



CANADIAN RETIREMENT PLANNING BEHAVIOR: HOW RELIANCE ON A GOVERNMENT PENSION RELATES TO PRE-RETIREMENT SAVINGS AND PLANNING BEHAVIOURS

Tanya M. Staples, M.A., CFP®

Ashlyn Rollins-Koons M.A., CFP®

Gregory J. Anderson MBA, CFP®

Blake Gray MBA, Ph.D., CFP®

Personal Financial Planning Department, Kansas State University

Key words:

to come

ABSTRACT

Canadians benefit from a robust government pension system that is designed to alleviate poverty. Concerns remain that Canadians are not saving enough for retirement. This study examines whether expected reliance on Canada's government pension system is associated with non-retired Canadians' engagement with retirement saving behaviour. Controlling for a variety of demographic and socioeconomic factors, this study supports the hypotheses that Canadians who expect to rely on government pensions are less likely to save and/or calculate retirement needs. This may contribute to retirement shortfalls. Implications for policymakers, practitioners, and researchers are discussed.



Introduction

For many Canadians, the recent pandemic resulted in an increased focus on present needs and increased doubts about the future, which is often reflected in spending, saving, and investing behaviours (Asebedo et al. 2021). Financial planning centres around balancing present and future wants and needs. Individuals face many challenges when preparing for retirement including forgoing present needs for an unknown future benefit that can be difficult to quantify. The contradiction is reflected in the large percentage of Canadians who say they want to prioritize financial wellness, while few have calculated retirement needs or created a formal financial plan (Canadian Imperial Bank of Commerce 2022).

There is also concern for the increasing financial strain on public and private resources as Canadians age with almost 19% being 65 or older (Raina et al., 2019; Statistics Canada, 2021). Canadians benefit from a robust public retirement income system relative to other countries. The Global Pension Index Report (Mercer 2022) gives Canada a "B" rating as it relates to adequacy, stability, and integrity. The Canadian system is on par with that of the United Kingdom and is rated higher than that of the United States ("C+"), but lower than that of Australia ("B+"). While the Canadian Federal Government has taken steps to strengthen the public retirement systems, this system is designed to alleviate poverty among seniors and protect retirees from significant declines in their standard of living (Blackshaw & Cahill 2020). In 2019, Canadians over the age of 65 had average expenditures of average \$48,453, (adjusted for inflation to 2023, \$55,188) (StatsCan 2023). To ensure adequate retirement, Canadians have a responsibility to save and plan for their retirement as well.

In the private sector, approximately 6.6 million Canadians were covered by pension plans in 2020. Two-thirds or approximately 4.4 million of those pension members, were participants of defined benefit pension plans (Mercer 2022). Pension plans in Canada represent approximately 23% of the average pre-retirement income needed, while Canada Pension Plan (CPP) and Old Age Security (OAS) account for approximately 50% of the average industrial wage. This assumes 60% -pre-retirement income need, based on the average industrial wage. Together the three pillars of CPP, OAS, and employer pension plans account for approximately 73% of the retirement income of average Canadians, meaning many Canadians may need to save on their own to keep their standard of living in retirement (Blackshaw and Cahill, 2020).

Research is needed to understand how Canadians' reliance on government pensions influences how they save for retirement. The primary question is, how does expected reliance on government pensions relate to voluntary savings for retirement and/or the calculation of retirement needs? Following an examination of current literature and findings of this analysis, implications for financial professionals, policymakers, and researchers are discussed.

Literature Review

Canadian Retirement System

The Canadian Retirement System comprises three pillars: Old Age Security (OAS), the Canada Pension Plan (CPP), the Quebec Pension Plan (QPP), and employer-sponsored pension plans. Old Age Security (OAS) is a non-contributory plan, funded by general tax revenue with age and residency as the only eligibility requirements. OAS offers some additional benefits for very low-income



Canadians to alleviate poverty. The CPP and QPP are contributory plans that are administered by federal and provincial governments. Quebec residents do not receive the CPP, but instead are entitled to the QPP. Both employees and employers pay into the plan through payroll deductions. To be eligible to receive the CPP/QPP pension you must contribute. The benefit is determined by a formula that considers the length of the contribution period, amount contributed, and age of the contributor. Average CPP 2023, is \$717.00 per month. Canadians are eligible to draw CPP as early as age 60 (actuarially reduced) and as late as age 70 (actuarially increased). Maximum OAS is \$687.00 (which most Canadians receive) and can be drawn as early as age 65 or delayed until age 70 (actuarially increased). Combined, these benefits provide a total of \$1,404 per month or \$16,848 per year, while the median retirement income need in Canada, 2023 is \$55,911 (StatsCan 2023).

Employers can offer defined benefit defined contribution plans, deferred profit-sharing plans, as well as group registered retirement savings plans (RRSPs). Defined benefit (DB) plans and defined contribution (DC) plans work similarly to those in the U.S. DB plans provide a predetermined benefit amount at retirement based on years of service, contribution limit, and age of plan member. Employees may not have to make contributions, but employers must contribute 50% of the required plan contributions. Defined contribution pension plans have a pre-determined contribution amount or formula that is usually matched by the employer; employers do not commit to providing a guaranteed pension amount. Plan members are prohibited from making cash withdrawals while employed.

In the private sector, approximately 6.6 million Canadians were covered by pension plans in 2020 (Mercer 2022). Pension plans in Canada represent approximately 23% of the average pre-retirement income needed, while CPP and OAS account for approximately 26% of the medium retirement income of \$65,300 (Statscan 2023). These three pillars account for approximately 49% of the median retirement income of Canadians, meaning Canadians need to save independently of government and employer retirement plans to maintain their standard of living in retirement (Statscan 2023). Similar findings are echoed by Clavet et al., (2022) who find public pensions and mandatory retirement accounts replace 46% of average pre-retirement income. It is difficult to know how much income is needed in retirement as many pre-retirement expenses are not needed or are lowered in retirement. Most Canadians (78%) believe they have sufficient retirement income when accounting for all sources of retirement income. The portion of income replaced by public pension plans put Canada 23rd out of 35 OECD countries in 2017 replacing 41% of average earnings compared to 48.4% on average for OECD countries (OECD, 2017).

