

The Effect of Attitudes Regarding Retirement on Pension Savings

Dr. *Ravit Rubinstein-Levi*

Guilford Glazer Faculty of Business and Management, Ben-Gurion University of the Negev
Ben-Gurion Ave 1, Be'er-Sheva, ISRAEL

Tel: +972-50-263-1136 E-mail: Ravitru@post.bgu.ac.il

Prof. *Haim Kedar-Levy*

Guilford Glazer Faculty of Business and Management, Ben-Gurion University of the Negev
Ben-Gurion Ave 1, Be'er-Sheva, ISRAEL

Tel: +972-8-647-9713 E-mail: Hlevy@som.bgu.ac.il

Abstract: Changes in most western countries' pension systems have shifted the responsibility for pension savings from governments to individuals. However, individuals are continuing to avoid making decisions regarding their pension savings, partially due to financial illiteracy as well as reluctance to deal with aging. The outcome is wide-ranging poverty among retirees. Improving financial literacy or using the tax system in order to motivate individuals to manage their pension savings more effectively has not provided the desired change due to the complex and dynamic nature of pension systems. We use the theory of conscious balance and Kahneman's theory of "thinking fast and slow" to suggest an alternative approach by studying the way attitudes toward pension and retirement guide individuals' retirement savings behavior. We empirically identify the relevant attitudes and hypothesize that creating a conceptual change in these attitudes will create a cognitive dissonance that will motivate individuals to improve their pension savings.

Keywords: Attitudes; Decision-making; Pension; Retirement; Savings

JEL Classifications: D14, D91, H55, H75, G28

1. Introduction

In recent years, "Self-Guided" retirement savings systems have been implemented in a growing number of western countries, among them Israel. Governments' preference to adopt such systems reflects a policy aiming to transfer the responsibility for pension savings from the governments to the individuals. This prevails despite the fact that such policy exacerbates inequality (Barth *et al.*, 2017). Most individuals are incapable of answering simple questions relating to pension savings. Therefore, a majority of individuals in many countries avoid decision-making regarding their pension savings, or make incorrect, heuristic decisions (Harrison *et al.*, 2006). Only half of individuals say that they engage in any kind of preparation for old age (Bénédicte, 2017). The result is low and suboptimal pension coverage (Oehler & Werner, 2008) that might require future taxpayers to fund the elderly, raising social fairness issues. It was found that 52% of households will be at risk of being unable to maintain their standard of living upon retirement (Munnell *et al.*, 2017). Mental implications for retirees, which stem from their poor economic situation, are to be expected (Danzer & Danzer, 2016).

In terms of the rational decision-making paradigm in economics (Friedman, 1953), most research suggests that the cause for inadequate pension savings by individuals stems from low financial literacy: a poor ability to understand financial concepts and ideas and use them in the decision-making process (Lusardi & Alessie, 2009). Accordingly, to improve individuals' decision-making regarding their pensions, instrumental solutions are proposed, primarily solutions that are based on improving financial literacy in the population (Maarten & Alessie, 2009). This task is difficult, prolonged, and expensive given the complexity of the matter and its dynamic nature (Worthington, 2008), especially since the ability to gain financial literacy depends to a large extent on the individual's level of education (Messacar, 2017) and that generic financial literacy does not significantly affect the pension decision-making specifically (Giovanni *et al.*, 2017). Therefore, providing knowledge of this sort may be relevant only in the long term, possibly through financial education at high school (Lusardi & Mitchell, 2009).

We suggest an alternative approach. Acknowledging that individuals may depart from rational decision-making in complex matters such as retirement planning, we embrace the behavioral perspective. Within the behavioral decision-making process, attitudes serve to make intuitive decisions, and a particular case where such decisions are made is in the absence of knowledge. Since individuals regard their attitudes as 'the truth' only until they are introduced with new facts or arguments that change their minds (Eiser & Pligt, 2015), we suggest affecting a few particular attitudes that guide individuals' savings decisions, thereby creating a conceptual change toward retirement and savings behavior. Changing an attitude is expected to be simpler than educating individuals toward making reasonable financial decisions. Raising awareness to the need to retire is rather simple, and we hypothesize that once this attitude has changed, individuals will more likely be motivated to plan their retirement while seeking advice on relevant factors. In this paper, we identify relevant attitudes as significant explanatory variables in a logit regression using several pension and retirement attitudes. The data has been collected as part of a nation-wide survey of the Israeli Central Bureau of Statistics (CBS). To the best of our knowledge, this is the first research proposing to explore whether and how individual's attitudes toward retirement and pension savings is indeed associated with actual pension savings.

