

Exploring gender differences in retirement preparedness behaviours in Canada: A health belief model approach to understanding perceived motivators, barriers and behavioural moderators.

by

Tanya M. Staples

B.A., Wilfrid Laurier University, 1997
M.A., McMaster University, 2000

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Personal Financial Planning Program
College of Health and Human Sciences

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2025

Abstract

Women increasingly play a pivotal role in personal wealth in Canada, controlling more than \$2 trillion in financial assets; a value projected to double within the next five years. Unfortunately, Canadian women are plagued by unique financial challenges such as lower earnings levels, disrupted career patterns, investment risk aversion, lower financial knowledge, increased longevity and increased incidents of financial insecurity. Using the health belief model this study explores the motivators driving retirement preparedness behaviours of women, focusing on perceived barriers, benefits and threats. Using the 2019 Canadian Financial Capabilities Study (CFCS) this dissertation employs a quantitative approach using a one-paper, four model framework. Statistical methods include path and regression analysis as well as moderation testing. By identifying gender-specific barriers and motivators that influence retirement preparedness behaviours, actionable recommendations can be developed for practitioners and policymakers to improve retirement outcomes for all Canadians, particularly women. Additionally, this dissertation contributes to the literature on financial knowledge, behavioural psychology, and gender-specific financial and retirement planning strategies.

Keyword: retirement preparedness, health belief model, perceived barriers, perceived benefits, perceived threats, financial knowledge, financial self-efficacy

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Approved by:
Major Professor
Dr. Blake Gray

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Dedication

To my husband, Trevor and children, Jaelyn, Julian and Marlaena; you believed in me even on days I did not. You tolerated my absences, every late night, and missed moments that made this possible. You held together the everyday: the hockey, the homework, the part-time jobs and school projects so I could pursue this Ph.D. Your sacrifices, encouragement, patience and faith sustained me. I could never fully repay what you have given me; I am forever grateful and deeply blessed to share this achievement with you. May this degree broaden the horizon of possibilities for our family and your futures, and be a reminder that perseverance, love, determination and teamwork are the building blocks for your future as well.

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Chapter 1 - Introduction

Statement of Problem

Women constitute 50.4% of the Canadian population, with 85.7% of those age 15 and older participating in the labour force as of 2023 (Canada.ca). Women have increasingly emerged as significant players in the financial landscape, currently controlling over \$2 trillion in financial assets, a figure expected to double in the next few years (SLGI Asset Management Inc., 2023). Despite this economic strength, women face distinct financial challenges: typically, they earn less than men, experience more disrupted life-course work patterns, exhibit higher aversion to investment risk, have lower levels of financial knowledge, and live longer, often with greater instances of financial insecurity (Berger & Denton, 2004; Eberhardt et al., 2022; Shilton, 2013).

These distinct pre-retirement experiences influence women's motivations for engaging in retirement preparedness behaviours. Consequently, women are more likely than men to seek professional retirement planning help and assistance with investment decisions (Joo & Grable, 2001). However, they are reported to need improved problem-solving skills related to retirement planning and engage in less formal planning than men (Noone et al., 2010; Wang et al., 2014). Though men and women engage about equally in informal retirement planning, the financial realities of women, particularly those without partners (Noone et al., 2010), differ significantly, leading to inadequate retirement preparedness (Leithman, 2004; Berger & Denton, 2004; Kopanidis et al., 2016).

Existing research provides insights into the need for financial literacy, positive financial behaviour engagement, and the value of financial self-confidence (Bialowolski et al., 2021; Farrell et al., 2015; Qamar et al., 2016). Nevertheless, there is little prior research identifying specific motivators compelling women to engage in positive financial behaviours (Lusardi &

Mitchell, 2008; Morris et al., 2022). This study aims to explore the relationships between key constructs of the health belief model, including perceived barriers, benefits and threats (susceptibility and severity) and the motivators that drive retirement preparedness behaviours. It further investigates how perceived barriers, benefits, and threats motivate women to engage in these behaviours while accounting for the moderating effects of objective financial knowledge (OFK) and financial self-efficacy (FSE).

The health belief model (HBM) is a predictive model, used initially to explain engagement or non-engagement in medical health screening and prevention programs. According to the HBM (Rosenstock, 1974), a patient's attitudes and beliefs influence their behaviour (Rosenstock et al., 1988). Research has also linked attitudes and beliefs to influencing retirement planning behaviours, highlighting the broader applicability of psychological factors like those identified by the HBM. Recently, the health belief model has applied to personal finance, as it provides valuable insight into personal financial decision-making (Ozmete & Tahira, 2011; Kaur & Vohra, 2013). Uma and Ilango (2021) used the HBM to examine factors that encourage people to purchase health insurance, while Moss et al. (2024) explored barriers to access relating to regulated financial planning advice. The HBM (Rosenstock, 1974), proposes that the likelihood of a person adopting a given behaviour is a function of the individual's perception of a threat to their situation, and their belief that adopting this behaviour will mitigate the threat (Rosenstock, 1996). Research demonstrates that financial literacy (knowledge and capabilities) and self-efficacy are key factors that impact financial behaviours. However, the decisions a person makes depend on a person's perception of barriers, benefits, vulnerability, and susceptibility, combined with cues to action to the desired behaviour are required to drive change (Morris et al., 2022).

Purpose

This dissertation applies the health belief model to the retirement preparedness behaviours of Canadian women, aiming to identify motivating factors to engagement. Utilizing a one-paper, four-model framework, this study examines:

1. Perceived barriers to engaging in retirement preparedness behaviours (Model 1).
2. Perceived benefits that encourage retirement preparedness behaviours (Model 2).
3. Perceived threats (susceptibility & severity) to retirement preparedness behaviours (Model 3).
4. The combination of perceived barriers, benefits and threats to retirement preparedness behaviours (Model 4).

Additionally, the moderating effect of objective financial knowledge and financial self-efficacy are examined across all models.

While the primary focus of this dissertation is on retirement preparedness behaviours of Canadian women, the broader study includes participants of all genders. This research seeks to understand the unique barriers and motivators influencing Canadian women's retirement preparedness, providing insights and recommendations for improvement. Detailed research questions for each model are presented in the following section.

Description of the Models

Model One

The health belief model, developed by Rosenstock (1974), is a psychological framework that posits that an individual's attitudes and beliefs influence behaviour. According to Eberhardt et al. (2019), individuals are more willing to engage in a particular behaviour when perceived barriers are minimal. Rosenstock et al. (1988) define perceived barriers that may encompass financial, physical, psychological or emotional costs or limitations that inhibit engagement. When barriers unique to the desired behaviour are identified, such as financial constraints (e.g., indebtedness or poor credit rating), or a lack of emergency fund or financial control - they may negatively influence an individual's motivation to engage even when there is a desire present. Understanding these determinants is critical for addressing and mitigating barriers that prevent women from engaging in retirement preparedness behaviour, ultimately enhancing their financial security and preparedness for retirement.

To the author's knowledge, no study has examined the retirement preparedness of Canadian women using the health belief model. As such the primary research question(s) for **Model One** are:

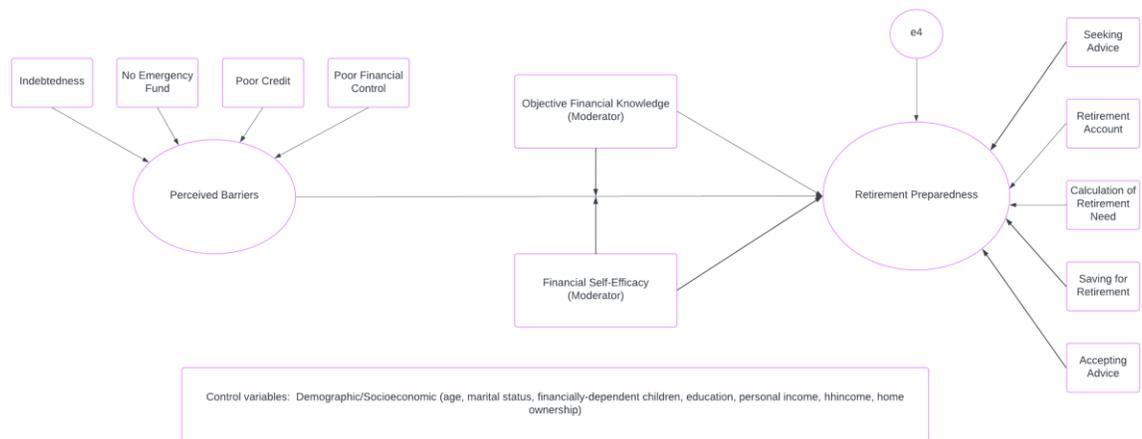
RQ1. What are the perceived barriers that prevent Canadian women from engaging in retirement preparedness behaviours?

RQ2. How does objective financial knowledge moderate the relationship between perceived barriers and the likelihood of engaging in retirement preparedness behaviours?

RQ3. How does perceived financial self-efficacy moderate the relationship between perceived barriers and the likelihood of engaging in retirement preparedness behaviours?

See Figure 1.1 below for the conceptual illustration for *model one* of this study. This model uses the Canadian Financial Capabilities Study (CFCS - 2019) and generalized structural equation modeling¹ (GSEM). The sample is restricted to participants in the CFCS – 2019 that are aged 35–65 and non-retired. These individuals are known as “pre-retirees”.

Figure 1.1 Proposed Conceptual Illustration for Model One



The hypothesized relationships to be tested in *Model One* are as follows:

H1. Perceived barriers are negatively associated with Canadian women’s engagement in retirement preparedness behaviours.

H1a. Perceived indebtedness is negatively associated with Canadian women’s engagement in retirement preparedness behaviours

H1b. Perceived lack of emergency savings is negatively associated with Canadian women’s engagement in retirement preparedness behaviours

H1c. Perceived poor credit is negatively associated with Canadian women’s engagement in retirement preparedness behaviours

¹ GSEM will be used as a robustness check for testing the HBM, and the stated hypothesis to assess how the variables are related.