Retirement Preparedness

To measure retirement preparedness, the National Retirement Risk Index (NRRRI) is constructed using the Survey of Consumer Finance (SCF) every three years to measure the share of American households at risk of being unable to maintain pre-retirement standards of living in retirement. This percentage has typically been around 50% (Munnell, et al. 2021). MacDonald et al. (2011) constructed a Canadian NRRRI using a similar methodology and found that even Canadians doing moderately or well economically were more at risk to have insufficient resources after retirement. There are many assumptions that must be made when calculating how much one needs in retirement, such as stock market performance, home value, and interest rates. These factors are often out of one's control, but there are actions one can take to improve retirement preparedness, such as



voluntarily saving and calculating retirement needs.

Non-retirees with retirement savings are more likely to perceive their retirement savings as adequate. In one study, those who had DC plans, DB plans, IRAs, or other savings were more likely to perceive their savings were adequate compared to those without retirement savings (Lim & Lee 2021). In looking at how people acted on these perceptions, Santen (2019) explored how uncertainty in future pension benefits affected household savings and found that a one dollar-increase in pension benefits resulted in a 32-cent decrease in household savings. In contrast, Witvorapong et al. (2021) found that, in Thailand, those that expected the government to provide the primary income source in retirement did not alter their savings patterns. It should be noted that Thai government assistance tends to be small.

Participation in DB and other government pension plans is often automatic and mandatory and the reduction in take-home pay may lead to some financial distress. Automatic enrollment in the U.S. Army's Thrift Savings Plan did not increase non-mortgage debt, change credit scores, or cause adverse credit outcomes (Beshears et al. 2022). There is, however, evidence of a crowding-out effect. Parada-Contzen (2020) studied how mandatory retirement savings plans crowded out other forms of investments including homeownership and non-retirement savings. In this sense, homeownership and participation in retirement plans are substitute goods.

Individuals automatically enrolled in DC plans are less likely to make additional voluntary savings and contribute less than voluntary participants (Burtica and Karamcheva 2019). Andersen and Bhattacharya (2021) looked at retirement savings across several countries and found that for young people, compulsory pension savings reduced voluntary savings and led to increased debt. This could be due to the belief that mandatory contributions are sufficient or simply that income is finite, and a limited amount can be dedicated to retirement savings. However, Andersen and Bhattacharya (2021) found that after a certain mandatory savings rate, this substitution effect ceased, and additional mandatory savings led to a higher lifetime benefit.

Financial Knowledge

Financial knowledge has many definitions and has been used interchangeably with financial literacy or capability (Xiao & Huang 2021). Individuals with high levels of financial knowledge may be better equipped with skills to plan and save for retirement. Financial knowledge or understanding recognizes that an individual must possess both financial knowledge and the ability to use personal finance-related information to be financially literate and effectively make financial decisions (Schuchardt et al., 2009; Huston, 2010). Objective financial knowledge pertains to understanding financial concepts and relates to a person's ability to engage in effective financial decision-making (Lee et al. 2019). For example, Anderson, Baker, and Robinson (2017) found that financial literacy was positively related to financial behaviours such as planning for retirement and saving for emergencies. Objective financial literacy scores also corresponded to higher retirement account contribution rates and higher investment returns (Clark, Lusardi & Mitchell 2015; Lusardi, Michaud & Mitchell 2017).

Subjective financial knowledge concerns a person's self-confidence relating to knowledge about and ability to make sound financial decisions (Lee et al. 2019). Subjective financial knowledge is associated with better savings behaviours and higher retirement plan account balances (Tang & Baker 2016). Anderson, Baker, and Robinson (2017) noted that the perception of one's financial literacy was more important to financial decision-making in many instances than objective financial



literacy. For example, among those with low objective financial literacy, their perception of their financial knowledge was more important in determining whether they planned for retirement than their actual knowledge score (Anderson, Baker & Robinson 2017). Increasing financial knowledge alone may not be enough to improve financial behaviour if individuals do not have confidence in their own abilities (Tang & Baker 2016), which helps explain attitude and behaviour gaps in practice.

Sociodemographics

Individual and familial characteristics have implications for retirement preparedness. Women tend to live longer, earn less, and be less prepared for retirement than men (Burn et al. 2020; Williams, Elizabeth & Spencer-Rodgers, 2010). Individuals nearer to retirement have different needs than those entering the workforce, especially when considering their saving behaviours (Gough & Niza 2011). Millennials' retirement planning behaviour is driven by income, financial planner use, job tenure, and motivation to save for retirement (Yao & Cheng 2017). Younger individuals may not be making enough to put away money for retirement or be eligible to participate in employer plans (Cole & Liebenberg 2008). Education also seems to be positively related to retirement preparedness, perhaps because more education is typically associated with greater levels of income and wealth (Campos et al. 2016; Grishina 2019; Kaplan & Rauh 2013).

Indigenous Canadians (First Nations, Métis, Inuit) and immigrants (Canadian newcomers) face barriers to access relating to financial services and mainstream financial institutions, albeit the barriers may differ. Indigenous Canadians often reside in remote areas or on reserved lands severely limiting opportunities for financial education and literacy (Kremer & Mah, 2021). Canadian immigrants may not be eligible for the same retirement benefits that Canadians are entitled to, which may affect their primary source of retirement income and find it difficult to find well-paying jobs and establish economic security (Ahmed et al., 2016). Indigenous Canadians face limited job opportunities and higher costs of goods and services if living in rural or remote locations (Kremer & Mah, 2021). Most of the research surrounding Indigenous people in Canada has focused primarily on health (e.g., Horrill et al., 2018; Nelson & Wilson, 2017), but more research is needed to understand how both immigrant and Indigenous populations are preparing for retirement.