By the theory of conscious balance (Heider, 1946), individuals are motivated to be in a state of balance and this motivation increases with the importance of the issue. Generally, since most individuals are aware of their imperfect pension planning while acknowledging its importance, they adopt irrational attitudes and make irrational pension savings decisions to reach a state of conscious balance. This mode of behavior may be explained as well by Kahneman's theory (2012), suggesting that there are two "Systems" that drive the way we think. "System 1" is fast, intuitive, and emotional, it operates automatically and quickly, with little or no effort and no sense of voluntary control. "System 2" is slower, more deliberate, and more logical. System 2 allocates attention to the effortful mental activities that demand it. System 1 runs automatically and System 2 is normally in a comfortable low-effort mode, in which only a fraction of its capacity is engaged. To the extent that departure from rational retirement and pension decisions is caused by financial illiteracy, which would prevent System 2 from taking over, it appears reasonable that irrational attitudes would be adopted to avoid cognitive dissonance. Our goal in this paper is to identify those specific attitudes, which, if changed, would motivate individuals to seek information and guidance toward improving, their retirement and pension planning.

The rest of the paper is as follows: Section 2 describes the role that attitudes play in the decision-making process; Section 3 links attitudes to the existence of pension savings; Section 4 explains why the Israeli survey data may be relevant for many Western societies. Section 5 presents

the methodology and the research questions, which are analyzed empirically in Section 6, with frequency Tables and logistic regression. Section 7 offers a brief discussion of the implications, and summarizes the paper.

2. Attitudes & Decision-making

An attitude is a relatively fixed and enduring organization of beliefs, feelings, and behavioral tendencies, which a person has on a certain topic. The attitude saves the person the energy required to reexamine his behavior each time he comes across a change, thus the attitude assists in decision-making (Hogg & Vaughan, 2005). Individuals' attitudes can be referred to as the results of the suggestions that System 1 generates to System 2 according to Kahneman's theory. System 1 continuously generates suggestions for System 2 in the form of impressions, intuitions, intentions, and feelings. If endorsed by System 2, impressions and intuitions turn into beliefs, and impulses turn into voluntary actions. Because System 1 operates automatically and cannot be turned off at will, errors of intuitive thought are often difficult to prevent. Biases cannot always be avoided, because System 2 may have no clue as to the error. Even when cues to likely errors are available, errors can be prevented only by the enhanced monitoring and effortful activity of System 2. (Kahneman, 2012). In the case of pension planning, the efforts involved are substantial, leading individuals to rely on System 1, or ignore the subject altogether.

Kahneman's theory appears to correspond with the theory of conscious balance; a conscious balance is a state of harmony between the components of the individual's consciousness. It is achieved by adopting those attitudes that yield most benefits. When individuals make decisions contrary to their attitudes, a "cognitive dissonance" is created – a discrepancy between their conscious components, which produces a sense of emotional stress and inconvenience stemming from the imbalance. This sense of emotional stress and inconvenience increases in line with the importance of the issue. In order to return to a state of balance, a state that the individual is highly motivated to achieve, individuals must change their attitudes. According to Kahneman's theory, in such a case, when System 1 runs into a difficulty, it should call for System 2 to support a more detailed and specific processing that may solve the problem of the moment.

On one hand, the theory of conscious balance is partially consistent with the fundamental assumption of classical economics, by which individuals are rational, acting to maximize their personal benefit by rational thinking. Both approaches assume that the individual is interested in maximizing personal benefit. Yet, while the classical economics approach stipulates that maximizing personal benefit would be carried out based on rational thinking only, the conscious balance theory maintains that individuals would act in every way to maximize benefit and reach a state of balance, including choosing an irrational behavior. On the other hand, the theory of conscious balance is fully congruent with the behavioral finance approach and the research carried out within its context, since according to both approaches individuals will choose any behavior, rational or irrational, to maximize their benefit. According to Kahneman's theory, biases, which can be referred to as the outcome of irrational behavior, cannot be avoided when System 2 has no clue to the error. This means that according to Kahneman's theory there are cases in which individuals cannot think rationally in order to maximize their personal benefit, as assumed in classical economics. The case of retirement and pension planning appears to fall in that category.

