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Financial preparation for retirement: multidimensional analysis of the perception of Brazilians

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ABSTRACT

This article aims to assess the perception of financial preparation for retirement in the non-retired Brazilian population. Also, it seeks to identify how socioeconomic, demographic, and behavioral variables influence financial preparation for retirement. This study advances by using a multidimensional measure of financial preparation for retirement in a comprehensive sample of Brazilians, bringing significant contributions to the implementation of new public policies for the most vulnerable groups. Identifying the level of financial preparation for retirement and the most vulnerable groups is key for a better understanding of the impact of social security and retirement on the lives of Brazilian citizens. In the Brazilian context, the Financial Preparation for Retirement Scale (FPRS) makes it possible to assess the public policies designed and it serves as a parameter for them to be reformulated, with a view to improving financial preparation for retirement in the most vulnerable groups. This is a survey, with 2,920 respondents from all Brazilian regions. The analysis techniques consisted in descriptive statistics, association test, and multiple regression analysis. Most Brazilians show low or very low financial preparation for retirement. It has been identified that 3 out of 4 Brazilians stop to think about how much they would need to save for their retirement. Despite being able to carry out some financial planning for retirement, most Brazilians cannot have good future expectations and savings behavior. Women, young people, divorced/separated persons, black persons, individuals with up to complete elementary education, borrowed housing, unemployed, with a gross monthly family income of up to R$ 1,100.00 and having 4 or more dependent persons constitute the profile of citizens less capable of dealing with financial preparation for retirement.

Keywords: financial preparation, retirement, Social Security Reform, financial literacy, behavioral finance.

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1. INTRODUCTION

The increase in life expectancy has negative impacts on the economy and exposes the weaknesses of public pension systems, currently funded by pay-as-you-go (Alonso-García & Rosado-Cebrian, 2021; Martinez et al., 2021), i.e. formal workers and companies pay the cost of pension benefits. In 2019, the ratio was, on average, 5 workers to pay for one's retirement benefits, however, with the increase in life expectancy, the projection is that in 2060 it will be 2 workers for each retiree's benefits (Ministério do Trabalho e Previdência, 2022).

From an economic viewpoint, there will be a mismatch between the active population and retirees that could impact individual quality of life (Ruthbah, 2021) due to the decrease in the benefit granted and the increase in the minimum age for retirement. Increasing the retirement age in a context of longevity implies an increase in social inequality (Culotta, 2021). And decreasing the retirement benefit means impacting the consumption habits of the elderly and the family group to which they belong, as citizens begin to prepare financially for retirement based on the perception of their pre-retirement income (Niu et al., 2020).

Therefore, in a scenario of pension deficit and changes in rules and expectations of income in retirement, individual responsibility to make the right financial decisions, which allow people to enjoy life and maintain the quality of life when they retire, is substantially increased, increasing the importance of planning and preparing for retirement (Bravo & Herce, 2022; Chen & Zurlo, 2022).

The purpose of financial planning for retirement is to ensure that people have the financial means to maintain their lifestyle even after retirement (Fan et al., 2021). The higher the life expectancy, the greater the savings in the phases that precede it (Jantan, 2020). However, research studies indicate that the population has accumulated debts and inadequate investments, reaching the retirement age with little or no money (Baulkaran, 2022; Lichtenstern et al., 2021), and end up becoming exclusively dependent on income from the assistance benefit and asking for credit to supplement income (Camarano, 2020; Instituto Brasileiro de Geografia e Estatística [IBGE], 2019a).

In emerging countries this scenario is more critical, since in most families retirement will be incorporated into the family budget, often supporting the whole family. In 2019, among Brazilian homes where elderly people live, 53.19% survived only on income from retirement (Camarano, 2020; IBGE, 2019a). Thus, the amount acquired to enjoy in the last stage of the life cycle (Lichtenstern et al., 2021) is relevant, as its decrease or non-existence could have impacts on the entire family system of more than half of the homes. Without financial preparation for retirement, a person may remain dependent on credit, raising debt levels and triggering implications for the economy and the financial system (De Bruijn & Antonides, 2020; Hansson et al., 2019).

It is also worth highlighting that each person has behavioral and socioeconomic characteristics that may influence financial preparation for retirement. Social, financial, and psychological factors influence the perception of adequate income for retirement (Herrador-Alcaide et al., 2021; Hershey et al., 2012) and there are significant differences in financial preparation for retirement between various socioeconomic and demographic profiles. There is no consensus on differences in financial preparation for retirement according to sex (Kumar et al., 2019; Noone et al., 2010) and age (Agabalinda & Isoh, 2020; Witvorapong et al., 2022). As for the variables marital status, dependents, educational level, income, race, and occupation (cf. Bucher-Koenen et al., 2021 and others), there is evidence that married, white persons, without dependents, having higher education and income are more capable of financially preparing for retirement. Regarding housing, it is believed to have no impact on the level of retirement savings (Suari-Andreu et al., 2019).

This article aims to assess the perception of financial preparation for retirement in the non-retired Brazilian population. Also, it seeks to identify how socioeconomic, demographic, and behavioral variables influence financial preparation for retirement.

Financial preparation for retirement is a relevant public and economic health issue, as it relates to other aspects of life, such as depression (Da Silva et al., 2018) and increased levels of indebtedness, due to disproportionate income when reaching the age of 60 years or more, negatively impacting the proper functioning of the financial system (Abrantes-Braga & Veludo-de-Oliveira, 2020; Lusardi et al., 2020). Mapping financial preparation for retirement can help public managers understand the population's behaviors and needs, proving to be useful in formulating strategies that encourage adequate preparation for retirement, in a scenario where the common pension system alone will not be able to adequately serve the entire population.

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The study innovates in four main aspects. First, by assessing for the first time financial preparation for retirement in a multidimensional way, having a proposed methodology as a basis. Second, for being a pioneer in assessing the theme with a comprehensive sample of Brazilians. Third, by assessing differences in financial preparation for retirement according to socioeconomic and demographic profiles. And fourth, by seeking to identify the impact of financial behaviors, time to retirement, and other variables on preparation.

2. THEORETICAL FRAMEWORK

2.1 Financial Preparation for Retirement

Preparing for retirement may be defined as a life project that aims to maintain the consumption style and standard of living at a level similar to what the person had before retiring (Han et al., 2019). In this sense, Chan et al. (2021) highlight that planning and attitudes regarding financial preparation for retirement impact individual lives, influencing health and general well-being.

Several authors seek to investigate preparation for retirement in countries like the United States (Clark et al., 2019; Lusardi & Mitchell, 2011a), Australia (Burnett et al., 2018; Kopanidis et al., 2017), the United Kingdom (Platts et al., 2019), Malaysia (Tan & Singaravelloo, 2020), and Turkey (Akben-Selcuk & Aydin, 2021). Such studies investigate how several factors (financial knowledge, financial planning, financial literacy) influence attitudes towards financial preparation for retirement (Cupák et al., 2019; Seidl et al., 2021).

In Brazil, these studies are still incipient (Schuabb & França, 2020; Freitas Vieira & Graeff, 2020). Most studies analyze specific audiences, such as private institutions (Schuabb et al., 2019; Silva & Rodrigues, 2016), universities (Krawulski et al., 2017; Macedo et al., 2017), and public bodies (Leandro-França et al., 2018; Seidl et al., 2018), emphasizing the need for studies on the Brazilian population.