Household composition may dictate both saving motivations and constraints. For example, marital status and the presence of children may affect one's ability and motivation to prepare for retirement. Married individuals tend to have economic advantages when compared to single individuals including having dual incomes and/or reduced childcare costs, both of which can be advantageous in saving for retirement (Joo & Grable, 2005; Zissimopoulos et al., 2015). The effects of marital status on retirement preparedness have often been shown to be influenced by gender. Single women accumulate significantly less wealth than single men (Gornick & Sierminska, 2021) and widows tend to be less likely to be prepared for retirement than widowers (Stone & Neumann, 2012). The presence of children is also an important consideration, as children represent a large economic investment. Segel-Karpas and Werner (2014) found that being married and having children were negatively related to financial preparedness.

Theoretical Framework

Individuals smooth consumption by borrowing when income is low, saving when income is high, and spending assets during retirement (Ando & Modigliani, 1963). Lowered needs for income in retirement relate to decreased needs for savings. In this way, public benefits can crowd out present savings.



Fisher's (1930) intertemporal choice model suggests that rational consumers make decisions now that will lead to maximum lifetime satisfaction. Read, Olivola and Hardisty (2017) applied intertemporal choice decision-making to how people weigh current versus future utility. They found that people viewed the opportunity cost of saving for larger future rewards as greater than that of current, smaller rewards and therefore were likely to choose current consumption over future consumption (and savings). Bleichrodt et al. (2015) discussed how different discount models can be applied to intertemporal choice. When weighing present versus future consumption, a discount rate applied to future utility determines present value which is compared to the present value of other options. Over-discounting the future value of present savings could lead to a retirement shortfall. Expectation of guaranteed retirement benefits in the future may increase discounting of future utility brought on by additional savings and therefore decrease savings beyond mandatory pension contributions.

Some argue those who are young or have lower incomes should not save for retirement at all. Scott et al. (2022) applied the life-cycle model to retirement savings and concluded that younger people should take care of their current needs and save for retirement when they are older and have a higher income. For example, in the U.S., Social Security may provide adequate income replacement for lower-income earners, further arguing in favour of current consumption. This attitude may include higher rates of discounting the utility of future income as they choose higher consumption today and lower income in retirement (Hanna & Lindamood, 2010). Those with lower incomes may rely more on public pensions due to reduced means to save and the fact they have a higher percentage of income replaced (90% for individuals classified as "lower income") by public Canadian pensions as average lifetime earnings drop (Clavet et al., 2022; Horner, 2009).

Hypotheses

Significant research has been conducted on the relationship between public retirement systems, retirement preparedness, and financial knowledge. However, little research exists on this impact in Canada, and this paper attempts to bridge that gap. This paper explores how the expectation to rely on a government pension as the primary source of retirement income affects other retirement preparedness behaviours, when controlling for financial knowledge, demographics, and socioeconomic status. . Understanding how individuals' expectations may influence savings and planning informs policy makers, practitioners, and individuals on the importance of concretizing future plans to make apparent gaps that require changes to current behaviours.

H1. Respondents who expect to rely on government pensions as the primary source of retirement income will be less likely to have calculated retirement needs.

H2. Respondents who expect to rely on government pensions as the primary source of retirement income will be less likely to voluntarily save for retirement.

Methodology

Data and Sample

The Canadian Financial Capability Study (CFCS) is funded by the Financial Consumer Agency of Canada and conducted by EKOS Research Associates. The purpose of the study is to better

understand Canadians' financial knowledge, skills, confidence, and well-being. The 2019 data had 7,169 responses that were collected online and by telephone. The focus of this study is retirement preparation and therefore excludes retired individuals (both those who are not working and reported they are still working) and individuals who responded, "do not know" or "prefer not to say", reducing the sample to 4,047. To create a more representative sample of Canadian residents, oversampling for Indigenous and new Canadians was performed. Sample weights are then applied to align more closely with the 2016 census figures and make the sample more representative of Canadians.

Measures

Dependent Variables

The primary focus of this study is pre-retirement financial behaviours. There are two financial behaviours that will be used as dichotomous dependent variables in this analysis; saving for retirement and calculated retirement needs. Savings for retirement is the response to the question: "Are you financially preparing for your retirement either on your own or through an employer pension plan?" Respondents were provided with four possible choices: (1) Yes, (2) No, (3) Don't know, and (4) Prefer not to say. Calculated retirement need was measured by asking respondents "Do you have a good idea of how much money you will need to save to maintain your desired standard of living when you retire?" Respondents were provided with four possible choices: (1) Yes, (2) No, (3) Don't know, and (4) Prefer not to say.

Explanatory and Control Variables

Government pension reliance. The main explanatory variable — government pension reliance, is measured by asking respondents, "What do you think will be your primary source of income in retirement?" Individuals can select government pension benefits, workplace pension plans, retirement savings, taxable investments, residence, business or rental income, continued work, medical or disability pension, none of these, don't know, prefer not to say, or other (specify). Those who selected government pension benefits were coded as "yes", don't know", and "prefer not to say" were left the same; and all others were coded as "no."

Financial knowledge. Objective financial knowledge is measured by asking three questions about inflation, life insurance needs, and leveraging debt. Individuals with higher scores on the first three questions are asked harder questions for the remaining four. The final four questions were selected from questions on comparing unit pricing of groceries, credit ratings, cost of housing, ATM cards, saving university money, inflation, credit report, and stock market insurance. From these seven responses, EKOS Research Associates created a score for financial literacy that ranges from -1.1703304 to 0.9150032. This measure is treated as a continuous variable. Subjective financial knowledge is a self-assessed measure where respondents respond to the question "How would you rate your level



of financial knowledge?" Options for response include very knowledgeable, knowledgeable, fairly knowledgeable, not very knowledgeable, don't know, and prefer not to say.

Demographics. Age is provided in the ranges of 18-24, 25-34, 35-44, 45-54, 55-64, and 65 and up. Gender is measured by asking respondents "Are you..." to which they can respond male, female, prefer to self-describe, or prefer not to say. Immigration is measured by whether the respondents answered yes or no to the question "Were you born in Canada?" Finally, those who answered yes to "Are you an Indigenous person, that is, First Nations, Métis or Inuk (Inuit)?" are considered Indigenous persons. Marital status is measured by asking "What is your current marital status?" with married, living with a partner (common-law), separated, divorced, widowed, single (never married), don't know, and prefer not to say. Financially dependent children was a binary variable that included whether the respondent was financially responsible for at least one child or no children.