H1d. Perceived poor financial control is negatively associated with Canadian women's engagement in retirement preparedness behaviours

H2. Objective financial knowledge will strengthen the relationship between perceived barriers and Canadian women's engagement in retirement preparedness behaviours

H3. Financial self-efficacy will strengthen the relationship between perceived barriers and Canadian women's engagement in retirement preparedness behaviours.

H4. Objective financial knowledge and financial self-efficacy will moderate the relationship between perceived barriers and engagement in retirement preparedness behaviours.

Model Two

Fundamental to the predictive ability of the health belief model is the understanding that individuals' perceptions of the benefits associated with engaging in particular financial behaviour can influence their decision-making. According to HBM, an individual is inclined to undertake an action if they are psychologically ready to engage and believe that the associated costs are outweighed by the benefits (Cummings et al., 1978). How individuals perceive the advantages/benefits of financial planning can significantly motivate them to engage in retirement preparedness behaviours.

Perceived benefits, in this context, refer to the perceived value or positive outcomes that individuals associate with retirement preparedness behaviour engagement. Unique to this model, the belief in the value of having lower expenses, being goal-oriented, having retirement confidence, staying informed financially, having good money habits and comparing prices for product and services. When individuals understand and value these benefits, they are more likely to act and prepare for retirement.

This study used the Canadian Financial Capabilities Study (2019) to explore factors that influence Canadian women’s engagement in retirement preparedness behaviours, and how these behaviours differ from those of Canadian men. By understanding the perceived benefits, such as seeking and accepting advice, engaging in financial decision-making and being a net saver, this model aims to identify perceived benefits associated with engaging in retirement preparedness behaviours.

Specifically, the primary research question(s) for model two are:

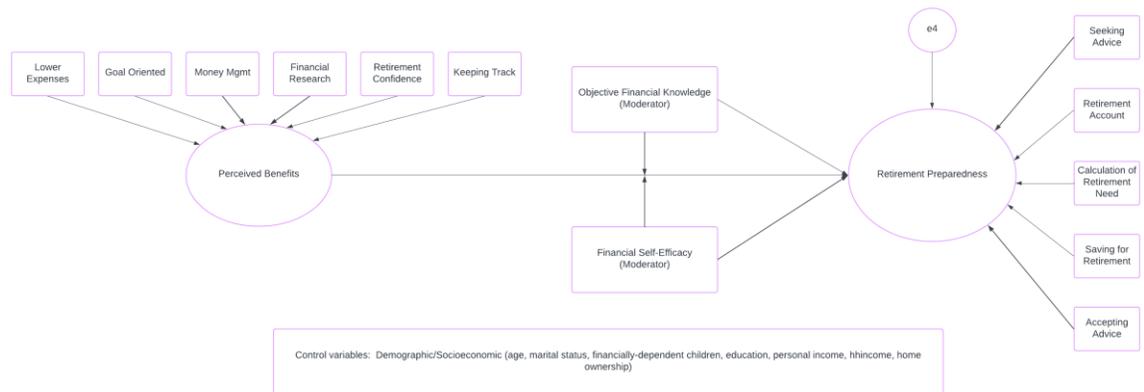
RQ1. What are the perceived benefits to engagement that motivate Canadian women to engage in retirement preparedness behaviours?

RQ2. Does perceived financial knowledge strengthen the relationship between perceived benefits and engagement in retirement preparedness behaviours?

RQ3. Does perceived financial self-efficacy strengthen the relationship between perceived benefits and engagement in retirement preparedness behaviours?

Model two uses generalized structural equation modeling (GSEM) to assess the relationships between perceived benefits and engagement in retirement preparedness behaviours. The sample is restricted to participants in the CFCS – 2019 aged 35–65 and non-retired. These individuals are known as “pre-retirees” See figure 1.2 below for the conceptual illustration.

Figure 1.2 Proposed Conceptual Illustration for Model Two



Considering the health belief model framework and the existing literature the hypothesizes below are tested in this model:

H1. Perceived (financial) benefits is positively associated with Canadian women’s engagement in retirement preparedness behaviours

H1a. Perceived value of having lower expenses than income is positively associated with Canadian women’s engagement in retirement preparedness behaviours

H1b. Perceived value of being goal-oriented is positively associated with Canadian women’s engagement in retirement preparedness behaviours.

H1b. Perceived value of having retirement confidence is positively associated with Canadian women’s engagement in retirement preparedness behaviours

H1c. Perceived value of being financially informed (keeping track) is positively associated with Canadian women’s engagement in retirement preparedness behaviours

H1d. Perceived value of effective money management is positively associated with Canadian women’s engagement in retirement preparedness behaviours

H1e. Perceived value of financial research is positively associated with Canadian women's engagement in retirement preparedness behaviours.

H2. Objective financial knowledge will strengthen the relationship between perceived benefits and Canadian women's engagement in retirement preparedness behaviours

H3. Financial self-efficacy will strengthen the relationship between perceived benefits and Canadian women's engagement in retirement preparedness behaviours

H4. Objective financial knowledge and financial self-efficacy will moderate the relationship between perceived benefits and engagement in retirement preparedness behaviours.

Model Three

The health belief model suggests that individuals' perception of their susceptibility to a serious issue (perceived threat) is fundamental to determining whether they will engage in the desired behaviour (Cummings et al., 1978; Scarinci et al., 2021). Research indicates that a high perceived susceptibility to a serious (health) issue increases the likelihood of engaging in behaviours or actions to mitigate or ameliorate the problem (Cummings et al., 1978; Rosenstock, 1947). Perceived threat refers to the self-assessed risk of developing a health problem. The HBM (Rosenstock, 1974), predicts that individuals with higher levels of perceived threat will engage in actions or behaviours to mitigate that risk.

While the HBM (Rosenstock, 1974) primarily addresses health-related concerns, this research explores its application to personal financial issues. Akin to illness, threats to financial problems can increase behavioral engagement as well. This research model classifies perceived threats such as not affording life's wants, fear money will run out, just getting by, not keeping track of money, struggling to pay bills, and regretful financial decisions. This study employs the

Canadian Financial Capabilities Study (2019) to explore these threat factors, how they influence Canadian women’s engagement in retirement preparedness behaviours, and how these behaviours differ from those of Canadian men.

The primary research question(s) for *model three* are:

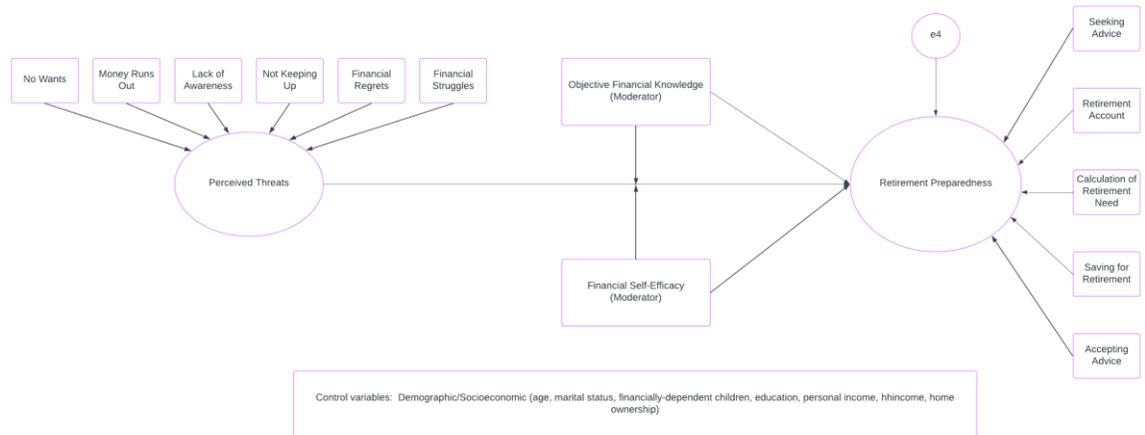
RQ1. What are the perceived financial threats that motivate individuals to engage in retirement preparedness behaviours?

RQ2. How does objective financial knowledge modify the relationship between perceived financial threats and the likelihood of engaging in retirement preparedness behaviours?

RQ3. How does financial self-efficacy modify the relationship between perceived financial threats and the likelihood of engaging in retirement preparedness behaviours?

See figure 1.3 below for the conceptual illustration.

Figure 1.3 Proposed Conceptual Illustration for Model Three



The hypotheses to be tested in this model are as follows:

H1. Perceived threats are negatively associated with Canadian women’s engagement in retirement preparedness behaviours

H1a. Perceived lack of disposable income is negatively associated with Canadian women's engagement in retirement preparedness behaviours.

H1b. Perceived fear that money runs out is positively associated with Canadian women's engagement in retirement preparedness behaviours.

H1c. Perceived lack of money awareness is negatively associated with Canadian women's engagement in retirement preparedness behaviours.

H1d. Perceived money problems is negatively associated with Canadian women's engagement in retirement preparedness behaviours.

H1e. Perceived financial regrets is negatively associated with Canadian women's engagement in retirement preparedness behaviours.

H1f. Perceived financial struggles (just getting by) is negatively associated with Canadian women's engagement in retirement preparedness behaviours.

H2. Objective financial knowledge will strengthen/moderate the relationship between perceived financial insolvency (not keep up with bill payments) and Canadian women's engagement in retirement preparedness behaviours.

H3. Financial self-efficacy will strengthen the relationship between perceived financial insolvency (not keep up with bill payments) and Canadian women's engagement in retirement preparedness behaviours.

H4. Objective financial knowledge and financial self-efficacy will moderate the relationship between perceived threats and engagement in retirement preparedness behaviours.

Model Four

HBM is a widely used framework for examining relationships between specific perceptions and the adoption of recommended behaviours. By exploring the interconnections of these perceived motivators and barriers, factors that affect decision-making can be determined (Skinner et al., 2015). Research indicates that high perceived benefits can drive behaviour adoption, even in the presence of serious or significant threats or barriers (Skinner et al., 2015; Wong et al., 2020).