Notably, the main reason why the theme has gained relevance in the world is the increase in life expectancy, which implies the need to prepare for retirement for a substantial period of the life cycle (Sharpe, 2021). Han et al. (2019) point out that science has raised the average life expectancy, thus life after retirement grows every year, combined with low birth rates.

Niu et al. (2020) add that the consumption habits of the elderly are based on their pre-retirement income. In this way, the calculation for adequate reserve for retirement must have the expectation and standard of living as a basis, in addition to maintaining financial well-being (Brüggen et al., 2017). Birkenmaier et al. (2021) point out that inadequate financial preparation for retirement will result in the burden of social security, highlighting the importance of policies to encourage savings behavior among the younger population.

In 2015, Brazil had 25,038,352 elderly people, this number jumped to 31,330,235 in 2021, accounting for an increase of 6,291,883 elderly people in 6 years (IBGE, 2019b). In the projections for the year 2030, it is estimated that the population aged 60 years and over will exceed 41.5 million people (IBGE, 2019b). These projections, added to the deficit of the pension system, may increase the imbalance of the public pension fund (Ataides & Santos, 2017).

As the population ages and life expectancy increases, countries are forced to make adjustments to their public pension fund systems. In Brazil, the last reform took place through Emenda Constitucional n. 103 (EC n. 103, 2019), where, among the relevant changes, the age for requesting retirement stands out, which is no longer 55 years old and became 62 years old for women and from 60 to 65 years old for men. And, changes in the calculation for average wage, as well as payment of rates for civil servants and workers of private companies (Nulle & Moreira, 2019). Such measures impact individual financial life both in reducing the value and in the deadline for receiving the pension, thus affecting individual and family life programming (Carneiro et al., 2021).

In this context, the adoption of policies aimed at raising awareness and improving the population's preparation for retirement are key. The Brazilian retirement preparation programs (Programas de Preparação para Aposentadoria [PPA]) emerged less than thirty years ago, driven by the creation of the Brazilian National Policy for the Elderly (Política Nacional do Idoso [PNI]), which provides for the implementation and maintenance of programs on this issue in the public and private sectors at least 2 years before a worker leaves the job. The Brazilian Elderly Statute was created in 2003, which once again emphasizes the importance of these programs and reduces the minimum advance period for preparing for retirement to 1 year before a worker leaves the job (Lei n. 10.741 [Estatuto do Idoso], 2003).

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Evidence indicates that, in Brazil, some individuals who are already retired need to keep working to maintain the pre-retirement financial lifestyle (Boehs et al., 2016; Macedo et al., 2017) and there is a contingent of individuals who postpone their retirement (Figueira et al. 2017; Marangoni & Mangabeira, 2014) due to the need to guarantee income. Thus, in a context where the public pension fund does not guarantee the maintenance of the same individual standard of living in post-retirement, there is an increased need for citizens to learn how to make financial decisions that strengthen their financial well-being (Anderson et al., 2017; Kumar et al., 2019).

Lack of knowledge of financial concepts for managing resources impacts the preparation for retirement (Lusardi & Mitchell, 2014, 2017). Thus, the financial collapse devastates many individuals who survive from paycheck to paycheck, with income already compromised by monthly and even daily needs (Morduch & Schneider, 2017). In this way, in addition to analyzing people's life cycle, it is worth understanding their life context and how they deal with financial reality (Lusardi & Mitchell, 2017). So, as important as identifying the level of financial preparation for retirement is analyzing differences in perception from the viewpoint of socioeconomic and demographic profiles (Table 1).

Table 1
Synthesis of the relationship between socioeconomic and demographic variables and financial preparation for retirement

Variable	Expected relationship	Authors
Gender	Women think and plan less about their retirement, negatively affecting their retirement preparation.	Kumar et al. (2019); Noone et al. (2010)
	Women are less financially literate, this has a negative impact on their income and projection for the future.	Bucher-Koenen et al. (2017); Kalmi and Ruuskanen (2018); Niu et al. (2020); Potrich et al. (2018)
	Men and women have the same retirement savings behavior.	Arrondel et al. (2013); Cupák et al. (2019); França and Hershey (2018)
Age	Individuals are more likely to plan for retirement as they age.	Clark et al. (2019)
	Older (working age) and less educated individuals are less likely to save for retirement.	Witvorapong et al. (2022)
Marital status	Married men and women are more likely to undertake retirement planning and preparation.	Clark et al. (2019); De los Santos et al. (2020)
	Both single men and women are less likely to plan for retirement.	Clark et al. (2019); De los Santos et al. (2020)
Educational level	Individuals with a higher educational level tend to have greater planning and savings for retirement.	Clark et al. (2019); Niu et al. (2020)
	Individuals who have a Master's and Doctorate degrees tend to be more prepared for retirement than those who have an undergraduate degree.	De los Santos (2020)
	Individuals who have an undergraduate degree tend to be more prepared for retirement than those who have not.	De los Santos (2020); Kalmi and Ruuskanen (2018)
Income	Individuals with higher income levels show greater financial preparation, including retirement savings.	Clark et al. (2019); Cupák et al. (2019); Rai et al. (2019)
	Poorer individuals do not have much to save, and this negatively impacts their savings behavior.	Witvorapong et al. (2022)
Race/ethnicity	Black and Hispanic individuals have lower incomes, less wealth, and less preparation for retirement.	Tamborini and Kim (2020)
Occupation	Employed individuals are more likely to save for retirement.	Cupák et al. (2019); De los Santos (2020); Kalmi and Ruuskanen (2018)
	Self-employed workers are more likely to prepare for retirement.	Niu et al. (2020)

Source: *Prepared by the authors.*

Regarding sociodemographic and economic profiles, significant differences were observed in terms of preparation and financial planning for retirement, which vary according to gender, with a negative emphasis on single women, with dependents, without a household of their own, and with low education (Kumar et al., 2019; Niu et al., 2020; Rai et al., 2019). In contrast, men have greater financial literacy, consequently, they have greater financial planning and preparation for retirement, regardless of their age, marital status, educational level, and occupation (Clark et al., 2019; De los Santos et al., 2020; Niu et al., 2020). Such evidence reflects that public policies should have a priority focus on women, so that they can acquire new skills and confidence to save and invest (Yeh & Ling, 2022).

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As for the measurement methods for financial preparation for retirement, Hershey et al. (2010) proposed the Interdisciplinary Financial Planning Model. Such a model encompasses the psychological factors, indicators of social support and economic forces that contribute to each individual decision to plan and save (Hershey et al., 2010). More recently, Akben-Selcuk and Aydin (2021) designed the perception model for financial preparation for retirement in Turkey. Other scales analyzed financial planning along using other dimensions (Leandro-França et al., 2014) and the perception of the future retirement (Rafalski & Andrade, 2017).

For the Brazilian context, Vieira et al. (2022) designed the FPRS, which consists of three dimensions (Future Expectation, Financial Planning, and Savings Behavior). This scale aims to grasp the individual perception of their financial preparation for retirement, i.e. it addresses the subjective aspect and identifies financial behavior throughout life. In this study, the FPRS was chosen because it is a multidimensional scale and adapted to the Brazilian context.