Socioeconomic status. Household income is measured by asking "What was your approximate total household income in 2018?" Categories increase by increments of \$20,000 up to \$100,000 and then \$100,000 to \$150,000, \$150,000 to \$200,000, and \$200,000 or more as the final income range. Don't know and prefer not to say were also included as options. Education is measured by asking "What is the higher level of schooling that you have obtained?" with less than high school, high school or equivalent, some college, without degree, college diploma or certificate (includes completed trade, vocational, or technical school), university undergraduate degree, university graduate degree, don't know, and prefer not to say. Employment is measured by whether respondents are employed (full- or part-time, self-employed, retired (and still working or not working), not working, don't know and prefer not to say. Those who are retired were excluded from the sample, so only employed, or not working respondents are included in the analysis. Homeownership is measured by whether respondents own with a mortgage, own without a mortgage, or rent. Student loans have also been of interest to researchers to determine whether student loan balances inhibit saving behaviours. Therefore, student loans have been made into a binary variable from a question that asks respondents what types of debt they have, where 1 = those who have student loans and 0 = those who do not.

Empirical Model

Probit Model

As both dependent variables for each model are dichotomous, a probit model was chosen to test the association between government pension reliance and behaviours of saving for retirement and calculating retirement needs using the following probit model via maximum likelihood:

$$\text{Saving for retirement \& calculated retirement needs}^* = \beta_0 + \beta_1 \text{govpen}_j + \beta_2 \text{subfin} + \beta_3 \text{IRT}_j + \beta_4 \text{income}_j + \beta_5 \text{gender}_j + \beta_6 \text{age}_j + \beta_7 \text{marital}_j + \beta_8 \text{findep}_j + \beta_9 \text{immigrant}_j + \beta_{10} \text{indigenous}_j + \beta_{11} \text{education}_j + \beta_{12} \text{employment}_j + \beta_{13} \text{homeowner}_j + \beta_{14} \text{studentloan}_j + \epsilon$$

Where saving for retirement and calculated retirement needs* are the estimated likelihoods that the individual is saving for retirement or has calculated retirement income needs.

Results

Descriptive Statistics

Table 1 lists the descriptive statistics for the variables of interest in this study. In the analytical sample, 67% of respondents reported relying on an income source other than a government pension as their primary expected source of income in retirement. Respondents appear to score highly on the objective financial literacy questions and only 19% of respondents said they were not very knowledgeable about finances. About 68% of the sample respondents were between 35 years old and 64 years old, and 52% of the respondents were male. Slightly less than 20% of respondents were born outside Canada, and only 7% reported being an Indigenous person. Most respondents were married or single, did not have children, and made less than \$150,000 a year. Only 5% of respondents reported not having a high school education, and more than half the sample were employed full-time. Finally, 65% said they did not own a home while 88% said they had student loans.

Table 1. Descriptive Statistics

Variable 1	Mean	Std Dev
Primary retirement income source		
Not government	0.668	0.471
Government	0.332	0.471
Objective financial knowledge score	20.415	6.834
Subjective financial knowledge		
Not very knowledgeable	0.192	0.394
Fairly knowledgeable	0.434	0.496
Knowledgeable	0.266	0.442
Very knowledgeable	0.107	0.310
Demographics		
Age		
18-24	0.079	0.270
25-34	0.189	0.392
35-44	0.209	0.407
45-54	0.268	0.443
55-64	0.205	0.404
65 and up	0.050	0.217
Sex		
Male	0.524	0.499
Female	0.476	0.499
Born outside Canada	0.195	0.396
Born in Canada	0.805	0.396
Non-Indigenous	0.927	0.260
Indigenous	0.073	0.260
Marital status		
Married	0.462	0.499
Living with partner	0.134	0.341
Separated	0.026	0.158
Divorced	0.053	0.224
Widowed	0.015	0.123
Single	0.310	0.463



Table 1. Descriptive Statistics continued

Financially dependent children		
No children	0.613	0.487
At least one child	0.387	0.487
Socioeconomics		
Household income		
\$0 to less than \$20,000	0.139	0.346
\$20,000 to less than \$40,000	0.137	0.344
\$40,000 to less than \$60,000	0.141	0.348
\$60,000 to less than \$80,000	0.117	0.321
\$80,000 to less than \$100,000	0.117	0.322
\$100,000 to less than \$150,000	0.189	0.391
\$150,000 to less than \$200,000	0.088	0.283
\$200,000 or more	0.073	0.261
Education		
Less than high school	0.048	0.215
High school diploma or equivalent	0.198	0.398
Some college or university without diploma	0.100	0.300
College diploma or certificate	0.222	0.416
University undergraduate degree	0.232	0.422
University graduate degree	0.200	0.400
Employment		
Full-time	0.523	0.500
Part-time	0.131	0.337
Self-employed	0.160	0.366
Not working	0.187	0.390
Homeownership		
Owns home	0.347	0.476
Does not own home	0.653	0.476
Student loans		
Has student loans	0.880	0.325
Does not have student loans	0.120	0.325

Marginal Effects of the Probit Models on Retirement Preparedness

Table 2 shows the marginal effects and standard errors of both models. Model 1 is focused on whether individuals are currently saving for retirement. Those who expect their primary income source in retirement to be a government pension and who were not working full time had a decreased probability of saving for retirement income needs. Those with higher subjective financial knowledge, household income, older than 34 (as opposed to 18 to 24-year-olds), widowed (as opposed to married), and homeowners all had an increased probability of saving for retirement.