The intuitive nature of HBM, and its easy applicability to real-life experiences and conditions makes it a robust framework for intention to engage in behavioural change. Both perceived barriers and benefits, particularly in the context of prevention and risk reductions, have been demonstrated to be the strongest of the HBM constructs as predictors of health-related behaviour change (Skinner et al., 2015). In the context of retirement preparedness behaviours, prevention and risk-reduction can involve engaging in behaviours to mitigate future financial risks. This research model explores a broader application of HBM to better understand the interplay of these perceptions as motivators to determine if Canadian men and women respond differently.

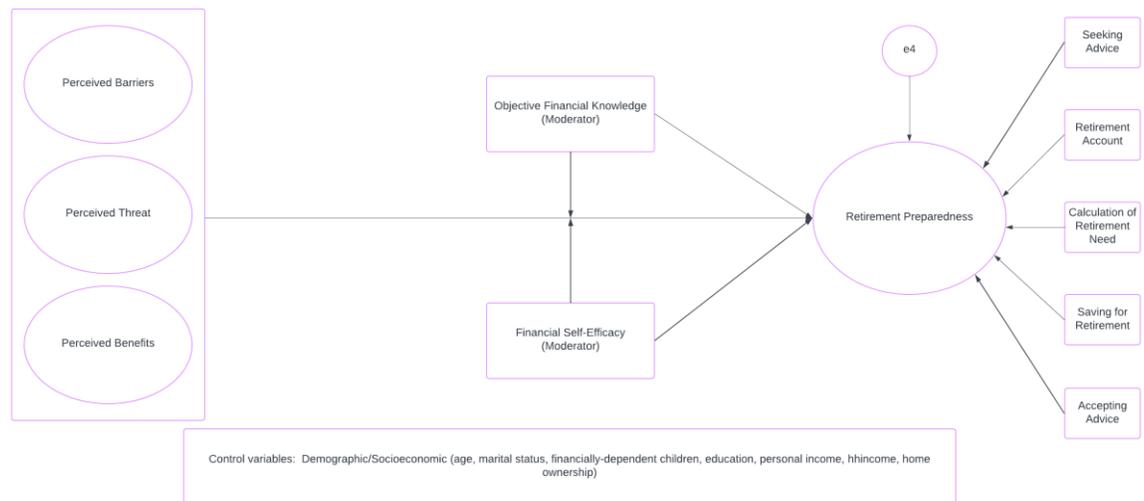
RQ1. To what extent do the perceived benefits of engaging in retirement preparedness behaviours outweigh the perceived barriers and threats to participation?

RQ2. Does objective financial knowledge strengthen the relationship between perceived benefits and the likelihood of engaging in retirement preparedness behaviours in the presence of the perceived barriers and threats.

RQ3. Does financial self-efficacy strengthen the relationship between perceived benefits and the likelihood of engaging in retirement preparedness behaviours in the presence of the perceived barriers and threats.

See figure 1.4 below for the conceptual illustration.

Figure 1.4 Proposed Conceptual Illustration for Model Four



The hypotheses to be tested in this above model are as follows:

H1: Women are more likely to engage in retirement preparedness behaviours when they perceive a threat and if they believe the perceived benefits of that desired behaviour outweigh the perceived barriers to engagement.

H2. Objective financial knowledge will moderate the relationship between perceived barriers, benefits and threats and Canadian women's engagement in retirement preparedness behaviours.

H3. Financial self-efficacy will moderate the relationship between perceived barriers, benefits and threats and Canadian women's engagement in retirement preparedness behaviours.

H4. Objective financial knowledge and financial self-efficacy will moderate the relationship between perceived barriers, benefits and threats and engagement in retirement preparedness behaviours.

Chapter 2 - Theoretical Framework

Existing retirement preparedness literature has focused primarily on the perceived retirement preparedness of households and individuals, trust and retirement preparedness, and retirement preparedness determinants, such as financial literacy (Kim & Hanna, 2015; Crawford & O'Dea, 2020; Koh et al., 2021; Uppal, 2016). Little research has focused on the retirement preparedness needs and behaviours of women, although research indicates that the financial behaviours of men and women differ significantly (Wagner & Walstad, 2022). Women have unique retirement planning needs. Women report higher levels of inadequate retirement preparedness than men, and fewer than two in ten women report feeling prepared for retirement (Fisher et al., 2015). For this study, both perceptions and determinants that trigger women to engage in retirement preparedness behaviours as well as the moderating effects of financial self-efficacy and financial knowledge were explored.

The Health Belief Model (HBM) is a conceptual framework developed in the 1950s by social scientists at the U.S. Public Health Services to understand better health behaviours and the choices patients make (Skinner et al., 2015). Specifically, HBM was designed to “predict whether and why people will take action to prevent, detect, or control illness conditions” (Skinner et al., 2015). According to HBM, a leading model within health promotion, individuals are more willing to engage in health promotion behaviour if they believe the following: they are at high risk (susceptibility) of experiencing a negative outcome, experiencing the negative outcome will cause hardship (severity), engaging in the preventative behaviour will reduce or eliminate the risk (benefits), the costs associated with the desired behaviour are minimal (barriers), and they are confident (self-efficacy) in their ability to engage (Eberhardt et al., 2019).

By looking at motivators and barriers, relevant factors needed in effective decision-making can be identified, to guide patients to take positive action and avoid negative health behaviors as the primary stimulus (Public Health Nigeria, 2022). Avoiding adverse effects is a key element of HBM (Hochbaum, 1958). For example, the prescription for physical activity may improve overall health. However, the negative consequence of a heart attack or the threat of a heart attack is a more significant motivator than looking and feeling good.

As the HBM (Rosenstock, 1974), suggests, people are primarily governed by their belief system, which results from needs, motives, fears, goals, desires, and external factors such as cultural and social factors (Hochbaum, 1958.) Beliefs lead to behavioral responses, and decisions relating to health depend on one's perceived threats and benefits (Maiman & Becker, 1974; Uma & Ilango, 2018). However, for Rosenstock (1974), it is the entirety of the formula that matters. The likelihood of a person adopting a given behavior is a function of the individual's perception of a threat to their situation and their belief that adopting this behavior will mitigate the threat. Understanding and predicting behaviors should precede any attempt to persuade people to change their behaviors – understanding why people do what they do will provide for better uptake in behavioral change (Rosenstock, 1974).

A person's perception of barriers, benefits, and threats to the desired behaviour is required to drive change (Farrell et al., 2016; Henager & Crude, 2016; Tang & Baker, 2016). The HBM (Rosenstock, 1974), can be used for both short- and long-term interventions so long as the data gathered accurately identifies those at risk and targeted for the intervention. When operationalizing the HBM (Rosenstock, 1974), framework, it must communicate the consequences of risky behaviors so that patients/clients understand perceived threats, and the steps they need to take to engage in the recommended action and its benefits (Rosenstock, 1974).

Although the original application of the HBM (Rosenstock, 1974), was healthcare, and not personal finance, recent research has successfully applied the concept of self-efficacy to personal finance (Qamar et al., 2016). The level that self-efficacy affects a person's financial decision-making and, therefore, is included in the analysis. Research demonstrates that financial literacy (knowledge and capabilities), self-efficacy, and positive financial behaviours are needed to achieve financial well-being (Qamar et al., 2016; Strömbäck et al., 2017). More recently, the Health Belief Model has been used to assess the role of perceived financial vulnerability, perceived benefits, and barriers to the aversion to health insurance products in India to make recommendations for policy changes and improvements within the industry and to government to provide for better health insurance engagement and utilization (Uma & Ilango, 2021).

The likelihood of a person adopting a given financial behaviour is a function of their perception of a threat to their financial situation and their belief that adopting this behaviour will mitigate or eliminate the threat. Determining the factors that drive people towards positive action is critical to improving financial behaviour, particularly for women that face more obstacles than men. The Health Belief Model (Hochbaum, 1958; Rosenstock, 1960) has had success in predicting a likelihood of changing negative health behaviors such as smoking (Prochaska et al., 1993; Strecher et al., 1994), dietary habits (Skinner et al., 2015), and exercise patterns (Das & Evans 2014; Jones et al., 2014). The emphasis on perception provided by the Health Belief Model enables multiple constructs to be included in the analysis to help provide additional context and factors that motivate women to adopt positive financial behaviours.

Chapter 3 - Literature Review

Retirement 858 is an essential and complex process that needs attention. The process has become increasingly difficult given increased longevity, decreased defined benefit pension plan participation in the private sector, higher levels of consumer debt that can negatively affect the ability to save, and more complex financial markets (Kumar et al., 2019; StatsCan, 2021).

Canadian women face more significant obstacles than men about retirement planning. While gaps in education, labour market participation, and income earned continue to narrow between the genders, women were more likely to experience time out of the workforce to care for others (Lehrer et al., 2023) and women live longer than men, often alone (Fox & Moyser, 2018). There is little research on retirement preparedness and Canadian women, including retirement income adequacy and retirement satisfaction.

Retirement Planning

An intentional set of actions in preparation for the transition from pre-retirement, retirement planning is often characterized by full-time paid labour, to retirement, where employment is optional (Earl & Archibald, 2014). Specifically, the process involves the acknowledgement of a need, the setting of goals, a decision to start planning and engaging in behaviours to achieve to goal (Fox & Moyser, 2018). For many Canadians, it is the most important planning life stage and involves some of the most important financial decisions households have had to make in their lifetime (Anderson et al., 2017). It is a detailed and time-consuming process ultimately determined by a person's financial resources, retirement goals, and beliefs about the planning process. Research indicates that those who have planned and prepared for retirement have experienced increased satisfaction levels, developed realistic retirement

expectations, and generated feelings of being in control (Donaldson et al., 2010; Tsotsoros et al., 2023). Retirement planning should result in a sense of being retirement ready.

Retirement planning engagement has varied significantly by demographic and socio-economic factors such as gender, age, race, education, marital status, income, and occupation (Kemp et al., 2005). Labour force participation for women continues to increase. More Canadian women than men (conditional on income) participate in registered pension plans and registered retirement savings programs (RRSP), and women are more likely to engage in day-to-day financial behaviours like budgeting and precautionary savings (Lehrer et al., 2023). However, the combination of intermittent labour market participation, an increased likelihood to work for an employer without a workplace pension, lower earnings levels, lower investment risk willingness, and longer retirements, result in women needing more help and guidance to be retirement-ready (Boisclair et al., 2017; Fisher et al., 2015).