3. Attitudes and Pension Saving Decisions

Studies suggest that individuals do not make pension savings decisions based on rational thinking due to a sense of confusion, apathy, and distrust. Therefore, savings decisions are ill-informed and irrational to such an extent that most individuals avoid seeking information to make "reasonable", let alone "optimal" decisions (Harrison *et al.*, 2006). That is why for example, many young people "under-save" whereas old people "over-save" (Groneck *et al.*, 2017) and that is also why individuals turn indifferent toward one of the most important financial decisions over their lifecycle (Harrison *et al.*, 2006).

We define the existence of pension savings as the presence of an official pension account an individual owns in a pension fund. Hence, we examine individuals' pension savings decisions from the behavioral finance approach, taking as given that individuals act irrationally with respect to pension savings. Therefore, we examine the specific attitudes that guide individuals' savings behavior, and based on those attitudes we propose to make a conceptual change instead of providing knowledge- We propose to change individuals' pension savings decisions by influencing System 1 rather than by influencing System 2.

As a first step, we identify individuals' attitudes that affect their pension savings decisions based on the influence that individuals' attitudes have on their pension savings decisions. Secondly, we classify those attitudes while defining the direction and the intensity by which they affect pension savings.

Based on the theory of conscious balance, we expect that individuals, who will change specific relevant attitudes, will be driven to change their pension savings behavior, since discrepancy between attitudes and behavior leads to a state of cognitive dissonance, which the individual is highly motivated to avoid.

4. The Relevance of the Israeli Case

In OECD countries, poverty rates among the population of retirees are substantially higher than in the general population (Bleikh, 2016). The main reason for this poverty is the combination between the pension savings method and individuals' pension savings behavior (Lusardi & Mitchell, 2009). Like most other countries in the Western world, Israel implements a Defined Contribution (DC) savings method. Thus, individuals are responsible for their own pension planning. Israeli individuals behave much like individuals in other western countries, and avoid managing their pension savings and adjusting it to their needs (Achdut & Spivak, 2010). The outcome is low pension coverage in the working population, which leads to high poverty rates in the retired population. It is important to note that Israel is similar to other OECD countries in the high levels of medical expenses paid by the elderly (Baird, 2016).

Among the incentives given by the Israeli government and other governments to encourage pension savings is tax deduction of various sorts. However, many individuals find it difficult to comprehend tax incentives, and hence do not take advantage of them (Jenkins, 2005). Based on Kahneman's theory, we hypothesize that a cognitive dissonance might occur among individuals who are aware that tax benefits are at reach, but cannot use System 2 in order to support a detailed and specific decision-making process to reap the benefits.

The Israeli government instituted a mandatory pension law aimed at increasing the rate of pension savers in the population, effective since January 1, 2008. There are different types of mandatory pensions; the one implemented in Israel is income-related (also in Austria, Belgium,

France, Germany, Italy, Norway, Sweden, and the United Kingdom). The Israeli mandatory pension is not expected to bring about a significant improvement in the state of all retired citizens. Instead, it is expected merely to reduce government expenditure on support payments for retirees (Gavious *et al.*, 2009). Nevertheless, as of 2015, approximately 40% of individuals have no pension savings at all, primarily due to poor enforcement of the law.

5. Methodology and Research Questions

This study is based on a survey that the Israeli Central Bureau of Statistics (CBS) conducted in 2002, incorporating a section on retirement and pension savings. For reasons we are not aware of, this section of the survey was never analyzed. While a later survey was conducted, in 2012, it was exclusive of the attitudes section, leaving the 2002 survey the only one relevant for our study. Since individuals' attitudes and their influence on behavior are not subject to frequent changes, we consider the 2002 data applicable despite the considerable time that has passed. The statistical analysis was carried out based on logistic regressions with multiple variables, where the dependent variable is the presence or absence of pension savings. We further conduct tests aimed at comparing the means of different sub-samples.

Our two research questions are presented as:

1. Which attitudes regarding retirement explain individuals' pension savings decisions?
2. What is the direction by which different attitudes explain pension savings decisions, and how important is each of them?