Table 2. Average Marginal Effects from Probit

Variable (Reference Group)	Model 1 (Voluntary Savings)		Model 2 (Knows Retirement Needs)	
	AME	SE	AME	SE
Government pension reliance (Relies on other source for retirement income)	-0.195***	0.022	-.119***	0.023
Objective financial knowledge score	-0.0002	0.001	0.006***	0.001
Subjective financial knowledge (Not very knowledgeable)				
Fairly knowledgeable	0.064**	0.024	0.151***	0.027
Knowledgeable	0.091***	0.025	0.313***	0.029
Very knowledgeable	0.069*	0.033	0.408***	0.035
Demographics				
Age (18-24)				
25-34	0.072	0.047	0.028	0.052
35-44	0.108**	0.048	0.073	0.052
45-54	0.112**	0.047	0.128*	0.052
55-64	0.141***	0.049	0.242***	0.055
65 and up	0.152**	0.058	0.245***	0.066
Sex (Male)	0.031	0.017	-0.027	0.018
Born in Canada (No)	0.033	0.020	0.001	0.022
Indigenous (No)	0.008	0.031	0.013	0.039
Marital status (Married)				
Living with partner	-0.042	0.024	-0.014	0.026
Separated	-0.014	0.041	0.067	0.048
Divorced	-0.007	0.032	-0.024	0.042
Widowed	0.100*	0.048	0.116	0.071
Single	0.038	0.023	0.025	0.028
Financially dependent children (0)				
One or more	-0.027	0.019	-0.028	0.020
Socioeconomics				
Household income (\$0 to less than \$20,000)				
\$20,000 to less than \$40,000	0.029	0.050	0.044	0.048
\$40,000 to less than \$60,000	0.104*	0.051	0.061	0.049
\$60,000 to less than \$80,000	0.213***	0.051	0.104*	0.050
\$80,000 to less than \$100,000	0.188**	0.056	0.133*	0.054
\$100,000 to less than \$150,000	0.265***	0.053	0.164**	0.053
\$150,000 to less than \$200,000	0.313***	0.056	0.260***	0.056
\$200,000 or more	0.307***	0.057	0.308***	0.058
Education (Less than high school)				
High school diploma or equivalent	0.038	0.042	0.009	0.045
Some college or university without diploma	0.004	0.045	0.048	0.051
College diploma or certificate	0.018	0.042	0.006	0.046
University undergraduate degree	0.050	0.042	-0.011	0.045
University graduate degree	0.048	0.043	-0.017	0.047
Employment (Full-time)				
Part-time	-0.087**	0.026	0.019	0.030
Self-employed	-0.162***	0.027	-0.008	0.026
Not working	-0.204***	0.030	-0.023	0.031
Homeownership (Owns home)				
Does not own home	0.038*	0.020	0.038	0.023
Student Loans (Has student loans)				
Does not have student loans	-0.072**	0.026	-0.034	0.031

Notes. *** $p < .001$ ** $p < .01$ * $p < .05$



Model 2 focuses on whether individuals have an idea of how much money they will need to maintain their standard of living. Those who expect that a government pension will be their primary income source in retirement have a decreased probability of having an idea of how much money they will need. Individuals who had higher levels of subjective and objective financial knowledge, more household income, and were older than 44 (as opposed to 18 to 24-year-olds) had an increased probability of having an idea of how much money they will need in retirement. Interestingly, those who were widowed also had a higher probability of having an idea of how much money they will need in retirement. Perhaps the financial stress of losing a spouse and/or the acquisition of investment and life insurance money can lead to the desire to develop a financial plan.

Discussion

The results of this study provide support for the hypothesis that those who expect to rely on a government pension in retirement are less likely to save on their own and know how much they need to live on in retirement. This aligns with the intertemporal choice model, as the findings suggest people are favouring current consumption rather than saving for future consumption when they know they have a source of income they can rely upon later. These results differ from the Thailand study, which did not find that government income reliance altered savings behaviours (Witvorapong et al. 2021). Although Thailand is markedly different from Canada, Witvorapong et al. (2021) paper is one of the few international studies that focuses on a similar research topic. Canada offers a much more extensive pension system than Thailand (Mercer 2022), which suggests that the robustness of a country's publicly funded retirement system is critical to understanding how respondents rely on public funds or save on their own for retirement.

Financial knowledge was generally found to be positively related to retirement-saving behaviours, which aligns with other research that has found financially knowledgeable people are more likely to engage in positive savings behaviours (i.e., Anderson, Baker & Robinson 2017). These findings suggest that those with objective financial knowledge may have the skills necessary to understand the importance of retirement saving, how to save, and how to calculate their needs, and those with more subjective financial knowledge may feel confident and motivated to do so (Gudmunson & Danes, 2011).

The findings related to demographics also provide some key insights. Interestingly, only one marital status was significant in either model. Those who were widowed compared to married individuals were more likely to save on their own for retirement. This is initially surprising as it might be expected that widows and widowers — who also suffer from a loss of their spouse's income — could qualify for survivor benefits and perceive less of a need to save on their own. However, there are many possible explanations for this finding. The intertemporal model offers one suggestion. In the nationally representative sample used for this study, most widow(er)s are at least 45 years old and, therefore, closer to retirement. For them, retirement may not be distant, but an event close at hand. Other research has suggested that widows and women do not receive as many benefits from the Canadian retirement system (Shilton 2013). This may result in widows feeling it is necessary to save on their own for retirement. It may also be that widows engaged with more professionals through the process of settling their spouse's estate, who advised them to take on better saving habits. More research is needed to test the interactions between widowhood status, gender, age, and income to fully understand this result. Finally, the results did not indicate a significant relationship between Indigenous and immigration status and retirement saving behaviours, which differs from other studies

as well (Curtis & Lightman 2017). Researchers should continue to understand the unique needs of foreign-born and Indigenous populations.

Policy Implications

It is important for policymakers to consider that without the addition of an employer retirement plan and/or personal retirement savings, Canadians will struggle to retire comfortably. While the Canadian government's multi-year CPP benefit enrichment program can help Canadians, policymakers may wish to consider whether increasing the reliance on government pensions will crowd out voluntary savings and calculation of retirement needs. Essentially as the government takes more ownership and responsibility for providing retirement income for its citizens, individuals may reduce their own self-reliance.