Retirement Preparedness

Retirement preparedness reflects the outcome of successful retirement planning (Earl & Archibald, 2014). It is the ability to support a replacement rate of pre-retirement income to ensure an individual can maintain their standard of living in retirement (Munnell et al., 2008). The replacement rate is measured against a target rate based on the smoothing effect of the life-cycle consumption model. Households whose replacement rate was 10 percent less than the target rate were at risk of not maintaining their standard of living (Munnell et al., 2008). This measurement forms the foundation of the Canadian National Retirement Risk Index (NRRI), modeled after the original NRRI index developed by Boston College (MacDonald et al., 2011). It has been used to evaluate the percentage of Canadian workers at risk of living below their current retirement standard. According to MacDonald et al. (2011), approximately one-third of

Canadian retirees have been unable to maintain their standard of living, and more Canadians are expected to experience the same difficulties in the future. This resources-based approach to retirement preparedness suggested that individuals that have sufficient retirement assets were less likely to be affected by negative financial events (Earl & Archibald, 2014).

The ability to support oneself in retirement depended on a few factors: accumulated savings, earnings, and investment performance (Lehrer et al., 2023). Not all these factors are within the individual's control. Individuals can, however, engage in positive financial behaviours such as carrying little to no consumer debt and participating in retirement savings programs such as registered retirement plans (RPPs), registered retirement savings plans (RRSPs), and tax-free savings accounts (TFSAs). Slight differences in savings over time can have significant differences in overall accumulated wealth (Shek-wai Hui et al., 2016). Another key indicator of retirement wealth was annual income; with higher annual income, men could support a more significant share of their income in retirement (Gornick et al., 2021). Investment risk preference can also affect longer term asset accumulation.

Key retirement preparedness behaviours include calculating future financial needs, actively saving and having retirement savings accounts. Research indicates that individuals that estimate their future retirement needs exhibit significantly more retirement wealth compared to those that did not estimate those needs (Martin & Finke, 2012; Vieira et al., 2023). Individuals that were actively saving for retirement were also more adequately prepared. Kim et al., (2016) found that 46% of individuals that had savings rules and goals were adequately prepared for retirement. While women are more likely than men to participate in RPPs and RRSPs, their lower levels of income, reduced investment risk-willingness, and time out of the labour force may result in lower levels of accumulated wealth, and therefore negatively impact retirement

preparedness (Lehrer et al., 2023; Shek-wai Hui et al., 2016; Theodos et al., 2014). Women's risk aversion prevented them from using financial products and services that could maximize wealth accumulation (Damong & Perez, 2024).

Retirement Preparedness and Financial Security in Retirement

Existing research has defined or attempted to quantify retirement preparedness in several ways. According to Hershey et al. (2010), perceived financial preparedness for retirement concerned the degree to which individuals believe their savings to be adequate to cover their retirement years. Retirement preparedness reflects the outcome of successful retirement planning (Earl & Archbald, 2014). Adequate retirement preparedness has been assessed based on a person's or household's available assets to sustain an above-median income replacement ratio. Industry often recommends this ratio is 70 percent or greater (Cole & Liebenberg, 2008; Kyoung et al., 2016), but in general, it is the ability to maintain a replacement rate of pre-retirement income to ensure individuals or households can maintain their standard of living (Munnell et al., 2008). Finally, pre-retirees' ability to accumulate sufficient wealth to live with relative economic security later in life is critical (Gornick & Sierminska, 2021).

Not engaging in retirement planning behaviors increased the likelihood of shortfall and not achieving that replacement ratio. Households' self-assessment, or lack of assessment of their retirement preparedness, underestimated their level of risk (Chen et al., 2023; Eberhardt et al., 2022). More than half of working-age, middle to high-income Canadians were at risk of insufficient financial resources in retirement (MacDonald et al., 2011). To ensure financial security in retirement, there are several actions that Canadians can take to improve the adequacy of their retirement income, such as having a retirement savings account, actively saving additional voluntary savings for retirement, and calculating retirement income needs.

Perceived Susceptibility, Retirement Preparedness and Canadian Women

The HBM framework (Rosenstock, 1974), defines perceived susceptibility/vulnerability as the degree to which a person is likely to contract a particular condition (Rosenstock, 1974). *Perceived susceptibility* is the degree to which women believe that if they retire from work, they will suffer from retirement income inadequacy. The health belief model considers internal and external factors, such as a woman's immediate and future financial resources and government support if available (Eberhardt et al., 2019). While more Canadian women actively participate in the labour force now than in previous decades, women still earn less than men (\$0.87 for every \$1.00 earned by men), and women are more likely to work part-time (StatsCan, 2024). These factors negatively impact pension plan eligibility and benefit accrual at the government and employer level. Research suggests that retirement preparedness may be particularly precarious for those that earn above the median income and those that are single. While women have historically earned less, as income increases, the amount on personal savings needed to satisfy the replacement ratio also increases which may also pose financial strains on higher income earning women (Boisclair et al., 2017). Research has indicated that marital status is also a significant positive predictor of retirement preparedness, so single women are at greater risk of retirement income inadequacy (Kopanidis et al., 2016). These factors influence a woman's acceptance or belief that they are vulnerable, and it is that vulnerability that motivates women to engage in retirement preparedness behaviours.

Perceived Severity, Retirement Preparedness and Canadian Women

Unlike perceived susceptibility, the HBM (Rosenstock, 1974), construct of perceived severity concerns the seriousness of the negative condition and its consequences. If women risk experiencing retirement income inadequacy due to a lack of retirement preparedness, the gravity

of insufficient retirement income and its impact is equally important. Research indicates that many individuals have a false sense of confidence in their retirement preparedness, assuming they have sufficiently saved or will need less than is required (Kim & Hanna, 2015). Research has also indicated that women have lower levels of objective financial knowledge, which when combined with issues with financial self-confidence, resulted in lower engagement in investing and saving and higher levels of debt (Farrell et al., 2016). A disrupted work-life course has been shown to financially disadvantage Canadian women. A disrupted work-life course was positively associated with lower financial knowledge and retirement preparedness levels, resulting in financial insecurity later in life (Berger & Denton, 2005). According to Curtis and Rybczynski (2015), Canadian women were less likely than men to be members of a pension plan, and if they were members, their pension values are lower. While this conflicts with other research (Fox & Moysen, 2018) that indicated more women than registered pension plans in Canada cover men because of the labour market shift from manufacturing to a service-oriented economy, the fact remained that only 39.5% of Canadian women participated in employer-sponsored pension plans. Additionally, women were more likely to be single parents, resulting in a greater demand for their time and money (Curtis & Rybczynski, 2015). In this context, the HMB would suggest that having retirement income inadequacy and not being able to retire as planned results in women's engagement in retirement preparedness behaviours.

Perceived Threats, Retirement Preparedness and Canadian Women

In an updated version of the original HBM model, *perceived threat* is calculated as the product of perceived susceptibility (an individual's belief in the likelihood of experiencing a negative effect) and perceived severity (the belief in the seriousness of that negative effect) (Rosenstock, 1994). The *perceived threat* represents the degree of motivation an individual has

to engage in behaviour to avoid a specific outcome. The greater the perceived severity and susceptibility, the more likely individuals are to engage in positive financial behaviours, such as retirement preparedness, to avoid negative consequences.

Retirement preparedness can be very challenging with the presence of both individual behaviours and external financial pressures. The lack of financial self-control negatively impacts wealth accumulation efforts as individuals with low levels of self-control and high levels of impulsivity struggled to avoid financial temptation (Kim et al., 2016). Poor financial management skills and insufficient financial planning capabilities have been linked to an increased risk of financial difficulties and suboptimal financial decision making during the critical pre-retirement planning stage (Gunawan et al., 2018; Youngwon & Loibl, 2021). The poor financial behaviours and difficulties resulted in delayed or reduced saving which is compounded by the fact that as individuals age, there was still a tendency to move investments towards fixed-income assets that could lead to lower levels of overall wealth for retirement (Lusardi et al., 2017).

Exploring retirement preparedness through a gendered lens, Canadian women were significantly more likely than men to experience poverty in retirement, especially unattached women (Fox & Moyser, 2018). Senior women (16.3%) were more likely than men (11.9%) to live in low-income households in Canada. Additionally, unattached senior women in Canada were also less likely to own their home (38.2%) compared to unattached senior men (62%) and home ownership is often a Canadian consumer's most valuable asset (Fox & Moyser, 2018)

Perceived Barriers, Retirement Preparedness and Canadian Women

Perceived barriers include the tangible and psychological costs of engaging in the prescribed behaviour. Financial indebtedness poses a significant retirement preparedness

challenge. Individuals burdened by debt struggle to save and accumulate retirement assets (Vieira et al., 2023). High levels of indebtedness, including perceived over indebtedness, have been linked to financial fragility and a decreased likelihood of owning personal retirement savings plans (Fan et al., 2022). Poor financial habits, such as procrastination (Goyal et al., 2023) with bill payment or debt repayment, impulsive spending and present-biased preferences, further compounds these problems (Gamst-Klaussen et al., 2019). These behaviours exacerbated by regretful financial decisions compromise long-term financial stability and retirement preparedness.

Women, in particular, experience disrupted life-course work patterns because of child-rearing (Berger & Denton, 2004). Canadian labour market policies have not always considered the impact of child-rearing and family's responsibilities after the first year of life. Thus, women are often engaged in precarious work, with few benefits (Curtis & Rybczynski, 2015; Fox & Moyser, 2018). Women have reported lower tolerances for investment risk, lower levels of financial knowledge, low levels of participation in employer-sponsored retirement savings programs, and less accumulated wealth relative to men; (Kumar et al., 2019) all of which can act as barriers to retirement preparedness behaviours.