3. METHOD

A survey was carried out using a questionnaire structured in 3 blocks. The first consists of 8 items that investigate the time left for retirement, the savings for retirement, the choice of some specific financial planning for retirement, the feeling of financial preparation for retirement, the comparison of the current and future financial status, dependence on someone's financial aid, whether you have a consigned payroll loan, and how you feel about your spending.

In turn, the second consists of 13 questions, which assess the level of perception of financial preparation for retirement. These questions come from the FPRS as proposed by Vieira et al. (2022). Finally, the third block consists of 9 questions to identify the profile of respondents, with variables of sex, age, marital status, race/ethnicity, educational level, whether they have financial dependents, type of housing, occupation, and range of monthly individual and family income.

Considering a population of 190,755,799 Brazilians (IBGE, 2010), a confidence level of 95%, and an error of 2%, the minimum desired sample was 2,401 respondents, distributed proportionally among Brazilian regions. Ten interviewers were previously trained by the researchers to apply the research. The project has been approved by the Research Ethics Committee (CAAE No. 53589721.5.0000.5346) and the respondents have signed the Free and Informed Consent Term (FICT).

As data analysis procedures, descriptive statistics, chi-square test, and regression were used. The chi-square test has as a null hypothesis the absence of association between the variables. The regression model has financial preparation for retirement as a dependent variable and as independent dummy variables (housing, education, consigned payroll loans, expenses, saving for retirement) how financially prepared you feel for retirement, how many banks/cooperatives you have a relationship with and there is a comparison between the situation today and what the person believes to have when reaching retirement age. As for the assumptions, the normality of errors (Kolmogorov-Smirnov test) and homoscedasticity (Pesarán-Pesarán test) were tested and the absence of multicollinearity was also analyzed through variance inflation factors (VIF).

4. ANALYSIS OF RESULTS

Data collection took place in 12 capital cities and 20 countryside towns between October 2021 and January 2022. A total sample of 2,920 respondents not yet retired was obtained, distributed among the regions as follows: 28% in the South, 41% in the Southeast, 6% in the Midwest, 19% in the Northeast, and 6% in the North. Among the respondents, the predominance is female (60.6%). Mean age is 38 years (standard deviation of 12 years). Regarding marital status, 48.7% are married or live in a marriage-like relationship. Regarding race/ethnicity, the majority (68.5%) of respondents are white. As for the educational level, 42.9% reported having completed high school or less. In terms of the type of housing, 54.7% answered to have a household of their own. In turn, considering occupation, the category salaried employee (36.2%) predominated in the responses. Table 2 shows the economic profile of respondents.

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Table 2

Economic profile of respondents according to the variables gross monthly individual income, gross monthly family income, dependents, consigned payroll loans, and expenses

Variables	Alternatives	Frequency	Percentage
Gross monthly individual income	Up to R$ 1,100.00	465	16.2
	Between R$ 1,100.00 and R$ 2,200.00	733	25.6
	Between R$ 2,200.01 and R$ 3,300.00	412	14.4
	Between R$ 3,300.01 and R$ 4,400.00	290	10.1
	Between R$ 4,400.01 and R$ 5,500.00	269	9.4
	Between R$ 5,500.01 and R$ 8,800.00	309	10.8
	Between R$ 8,800.01 and R$ 11,000.00	161	5.6
	Between R$ 11,000.01 and R$ 22,000.00	185	6.5
	Above R$ 22,000.00	39	1.4
Gross monthly family income	Up to R$ 1,100.00	178	6.3
	Between R$ 1,100.00 and R$ 2,200.00	418	14.7
	Between R$ 2,200.01 and R$ 3,300.00	373	13.1
	Between R$ 3,300.01 and R$ 4,400.00	317	11.1
	Between R$ 4,400.01 and R$ 5,500.00	318	11.2
	Between R$ 5,500.01 and R$ 8,800.00	485	17.0
	Between R$ 8,800.01 and R$ 11,000.00	305	10.7
	Between R$ 11,000.01 and R$ 22,000.00	338	11.9
	Above R$ 22,000.00	113	4.0
Has dependents	None	1,005	34.7
	1	947	32.7
	2	545	18.8
	3	227	7.8
	4 or more	173	6.0
Has a consigned payroll loan	No	2,430	84.4
	Yes	450	15.6
About expenses	I spend more than I earn	624	21.5
	I spend equal to what I earn	1,052	36.4
	I spend less than I earn	1,220	42.1
How many banks you have a relationship with	None	82	3.2
	1	868	34.1
	2	934	36.6
	3	409	16.0
	4 or more	256	10.0

Source: *Prepared by the authors.*

The income variables are quite heterogeneous, with greater representation in individual income between R$ 1,100.00 and R$ 2,200.00 and the category monthly family income ranges from R$ 5,500.01 to R$ 8,800.00 (17%).

Approximately 1/3 of respondents do not have any financial dependents, most do not have consigned payroll loans (84.4%). Table 3 describes retirement issues.

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Table 3
Profile of respondents according to variables regarding time left until retirement, knowledge about retirement savings, specific retirement planning

Variables	Alternatives	Frequency	Percentage
How long until you retire?	Does not know	553	19.9
	Up to 10 years	560	20.2
	11 to 20 years	529	19.1
	21 to 30 years	584	21.0
	Over 31 years	549	19.8
Have you ever tried to figure out how much you need to save for retirement?	No	2,224	76.7
	Yes, I know approximately	585	20.2
	Yes, I know exactly	89	3.1
Do you have any specific retirement plans?*	No	939	32.2
	Yes, I have been contributing to the public pension fund	1,421	48.8
	Yes, I bought/am buying apartment(s)/land(s) for retirement	359	12.3
	Yes, I buy stocks, funds, or bonds for long-term investment for retirement	275	9.4
	Yes, I have a life insurance policy	142	4.9
	Yes, I have money in savings	388	13.3
	Yes, I have a pension fund from my employer	65	2.2
	Yes, I have a private pension fund	162	5.6
	Other	78	2.7

The respondent chose one or more alternatives.
Source: *Prepared by the authors.*

It is observed that part of the sample does not know the time left to retire, a piece of data that demonstrates lack of preparation for retirement. As for specific planning for retirement, 48.8% contribute to the public pension fund, a piece of information that may be associated with the significant number of salaried employees. It is noteworthy that 32.2% do not have any specific planning for retirement and that investments (stocks, investment bonds, pension funds, and private pension plans) were below 10%. Table 4 shows the profile of respondents in relation to perceptions of preparation for retirement.