The results of this study suggest Canadians who expect to rely on government pensions for their primary retirement income are not setting aside savings for retirement either through an employer plan or personal savings, nor are they determining their retirement income needs. In addition to the enrichment of the CPP pension plan, the federal government through its National Financial Literacy Task Force 2021 – 2026 Strategic Plan will focus on reducing barriers to financial services, supporting diverse needs and using effective communication to improve financial decision making of Canadians (Financial Consumer Agency of Canada, 2021). While this will continue to improve the financial literacy of Canadians, it must be understood that government pension plans are designed to alleviate poverty among seniors and to ensure that seniors do not experience a significant decline in their standard of living; not provide comprehensive retirement income.

The current findings generally support the notion that educating Canadians about public pensions could improve saving behaviours. This education should have a specific emphasis on what the programs offer and how much. Retirement education should teach Canadians how to determine their retirement income needs, even if it is just a basic calculation. Without personal savings, Canadians may become more reliant on government financial support in the future, which will further strain government resources and leave retirees with inadequate retirement income.

Practitioner Implications

Reliance on government pensions may also lead to complacency as it decreases the likelihood that one will calculate their retirement needs and save voluntarily. Financial professionals can help fill this void by providing a comprehensive analysis that includes government pension income and discusses shortfalls that may arise if pension income is deemed insufficient. Professionals can develop savings, investment, and income strategies with their clients to supplement the basic standard of living pensions provide. Developing, implementing, and monitoring these plans will deepen client relationships which can improve client retention and client well-being. Financial planners can grow their client base and better serve their clients by identifying individuals who expect to rely on government pensions that will likely be insufficient in retirement. Calculating retirement income needs and public pension insufficiency can be a catalyst to change attitudes early so clients will implement savings plans and help grow the client relationship both to and through retirement.

Future Research/Limitations



Future research should continue aiming to understand what makes an individual ready to retire. This study focused on two financial behaviours — calculating retirement needs and voluntarily saving for retirement. However, there are many other financial behaviours that may relate to retirement readiness. Emergency fund savings, for example, may be critical to retirement preparedness as they allow a household to cope with unexpected expenses without having to dip into other savings or assets (Lee & Hanna, 2022). Whether a household is prone to overspend may also affect how much they save (Yao & Cheng, 2017). Working with a financial professional or receiving other forms of professional advice may also influence retirement readiness behaviours. Future studies should examine government pension reliance and these other present financial behaviours in more detail.

One of the main limitations of this study is the CFCS does not have information on how much respondents are saving. Even if a respondent indicates that they are saving on their own for retirement, it is not possible to determine whether they are or will be financially ready to retire based on this information. However, this information does indicate whether they are taking personal responsibility to save for retirement and if they have taken the time to determine how much they will need in retirement. It identifies those who have made retirement preparedness at least somewhat of a priority. A future study that views retirement saving as a continuous variable would be beneficial to determine whether government pension reliance is associated with how much someone saves.

Future research should also consider the unique and diverse regional differences across the country. Canadians differ greatly whether they live in rural, urban, or suburban centres. Based on the 2019 Canadian Election Study, survey respondents acknowledge that rural Canadians tend to be more conservative both politically and socially than their urban or suburban counterparts (Speer & Loewen 2021). As the second largest country in the world (by land mass), covering 10 million square kilometres, that reaches three oceans, it is not surprising that it is made up of five distinct regions with its own distinct culture, history, and politics.

It is important to note that in a highly decentralized, federal system, with a highly dispersed population, where provinces and territories have a lot of autonomy, regional differences exist (Montpetit, Lachapelle & Kiss 2017). Other factors such as language, immigration status, level of education and income also play a role (Cochrane & Perrella 2013). Our efforts to evaluate the relationship between urban and rural Canadians, as well as regional differences, were not able to produce meaningful results in this study. However, future studies on geographical differences could provide interesting insights into how Canadians' retirement preparedness behaviour differs across the country.

Conclusion

While there are many factors that influence whether a person saves for retirement, it appears relying on a government pension is also associated with pre-retirement behaviours. This study explores this relationship using the Canadian Financial Capability Study and found that those who expect to rely on a government pension in the future were less likely to both voluntarily save for retirement and calculate their future retirement income needs.

This has important implications for policymakers as they need to consider how expanding and modifying government pensions could impact retirement readiness due to reduced voluntary retirement savings and retirement planning. Improved education and consistency on the strengths and limitations of government pensions should be utilized to help reduce this impact. Similarly,



financial practitioners who understand this will be better prepared to help their clients develop, implement, and monitor financial plans that will see them through retirement.

This study looked at two financial behaviours, namely voluntarily saving for retirement and calculating retirement needs. Future research could explore other variables such as having an emergency fund and monthly budgeting. Treating retirement savings as a continuous variable could provide additional insight as could looking at how auto-enrollment in defined contribution plans impacts some of these same behaviours.

References

Ahmed, S, Shommu, N S, Rumana, N, Barron, G R S, Wicklum, S & Turin, T C 2016, 'Barriers to access of primary healthcare by immigrant populations in Canada: A literature review,' *Journal of Immigrant and Minority Health*, vol. 18, no. 6, pp. 1522–1540, DOI:<10.1007/s10903-015-0276-z>

Andersen, T M & Bhattacharya, J 2021, 'Why mandate young borrowers to contribute to their retirement accounts?' *Economic Theory*, vol. 71, no. 1, pp. 115–149, DOI:<10.1007/s00199-019-01235-2>

Anderson, A, Baker, F & Robinson, D T 2017, 'Precautionary savings, retirement planning and misperceptions of financial literacy,' *Journal of Financial Economics*, vol. 126, no. 2, pp. 383–398, DOI:<10.1016/j.jfineco.2017.07.008>

Ando, A & Modigliani, F 1963, 'The "life cycle" hypothesis of saving: Aggregate implications and tests,' *The American Economic Review*, vol. 53, no. 1, pp. 55–84.