Perceived Benefits, Retirement Preparedness and Canadian Women

In contrast, the perceived benefits are the expected value associated with the acceptance and implementation of the advised behaviour. Perceived benefits are the positive effects of recommended action to reduce a threat, which can also have non-health related benefits that may be financial, psychological, or social in nature (Skinner et al., 2015). Perceived benefits are the second most important construct of the HBM, especially for prevention and risk reduction rather than treatment of behaviour (Skinner et al., 2015). Specifically, the ability to retire provides a

stable retirement and makes you feel financially secure. Existing research suggests that setting and having financial goals has influenced retirement behaviours because having a clear understanding of financial goals can act as a motivator to proactive behavioural engagement and a significant predictor of retirement preparedness (Amka, 2020; Cai & Yang, 2010; Moorthy et al., 2012). Accordingly, the need to save for the future (spending less than income earned) to be adequately prepared for retirement was important and the effect of lack of savings or under-saving is well researched (Kenneth et al., 2021; Lynn, 2023)

Financially informed individuals are more likely to plan for retirement and invest more efficiently than non-informed individuals (Lusardi & Mitchell, 2011c). According to Mekkaoui & Legendre (2022), savings for long-term investment were 59% higher and total financial assets were 50% higher for sample participants that identified as informed. Emergency savings has been associated with sustainable retirement plans whereby individuals are able support themselves financially through retirement as they would not drain financial assets or require external financial support. Emergency savings are considered a positive financial behaviour that has been linked to long-term financial security and retirement stability (Moutusi, 2023; Nam & Loibl, 2021; Sundarasan et al., 2024)

While threats to not feeling about to retire may be high, a woman's belief in the value in engaging in retirement planning behaviours to reduce the threat of a negative effect to her retirement must also be strong (Eberhardt et al., 2019). Single Canadian women were more likely to engage in retirement preparedness behaviours than single men, but they were more likely to indicate concerns for retirement income adequacy as well (Fox & Moyser, 2018).

Financial Knowledge, Retirement Preparedness & Canadian Women

While there is no universally accepted definition of financial knowledge, it is often used interchangeably with financial literacy (Knoll & Houts, 2012). While financial literacy concerns financial knowledge and the ability to use that knowledge to make informed decisions about financial matters (Lusardi & Mitchell, 2014), the two terms are not identical. According to Huston (2010), financial knowledge is the understanding of financial matters developed through education, experience, or both. Financial knowledge can be objective and subjective; this paper will focus on objective financial knowledge (Lind et al., 2020). Women exhibited lower levels of financial knowledge, an indicator of negative financial behaviour (Lusardi & Mitchell, 2008). In fact, Canadian women performed worse than men on all three financial knowledge questions in the Canadian Financial Capabilities Study (CFCS).

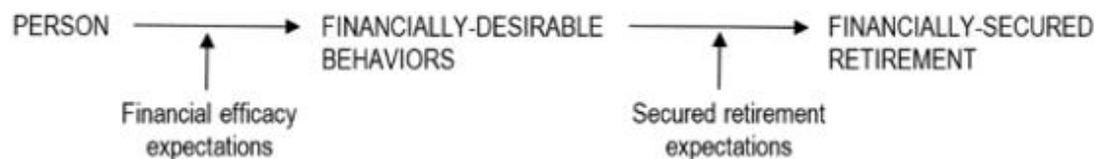
Research suggests that Canadian women who possessed lower levels of financial knowledge were more likely to borrow at higher rates, accumulate less wealth, report excessive debt loads and were more likely to leverage retirement assets. Lower levels of financial knowledge have also been associated with increased risk of financial insecurity and poverty (Theodos et al., 2014; Xiao et al., 2014). A concern for Canadian women as they consider retirement planning.

Financial Self-Efficacy, Retirement Preparedness and Canadian Women

Self-efficacy is the degree to which a person is confident enough to engage in recommended actions effectively (Bandura, 1977; Abraham & Sheeran, 2015; Farrell et al., 2016). Self-efficacy beliefs are psychological characteristics that help explain human behaviour and motivation. A strong sense of self-efficacy increases the likelihood of goal achievement, which also applies to financial self-efficacy (Lapp, 2010). Financial self-efficacy influences

personal control, which is critical to effective money management, and the financial behaviours necessary for retirement preparedness (Asebedo et al. 2019). Individuals with higher financial self-efficacy were more likely to see financial matters as challenges to tackle, rather than threats to avoid (Farrell et al., 2016). Engaging in activities that increase positive effects, has strengthened financial self-efficacy and has driven favourable financial outcomes (Figure 3.1) such as a financially secure retirement (Fisher et al., 2015; Lim et al., 2014; Qamar et al., 2016)

Figure 3.1 Framework of Behaviour Change in the Context of Retirement Preparation



Source: Adapted from Bandura's framework (1977).

Canadian women have experienced significant declines in family income after the demise of marriage or union, compared to men (Fox & Moyser, 2018). Additionally, women have tended to feel less confident in their financial knowledge and were more likely to select the 'don't know' option, in surveys relating to personal finance (Boisclair et al., 2017; Riitsalu & Murakas, 2019). In contrast, the desire for financial freedom or the ability to change one's financial situation has served as a strong motivator for change (Rowley et al., 2012). The prospect of a financially secure retirement has motivated individuals to engage in retirement planning behaviours, connecting their belief in their ability to impact the future with behaviour (Shek-wai Hui et al., 2016). Bergen and Denton (2004) identified that employer-sponsored pension plans and financial education programs as catalysts for positive financial behaviour among women. However, many women (60.5%) were not covered by employer-sponsored pension plans (Fox & Moyser, 2018). Engaging in activities that increase positive effects, such

as feeling proud, in control, determined and/or enthusiastic, supported improved feelings of financial self-efficacy and has driven financial success (Asebedo et al., 2019; Lapp, 2010).

Chapter 4 - Methodology

This section presents data, sample sources, GSEM models, and measures. The primary purpose of the current study is to identify and examine the specific motivating factors that encourage Canadian women to engage in retirement preparedness behaviours. The health belief model (HBM) provides a framework to examine the relationships between perceived threats (susceptibility and severity), barriers, benefits for Canadian women to engage in retirement planning behaviours. Specifically, this study will use the 2019 version of the Canadian Financial Capabilities Study (CFCS), to better understand the retirement preparedness behaviours and motives of pre-retiree Canadians with a comparative analysis of gender differences in these behaviours and motivations.

Data

To conduct the analysis, this study used the Canadian Financial Capability Study (CFCS). This study is conducted every five years in Canada and is funded by the Financial Consumer Agency of Canada (FCAC) and directed by Advanis, a member of the Canadian Insights Council (CRIC). The CFCS was designed to gather detailed information about the financial capabilities of Canadians and is quite similar in design to that of the National Financial Capabilities Study (NFCS) in the United States. In 2009, when the first CFCS was conducted, financial capabilities were defined as both skills and the ability (confidence) to seek out help, make informed decisions and take effective action. The goal of this survey was to create an awareness of how well Canadians understood their financial situation, the financial services available to them and how best to use those services to plan for the future (FCAC, 2019). The CFCS consists of a core and supplemental survey component. Not all participants of the core survey, participate in the supplement survey, which is administered to approximately 40% of core survey participants. The

focus of the supplement survey consists of psychological factors relating to financial matters, fraud, debt, and financial well-being (FCAC, 2024). Participants can complete the survey online or by phone.

Sample

The total sample size for the CFCS – 2019 is 7,169 adult Canadians (18+). The survey was conducted by Advanis, a private, market, and social research firm. Advanis used a probability-based approach to gathering participant responses through its General Population Representative Sample (CPRS) and random digital dialing (RDD). Given the regionality of Canada, participants in hard-to-reach areas were provided the opportunity to complete the survey using Computer Assisted Telephone Interviewing (CATI) technology. The CFCS results are weighted by the following factors: region, gender, income, education, and age group. Additionally, the recruitment process used a quota system to ensure key sub-populations were representative. Data within the CFCS, 2019 were weighted to population proportions for age, region of the country, education and marital status. No additional weighting were added to the analyses.

For the purposes of this research, the sample was restricted to individuals aged 35 – 65 who are not retired. Existing research indicates that those under age 35 experience significant changes in employment, marital, and family status which can skew results related to retirement preparedness (Anderson et al., 2000; Kim & Hanna, 2015). The average retirement age for Canadian woman is 63.6 years; however, women up to age 65 were included to account for the increasing retirement age in Canada (Davis, 2024). Since the focus is retirement preparedness behaviours, the sample was further refined to include only employed people to capture the effects of workplace pensions and government-sponsored contributory pension plans. To ensure

a representative sample of Canadian women, oversampling for new Canadian women (newcomers) and Indigenous women in the GSEM analysis, to better reflect the diversity within the population. Currently, more than 25% of all Canadian women identify as new-comers and 5% identify as Indigenous (StatsCan 2022). While ethnicity is present in the CFCS sample information, race is not. In Canada given variation and inconsistency in how race has been tracked in Canada, it often does not form part of surveys and questions related to ethnicity, origin or country of birth as asked instead (Canadian Race Relations Foundation. (n.d.); Manuel et al., 2022).

Measures

Primary Dependent Variables (all models)

Retirement preparedness behaviours. The primary focus of this study was to determine the factors that motivate Canadian women to engage in *retirement preparedness behaviours*; defined as having retirement savings accounts, actively saving for retirement, calculating retirement needs, seeking and accepting financial advice. According to Earl and Archibald (2014), retirement planning is not synonymous with retirement resources accumulation. While both are preparatory behaviours, planning is a predictor, and resources are an outcome of successful retirement planning. There are five financial behaviours that were used to create a latent construct that will measure retirement preparedness: having retirement savings accounts, actively saving for retirement, calculating retirement needs, and seeking and accepting financial advice. *Having a retirement savings account* was measured by asking survey participants “Other than government pension benefits (CPP, QPP, OAS, GIS), which of the following sources of revenue do you expect to have in retirement?” Survey participants were provided with 15 options that were consolidated into seven options: (1) Workplace pension, (2) RRSP, (3) TFSA, (4) NR

account, (5) No retirement savings account, (6) Don't know, and (7) Prefer not to say. *Actively saving for retirement* will be measured using the question "Are you financially preparing for your retirement either on your own or through an employer pension plan?" Survey participants were provided with four options: (1) Yes, (2) No, (3) Don't know, and (4) Prefer not to say. *Calculating retirement need* was measured by asking survey participants "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?" Survey participants were provided with four possible choices: (1) Yes, (2) No, (3) Don't know, and (4) Prefer not to say. *Seeking advice* asked survey participants "in the past 12 months, did you make use of FREE or PAID advice on any financial products? If so, did this include advice on:" Respondents were provided with nine options which included all areas of comprehensive financial planning and included "no, did not use any free or paid advice (7)," "don't know (8)" and "prefer not to say (9)". Seeking advice was coded as a binary variable, with any advice sought coded as "yes" (1) and "no, did not use any free or paid advice" coded as "no" (0)

Predictor and Control Variables

There are three main explanatory variables: perceived barriers, benefits, and threats (susceptibility and severity) as outlined by the health belief model.

