emphasises

that the expected future is a vital action factor. Individuals' future expectations deeply affect and form the objectives and plans that guide actions and performance (Khan *et al.*, 2020). Thus, individuals' future orientation would lead them to consider planning, particularly retirement. This is justified since about 90% of the UAE population are foreigners, and their job stability is not as certain as for citizens. The results supported this justification.

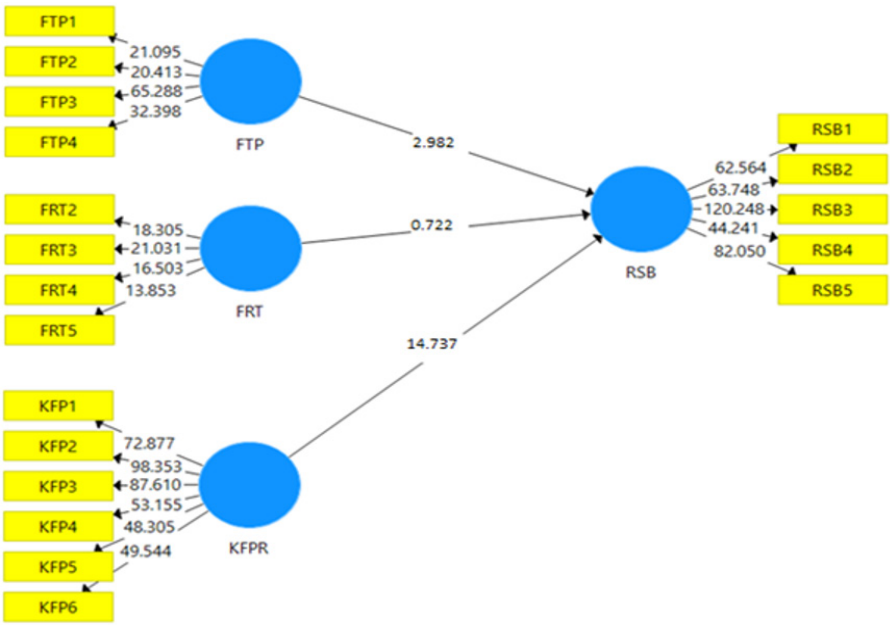
Table 5 also shows that hypothesis H_2 was not supported, as the FRT and RSB link was insignificant ($\beta = -0.04$, $t = 0.72$, $p > 0.05$). This result was supported by prior studies (Gutierrez and Hershey, 2014; Alkhawaja and Albaity, 2020; Afthanorhan *et al.* (2020). Muktadir-Al-Mukit (2020) found that more highly risk-tolerant people appeared to have less cash in their bank accounts and a more significant debt burden. Instead of putting money aside for future needs, such individuals would spend on risky investments resulting in abnormal returns.

The third hypothesis, H_3, was supported because KFPR positively impacted RSB ($\beta = 0.73$ $t = 14.74$, $p < 0.05$), which was also supported by previous studies (Herrador-Alcaide *et al.*, 2021). Following the social-cognitive theory, personal knowledge is one determinant of behaviour. A high degree of financial planning knowledge means that individuals know how to plan their retirement, resulting in adequate savings properly. It can be argued that the sample used in this study justified these results since it comprised university staff. These respondents are knowledgeable in terms of financial planning for retirement. A previous study on financial literacy in the UAE implied low financial literacy (Suri & Purohit, 2017). However, as the present study's sample was concentrated on university staff, the results were expected.