Asebedo, S D, Liu, Y, Gray, B & Quadria, T H 2020, 'How Americans used their COVID-19 economic impact payments,' *Financial Planning Review*, vol. 3, no. 4, DOI:<10.1002/cfp2.1101>

Beshears, J, Choi, J J, Laibson, D, Madrian, B C & Skimmyhorn, W L 2022, 'Borrowing to save? The impact of automatic enrollment on debt,' *The Journal of Finance*, vol. 77, no. 1, pp. 403–447, DOI:<10.1111/jofi.13069>

Blackshaw, M & Cahill, E 2020, *Canada's retirement income system*, Library of Parliament, viewed 25 May 2023, < https://lop.parl.ca/sites/PublicWebsite/default/en_CA/ResearchPublications/201940E>

Bleichrodt, H, Keskin, U, Rohde, K I M, Spinu, V & Wakker, P 2015, 'Discounted utility and present value—A close relation,' *Operations Research*, vol. 63, no. 6, pp. 1420–1430, DOI:<10.1287/opre.2015.1433>

Burn, I, Button, P, Figinski, T F & McLaughlin, J S, 2020, 'Why retirement, social security, and age discrimination policies need to consider the intersectional experiences of older women,' *Public Policy & Aging Report*, vol. 30, no. 3, pp. 101–106, DOI:<10.1093/ppar/praa017>

Butrica, B A & Karamcheva, N S, 2019, 'Automatic enrollment and its relation to the incidence and distribution of dc plan contributions: Evidence from a national survey of older workers,' *The Journal of Consumer Affairs*, vol. 53, no. 3, pp. 1192–1219, DOI:<10.1111/joca.12223>

Canadian Imperial Bank of Commerce, *Canadians are prioritizing financial wellness, yet aren't seeking professional advice in 2022: CIBC Poll*, viewed 25 May 2023, < <https://cibc.mediaroom.com/2022-03-16-Canadians-are-prioritizing-financial-wellness,-yet-arent-seeking-professional-advice-in->



2022-CIBC-Poll>

Clark, R, Lusardi, A & Mitchell, O S 2017, 'Financial knowledge and 401(k) investment performance: A case study,' *Journal of Pension Economics & Finance*, vol. 16, no. 3, pp. 324-347, DOI:<10.1017/S1474747215000384>

Clavet, N J, El-Attar, M, & Fonseca, R 2022, 'Replacement rates of public pensions in Canada: heterogeneity across socio-economic status,' *Canadian Public Policy*, vol. 48, no S2, pp. 22-34.

Cochrane, C & Perrella, A 2013, 'Regions, regionalism and regional differences in Canada,' *Canadian Journal of Political Science*, vol. 45, no. 4, pp. 829-853, DOI:<10.1017/S0008423912001011>

Cole, C R & Liebenberg, A P 2008, 'An examination of retirement income adequacy measures and factors affecting retirement preparedness,' *SSRN Scholarly Paper No. 1272067*, DOI:<10.2139/ssrn.1272067>

Curtis, J & Lightman, N 2017, 'Golden years or retirement fears? private pension inequality among Canada's immigrants,' *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement*, vol. 36, no. 2, pp. 178-195, DOI:<10.1017/S0714980817000083>

Financial Consumer Agency of Canada. (2021). *Make Change that Counts: National Financial Literacy Strategy 2021-2026*. <Make Change that Counts: National Financial Literacy Strategy 2021-2026 - Canada.ca>

Fisher, I 1930, 'The theory of interest,' Macmillan, London.

Gornick, J C & Sierminska, E 2021, 'Wealth accumulation and retirement preparedness in cross-national perspective: A gendered analysis of outcomes among single adults,' *Journal of European Social Policy*, vol. 31, no. 5, pp. 549-564, DOI:<10.1177/09589287211056174>

Gough, O & Niza, C 2011, 'Retirement saving choices: Review of the literature and policy implications,' *Journal of Population Ageing*, vol. 4, no. 1, pp. 97-117, DOI:

<10.1007/s12062-011-9046-4>

Gudmunson, C G & Danes, S M 2011, 'Family financial socialization: Theory and critical review,' *Journal of Family and Economic Issues*, vol. 32, pp. 644-667. DOI:<10.1007/s10834-011-9275-y>

Hanna, S D & Lindamood, S 2010, 'Quantifying the economic benefits of personal financial planning,' *Financial Services Review*, vol. 19, no. 2.

Horner, K 2009, 'Retirement saving by Canadian households. Report for the research working group on retirement income adequacy,' Ottawa: Department of Finance.

Horrill, T, McMillan, D E, Schultz, A S H & Thompson, G 2018, 'Understanding access to healthcare among Indigenous peoples: A comparative analysis of biomedical and postcolonial perspectives,' *Nursing Inquiry*, vol 25, no. 3, DOI:<10.1111/nin.12237>.

Joo, S H & Grable, J E 2005, 'Employee education and the likelihood of having a retirement savings program,' *Journal of Financial Counseling and Planning*, vol. 16, no. 1.

Kaplan, S N & Rauh, J D 2013, 'Family, education, and sources of wealth among the richest



Americans, 1982-2012,' *The American Economic Review*, vol 103, no. 3, pp. 158-162.