The following variables and specific attitudes were regressed on the binary dependent variable have/don't have pension savings:

- A. Retirement age: the individuals' attitude regarding the need to retire at a certain age
- B. Future wellbeing: the degree of the individuals' optimism toward their lives in general and their financial status in particular in the years to come
- C. Who is responsible for my economic future: the individuals' attitude toward the identity of the factor they consider responsible for their standard of living after retirement
- D. Retirement planning 1: The level of thought given to the years after retirement
- E. Retirement planning 2: The individuals' attitude regarding the age at which planning of the pension savings should begin
- F. Demographic variables: age, gender, marital status, religion, religiosity, education and income

6. Results

This section opens with a brief summary statistics of the relevant demographic variables, proceeds to present the attitudes' variables, and concludes with a logistic regression and its implications.

6.1 Demographic descriptive statistics

As an overview of the sample we note that 51.6% of the respondents are women, 67% of the respondents are married, 20% single, and about 6% widowed or divorced. About 83% of the respondents are Jewish, and most of the other respondents are Muslim. Following are frequency Tables of the main demographic variables.

Table 1. Age and personal monthly income

Age	Percent	Income	Percent
20-24	12.0	1,500 NIS or less	3.0
25-29	11.8	1,501-2,500 NIS	3.4
30-34	11.4	2,501-3,000 NIS	4.2
35-39	9.6	3,001-4,000 NIS	8.1
40-44	9.0	4,001-5,000 NIS	7.7
45-49	8.9	5,001-6,000 NIS	5.7
50-54	8.9	6,001-7,000 NIS	4.4
55-59	7.0	7,001-9,000 NIS	5.0
60-64	5.1	9,001-12,000 NIS	5.3
65-74	9.1	More than 12,000	7.3
75+	7.2	Don't know	2.8
Total	100.0	N.A. ¹	43.1
		Total percent	100.0

N=6,967

Frequency of the age and the monthly income variables in the sample.

Table 1 shows that more than half of the respondents are under the age of 45 and only about 16% of the respondents are over the age of 65, i.e., at retirement age.

Table 2. Religiosity

Religiosity level	Percent of sample	% Having pension		Total
		No	Yes	
Ultra-religious	5.2	79.1%	20.9%	100%
Religious	10.1	59.9%	40.1%	100%
Traditional but religious	13.1	61.4%	38.6%	100%
Traditional but not so religious	28.7	65.3%	34.7%	100%
Non-religious, secular	42.9	62.5%	37.5%	100%
Total percent	100.0			

N=6,967; Frequency of the religiosity variable in the sample.

Table 1 shows that more than half of the respondents are under the age of 45 and only about 16% of the respondents are over the age of 65, i.e., at retirement age.

Table 2 shows the degree of religiosity, an attribute we hypothesize may be relevant for the study. The data presented in table 2, explain the high rate of poverty in the ultra-religious population- about 42% of the ultra-religious retirees receive government support payments, compared to less than 31% of the general population of retirees. Charity and concern for the elderly is one of the foundations of Judaism. 14% of the religious population report of financial support of their parents, compared to 12.2% of the non-religious population. We note that surprisingly, the data indicate that the financial support of the children to their parents does not increase with the

¹ Not available percent.

level of religiosity, on the contrary – 6.3% of the ultra-religious population financially support their parents, compared to 9.6% of the religious population, 16.3% of the traditional-religious and 16.4% of the traditional-not so religious population. This can be attributed to the widespread poverty in the working religious population, which also rises with the level of religiosity. The religious Jewish population in general, is characterized by a large number of non-profit organizations aimed at assisting the needy. That is why we expect to find different attitudes among the religious population when it comes to issues regarding retirement and pension savings, compared with the secular population. A Wilcoxon Signed-Ranked Test indicates that the differences in the rates of pension savings among individuals who belong to groups of different religiosity were marginally statistically significant $z = -1.849$, $p = 0.064$. Since the correlation between religiosity levels and the existence of pension savings was not found to be significant, we conducted a chi-square test of independence, comparing the frequency of the existence of pension savings in the Ultra-religious group and the non-religious (secular) group. A significant interaction was found ($\chi^2(4) = 39.41$, $p = 0.000$). Non-religious individuals are more likely to have pension savings (37.5%) compared to Ultra-religious individuals (20.9%).