Table 4
Profile of respondents according to the variables feeling of financial preparation for retirement, comparison of current and future financial status, and dependence on financial aid

Variables	Alternatives	Frequency	Percentage
How financially prepared do you feel for retirement?	Not at all	973	33.5
	Very little	831	28.5
	Little	792	27.2
	Much	239	8.2
	Very much	76	2.6
Comparing your financial status today to what you believe you will have when you retire, your financial status is:	Much worse than what I'll have when I retire	213	7.4
	Worse than what I'll have when I retire	675	23.4
	Same as what I'll have when I retire	957	33.3
	Better than what I'll have when I retire	816	28.3
	Much better than what I will have when I retire	220	7.6
Are you currently depending on someone else's financial help to support your monthly expenses?	No	1,726	59.7
	Yes, I count on help to cover less than 25% of my expenses	317	10.9
	Yes, I count on help to cover 25% to 50% of my expenses	302	10.4
	Yes, I count on help to cover 51% to 75% of my expenses	178	6.1
	Yes, I count on help to cover more than 75% of my expenses	202	7.0
	Yes, I count on help, but I don't know when my expenses are paid by the person who helps me	171	5.9

Source: *Prepared by the authors.*

A large proportion of respondents do not feel financially prepared for retirement (33.5%). However, it is believed that the current situation is the same as it will be when they retire (33.3%), followed by an optimistic view in which 28.3% of respondents believe that it will be better than today's financial status. And, currently, most do not depend on someone's financial help to support monthly expenses (59.7%). Table 5 displays the valid averages and percentages of the items and dimensions corresponding to the FPRS.

Table 5
Mean and valid percentages of the variables and dimensions of the Financial Preparation for Retirement Scale

Dimension	Variables	Mean	Percentages				
			1*	2*	3*	4*	5*
Future expectation	I believe I'm saving enough to secure the standard of living I want in retirement.	2.4	30.7	25.2	23.8	12.5	7.8
	I feel that I will achieve the financial goals I set for myself.	3.0	14.7	16.8	32.5	20.8	15.2
	I feel able to save enough money to last until the end of my life.	2.5	29.7	23.1	24.0	13.9	9.4
	I feel that I will be financially secure until the end of my life.	2.6	27.3	21.8	25.5	14.6	10.8
	I think a lot about future finances.	3.6	8.2	13.3	23.0	24.0	31.7
Financial planning	I often compare my current financial position with the financial position I would like to have in retirement.	3.0	19.1	18.3	25.7	17.4	19.5
	I think about the financial issues of retired people.	3.2	14.9	17.6	24.5	21.0	22.1
	I often talk to my family about financial issues for retired people.	2.5	28.8	24.4	23.5	11.8	11.5
Savings behavior	I feel able to save money to make my dreams come true.	3.0	14.2	19.5	30.9	18.9	16.4
	I make a reserve of money that I receive monthly for some future need.	2.8	26.2	21.2	19.1	15.9	17.6
	I save part of my income every month.	2.7	29.7	19.7	19.6	14.7	16.3
	I save money regularly to achieve long-term financial goals.	2.6	29.8	21.3	18.3	15.4	15.2
	I start saving more when I get a pay rise.	2.8	26.0	19.2	22.4	15.6	16.7

Note: *Likert-type scale applied: 1* = Never; 2* = Rarely; 3* = Sometimes; 4* = Often; 5* = Always.*
Source: *Prepared by the authors.*

In the dimension "Future Expectations", it is observed that in 3 items the predominant answer was never, reflecting the incapacity and insecurity, as well as the lack of future financial projections. However, the frequency was raised to "I think a lot about future finances," which denotes a concern for the future, ratified by the preponderant answer "Sometimes" to the item "I feel that I will achieve the financial goals I set for myself." As for Financial Planning, the most marked response was sometimes for 3 items. However, for the item "I often talk to my family about financial issues for retired people," the alternative was never the most preponderant, and this demonstrates that the person thinks, worries, but does not talk to their family, directly influencing individual financial planning.

Regarding Saving Behavior, 4 items were never the most chosen answer, and this demonstrates that the sample does not save, nor does it save for the future. The only item where respondents marked "Sometimes" refers to saving to make dreams come true. Then, the 3 dimensions of the scale and the FPRS were built using the proposed methodology. Figure 1 highlights the distribution of the frequency of responses and Table 6 highlights the mean values and standard deviations.
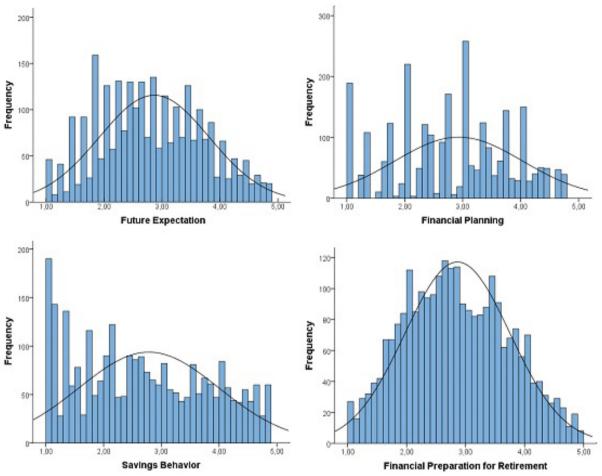
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Figure 1 *Frequency distribution of the dimensions and the Financial Preparation for Retirement Scale*
Source: *Prepared by the authors.*

Table 6
Mean, standard deviation, and rating on the Financial Preparation for Retirement Scale

Dimension	Mean	Standard deviation	Percentages			
			VL*	L*	H*	VH*
Future Expectation	2.5	0.99	18.3	34.4	28.7	18.5
Financial Planning	2.6	1.05	18.8	27.3	29.5	24.4
Savings Behavior	2.4	1.14	30.4	26.3	20.2	23.0
Financial Preparation for Retirement	2.5	1.00	16.2	35.0	27.5	21.4

Note: *FPRS levels: VL* = Very low; L* = Low, H* = High, VH* = Very high.*
Source: *Prepared by the authors.*

The average is around 2.5, which according to the scale rating indicates low financial preparation. In 2 dimensions, "Future Expectation" and "Savings Behavior", and on the FPRS more than 50% of respondents are rated in the very low or low categories. The result for the dimension "Financial Planning" is slightly better with more respondents rated in the categories high and very high. For more than 1/3 of respondents, financial preparation for retirement is low, and for 16.2% it is very low, i.e. a significant portion of the population notices that they cannot reach an adequate level of financial preparation for retirement.

After identifying the levels of preparation for retirement, we sought to assess the differences according to socioeconomic and demographic profiles (Table 7).