Perceived barriers (model one). Were measured by the following four statements: (1) "I have too much debt right now." Participants were provided with the following six options: (a) "strongly agree," (b) "agree," (c) "disagree," (d) "strongly disagree," (e) "don't know" and (f) "prefer not to say" This statement was coded as categorical. Statement two (2) "I find it difficult to break undesirable habits." Participants were provided with the following seven responses: (a) "fits very well", (b) "fits fairly well", (c) "fits neither well nor badly", (d) "does not fit well" (e)

“does not fit at all”, (f) “don’t know” and (g) “prefer not to say.” This categorical variable was reverse coded to align with the latent construct perceived barriers. Statement three: (3) “I often make financial decisions I later regret.” Respondents were provided with six options: (a) “strongly agree,” (b) “agree,” (c) “disagree,” (d) “strongly disagree,” (e) “don’t know” and (f) “prefer not to say.” This observed variable was coded as categorical. The final variable used to measure the latent construct of perceived barriers is: (4) “I am just getting by financially. Participants were provided with five options ranging from “complete” to “not at all.” This categorical variable was also reverse coded to better align with the latent construct of perceived barriers.

Perceived benefits (model two). Perceived benefits will be measured by the following six statements: “Over the past year, would you say your monthly household spending was less than, more than, or about equal to your monthly household income. Survey participants were provided with five options: (a) “spending less than income,” (b) “spending more than income,” (c) “spending about equal to income,” (d) “don’t know,” and (e) “prefer not to say.” This binary variable was coded as one (1) if participants selected “spending less than income” and zero (0) if participants selected “spending more than income or spending about equal to income.” The second statement asked respondents to indicate the following: “I am able to work diligently toward long-term, financial and money management goals.” Survey respondents were provided with the following seven options: (a) “fits very well,” (b) “ fits fairly well,” (c) “fits neither well nor badly,” (d) “does not fit well,” (e) “does not fit at all,” (f) “don’t know,” (g) “prefer not to say”. This categorical variable was reverse coded so the benefit of working towards a goal was weighted the most, and the last two options were consolidated given such a low response rate. The third statement asked respondents to indicate the following: “How confident are you that

these sources of retirement income will give you the standard of living you hope for?”

Respondents were provided with six options: (a) ‘very confident,’ (b) ‘fairly confident,’ (c) ‘not very confident,’ (d) ‘not at all confident,’ (e) ‘don’t know,’ (e) ‘prefer not to say’.

Statement four asked participants to indicate how well they were informed about financial matters, specifically staying informed on financial issues. Survey participants were provided with six options (a) “very good” (b) “good” (c) “fairly good” (d) “not very good” (e) “don't know” (e) “prefer not to say” This statement was coded as categorical. (a) “yes,” (b) “no,” (c) “don’t know,” (d) “prefer not to say.” Statement five asked respondents to report their money management skills on a day-to-day basis; specifically, respondents were asked: “How would you rate yourself of each of the following areas of financial management – making ends meet?” Respondents were provided with the following six options: (a) “very good,” (b) “good,” (c) “fairly good,” (d) “not very good,” (e) “don’t know,” and (f) “prefer not to say.” This categorical variable was reverse coded so those agreeing with good money management was weighted the most. The final statement in the perceived benefits construct was: “How do you rate yourself on each of the following areas in financial management – shopping around to get the best product such as loans or insurance rates?” Survey participants were provided with six options: (a) “very good,” (b) “good,” (c) “fairly good,” (d) “not very good,” (e) “don’t know,” (f) “prefer not to say”

Perceived threats (model three). Perceived threats (susceptibility & severity) will be measured by the following six questions: (1) “Because of my money situation, I feel like I will never have the things in life I want.” Survey respondents were provided with five options: (a) “completely”, (b) “very well,” (c) “somewhat.” (d) “very little,” (e) “not at all.” The second statement posed to respondents was “I am concerned that my money I have or will save won’t

last.” Survey respondents were provided with the following five response options: (a) “completely”, (b) “very well,” (c) “somewhat,” (d) “very little,” (e) “not at all.” This categorical variable was reverse coded as lower ability to manage debt and credit commitments is related to higher perceived susceptibility (source this). (3) “How would you rate yourself on keeping track of money?” The following six response options were provided: (a) “very good.” (b) “good.” (c) “fairly good,” (d) “not very good,” (e) “don’t know.” (f) “prefer not to say.” The fourth statement for perceived threats was: “In the last 12 months, which of these statements best describes how well you have been keeping up with bills and other financial commitments?” (a) “keeping up without any problems,” (b) “keeping up, but it is sometimes a struggle,” (c) “having troubles keeping up and falling behind with bills and credit,” (d) “don’t have any bills or credit commitments,” (e) “don’t know,” and (f) “prefer not to say.” This categorical variable was coded 1 – 3 with “don’t have any bill payments or credit commitments” coded as missing given that it represented only 2% of respondents and was neither negative nor positive re: perceived threat. The fifth statement included in the perceived threats model asks respondents to indicate how well the following statement describes them: “I am just getting by financially.” Respondent options were as follows: (a) “completely,” (b) “very well,” (c) “somewhat,” (d) “very little,” (e) “not at all.” The final statement in this construct concerns a person’s financial habits. Specifically, respondents were asked to answer the following statement: “I find it difficult to break undesirable habits. The following seven options were provided: (a) “fits very well,” (b) “fits fairly well,” (c) “fits neither well nor badly,” (d) “does not fit well,” (e) “does not fit at all,” (f) “don’t know,” (g) “prefer not to say.” This categorical variable was reverse coded one – four with response options a & b combined given small response numbers and concerns for convergence issue.

Financial self-efficacy (all models). To investigate the moderating effects on the relationship between retirement preparedness behaviours and perceived barriers (*model one*), perceived benefits (*model two*) and perceived threat (*model three*) this project will include financial self-efficacy in the analysis. In the CFCS, respondents are asked to rate how much they feel they know about financial matters. Specifically, respondents are asked: “How would you rate your level of financial knowledge?” Respondents were provided with six options: (a) “very knowledgeable” (b) knowledgeable”, (c) “fair knowledgeable”, (d) “not very knowledgeable”, (e) “don’t know”, (f) “prefer not to say”. Existing research suggests that subjective financial knowledge questions are effective proxies for financial self-efficacy (Białowolski et al., 2021; van Rooij et al., 2011) and as a result, will be used to measure financial self-efficacy in this study. This variable is categorical.

Objective financial knowledge (all models). This research also seeks to examine the moderating effect of objective financial knowledge on the relationship between retirement preparedness behaviours and perceived barriers (*model one*), perceived benefits (*model two*) and perceived threat (*model three*). Objective financial knowledge is a categorical variable measured by a composite of three questions within the CFCS. These questions are designed to mimic Lusardi’s Big Three financial literacy questions, which are widely used to assess financial knowledge. Respondents were asked to correctly answer the following three questions: “Suppose you had \$100 in a savings account, and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?”, “Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, with the money in this account, would you be able to buy...”, “Do you think the following statement is true or false? Buying a single company stock usually provides a safer return than a

stock mutual fund”. This composite measure of financially knowledgeable captures a more comprehensive assessment of respondents' objective financial knowledge understanding.

Previous research has indicated positive associations between financial behaviours (planning for retirement, saving for an emergency etc.,) and objective financial knowledge (Lind et al., 2020).

Demographics. This study will control demographic and socioeconomic characteristics. Four demographic variables will be measured: age, gender, marital status, and financially dependent children. Four demographic characteristics will be measured: age, ethnicity, marital status, and household composition. *Age* is a categorical variable measured by "may we place your age into one of the following general age categories." The following ranges were provided to participants: “18 – 24 years,” “25 – 35 years,” “35 – 44 years,” “45 – 54 years,” and “55 –64 years” and “65 years or older”. *Gender* will be measured by four options. Categories provided (a) “male,” (b) “female,” (c) “prefer to self-describe” and (d) “prefer not to say.” This binary variable is coded as one (1) if participants indicated they were female and zero (0) if they indicated they were male. Research indicates that as people age, engagement in retirement preparedness behaviours increases and certain ethnicities (Caucasian) are more likely to engage in retirement preparedness behaviours than other ethnicities (Curtis & Rybczynski, 2015; Kim & Hanna, 2015). *Marital status* is measured by "What is your current marital status." Participants were provided with the following options: (a) “married,” (b) “living with a partner (common-law),” (c) “separated,” (d) “divorced” (e) “widowed,” (f) “single,” (g) “don’t know,” and (h) “prefer not to say”. This variable was coded as categorical to capture some of the nuances present in different relationship statuses. Married individuals are more likely to engage in retirement preparedness behaviours (Kopanidis, 2016). *Financially dependent children* are measured by "Are you financially responsible for any children in your household or living

somewhere else?" The options provided to participants were (a) "yes," (b) "no," and (c) "prefer not to say". This binary variable is coded as one (1) if participants indicated they had children and zero (0) if they did not. Married households with children are most likely to engage in retirement preparedness behaviours, while single women with children are least likely to prepare for retirement (Lusardi & Mitchell, 2008; Staples et al., 2023). Each demographic question also includes the option "prefer not to say."(Jakobsen et al., 2017; Hughes et al., 2022).