A Wilcoxon Signed-Ranked Test indicates that the rates of individuals with pension savings were statistically significantly higher among individuals having higher income than among individuals having lower income $z = -15.582$, $p = 0.000$. While not surprising, we trust that documented evidence should be presented.

6.2 Frequency tables of attitudes

In the following section, frequency Tables describing the main attitude variables in the survey are presented, highlighting the differences in attitudes between respondents who have pension savings and respondents who lack pension savings.

Table 3. The need to retire at a certain age

Need to retire	Percent	% Having pension		Total
		No	Yes	
Yes	31.5	60.4%	39.6%	100%
No	68.5	70.1%	29.9%	100%
Total percent	100.0			

N=6,967; Frequency of various answers regarding the question:
whether an individual should retire at a certain age.

Table 3 shows that approximately 31% of the respondents express the attitude that an individual should retire when reaching a certain age, while approximately 69% of the respondents think that an individual should not retire upon reaching a certain age. Notably, the majority of the respondents have an irrational attitude regarding the need to retire at a certain age. About 70% of the respondents who believe that there is no need to retire at a certain age lack pension savings. A chi-square test of independence was calculated, comparing the frequency of the attitude regarding the need to retire at a certain age in individuals with and without pension savings. A significant interaction was found ($\chi^2(1) = 63.513$, $p = 0.000$). Individuals without pension savings are more likely to think that there is no need to retire at a certain age, than individuals with pension savings. This finding is consistent with the psychological theories suggesting that people without savings will more likely avoid the cognitive dissonance by ignoring the troubling information.

Table 4. Responsibility of government and of family members in maintaining my standard of living

Other's responsibility to my standard of living	Responsibility of the government				Responsibility of family members/relatives			
	Percent	% Having pension			Percent	% Having pension		
		No	Yes	Total percent		No	Yes	Total percent
To a very large extent	44.8	65.2	34.8	100	36.1	65.3	34.7	100
To a large extent	46.2	68.3	31.7	100	38.9	69.5	30.5	100
To a certain extent	7.3	69.0	31.0	100	13.1	68.2	31.8	100
Not at all	1.7	72.2	27.8	100	11.9	62.9	37.1	100
Total percent	100.0				100.0			

N=6,967;

Frequencies of attitudes pertaining to the identity of the factor responsible for the respondents' financial future

Table 4 shows that about 91% (!) of respondents embrace the attitude that the government is responsible "to a very large extent" or "to a large extent" for maintaining a reasonable standard of living for them upon retirement. Approximately 7% think that the government is responsible for it only to a certain extent and only less than 2% (!) think the government is not responsible at all. The Table also shows that 75% of respondents hold the attitude that family members are responsible "to a very large extent" or "to a large extent", for maintaining their reasonable standard of living after retirement. About 13% think that family members are responsible only to a certain extent and 12% think family members are not responsible at all.

Note that over 65% of the respondents who believe that the government/family members of the retiree are responsible for the retiree's reasonable standard of living 'to a very large extent' lack pension savings. Wilcoxon Signed-Ranked Tests indicate that individuals without pension savings place significantly more responsibility on the government (and separately, on family members) toward maintaining a reasonable standard of living for retirees than individuals with pension savings ($z = -12.333$, $p = 0.000$ regarding government responsibility, and $z = -13.432$, $p = 0.000$ regarding family members' responsibility). This finding, as the one above, is consistent with the cognitive dissonance theory, as a higher proportion of individuals without pension savings tend to shift the responsibility of the issue to the government or to family members.

Table 5. Giving thought to retirement

How much thought have you given to retirement	Percent	Pension		
		No	Yes	Total
A very great deal of thought	2.5	52.6%	47.4%	100%
A great deal of thought	5.0	41.9%	58.1%	100%
A little thought	5.9	42.1%	57.9%	100%
I haven't thought about it	11.3	51.5%	48.6%	100%
N.A.	75.2			
Total percent	100.0			

N=6,967;

Frequency of various answers regarding the question: how much thought did you give to retirement.