Table 5: Parameter Estimation – Full Model

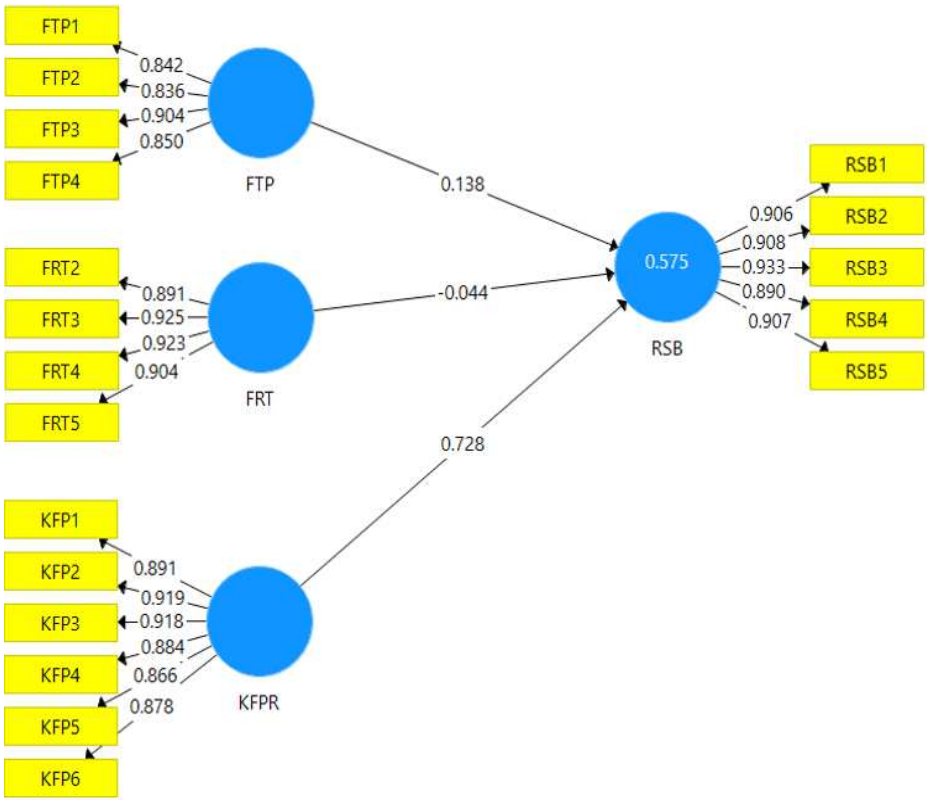
	Coefficient	T Statistics	P Values
FTP -> RSB	0.138	2.982	0.003
FRT -> RSB	-0.044	0.722	0.472
KFPR -> RSB	0.728	14.737	0.000

Figure 2: Structural Model



The for FTP, FRT, and KFPR (0.575 = 57.5%) moderately affected RSB (see Figure 3). additionally, we checked Stone-Geisser Q^2, which measures the model's predictive validity. It analyzes the model's ability to meet expectations. A higher value of Q^2 suggests that the variables have predictive relevance. We found that in the estimated model, the Q^2 was 0.514, which is considered good according to Hair et al. (2017).

Figure 3: Measurement Model



5.3.2. The structural model with a moderator

5.3.2.1. Age

Table 6 presents the parameter estimation with the moderating effect of age. There were two age groups, middle-aged (more than 40 years old) and young adults (21 to 40 years old). Young adults seemed to have no concern about the future (young adults: = 0.051, t = 0.940, *P* 0.05; middle-aged adults: = 0.368, t = 3.472, *P* 0.05) and tended to be more knowledgeable about financial planning (young adults: = 0.780, t = 15.496, *P* 0.05; middle-

aged adults: = 0.517, t = 4.740, *P* 0.05), in comparison to middle-aged adults who seemed to be unwilling to take any financial risk (young adults: β = -0.133, t = 2.152, P < 0.05; middle-aged adults: β = 0.206, t = 1.306, P > 0.05). Middle-aged adults had more commitments and responsibilities, typically concerning their growing children and aging parents, which did not allow them to take risks as they thought more about the future. In contrast, young adults were less committed, thought more about the present than the future, and may take greater financial risks. Furthermore, compared to the past, life's more expensive and demanding nature and the uncertain economy force young adults to be more knowledgeable about financial planning. The results were similar to Afthanorhan *et al.* (2020), who found that age moderated the link between the selected variables and saving behaviour.