Kremer, S & Mah, K 2021 *Improving Financial Literacy in Indigenous Communities*, University of Waterloo, viewed 25 May 2023, <<https://www.canada.ca/en/financial-consumer-agency/programs/research/2021-building-better-financial-futures-challenge/improving-financial-literacy.html>>

Lee, J M, Park, N & Heo, W 2019, 'Importance of subjective financial knowledge and perceived credit score in payday loan use,' *International Journal of Financial Studies*, vol. 7, no. 3, DOI:<10.3390/ijfs7030053>

Lee, S T & Hanna, S D 2022, 'What, Me Worry? Financial Knowledge Overconfidence and the Perception of Emergency Fund Needs,' *Journal of Financial Counseling and Planning*, vol. 33, no. 1, pp. 140-155, DOI:<10.1891/JFCP-2021-0045>

Lim, H & Lee, J M 2021, 'Retirement income sources and subjective financial well-being: A comparison of retirees and non-retirees,' *Financial Counseling and Planning*, vol. 32, no. 3, pp. 517-534. DOI:<10.1891/JFCP-19-00101>

Lusardi, A, Michaud, P C & Mitchell, O S 2017, 'Optimal financial knowledge and wealth inequality,' *Journal of Political Economy*, vol. 125, no. 2, pp. 431-477, DOI:<10.1086/690950>

MacDonald, B J, Moore K D, Chen H & Brown R L 2011, 'The Canadian National Retirement Risk Index: employing statistics Canada's LifePaths to measure the financial security of future Canadian seniors,' *Canadian Public Policy*, vol. 37, no. 1, pp. S73-S94. DOI: <10.3138/cpp.37.suppl.s73>

Mercer 2022, *Global Pension Index 2022 reveals key areas for improvement in Swiss pension system*, viewed 25 May 2023, < <https://www.mercer.ch/newsroom/global-pension-index-2022.html>>

Montpetit, E, Lachapelle, E & Kiss, S 2017, *Does Canadian federalism amplify policy disagreements?* IRRP Study, viewed 25 May 2023. < <http://irpp.org/wp-content/uploads/2017/09/study-no65.pdf>>

Munnell, A H, Chen, A & Siliciano, R L 2021, 'The national retirement risk index: An update from the 2019 SCF,' *IDEAS Working Paper Series from RePEc*.

Nelson, S E & Wilson, K 2017, 'The mental health of Indigenous peoples in Canada: A critical review of research,' *Social Science & Medicine*, vol. 176, pp. 93-112, DOI:<10.1016/j.socscimed.2017.01.021>

Organisation for Economic Co-operation and Development 2017, 'Pensions at a Glance,' Paris: OECD Publishing

Parada-Contzen, M 2020, 'Crowding-out in savings decisions, portfolio default adoption and home ownership: Evidence from the Chilean retirement system,' *Review of Economics of the Household*, vol. 18, no. 2, pp. 543-569, DOI:<10.1007/s11150-020-09479-x>

Raina, P, Wolfson, C, Kirkland, S, Griffith, L E, Balion, C, Cossette, B, Dionne, I, Hofer, S, Hogan, D, van den Heuvel, E R, Liu-Ambrose, T, Menec, V, Mugford, G, Patterson, C, Payette, H, Richards, B, Shannon, H, Sheets, D, Taler, V, Thompson, M, Tuokko, H, Wister, A, Wu, C & Young, L. (2019). 'Cohort profile: The Canadian Longitudinal Study on Aging (CLSA),' *International Journal of Epidemiology*, vol. 48, no. 6, pp. 1752-1753j, DOI:< 10.1093/ije/dyz173>

Read, D, Olivola, C Y & Hardisty, D J 2017, 'The value of nothing: Asymmetric attention to opportunity



costs drives intertemporal decision making,' *Management Science*, vol. 63, no. 12, pp. 4277–4297, DOI:<10.1287/mnsc.2016.2547>

Rutledge, M S, Sanzenbacher, G & Vitagliano, F M 2018, 'How Does Student Debt Affect Early-Career Retirement Saving?' SSRN Scholarly Paper No. 2839453, <<https://papers.ssrn.com/abstract=2839453>>

Santen, P 2019, 'Uncertain pension income and household saving,' *The Review of Income and Wealth*, vol. 65, no. 4, pp. 908–929, DOI:<10.1111/roiw.12383>

Scott, J S, Shoven, J B, Slavov, S N & Watson, J G 2023, 'The life-cycle model implies that most young people should not save for retirement,' *The Journal of Retirement*, vol. 10, no. 3, pp. 47–70, DOI:<10.3905/jor.2022.1.119>

Segel-Karpas, D & Werner, P 2014, 'Perceived financial retirement preparedness and its correlates: a national study in Israel,' *International Journal of Aging & Human Development*, vol. 79, pp. 279–301, DOI:<10.1177/0091415015574177>

Shilton, E 2013, 'Gender risk and employment pension plans in Canada. Canadian Labour and Employment Law Journal, vol. 17, no. 1, pp. 101–142.

Speer, S, & Loewen, P 2021, *Perceptions and Polarization: Measuring the Perception Gap Between Urban and Rural Canadians*, viewed 25 May 2023, <<https://ppforum.ca/wp-content/uploads/2021/02/PPF-Perceptions-and-Polarization-Measuring-the-Perception-Gap-2021-EN.pdf>>

Statistics Canada 2022, *Demographic estimates by age and sex, provinces and territories*, viewed 25 May 2023, <https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2020018-eng.htm>

Stone, L O & Neumann, B 2012, 'Gender differences in preparedness to meet retirement's challenges,' in Stone, L O (ed.), *Key demographics in retirement risk management*, Springer Netherlands, pp. 109–125, viewed 25 May 2023, DOI:<10.1007/978-94-007-4044-0>

Tang, N & Baker, A 2016, 'Self-esteem, financial knowledge and financial behavior,' *Journal of Economic Psychology*, vol. 54, 164–176, DOI:<10.1016/j.joep.2016.04.005>

Williams, M J, Elizabeth, L P & Spencer-Rodgers, J 2010, 'The masculinity of money: Automatic stereotypes predict gender differences in estimated salaries,' *Psychology of Women Quarterly*, vol. 34, no. 1, 7–20, DOI:<10.1111/j.1471-6402.2009.01537.x>

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*, vol. 21, no. 2, pp. 218–236, DOI:<10.1017/S1474747220000360>

Yao, R & Cheng, G 2017, 'Millennials' retirement saving behavior: Account ownership and balance,' *Family and Consumer Sciences Research Journal*, vol. 46, no. 2, pp. 110–128, DOI:<10.1111/fcsr.12241>

Zissimopoulos, J M, Karney, B R & Rauer, A J 2015, 'Marriage and economic well being at older ages,' *Review of Economics of the Household*, vol. 13, no. 1, pp. 1–35. <https://doi.org/10.1007/s11150-013-9205-x>