Table 5 shows that less than 3% of the respondents gave a very great deal of thought to retirement, 5% gave a great deal of thought, almost 6% gave a little thought and over 11% did not give any thought at all to retirement. These findings, according to which, less than 8% gave a great deal/a very great deal of thought to retirement are consistent with the findings in other studies, according to which, most individuals avoid seeking information to make "reasonable", let alone "optimal" pension savings decisions (Lusardi & Mitchell, 2009). Note that the majority of respondents who did not give any thought to retirement lack pension savings. A Wilcoxon Signed-Ranked Test indicates that individuals without pension savings gave significantly less thought to retirement than individuals with pension savings, $z = 51.894$, $p = 0.000$.

Table 6. The age for planning financial resources for retirement

Table 6 shows that only about 42% of the respondents hold the attitude that financial resources for retirement age should be planned for up to the age of 25. 22% think that the appropriate age is 26-30 and 12% think that the appropriate age is 36-40. The cumulative percent until age 40 is 80.6%. A Wilcoxon Signed-Ranked Test indicates that individuals without pension savings believe, significantly more than individuals having pension savings, that retirement planning can be postponed to a later age, $z = -5.767$, $p = 0.000$. This finding, is consistent with the psychological theory of cognitive balance: postponing retirement planning reduces the plausible cognitive dissonance among individuals with no savings more than among individuals with savings.

Age	Percent
Up to 10	0.9
11-20	15.7
21-25	26.4
26-30	21.7
31-35	3.9
36-40	12.0
41-45	3.1
46-50	6.2
51-55	1.5
56-60	1.6
61-65	0.3
66-70	0.1
70+	0.0
Don't know	6.6
N.A.	0.0
Total	100.0

N=6,967;

Frequency of the question: What is the right age to start planning financial resources for retirement.

Table 7. Financial status and life in the next several years

Expected status	Prediction regarding financial status				Prediction regarding life			
	Percent	% Having pension			Percent	% Having pension		
		No	Yes	Total		No	Yes	Total
Better	35.4	71.7%	28.3%	100%	47.5	69.0%	31.0%	100%
Won't change	36.7	62.6%	37.4%	100%	30.1	63.3%	36.7%	100%
Worse	19.5	65.2%	34.8%	100%	12.9	66.7%	33.3%	100%
Don't know	8.5	73.8%	26.2%	100%	9.4	72.1%	27.9%	100%
Total percent	100.0				100.0			

N=6,967;

Frequency of various answers regarding the questions in which the respondent is asked to estimate what their financial status will be and what would happen to his/her life in general in the next several years.

Table 7 shows that approximately 35% of the respondents estimate their financial status to be better in the next several years, approximately 37% think that their financial status will not change in the next several years, about 20% think their financial status will get worse, and about 9% do not have an estimate. The Table also shows that approximately 48% of respondents estimate that their lives in general will improve, about 30% estimate that their lives will not change; about 13% estimate that their lives will get worse, and approximately 9% cannot estimate what their lives would be like in the next few years. A Wilcoxon Signed-Ranked Test indicates that individuals without pension savings tend to be significantly more optimistic regarding their lives in general in the next several years, $z = -55.013$, $p = 0.000$, and they tend to be more optimistic regarding their economic status in the next several years, $z = -55.748$, $p = 0.000$.

6.3 Logistic regression

A logistic regression was conducted to examine the explanatory power of attitudes and demographic variables on the existence or absence of pension savings. The regression was performed using the "stepwise" procedure, and it explains a considerable rate of the variance (Nagelkerke $R^2 = 0.673$, i.e. 67.3%). The entire model as is each one of the variables included in it, is statistically significant.

Table 8. Regression results

Variables in the Equation	<i>B</i>	Wald	Sig.	Exp(<i>B</i>)
Gender	-0.297	24.301	0.000	0.743
Marital		156.194	0.000	
Marital (1)	0.980	113.231	0.000	2.664
Marital (2)	0.747	4.531	0.033	2.111
Marital (3)	0.489	10.088	0.001	1.630
Age	0.006	8.418	0.004	1.006
Jew	1.205	169.210	0.000	3.336
Need to retire	-0.475	58.206	0.000	0.622
Government responsibility	-0.125	7.722	0.005	0.882
Family responsibility	-0.063	4.282	0.039	0.939
Age plan	-0.007	6.260	0.012	0.993
Constant	-0.921	19.447	0.000	0.398
Nagelkerke $R^2 = 0.673$				

The independent variables that predict the presence/absence of pension savings and the intensity of the prediction.