Table 7
Financial preparation for retirement x explanatory variables

Financial preparation for retirement →		Very low (1)	Low (2)	High (3)	Very high (4)	Qui² Pearson [p value]
Variables	**Categories**	**% (line)**	**% (line)**	**% (line)**	**% (line)**	
Sex	Male	13.7	31.2	30.5	24.6	30.01 [0.00]
	Female	17.8	37.4	25.8	19.1	
Age	18 to 29 years	16.8	37.5	28.4	17.2	24.75 [0.00]
	30 to 38 years	15.0	32.9	30.4	21.7	
	39 to 48 years	15.7	33.3	29.5	21.4	
	49 to 78 years	16.6	35.4	22.6	25.4	
Marital status	Single	16.8	36.6	28.9	17.7	52.19 [0.00]
	Married or living in a marriage-like relationship	13.9	33.9	28.4	23.8	
	Separated/divorced	24.6	34.8	20.3	20.3	
	Widower	23.3	20.0	10.0	46.7	
	Other	21.1	42.1	21.1	15.8	
Race/ethnicity	White	14.0	33.9	30.2	21.9	52.46 [0.00]
	Black	25.1	34.7	24.7	15.5	
	Brown	18.8	39.8	19.5	21.8	
	Other	20.8	27.1	31.3	20.8	
Educational level	Incomplete Elementary School	32.6	26.9	17.1	23.4	208.51 [0.00]
	Elementary School	25.8	42.3	8.9	23.0	
	Technical Course	17.1	30.5	26.2	26.2	
	High School	19.2	39.1	21.6	20.1	
	Higher Education	13.8	38.4	30.2	17.6	
	Specialization or MBA	9.7	26.5	36.4	27.4	
	Master's or Doctorate degree	7.9	28.9	45.0	18.2	
Occupation	Civil servant	10.4	32.9	34.8	21.9	87.03 [0.00]
	Salaried employee	20.3	36.2	22.7	20.9	
	Private practitioner	16.7	28.4	33.3	21.6	
	Self-employed worker	18.2	37.0	24.1	20.7	
	Business owner	12.0	27.4	28.0	32.6	
	Does not work	18.2	42.0	28.2	11.6	
	Other	17.2	39.5	28.7	14.6	
Gross monthly individual income	Up to R$ 1,100.00	19.1	41.7	23.2	15.9	227.95 [0.00]
	Between R$ 1,100.00 and R$ 2,200.00	23.3	41.7	15.6	19.4	
	Between R$ 2,200.01 and R$ 3,300.00	20.1	36.9	28.2	14.8	
	Between R$ 3,300.01 and R$ 4,400.00	11.7	31.4	34.1	22.8	
	Between R$ 4,400.01 and R$ 5,500.00	13.4	30.1	32.3	24.2	
	Between R$ 5,500.01 and R$ 8,800.00	7.8	32.7	35.3	24.3	
	Between R$ 8,800.01 and R$ 11,000.00	9.3	26.7	36.6	27.3	
	Between R$ 11,000.01 and R$ 22,000.00	4.3	18.4	42.7	34.6	
	Above R$ 22,000.00	2.6	25.6	43.6	28.2	
Gross monthly family income	Up to R$ 1,100.00	20.2	48.3	14.0	17.4	311.16 [0.00]
	Between R$ 1,100.00 and R$ 2,200.00	28.2	39.5	11.7	20.6	
	Between R$ 2,200.01 and R$ 3,300.00	21.7	43.2	20.6	14.5	
	Between R$ 3,300.01 and R$ 4,400.00	23.0	36.9	22.4	17.7	
	Between R$ 4,400.01 and R$ 5,500.00	17.9	32.4	28.3	21.4	
	Between R$ 5,500.01 and R$ 8,800.00	10.3	36.5	34.2	19.0	
	Between R$ 8,800.01 and R$ 11,000.00	7.2	30.8	38.4	23.6	
	Between R$ 11,000.01 and R$ 22,000.00	5.9	23.4	43.8	26.9	
	Above R$ 22,000.00	1.8	20.4	39.8	38.1	

Source: *Prepared by the authors.*

It is noticed that there is a statistically significant dependence relationship at the 1% level between financial preparation for retirement for all variables tested. Most men have high or very high financial preparation, while low and very low categories predominate among women, confirming the study by several authors (Kalmi & Ruuskanen, 2018; Potrich et al., 2018). As for the educational level, Clark et al. (2019) and Niu et al. (2020) have already identified that the higher the educational level, the greater the financial preparation for retirement, such results were reaffirmed in this research.

Also, it is observed that civil servants and business owners have higher levels of financial preparation for retirement. It is also noticed that categories with higher income levels have higher percentages of high and very high financial preparation for retirement, corroborating the studies by Clark et al. (2019), Cupák et al. (2019), and Rai et al. (2019).

Finally, we sought to assess the influence of socioeconomic and demographic factors and behavior variables on financial preparation for retirement through linear regression analysis. Table 8 displays the results of the robust estimation heteroskedasticity consistent covariance matrix (HCCM) (White, 1980).

Table 8
Estimated regression model for financial preparation for retirement

Model	Coefficients	Wald's Chi²	Sig.	VIF
Dummy educational level	0.246	58.355	0.000	1.199
Dummy housing	0.104	11.875	0.001	1.087
Dummy consigned payroll loan	-0.089	5.259	0.022	1.100
Dummy expenses	-0.601	272.601	0.000	1.109
Dummy saving for retirement	0.354	95.670	0.000	1.199
How financially prepared you feel for retirement	0.307	344.031	0.000	1.341
How many banks/cooperatives you have a relationship with	0.056	31.500	0.000	1.083
Comparing your situation today with what you believe you will have when you retire	0.002	0.016	0.900	1.075
Age	-0.004	9.881	0.002	1.273

Note: *Dummy housing (1 household of their own, 0 others); dummy educational level (1 from Higher Education, 0 below Higher Education); dummy consigned payroll loan (1 has, 0 does not have); dummy expenses (1 I spend equal to/more than what I earn, 0 I spend less than I earn); dummy saving for retirement (1 I know the value, 0 I don't know the value); how financially prepared you feel for retirement (1 not at all, 2 very little, 3 little, 4 much, 5 very much); how many banks/cooperatives you have a relationship with (number); comparing your situation today with what you believe you will have when you retire (1 much worse, 2 worse, 3 the same, 4 better, 5 much better); age (number).*
Source: *Prepared by the authors.*

The adjusted coefficient of determination is 0.423. The KS test did not reject the null hypothesis, indicating that the errors have a normal distribution (value 0.019 and sig. 0.057). All inflation factors (VIF) are less than 10, given the assumption of absence of multicollinearity.

The variable showing the highest positive coefficient was knowledge of the value they need to save for retirement, followed by how the person feels financially prepared for retirement, indicating that the greater the knowledge and feeling regarding financial management, the greater the perception of financial preparation for retirement. On the other hand, the existence of consigned payroll loans and spending above income showed negative values, reducing financial preparation for retirement.

Regarding the economic and demographic variables, it was found that respondents who own their own home and have Higher Education show greater financial preparation for retirement than the others, a piece of information similar to the study by De los Santos (2019). Another major factor is that younger people are less prepared for retirement – this relationship was also reported by Clark et al. (2019).

5. DISCUSSION AND PRACTICAL IMPLICATIONS

Pension reforms have broad economic and social impacts on significant portions of the population, especially when it comes to reforms carried out in emerging economies. For every 4 respondents, 3 do not

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even stop to think about how much they would need to save for retirement, in addition to showing overconfidence in the future benefit that will be granted by the Brazilian National Institute of Social Security.

Also, the way in which each government manages public pensions can have significant and lasting effects on income equality policies and general welfare. In Brazil, pension regimes are linked to individual contributions and employment history (Bravo & Herce, 2022). In the country, 12% of the working age population is unemployed; 40.8% are engaged in informal work (Komatsu & Menezes-Filho, 2020), where there are no guarantees such as retirement, and another significant portion has their retirement planning mainly based on contribution to the public pension system. In this scenario, the vulnerability of the population regarding their ability to save for the future, the difficulty of guaranteeing some income for the purpose of retiring, and the dependence of those who are able to contribute in relation to the social security system become clear.

This panorama directly contributes to explain the poor results for the dimensions "Savings Behavior" and "Future Expectation". Without a set of public policies aimed at full employment, expansion of Higher Education, and programs for financial literacy and preparation for retirement, both associated with a legislation that regulates the supply and demand of credit, the most vulnerable people will remain without future expectations about their financial life.