Table 6: Parameter Estimation – Moderating effect of age

	Coefficient	t-statistics	P -Values	Q^2 (R^2)
Young adults (21 to 40 years old**)**				
FTP -> RSB	0.051	0.940	0.348	0.47(0.58)
FRT -> RSB	-0.133	2.152	0.035	
KFPR -> RSB	0.780	15.496	0.000	
Middle-Aged Adults (More than 40 years old**)**				
FTP -> RSB	0.368	3.472	0.001	0.36(0.49)
FRT -> RSB	0.206	1.306	0.192	
KFPR -> RSB	0.517	4.740	0.000	

5.3.2.2. Education Level

Table 7 demonstrates the parameter estimation, with the moderating effect of education level. The sample was divided into high education level (Master's and Ph.D. holders) and low (high school diploma and bachelor's or equivalent degree holder). Individuals who had a low education level tended to show little concern about the future (low education level: = 0.054, t = 0.947, *P* 0.05; high education level: = 0.249, t = 3.018, *P* 0.05) and seemed to be more knowledgeable about financial planning (low education level: β = 0.806, t = 15.013, P < 0.05; high education level: β = 0.611, t = 7.068, P < 0.05), as compared to individuals who had a high education level, who tended to be unwilling to take any financial risk (low education level: = -0.123 t = 1.979, *P* 0.05; high education level: = 0.077, t = 0.727, *P* 0.05). It can be postulated that, as individuals think about their future, they are willing to work to obtain master's and Ph.D. degrees to satisfy their long-term career goals, leaving them with no opportunity to take any financial risk and vice-versa. Additionally, the enthusiasm of individuals with higher education levels for a particular subject left them with little time to think or learn about financial planning. The results were in line with Hershey and Mowen (2000), Hershey *et al.* (2007), and Eren and Tezel (2010) found a positive relationship between education and FTP, whereby highly educated individuals had an extended future orientation. Furthermore, Grable (2000), Duasa and Yusof (2013), and Magendans *et al.* (2017) found that education and FRT were positively linked, whereby highly educated individuals were more risk-tolerant than less educated individuals.

Table 7: Parameter Estimation – Moderating effect of education level

	Coefficient	t-statistics	P -Values	Q^2 (R^2)
Low Education Level (High school and Bachelor's & equivalent**)** (degree holder				
FTP -> RSB	0.054	0.947	0.344	0.51 (0.62)
FRT -> RSB	-0.123	1.979	0.048	
KFPR -> RSB	0.806	15.013	0.000	
High Education Level (Master and Ph.D. holder**)**				
FTP -> RSB	0.249	3.018	0.003	0.39 (0.50)
FRT -> RSB	0.077	0.727	0.467	
KFPR -> RSB	0.611	7.068	0.000	

5.3.2.3. Gender

Table 8 provides the parameter estimation with the moderating effect of gender. There were two gender groups: male and female. Females did not seem to be as concerned about the future as males (male: $\beta = 0.191$, $t = 2.552$, $P < 0.05$; female: $\beta = 0.092$, $t = 1.916$, $P > 0.05$) and were a little more knowledgeable about financial planning (male: = 0.653, t = 8.306, *P* 0.05; female: = 0.801, t = 18.376, *P* 0.05), as compared to males, who seemed to be more reluctant to take any financial risk (male: $\beta = 0.117$, $t = 1.161$, $P > 0.05$; female: $\beta = -0.093$, $t = 1.601$, $P > 0.05$), as compared to females. In the Arab world, males are typically the household breadwinners and support their family members. They are forced to think about the future and avoid financial risks to prevent possible losses. Females think less about the future but still cannot take financial risks due to the uncertain economy and difficult living conditions, which force them to contribute financially to support their family members.

Moreover, females' interest in details may be a factor that drives them to learn more about financial planning. This result was supported by Asare *et al.* (2018) and Mori (2019), who indicated that females have lower risk tolerance than males. This study's results were opposite to Mahdavi & Horton (2014), who argued that females have more inadequate financial knowledge even with a higher level of education. Conversely, Wang (2014) supported this study's results where females had a lower future perspective than males. It was argued that this might be due to more inadequate risk-taking behaviour than males.