Socioeconomic status. Annual individual income is measured by "Personal income before tax-derived value range." The options range from "Less than \$20, 000" to "\$200,000 or more." Income categories increase by \$20,000 below \$100,000, and \$50,000 between \$100,000 - \$200,000. This variable was coded as categorical. Individual income is an included measure given Canadian women are more likely to live alone and with lower income than men in retirement (Boisclair et al., 2017). Annual household income is measured by "Household income before tax grouped." The options range from "Less than \$20,000" to "\$200,000 or more." Income categories increase by \$20,000 below \$100,000, and \$50,000 between \$100,000 - \$200,000. The annual household income variable is coded as categorical. Home ownership is measured by "Do you currently own or rent your home?". The options are "own with a mortgage" to "own, without a mortgage," "rent," "don't know," and "prefer not to say." This categorical variable was coded as two (2) if you owned your home without a mortgage, one (1) if you owned your home with a mortgage and zero (0) if you rented. Research by Gignac et al., (2024) and Rollins-Koons (2024) have similarly defined home ownership as a categorical, rather than binary variable to account for nuanced gender differences and changes in financial well-being as individuals move from renter to mortgagor to fully ownership overtime. Education level is measured by "What is the highest level of schooling that you have ever attained?" The options provided will include: (a)

"Less than high school diploma, (b) high school diploma or equivalent, (c) some college or university without a diploma, certificate or degree (some trade, vocational or technical school, CEGEP, or university), (d) college diploma or certificate (completed trade, vocational or technical school or CEGEP), (e) university undergraduate degree (f) "university graduate degree" (professional degrees), (g) "don't know" and (h) "prefer not to say" others, please specify." Employment status is measured by "What is your current work situation? Are you now..." Eight options are provided: (a) employed - full-time, (b) employed - part-time or in temporary work, (c) self-employed, (d) retired and not working, (e) not working (including unpaid housework, student etc.), (f) retired but still working (g) don't know" and (h) prefer not to say. Education level and employment status were coded as categorical. Each socioeconomic status question includes the option "prefer not to say" (Hughes et al., 2022). Existing research suggests that Socioeconomic status can influence financial behaviours, including retirement planning (Noone et al., 2012).

Preliminary Analysis & Missing Data

Analysis Plan - Generalized Structural Equation Modelling (GSEM)

By exploring the individual components of the HBM – perceived barriers, benefits, and threats - several steps were involved in the analysis plan to correctly identify the individual constructs that acted as the primary motivator for engaging in retirement preparedness behaviours. Using a fourth analysis model permitted the exploration of the interrelationships and interconnectedness of the HBM constructs and their overall impact on retirement preparedness engagement. Thus, this model served as a robustness check to validate the individual construct findings and to determine if those findings remained consistent when the constructs are analyzed

collectively. A subsequent gender-lens analysis assessed whether the motivators identified as significant, functioned uniquely for Canadian women versus men

The analysis plan relied on ordinal, categorical, and some binary variables, requiring a non-linear model. As a result, generalized structural equation model (GSEM) which effectively handled the categorical data, and item response theory (IRT) which provided measurement precision, were best suited to examine the relationships between perceived barriers, benefits, and threats to retirement preparedness behaviours within the Canadian context. Further, GSEM was applicable given its ability to assess complex relationships among multiple latent constructs, examining both direct and conditional effects simultaneously. Assuming a continuous variable structure that underpins conventional structural equation modelling (SEM) was not possible (Muthén & Muthén, (2017); StataCorp., 2024).

GSEM estimation method uses Akaike's Information Criterion (AIC), Bayesian Information Criterion (BIC) and Log Likelihood function to evaluate and compare model fit specifications. AIC is a common method of comparing models in psychology and other social science fields (Wagenmakers & Farrell, 2004). It is used to assess goodness-of-fit of a statistical model in time series analysis, factor analysis, latent class analysis and regression (Wagenmakers & Farrell, 2004). The goal is to select the model with the least amount of information loss (< 2 is ideal) between the true model and the approximated model. It is important to note that AIC rewards a higher likelihood model as it explains the data better, while penalizing models that lack parsimony (excessive parameters; Wagenmakers & Farrell, 2004).

BIC is another specification tool for model comparison that became quite popular in model selection, especially in the case of questionable p-value results, large datasets and models using categorical data (Raftery, 1995). BIC tends to prefer simpler models (penalizes

complexity), more so than AIC. Like AIC, BIC favours lower values, especially in larger sample sizes thus improving interpretability by the preference for model simplicity (Raftery, 1995).

Depending on the goal of the analysis, the preference for AIC -predictability or BIC - simplicity and interpretability needs to be balanced. Raftery (1995) suggested a revised interpretation of Jeffery's (1961) interpretation of BIC threshold which is as follows: BIC Difference: 0 – 2, 2 – 6, 6 – 10 and >10 corresponds with Model Evidence: weak, positive, strong, very strong, indicating that there is evidence that the lower-BIC value model is stronger (Raftery, 1995).

The Log-likelihood (LL) value is another method of assessing goodness of fit for a model, although its given value is relatively meaningless unless used for comparing multiple models. In general, the higher the value of the log likelihood, the better the model fits the dataset. It is important to note that a model with more parameters will be bigger, and by default will be the LL value. As a result, Log-likelihood value, like AIC and BIC while offering valuable insights about the model fit, should not be used in isolation (StackExchange, 2022). Conversely when used in combination, these individual model-fit criteria enable researchers to balance fit quality, parsimony and interpretability.

Analysis Strategy – Item Response Theory (IRT)

Item response theory (IRT) has emerged as a popular statistical model for health-related, quality of life analysis and psychological measurement (Chen et al., 2021). IRT was developed in the 1950s –60s by Frederic Lord (1968) to evaluate test participants and predict their responses based on their abilities or latent characteristics (Zanon et al., 2016). It provides a probabilistic way to link survey responses to underlying respondent characteristics or traits, that are not directly observable through a function called the item characteristic curve (ICC). The core of IRT is characterized by its parameters; difficulty, or threshold and how well it

discriminates between high and low levels of a trait or how well a question clearly separates a respondent that is highly motivated from someone who is not (Immekus et al., 2019). IRT models allow for inferences about both the items of analysis and the respondents themselves on a common scale (Chen et al., 2021). Specifically, it models the likelihood an individual endorses the optimal response and relates that to the difficulty of the item and how informative the item is about the overall latent construct providing a more nuanced understanding of an individual's motivation to engage in retirement preparedness behaviours (Dello Stritto & Preston, 2020).

This study employed a unidimensional item response theory (IRT) calibration approach, using generalized structural equation modelling (GSEM) to examine the relationships among the health belief model (HBM) constructs of perceived barriers, benefits and threats and their collective effects on motivation to engage in retirement preparedness behaviours. Dimensionality through exploratory factor analysis consistently indicated a single dominant eigenvalue (< 1.0). To strengthen the support for unidimensionality, explained common variance (ECV) was manually calculated for each construct (Liu et al., 2023). The generally accepted threshold of 70% or more of the total variance for each construct was confirmed. These findings are in line with existing research that suggests a unidimensional model is appropriate under such conditions (Chen et al., 2020; Immekus et al., 2019). The data was coded, and all analyses were run in Stata/SE 19.

Missing Data (data treatment, robustness checks)

To reconcile differences in sample size between the core CFCS survey and its smaller supplemental component, multiple imputations (10 datasets) were used for the descriptive statistics. Multiple imputations is a statistical method designed to remedy the underestimation bias of standard errors and significance tests associated with the single imputation method

(Johnson & Young, 2011). Specifically, statistical analysis was conducted on each computed dataset separately, but only the imputed values vary. They are then combined to create a single pooled estimated data set (Johnson & Young, 2011) and those estimated missing values were used in further analysis.

To model our ordinal outcomes, GSEM was used, which extends traditional SEM by including generalized linear model components to account for the non-normal, non-continuous, distributed data. This process specified the appropriate link functions with the generalized linear model (GLM) framework, although parameters were still estimated using full-information maximum likelihood (FIML; Miles & Gilbert, 2005).

FIML is a robust process for handling missingness, providing unbiased parameter estimates when data is Missing at Random (MAR) and particularly effective when dependent variables are a latent construct (Eekhout, 2014). FIML is advantageous over other missingness methods, such as listwise deletion, given that the latter is prone to biased results and reduced statistical power. FIML does not fill in missing values; it estimates the missing values based on data available, including partially missing data.

Additionally, it estimates the relationships between the variables and the mean and variance estimates, incorporating incomplete data. A strength of the FIML method is that it provides unbiased estimates under specific assumptions (Graham et al., 2007). The combination of FIML and GLM provided model accommodation for categorical data.

Gender-lens Missingness Robustness Check.

An initial assessment was conducted to evaluate the missing data in the CFCS. The approach involved exploring interactions between the missingness and the observed demographic and socioeconomic status (SES) variables and gender, given that it is a fundamental

focus of this study. Gender-related discrepancies were noted, with missing data in certain variables disproportionately affecting male or female respondents. As a result, the missingness may be related to underlying characteristics and not missing completely at random (MCAR). Given the relevance of the gender variable to the research questions and hypotheses of this study, listwise or pairwise deletion could not be employed. Instead, multiple imputations were used to maintain the integrity of the data. Consequently, the response selection "prefer not to say" was recoded as missing data by generating a nonresponse⁹⁹ variable. This approach uses all available data and reduces bias.

As a gender robustness check, this analysis also examined the effects of "don't know" responses by generating a nonresponse⁹⁸ variable. Existing research suggests a gender difference in the frequency of its selection in surveys related to financial matters. This research indicates that women may overuse this response selection when lacking confidence or certainty. Surveys relating to money and financial matters are more likely to choose this option than men when they are not certain of the correct answer (Chen & Garrand, 2018). T-tests/logistic regression were used to determine if there is a systematic difference between the two groups (including, not including, the "don't know" responses).

Reliability and Dimensionality

In the preliminary analyses, steps were taken to ensure the measurement items' internal consistency and construct validity, item scalability, inter-item correlation (Pearson's r), and factor analysis were examined for each health belief model (MBM) construct and the retirement preparedness behaviour outcome.

Internal Consistency and Item Scalability.