It was also possible to identify that women, young people, divorced/separated persons, blacks, with up to complete elementary education, borrowed housing, unemployed, with a gross monthly family income of up to R$ 1,100.00 and with 4 or more dependents constitute the profile of citizens less able to deal with financial preparation for retirement. These groups with high vulnerabilities related to income, employment, schooling, and inadequate expenditure management are, therefore, the most dependent on public policies.

The promotion of specific interventions aimed at reducing social inequalities can lead to an improvement in the cost of the social security system, as well as a reduction

in the country's level of indebtedness. At the same time, the adoption of effective educational policies, such as the inclusion of the themes preparation for retirement in school curricula that contribute to improved levels of education and financial literacy (França & Hershey, 2018; Nolan & Doorley, 2019), the support in creating an effective planning (Han et al., 2019) and continuous training on the psychological and financial aspects of a healthy lifestyle (Nansubuga, 2018) are alternatives that can help improving financial preparation for retirement.

The financial system has been responsible for the provision of facilitated credit (Lusardi & Mitchell, 2011b; Tiryaki et al., 2017) and for the lack of clarity of the conditions of these loans (Garz et al., 2021). Access to financial products and services went from 85% in 2019 to 96% in 2021, one of the reasons for this boost was the payment of emergency aid granted during the pandemic of coronavirus disease 2019 (COVID-19) (Banco Central do Brasil, 2021). The health crisis boosted the opening of accounts to receive the aid, causing the expansion of fintechs (Furlani & Carvalho Dias, 2021). Thus, these entities began to contribute to family indebtedness and the reduction of savings for retirement through the availability of credit cards, financing, and mainly consigned payroll-deductible loans. Under these circumstances, situations of over-indebtedness and discrimination are also amplified, as potentially vulnerable groups have reduced credit approval rates or receive more expensive credit offers than others (Garz et al., 2021). Therefore, it is necessary and urgent that the financial system take the role of consumer protection, application of suitability, and promotion of actions aimed at providing clients with financial literacy.

Thus, it is key to expand the Brazilian National Strategy for Financial Education (Estratégia Nacional de Educacional Financeira [ENEF]) and the PPAs. It is necessary that the government, the Central Bank, the Securities and Exchange Commission of Brazil (Comissão de Valores Mobiliários [CVM]), financial agents, and society (non-governmental organizations [NGOs], digital influencers) make a joint effort in favor of a greater reach of the initiatives to increase financial knowledge and improve the population's financial behavior.

6. FINAL REMARKS

When it comes to preparing for retirement, it is observed that Brazil presents a very different scenario from those identified in developed countries. In these countries, the existence of financial preparation for retirement is a

fact for the majority of the population (Ruthbah, 2021), what is discussed is whether this preparation has an adequate level (Han et al., 2019) and whether the citizen is able to decide how to adequately allocate resources and

make necessary investments (Baulkaran, 2022; França & Hershey, 2018; Nolan & Doorley, 2019). While in Brazil the scenario consists in great incapacity for financial preparation for retirement for a significant portion of the population.

Regarding the goal of assessing the perception of financial preparation for retirement in the non-retired Brazilian population, it was identified that the vast majority of Brazilians had low/very low preparation. In the analysis of the influence of socioeconomic, demographic, and behavioral variables, it was identified that groups with women, young people, divorced/separated persons, black people, those with up to complete elementary education, borrowed housing, unemployed, with a gross monthly family income of up to R$ 1,100.00, and having 4 or more dependents are the most vulnerable ones. Without any savings capacity, spending more than they earn and depending on consigned payroll loans and other credits to "make ends meet," the most vulnerable group cannot think or measure how much they would need to pay for their retirement and, consequently, have low future financial expectations.

Therefore, from a practical viewpoint, the scenario is challenging and the future will largely depend on the capacity of the State and the financial system. The existence of a State-level public policy for a consistent, effective, and long-term social security and a broad effort of population's financial literacy are indispensable conditions for the future financial expectation to be better than today, so that the country is able to increase the financial well-being of its citizens. From a theoretical and methodological viewpoint, as far as we are aware, this is the first research study depicting the perception of citizens regarding financial preparation for retirement with a comprehensive sample of Brazilians.

One of the limitations of this research study is using the survey methodology, which is subject to some biases of the respondents, such as providing socially desirable responses. Research on this theme in the Brazilian context is still incipient. Further research can advance both in the search for a new background (economic, social, cultural, etc.) and the impacts (financial well-being, quality of life, financial citizenship, etc.) of financial preparation for retirement.

REFERENCES

Abrantes-Braga, F. D. M., & Veludo-de-Oliveira, T. (2020). Help me, I can't afford it! Antecedents and consequence of risky indebtedness behaviour. *European Journal of Marketing*, *54*(9), 2223-2244.

Agabalinda, C., & Isoh, A. V. N. (2020). Moderating effects of social learning on the usage of formal financial services in Kampala, Uganda. *Journal of Economics and International Finance*, *12*(3), 120-129.

Akben-Selcuk, E., & Aydin, A. E. (2021). Ready or not, here it comes: A model of perceived financial preparation for retirement. *Journal of Adult Development*, *28*(4), 346-357.

Alonso-García, J., & Rosado-Cebrian, B. (2021). Financial crisis and pension reform in Spain: The effect of labour market dynamics. *Journal of Economic Policy Reform*, *24*(2), 201-218.

Anderson, A., Baker, F., & Robinson, D. T. (2017). Precautionary savings, retirement planning and misperceptions of financial literacy. *Journal of Financial Economics, 126*(2), 383-398.

Arrondel, L., Debbich, M., & Savignac F. (2013). Financial literacy and financial planning in France. *Numeracy*, *6*(2), 1-23.

Ataides, C. M., & Santos, M. S. (2017). A reforma previdenciária: Uma análise do saldo deficitário do regime geral de previdência social e sua relação com as mudanças demográficas do Brasil. *Revista de Auditoria Governança e Contabilidade*, *5*(19), 78-94.

Banco Central do Brasil. (2021). *Relatório de Cidadania Financeira 2021*. https://www.bcb.gov.br/content/cidadaniafinanceira/documentos_cidadania/RIF/Relatorio_de_Cidadania_Financeira_2021.pdf

Baulkaran, V. (2022). Personal bankruptcy and consumer credit delinquency: The case of personal finance education. *International Review of Financial Analysis*, *81*, 102098.

Birkenmaier, J., Kim, Y., & Maynard, B. (2021). Financial outcomes of interventions designed to improve retirement savings: A systematic review. *Journal of Gerontological Social Work*, *64*(3), 238-256.

Boehs, S. D. T. M., Costa, A. B., & Schmitt, J. (2016). Razões para retorno ao trabalho na aposentadoria: Estudo com servidores de uma universidade brasileira. *Kairós-Gerontologia*, *19*(3), 225-244.

Bravo, J. M., & Herce, J. A. (2022). Career breaks, broken pensions? Long-run effects of early and late-career unemployment spells on pension entitlements. *Journal of Pension Economics & Finance*, *21*(2), 191-217.

Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, *79*, 228-237.

Bucher-Koenen, T., Lusardi, A., Alessie, R., & Van Rooij, M. (2017) How financially literate are women? An overview and new insights. *Journal of Consumer Affairs*, *51*, 255-283.