Table 8: Parameter Estimation – Moderating effect of gender

	Coefficient	t-statistics	P-Values	Q^2 (R^2)
Male				
FTP -> RSB	0.191	2.552	0.011	0.47 (0.58)
FRT -> RSB	0.117	1.161	0.246	
KFPR -> RSB	0.653	8.306	0.000	
Female				
FTP -> RSB	0.092	1.916	0.056	0.51 (0.64)
FRT -> RSB	-0.093	1.601	0.110	
KFPR -> RSB	0.801	18.376	0.000	

5.3.2.4. Income

Table 9 presents the parameter estimation with the moderating effect of monthly income. The sample was divided into two groups based on monthly income: high monthly income (more than 25,000 AED) and low monthly income (less than 25,000 AED). Individuals who earned low monthly incomes tended to show no concern about the future (low income:

= 0.063, t = 1.175, *P* 0.05; high income: = 0.255, t = 2.818, *P* 0.05) and seemed to be more knowledgeable about financial planning (low income: β = 0.775, t = 14.851, P < 0.05; high income: β = 0.599, t = 6.206, P < 0.05), as compared to individuals who earnt high monthly incomes, who seemed to be more reluctant to take any financial risks (low income: = -0.086, t = 1.388, *P* 0.05; high income: = 0.101, t = 0.844, *P* 0.05). Low-income earners typically do not have the opportunity to plan when their incomes barely cover their current needs; rather, they may make risky investments to increase their monthly income and vice-versa. Usually, low-income earners try to improve their financial situation by learning more about financial planning, as financial planning could help them satisfy their basic needs. This study's result was consistent with Pinjisakikool (2017), who found that higher income leads to higher risk tolerance. Similarly, the moderating impact of income on FTP and RSB was similar to the results of (Garasky *et al.*, 2008; Palaci *et al.*, 2017). It can be argued that low-income individuals deal with day-to-day expenses and cannot consider the future retirement perspective.

Table 9: Parameter Estimation – Moderating effect of monthly income

	Coefficient	t-statistics	P -Values	Q^2 (R^2)
Low Monthly Income (Less than 25,000 AED**)**				
FTP -> RSB	0.063	1.175	0.241	0.47 (0.58)
FRT -> RSB	-0.086	1.388	0.166	
KFPR -> RSB	0.775	14.851	0.000	
High Monthly Income (More than 25,000 AED**)**				

FTP -> RSB	0.255	2.818	0.005	0.37 (0.49)
FRT -> RSB	0.101	0.844	0.399	
KFPR -> RSB	0.599	6.206	0.000	

5.3.2.5. *Nationality*

Table 10 represents the parameter estimation with the moderating effect of nationality. There were two groups: locals and foreigners. Locals seemed to have no concern about the future (local: β = 0.189, t = 1.653, P > 0.05; foreign: β = 0.149, t = 2.927, P < 0.05), as compared to foreigners, who were more unwilling to take any financial risk (local: β = -0.080, t = 0.578, P > 0.05; foreign: β = -0.017, t = 0.254, P > 0.05), as compared to locals. Furthermore, foreigners tended to be more knowledgeable about financial planning (local: = 0.652, t = 5.829, *P* 0.05; foreign: = 0.728, t = 13.231, *P* 0.05), as compared to locals. Living in a country other than one's country can be exhausting, as foreign individuals face many challenges and may feel financially insecure and uncomfortable. This outcome causes foreigners to think more about their futures; they try to learn more about financial planning and avoid taking financial risks. Conversely, locals feel comfortable and financially secure due to the advantages and benefits provided by the UAE government, which made them less concerned about the future and, by connection, financial planning and more interested in riskier investments. This result was similar to Duasa and Yusof (2013) and Kimiyaghalam and Yap (2017), who found differences between races in Malaysia.

Table 10: Parameter Estimation – Moderating effect of nationality

	Coefficient	t-statistics	P-Values	Q^2 (R^2)
Locals				
FTP -> RSB	0.189	1.653	0.099	0.43 (0.52)
FRT -> RSB	-0.080	0.578	0.563	
KFPR -> RSB	0.652	5.829	0.000	
Foreigners				
FTP -> RSB	0.149	2.927	0.004	0.47 (0.59)
FRT -> RSB	-0.017	0.254	0.799	
KFPR -> RSB	0.728	13.231	0.000	

Lastly, the R2 and Q2 of all the moderating effect models show that the variables explained between a third to more than 50% of the variation, and the relevance and predictiveness of the variables are established.

As robustness, we ran a model with all the control variables and checked the coefficients of the three main variables. If any of the coefficients change sign or become insignificant, this might suggest that the initial result is not robust. We observed no coefficient sign or significance change after running the model with all the control variables.