To interpret the probabilistic relations between the different predictors and the outcome variable – having pension savings (=1) and not having pension savings (=0), the odds ratio Exp(*B*) should be observed. In our case, when the independent variable increases by unity, the probability that the outcome will change from 0 to 1 increases by the odds ratio value. Therefore, when the odds ratio is greater than 1 the probability of having pension savings is higher, and when the odds ratio is lower than 1 the probability of having pension savings is lower.

The two most important attitude explanatory variables are: acknowledging the need to retire at a certain age and government responsibility. With Exp(*B*) coefficient of 0.622, a unit increase in individuals' attitude that there is no need to retire at a certain age increases their likelihood to lack pension savings by about 38%. Similarly, with Exp(*B*) coefficient of 0.882, a unit decrease in the

attitude attributing more responsibility to the government in maintaining their standard of living after retirement, makes such individuals about 12% more likely to lack pension savings. The results are less striking with respect to the attitude of family responsibility, about 6%, and age of planning for retirement was found neutral in its impact on having savings or not.

The findings of the regression regarding the attitudes variables indicate irrational attitudes among individuals. Because we saw in Table 4 that respondents having pension savings also assign some responsibility for their post-retirement wellbeing to the government and family members (who are not the spouse or partner), they also hold irrational attitudes given a DC pension system. Therefore, we conclude that individuals' attitudes regarding retirement are irrational whether they have pension savings or not, albeit individuals without pension savings are more irrational.

The Table indicates that the probability that Jewish individuals will have pension savings is greater than the probability for non-Jewish individuals. This finding is likely to be explained by the fact that the Jewish sector is mostly employed in supervised organizations, while Muslims are mostly employed in family owned, and less supervised organizations.

The probability that married individuals will have pension savings is greater than the probability that individuals of other marital statuses will. This probably happens because married individuals are also more likely to work in supervised organizations due to their need for stability in income and in the workplace in order to support their families. The probability that an individual will not have pension savings is greater for women than for men.

Analyzing the results from the perspective of the conscious balance theory implies that individuals without pension savings will convince themselves that there is no need to retire at a certain age and that the government is responsible for the retiree's reasonable standard of living. Since the emotional stress that stems from this imbalance is increasing with the importance of the issue, and since retirement is an important issue, individuals will be highly motivated to achieve conscious balance. In terms of Kahneman's theory, System 1 takes over System 2 since System 2 is unable to support a detailed and specific logical processing and "solve the problem", therefore individuals will be willing to adopt irrational attitudes. Based on this principle we can also conclude that individuals will improve their pension savings behavior if their attitudes towards retirement will change, as they will act to avoid a cognitive dissonance.

7. Discussion and Summary

Our findings illustrate that the individuals' attitudes on retirement issues are significant explanatory factors of the presence or absence of pension savings. We found that irrational attitudes towards retirement explain irrational pension savings behavior and certain attitudes are of greater importance than others are. The most influential attitude on pension savings is acknowledging the need to retire at a certain age. Individuals who lack pension savings think that retirement planning could be postponed for a later age. Accordingly, they tend not to acknowledge the need to retire at a certain age and give less thought to retirement. They also tend to be more optimistic regarding their lives in the near future and regarding their expected financial status and they place more responsibility on the government to maintain a reasonable standard of living for them after retirement.

Our study introduces new insights as it expands on the explanation for this irrational behavior by finding the attitudes upon which it is based and defining their direction and intensity. Our findings could be explained based on the theory of conscious balance, by arguing that individuals

adopt irrational attitudes regarding retirement, and consequently behave irrationally to avoid cognitive dissonance, especially in light of the importance of the pension savings issue. According to Kahneman's theory, this stems from their lack of ability to use System 2 due to lack of "financial literacy".

From an applicable aspect, we recommend that policymakers act to improve the effectiveness of individuals' pension savings in a manner, that to the best of our knowledge has not been carried out so far in this field, i.e. by affecting individuals' attitudes. Governments should act to make individuals acknowledge the need to retire at a certain age, and highlight their personal responsibility in maintaining for themselves a reasonable standard of leaving after retirement. Accordingly, individuals will give more thought to their retirement and start planning it at a younger age, possibly by seeking aid from experts.