Bucher-Koenen, T., Alessie, R. J., Lusardi, A., & Van Rooij, M. (2021). *Fearless woman: Financial literacy and stock market participation*. National Bureau of Economic Research, 28723.

Burnett, J., Davis, K., Murawski, C., Wilkins, R., & Wilkinson, N. (2018). Measuring the adequacy of retirement savings. *Review of Income and Wealth*, 64(4), 900-927.

Camarano, A. A. (2020). Depending on the income of older adults and the coronavirus: orphans or newly poor? *Ciência & Saúde Coletiva*, 25, 4169-4176.

Carneiro, M. D. F. C., Alves, V. P., & Silva, H. S. D. (2021). Aposentadoria e planejamento para vida pós-trabalho: um estudo com servidores de um instituto federal de educação. *Revista Brasileira de Geriatria e Gerontologia*, 24(1), 1-13.

Chan, M. C., Chung, E. K., & Yeung, D. Y. (2021). Attitudes toward retirement drive the effects of retirement preparation on psychological and physical well-being of Hong Kong Chinese retirees over time. *The International Journal of Aging and Human Development*, 93(1), 584-600.

Chen, Z., & Zurlo, K. A. (2022). The role of secured and unsecured debt in retirement planning. *Journal of Family and Economic Issues, (February 26, 2022)*, 1-11.

Clark, R. L., Hammond, R. G., & Khalaf, C. (2019). Planning for retirement? The importance of time preferences. *Journal of Labor Research*, 40(2), 127-150.

Culotta, F. (2021). Life expectancy heterogeneity and pension fairness: An Italian north-south divide. *Risks*, 9(3), 57.

Cupák, A., Kolev, G. I., & Brokešová, Z. (2019). Financial literacy and voluntary savings for retirement: novel causal evidence. *The European Journal of Finance*, 25(16), 1606-1625.

Da Silva, M. M., Turra, V., & Chariglione, I. P. F. S. (2018). Idoso, depressão e aposentadoria: Uma revisão sistemática da literatura. *Revista de Psicologia da IMED*, 10(2), 119-136.

De Bruijn, E. J., & Antonides, G. (2020). Determinants of financial worry and rumination. *Journal of Economic Psychology*, 76, 102233.

De los Santos, J. A. A., Labrague, L. J., & Milla, N. E. (2020). Happiness and retirement readiness among pre-retiring employees: A cross-sectional study. *Ageing International*, 45(1), 85-98.

Emenda Constitucional n. 103, de 12 de novembro de 2019. (2019). Altera o sistema de previdência social e estabelece regras de transição e disposições transitórias. https://www.planalto.gov.br/ccivil_03/constituicao/emendas/emc/emc103.htm

Fan, L., Stebbins, R., & Kim, K. T. (2021). Skint: Retirement? Financial hardship and retirement planning behaviors. *Journal of Family and Economic Issues, (July 3, 2021)*, 1-14.

Figueira, D. A. M., Haddad, M. D. C. L., Gvozd, R., & Pissinati, P. S. C. (2017). A tomada de decisão da aposentadoria influenciada pelas relações familiares e laborais. *Revista Brasileira de Geriatria e Gerontologia, 20*(2), 207-215.

França, L. H., & Hershey, D. A. (2018). Financial preparation for retirement in Brazil: A cross-cultural test of the interdisciplinary financial planning model. *Journal of Cross-Cultural Gerontology*, 33(1), 43-64.

Freitas Vieira, J. F., & Graeff, B. (2020). Programas de preparação para aposentadoria no Brasil: Uma revisão de literatura. *Estudos Interdisciplinares sobre o Envelhecimento*, 25(3), 345-362.

Furlani, C., & Carvalho Dias, M. (2021). Transformações recentes no sistema financeiro nacional: O caso das *fintechs*. *Revista Tecnológica da Fatec Americana*, 9(1), 1-12.

Garz, S., Giné, X., Karlan, D., Mazer, R., Sanford, C., & Zinman, J. (2021). Consumer protection for financial inclusion in low-and middle-income countries: Bridging regulator and academic perspectives. *Annual Review of Financial Economics*, 13, 219-246.

Han, J.; Ko, D., & Choe, H. (2019). Classifying retirement preparation planners and doers: A multi-country study. *Sustainability, 11*(10), 2815.

Hansson, I., Buratti, S., Johansson, B., & Berg, A. I. (2019). Beyond health and economy: Resource interactions in retirement adjustment. *Aging & Mental Health*, 23(11), 1546-1554.

Herrador-Alcaide, T. C., Hernández-Solís, M., & Topa, G. (2021). A model for personal financial planning towards retirement. *Journal of Business Economics and Management*, 22(2), 482-502.

Hershey, D. A., Henkens, K., & Van Dalen, H. P. (2010). Aging and financial planning for retirement: Interdisciplinary influences viewed through a cross-cultural lens. *The International Journal of Aging and Human Development*, 70(1), 1-38.

Hershey, D. A., Jacobs-Lawson, J. M., & James, T. A. (2012). Effective financial planning for retirement. In M. Wang (Ed.), *The Oxford Handbook of Retirement* (pp. 402-430). Oxford University Press.

Instituto Brasileiro de Geografia e Estatística. (2010). *Censo 2010. Resultados*. http://www.censo2010.ibge.gov.br/resultados_do_censo2 010.php

Instituto Brasileiro de Geografia e Estatística. (2019a). *Pesquisa Nacional por Amostra de Domicílios Contínua*. Rio de Janeiro: IBGE.

Instituto Brasileiro de Geografia e Estatística. (2019b). *Projeção da população*. https://www.ibge.gov.br/apps/populacao/projecao/index.html

Jantan, M. S. (2020). The improvement in life expectancy: Systematic literature review of retirement saving. *SSRN, (May 18, 2020)*.

Kalmi, P., & Ruuskanen, O. P. (2018). Financial literacy and retirement planning in Finland. *Journal of Pension Economics & Finance*, 17(3), 335-362.

Komatsu, B. K., & Menezes-Filho, N. (2020). *Simulações de impactos da COVID-19 e da renda básica emergencial sobre o desemprego, renda, pobreza e desigualdade* (Policy Paper, no. 43). Insper.

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Kopanidis, F. Z., Robinson, L. J., & Reid, M. (2017). To stay or to go? Postretirement housing choices of single baby boomer women. *Journal of Women & Aging*, *29*(5), 417-427.

Krawulski, E., Boehs, S. D. T. M., Cruz, K. D. O., & Medina, P. F. (2017). Voluntary teaching in retirement: A transition between work and non-work. *Psicologia: Teoria e Prática*, *19*(1), 55-66.

Kumar, S., Tomar, S. & Verma, D. (2019). Women's financial planning for retirement: Systematic literature review and future research agenda. *International Journal of Bank Marketing*, *37*(1), 120-141.

Leandro-França, C., Murta, S. G., & Iglesias, F. (2014). Planejamento da aposentadoria: Uma escala de mudança de comportamento. *Revista Brasileira de Orientação Profissional*, *15*(1), 75-84.

Leandro-França, C., Iglesias, F., & Murta, S. G. (2018). Future and retirement: Evidence of validity for a measure of temporal perspective. *Revista Psicologia Organizações e Trabalho*, *18*(2), 390-395.