6. Conclusion

This study investigated the direct impact of; KFPR, FRT, and FTP on RSB and the moderating effect of demographics on the relationships between the variables. The study was novel, as few previous studies have investigated these links in the UAE. It was found that FTP and KFPR were positively related to RSB, while FRT insignificantly influenced RSB. Furthermore, age, education level, gender, monthly income, and nationality moderated the links on RSB.

The results suggested that working individuals should plan and prepare for their retirement. They should establish achievable targets for retirement and seek advice from professionals when encountering problems with their retirement plans. Additionally, knowledgeable individuals should share their knowledge with others. Moreover, in countries where pension benefits are not part of the salary structure, companies must be more proactive and support individual employees' retirement preparations. Put together, it will lead to more effective and efficient retirement planning.

FTP, FRT, and KFPR can be used by financial advisors to assess an individual's knowledge and preferences. The results may help advisors tailor retirement plans and reduce any guesswork. Additionally, the results may help financial planners educate the public and provide appropriate counseling. For example, less knowledgeable individuals with a lower risk tolerance might target safe short-term investments.

From the marketing point of view, financial planners and financial institutions should develop and improve their existing marketing strategies to encourage young individuals to plan for their retirement and help them save and invest. Removing hardcore terminology and difficult-to-understand terms and being transparent with clients will entice individuals to move from one step to another with ease and peace of mind.

The theoretical implications of this study are as follows. First, this research comprises one of the few studies conducted in the UAE focused on retirement savings. Therefore, it provides a solid foundation for future studies in the area. Moreover, this study will help researchers better understand the cultural contexts of retirement savings and saving in general. This study extends the knowledge base concerning the factors influencing saving intentions, such as financial education and subjective norms.

Furthermore, the practical implications are as follows. Due to the retirement saving issue that retirees currently face, the government, financial advisers, and banks must thoroughly understand the main factors affecting retirement saving expectations. Financial advisors should establish practices oriented toward families or employers and encourage clients to bring their partners, children, parents, friends, or colleagues from work. Positive outcomes may result since spouses can significantly influence clients. The government and regulatory institutions can encourage companies to create and implement retirement funds for all employees, where part of an employee's salary is transferred into the individual's retirement plan. The government should also closely monitor the entities that manage retirement fund investments to prevent people from losing their life savings, as happened during the 2007-2008 global financial crisis. The central bank can facilitate and invest the retirement funds of locals and non-locals into government-issued bonds or mutual funds. Lastly, policymakers should implement policies to include personal finance and financial planning in school and university curricula to improve people's awareness concerning the importance of retirement plans.

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ادخار الأفراد قبل التقاعد وتأثره بخصائصهم الديموجرافية والاجتماعية

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ملخص البحث:

أجريت هذه الدراسة لفحص العلاقة بين منظور الزمن المستقبلي (FTP)، وتحمل المخاطر المالية (FRT)، ومعرفة التخطيط المالي للتقاعد (KFPR) ، وسلوك الادخار للتقاعد (RSB) ، وكذلك التأثير المتوسط للتركيبة السكانية حول العلاقة بين هذه المتغيرات. تم جمع البيانات لهذه الدراسة في المقام الأول من خلال أخذ العينات الحكمية غير الاحتمالية. وشارك في الدراسة 312 فرداً من الإمارات العربية المتحدة يعملون في الجامعات. تم إجراء تحليل البيانات باستخدام حزم البرامج Smart-PLS و SPSS. وجد أن منظور الزمن المستقبلي له تأثير إيجابي على سلوك التوفير قبل التقاعد، في حين أن تحمل المخاطر المالية لم يكن ذو دلالة إحصائية. علاوة على ذلك ، ظهر ان العمر والجنس والجنسية والمستوى التعليمي والدخل الشهري متغيرات مهمة في تغير العلاقات. خلصت الدراسة أنه يجب على صانعي السياسات تنفيذ سياسات لتضمين التمويل الشخصي والتخطيط المالي في المناهج المدرسية والجامعية لتحسين وعي الناس بأهمية التخطيط للتقاعد. يمكن توجيه موارد التعليم بحكمة لمعالجة التخطيط للتقاعد من قبل المنظمين وواضعي السياسات

الكلمات الدالة: سلوك التوفير قبل التقاعد، تحمل المخاطر المالية، المنظور المالي المستقبلي، المعرفة بالتخطيط المالي

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