It is possible to create this change in the individuals' attitudes by influencing System 1. In the process of creating the change, cognitive dissonance is expected due to the failure of System 2 to support an informative decision. Therefore, we propose that the state will provide individuals a solution to the problem in the form of professional advice on behalf of the state. In that context we note that only 9.2% of the respondents of the survey consulted someone regarding savings for retirement, less than 12% of those respondents consulted a pension consultant, more than 42% of them consulted their insurance agent, and almost 50% consulted family and friends, co-workers, or their employer.

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References

- [1] Achdut, L., and Spivak, A. (2010). "The pension system in Israel after fifteen years of reform", *The Van Leer Institute*. [Online] Available at: <https://www.vanleer.org.il/en/publication/pension-system-israel-after-15-years-reforms> .
- [2] Baird, K. (2016). "Paying 'til it hurts: high medical spending among the poor and elderly in ten developed countries", *LIS Working Paper* No. 659.
- [3] Barth, D., Papageorge, N.W. and Thom K. (2017). "Genetic ability, wealth, and financial decision-making", *IZA Discussion Paper* No. 10567.
- [4] Bénédicté, H. A. (2018). "Preparation for old age in France: the roles of preferences and expectations", *The Journal of the Economics of Ageing*, 12(1): 15-23.
- [5] Bleikh, H. (2016). "Poverty and inequality in Israel: An International Perspective", In: D. Chernichovsky, and A. Weiss (Eds.), *State of the nation report: society, economy and policy in Israel 2015: Vol. 4. Social welfare* (pp. 353-392). Taub Center for social policy studies in Israel, the Herbert M. Singer Annual Report Series.

- [6] Danzer, A. M., and Danzer, N. (March, 2016). "*Pension generosity and mental wellbeing: the effect of eradicating poverty at old-age*", Paper presented at Demographischer Wandel - session: pensions and labor market outcomes conference, No. G05-V1, Germany.
- [7] Eiser, R. J., and Pligt, J. (2015). *Attitudes and Decisions*. London: Psychology Press.
- [8] Friedman, M. (1953). *Essays in positive economics*. Chicago: University of Chicago Press.
- [9] Gallo, G., Torricelli, C. and Van Soest A. (2017). "Individual heterogeneity and pension choices: how to communicate an effective message?" *CERP Working paper* No. 172/17.
- [10] Gavius, I., Spivak, A. and Yosef, R. (2009). "Pension reform in Israel under mandatory pension law", *Pensions: An International Journal*, 14 (1): 4-13.
- [11] Groneck, M., Ludwig, A. and Zimper, A. (2017). "The impact of biases in survival beliefs on savings behavior", *SAFE Working Paper* No. 169.
- [12] Harrison, T., Waite, K., and White, P. (2006). "Analysis by paralysis: the pension purchase decision process", *The International Journal of Bank Marketing*, 24(1): 5-24.
- [13] Heider, F. (1946). "Attitudes and cognitive organization", *The Journal of Psychology: Interdisciplinary and Applied*, 21(1): 107-112.
- [14] Hogg, M. and Vaughan, G. (2005). *Social Psychology (4th Ed)*. London: Prentice Hall.
- [15] Jenkins, V. (2005). "Educating employers to make informed choice about financial education", *Pensions: An International Journal*, 10(4): 331-336.
- [16] Kahneman, D. (2012). *Thinking, fast and slow*. New York: Penguin Press.
- [17] Lusardi, M. and Alessie, R. (2011). "Financial literacy and retirement planning in the Netherlands", *Journal of Economic Psychology*, 32(4): 593-608.
- [18] Lusardi, A. and Mitchell, O.S. (2017). "How ordinary consumers make complex economic decisions: financial literacy and retirement readiness", *Quarterly Journal of Finance*, 7(3).
- [19] Messacar, D. (2017). "The Effects of Education on Canadians' Retirement Savings Behavior", *Statistics Canada* No. 391. [Online] Available at: <https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2017391-eng.htm>.
- [20] Munnell, A. H., Hou, W. and Sanzenbacher, G. T. (2017). "Do households have a good sense of their retirement preparedness?" *CRR Working Paper* No. 17-4
- [21] Oehler, A. and Werner, C. (2008). "Saving for retirement- A case for financial education in Germany and UK. An economic perspective", *Journal of Consumer Policy*, 31(3): 253-284.
- [22] Worthington, A.C. (2008). "Knowledge and perceptions of superannuation in Australia", *Journal of Consumer Policy*, 31(3): 349-369.