Lei n. 10.741, de 1º de outubro de 2003. 2003. Dispõe sobre o Estatuto da Pessoa Idosa e dá outras providências. http://www.planalto.gov.br/ccivil_03/leis/2003/l10.741.htm

Lichtenstern, A., Shevchenko, P. V., & Zagst, R. (2021). Optimal life-cycle consumption and investment decisions under age-dependent risk preferences. *Mathematics and Financial Economics*, *15*(2), 275-313.

Lusardi, A., & Mitchell, O. S. (2011a). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance*, *10*(4), 509-525.

Lusardi, A., & Mitchell, O. S. (2011b). Financial literacy around the world: an overview. *Journal of Pension Economics & Finance*, *10*(4), 497-508.

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, *52*(1), 5-44.

Lusardi, A., & Mitchell, O. S. (2017). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. *Quarterly Journal of Finance*, *7*(3), 1750008.

Lusardi, A., Mitchell, O. S., & Oggero, N. (2020). Debt and financial vulnerability on the verge of retirement. *Journal of Money, Credit and Banking*, *52*(5), 1005-1034.

Macedo, L. S. S., Bendassolli, P. F., & Torres, T. D. L. (2017). Representações sociais da aposentadoria e intenção de continuar trabalhando. *Psicologia & Sociedade*, *29*, e145010.

Marangoni, J. F. C., & Mangabeira, J. A. (2014). Política integrada de atenção à saúde do servidor público do Distrito Federal: O programa de preparação para o período pós-carreira. *Revista Brasileira de Medicina do Trabalho*, *12*(1), 8-15.

Martinez, R., Morsch, P., Soliz, P., Hommes, C., Ordunez, P., & Vega, E. (2021). Life expectancy, healthy life expectancy, and burden of disease in older people in the Americas, 1990-2019: A population-based study. *Revista Panamericana de Salud Pública*, *45*, 1-14.

Ministério do Trabalho e Previdência. (2022). *Projeções financeiras e atuariais para o regime geral de previdência social*. https://www25.senado.leg.br/documents/59501/122948047/IV.5+ -+Proje%C3%A7%C3%B5es+Atuariais+para+o+RGPS.pdf/e619e768-7f9f-415b-b945-ec9f65db4f71

Morduch, J., & Schneider, R. (2017). *The financial diaries: How American families cope in a world of uncertainty*. Princeton University Press.

Nansubuga, F. (2018). The role of self-efficacy in explaining psychological and financial preparation for retirement: A behavioural study of retirement transitioning in Uganda. *Journal of Adult Development*, *25*(4), 297-308.

Niu, G., Zhou, Y., & Gan, H. (2020). Financial literacy and retirement preparation in China. *Pacific-Basin Finance Journal*, *59*, 101262.

Nolan, A., & Doorley, K. (2019). *Financial literacy and preparation for retirement* (IZA Discussion Papers, no. 12187). IZA - Institute of Labor Economics.

Noone, J. H., Stephens, C., & Alpass, F. (2010). The Process of Retirement Planning Scale (PRePS): Development and validation. *Psychological Assessment*, *22*(3), 520.

Nulle, A. L., & Moreira, C. S. (2019). A previdência social: Reforma ou há alternativas? *Economia e Sociedade*, *28*, 791-819.

Platts, L. G., Corna, L. M., Worts, D., McDonough, P., Price, D., & Glaser, K. (2019). Returns to work after retirement: A prospective study of unretirement in the United Kingdom. *Ageing & Society*, *39*(3), 439-464.

Potrich, A. C. G., Vieira, K. M., & Kirch, G. (2018). How well do women do when it comes to financial literacy? Proposition of an indicator and analysis of gender differences. *Journal of Behavioral and Experimental Finance*, *17*, 28-41.

Rafalski, J. C., & Andrade, A. L. (2017). Desenvolvimento da Escala de Percepção de Futuro da Aposentadoria (EPFA) e correlatos psicossociais. *Psico-USF*, *22*(1), 49-62.

Rai, K., Dua, S., & Yadav, M. (2019). Association of financial attitude, financial behaviour and financial knowledge towards financial literacy: A structural equation modeling approach. *FIIB Business Review*, *8*(1), 51-60.

Ruthbah, U. (2021). The retirement puzzle. *Australian Journal of Management*, *47* (2), 1-26.

Schuabb, T. C., & França, L. H. D. F. P. (2020). Planejamento financeiro para a aposentadoria: Uma revisão sistemática da literatura nacional sob o viés da psicologia. *Estudos e Pesquisas em Psicologia*, *20*(1), 73-98.

Schuabb, T. C., França, L. H. D. F. P., & Amorim, S. M. (2019). Retirement savings model tested with Brazilian private health care workers. *Frontiers in Psychology*, *10*, 1701.

Seidl, J., Leandro-França, C., & Murta, S. G. (2018). Impact and support evaluation of a retirement planning course. *Revista Psicologia Organizações e Trabalho*, *18*(4), 494-502.

Seidl, J., Neiva, E. R., Noone, J. H., & Topa, G. (2021). Process of retirement planning scale: Psychometric properties of

R. Cont. Fin. – USP, São Paulo, v. 34, n. 91, e1705, 2023

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the complete and short Spanish versions. *Work, Aging and Retirement*, *7*(2), 154-165.

Sharpe, D. L. (2021). Reinventing retirement. *Journal of Family and Economic Issues*, *42*(1), 11-19.

Silva, R. S., & Rodrigues, N. D. (2016). Saúde emocional: A importância de planejar a aposentadoria. *Ensaios e Ciências Biológicas Agrárias e da Saúde*, *20*(2), 116-121.

Suari-Andreu, E., Alessie, R., & Angelini, V. (2019). The retirement-savings puzzle reviewed: The role of housing and bequests. *Journal of Economic Surveys*, *33*(1), 195-225.

Tamborini, C. R., & Kim, C. (2020). Are you saving for retirement? Racial/ethnic differentials in contributory retirement savings plans. *The Journals of Gerontology: Series B*, *75*(4), 837-848.

Tan, S., & Singaravelloo, K. (2020). Financial literacy and retirement planning among government officers in Malaysia. *International Journal of Public Administration*, *43*(6), 486-498.

Tiryaki, G. F., Gavazza, I. D. O., Andrade, C. M., & Mota, A. L. (2017). Ciclos de crédito, inadimplência e as flutuações econômicas no Brasil. *Revista de Economia Contemporânea*, *21*(1), 1-33.

Vieira, K. M., Rosenblum, T. O. A., & Matheis, T. K. (2022). And tomorrow, how will it be? Developing a Financial Preparation for Retirement Scale (FPRS). *Journal of Behavioral and Experimental Finance*, *35*, 100709.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: Journal of The Econometric Society*, *48*(4), 817-838.

Witvorapong, N., Yoon, Y., & Pothisiri, W. (2022). Do expectations for post-retirement family and government support crowd out pre-retirement savings? Insights from the working-age population in Thailand. *Journal of Pension Economics & Finance*, *21*(2), 218-236.

Yeh, T. M., & Ling, Y. (2022). Confidence in financial literacy, stock market participation, and retirement planning. *Journal of Family and Economic Issues*, *43*(1), 169-186.

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R. Cont. Fin. – USP, São Paulo, v. 34, n. 91, e1705, 2023