Using Cronbach's Alpha (α), the internal consistency of the observed measures for each latent construct ranged from 0.65 to 0.78. Only retirement preparedness behaviours (0.65) did not meet the desired minimum threshold of 0.70 for Cronbach's Alpha. Item scalability was measured by computing Loevinger's H coefficient (loevh command in Stata). The observed items in perceived barriers indicated moderate to strong scalability ($H = 0.49 - 0.55$) with individual z-scores above 25 indicating strong relationships between the individual observed variables. This latent construct indicated conditions of financial instability/distress, inhibiting, or acting as a deterrent/barrier to engaging in retirement preparedness behaviours. The observed items that formed the latent construct perceived benefits indicated moderate scalability ($H = 0.31 - 0.43$), with *effective money management* and being *financially informed* having the most substantial associated/dimensional alignment with perceived benefits. Perceived threats consisted of six observed constructs that indicated moderate to strong scalability when measured using Loevinger's H ($H = 0.31 - 0.55$). The observed variables *fear that money will not last* and *cannot afford any wants in life* had higher mean scores, suggesting more frequent financial difficulties in respondents.

Inter-item Correlation & Multicollinearity.

Inter-item correlation (Pearson's R) was used to measure the strength of the relationship between the variables for each latent construct. No inter-item relationship indicated a strong correlation ($r > 0.80$), but relatively low- moderate, positive correlations within each latent construct; perceived barriers ($r = 0.36 - 0.53$), perceived benefits ($r = 0.15 - 0.50$), perceived threats ($r = 0.24 - 0.69$) and retirement preparedness behaviours ($r = 0.01 - 0.63$).

Multicollinearity was assessed and mitigated by centering the data of the primary predictors, providing for more stable and reliable estimates, and helping with convergence. (Muthén, B. 2011) Additionally, the variance inflation factor (VIF) in Stata was used to ensure that the independent variables in this study are truly independent. No VIF score for these variables exceeded a VIF value = 2 (VIF values = 1.36 - 1.71).

Exploratory Factor Analysis (EFA).

Exploratory factor analysis (EFA-ML) was conducted to assess item loadings on the latent constructs and quantify the inter-item correlations of the dependent and independent constructs in this study. This provided a more comprehensive understanding of the hypothesized relationships between perceived threats, barriers, benefits, and retirement preparedness behaviours. EFA was chosen instead of confirmatory factor analysis (CFA) because the perceptions derived from the health belief model framework (barriers, benefits, and threats) have not been applied to Canadian retirement preparedness behaviours. Items effectively loaded on a single factor for perceived barriers (eigenvalue = 1.72) and the individual item loadings were as follows: having *no emergency fund* (0.70) has highest loading, so strongest indicator while *indebtedness* (0.64) *having poor credit* (0.64) and *feeling out of control, financially* (0.64) were all moderate. All were above 0.40, indicating results are meaningful/reasonable. Having no emergency fund (0.51) has the lowest uniqueness, so it is best represented by factor one, but the remaining were all moderate, < 0.60. Exploratory factor analysis performed on the perceived threats, loaded on three factors, but only factor one met the eigenvalue > 1.0 threshold (2.628) and explained 80.19% of the variance. The overall model demonstrated good fit, notwithstanding *not keeping track of money* that generated a uniqueness score of > 0.60.

Exploratory factor analysis (EFA-PAF). To reduce incidences of Heywood cases an alternative extraction method - principal axis factoring (PAF) was selected to reduce these incidences and improve convergence (Stata – help page). As the goal was to uncover latent constructs rather than reduce dimensionality, PAF was employed given its ability to estimate shared variance without strict normality assumptions (Statistics Easily, n.d.). The results of the PAF factor analysis for perceived benefits generated the following result. All perceived benefit items loaded positively on factor one, (eigenvalue = 2.003), explaining 75% of the model variance. This loading would be considered positive and strong, especially for *retirement confidence* (0.55), *being financially informed* (0.66), *effective money management* (0.72), and *consumer due diligence* (0.57). The PAF factor analysis for retirement preparedness behaviours produced an eigenvalue of 1.52, accounting for 69% of the model variance, and all five retirement preparedness behaviour items loaded positively on factor one, with *having a retirement account* and *saving for retirement* both positively and strongly aligned (0.73 and 0.79, respectively). There was no need to rotate any of the EFA-PAFs conducted, as only one factor was retained for each latent construct, making rotation irrelevant, as there was no need for interpretability to be improved (UCLA Institute for Digital Research and Education. (n.d.)).

Item-response Theory (IRT) Data Transformation

A final step in the data analysis preparation included transforming categorical data into continuous measures to ensure compatibility with assumptions underlying generalized structural equation models (GSEM), which operate best on continuous latent constructs (Miles & Gilbert, 2005). Given the categorical nature of the survey responses and their interrelationships, IRT was employed to reveal latent traits that encapsulate the variation in how individuals respond to a set of items. Another positive feature of IRT is that, in addition to estimating the latent traits, it also

accounts for measurement error and item-specific characteristics such as difficulty and discrimination (Chen et al., 2021). Difficulty and discrimination are measurement parameters in the IRT framework that provide more nuanced insights than simply scores. The difficulty measure is defined as the level/location of a latent construct that an individual must have (50% likelihood of endorsing a higher category), or the threshold at which a perception is to be supported or endorsed (Gyamfi & Acquaye, 2023). While discrimination concerns sensitivity to change reflected in the steepness in the slope in the item characteristic curve (Baker, 2004). The steeper the slope, the more rapid the probability of a correct response change, which allows for quantification of a response change. The difficulty and discrimination measures are mutually exclusive. A change in one does not dictate a change in the other (Baker, 2004).

The **IRT partial credit model (PCM)** analysis (Table 2) for the dependent variable – *retirement preparedness behaviours* revealed that respondents have low difficulty thresholds for having a retirement account ($b_i = -1.29$) and saving for retirement ($b_i = -1.02$) which indicates an increased likelihood of endorsement. While the PCM model is equipped to handle ordinal polytomous items, it is an effective alternative to GRM although it constrains all items within the model with the same discrimination value ($a_i = 1$), so factor loadings and the binary correlations have the same values as well (Kuo & Sheng, 2016; Sun et al., 2021). The PCM resulted in log-likelihood of -7840.59 ($df = 6, p < 0.001$) indicating a statistically significant fit. PCM was used as an alternative to GRM due to non-convergence of the GRM.

The **IRT graded response model (GRM)** results for the independent latent constructs (Table 2) demonstrated the following discrimination parameters indicating weak to strong predictive ability for perceived benefits ($a_i = 0.974 - 1.196$); strong predictive abilities for each of

the perceived barriers ($a_i = 1.813 - 2.834$) and weak to strong predictive abilities for perceived threats ($a_i = 0.782 - 2.983$).

The corresponding difficulty thresholds for each item are also reported individually (Table 2) for each latent IV construct. For perceived barriers, the *indebtedness* difficulty threshold range was ($b_i = -0.53 - 1.46$) the *having no emergency fund* difficulty threshold range was ($b_i = 0.16 - 1.10$), the *having poor credit* difficulty threshold was ($b_i = 0.16 - 1.94$) and the *having no control of money* difficulty threshold was ($b_i = -1.78 - 1.83$). For perceived benefits, the *goal-oriented* threshold range was ($b_i = -2.827 - 1.039$), the *retirement confidence* difficulty range was ($b_i = -1.873 - 1.638$), the *financial informed* difficulty threshold range was ($b_i = -1.282 - 1.299$), the *effective money management* difficulty range was ($b_i = -2.062 - 0.286$), and the *financial research* range was ($b_i = -1.336 - 1.274$). For perceived threats, the *affording no wants (in life)* threshold range was ($b_i = -0.836 - 1.394$), the *fear money runs out* difficulty range was ($b_i = -1.332 - 1.054$), the *not keeping track* difficulty threshold range was ($b_i = -0.776 - 3.560$), the *money problems* difficulty range was ($b_i = 0.203 - 1.793$), the *financial regrets* difficulty range was ($b_i = -0.152 - 1.228$) and the *just getting by* range was ($b_i = -1.178 - 4.736$). It should be noted that a low difficulty value ($b_i = -2$) indicates that the question was easier to endorse, even for low-ability individuals (those lacking financial knowledge and ability), while high difficulty value ($b_i = +2$) is more difficult to endorse (requires greater financial knowledge and skill).

When using IRT with GSEM and SEM, the prediction of theta values provides a refined metric that more accurately reflects the underlying construct, which is not possible with raw scores or averages, which provide for more reliable estimates at the modeling stage (Thompson,

2009). Theta values act as observed variables of the latent constructs in the analysis to allow for an examination of the interrelations of the latent constructs (Cook & Wind, 2024).

Chapter 5 - Results

This chapter presents the results of the study that examined the perceived barriers, benefits, and threats that motivate (or demotivate) Canadians to engage in retirement preparedness behaviours. Explicitly, the focus of this paper was Canadian women, and the intent was to identify and explore how specific financial perceptions would motivate or demotivate them, if they responded differently than Canadian men. This chapter also examined the degree to which objective financial knowledge and financial self-efficacy could strengthen the relationship between the key constructs of the HBM (Rosenstock, 1974), and retirement preparedness behaviours. The descriptive statistics summarized the essential features of the data used, and the essential features of each latent/observed variable. As the study's goal was to understand retirement preparedness behaviours of Canadian women, these statistics were stratified by gender and presented accordingly. This permitted any male-female differences to be observable from the outset.

Descriptive Statistics

Dependent variable. The descriptive statistics for the study's demographic and socioeconomic status characteristics are presented in Table 5.1. The desired sample had a total of 3,272 respondents of which 1,733 identified as male, 1,525 identified as female, 7 elected to self-describe and 7 respondents preferred not to say. Most respondents (81%) reported they were "born in Canada", 17% reported they were female and 20% reported they were male. Referring to frequency distribution for age group, 1,346 respondents indicated they were between the ages of 45 – 54 and of those respondents, both men and women each constituted approximately 41%. Of interest, more females than males were aged 54 – 65 (31% versus 24%) whereas the opposite was observed for those aged 35 – 44 (34% versus 29) respectively. Using age group 35 – 44 as

the reference, men in this sample skewed younger. Specifically, the odds of male respondents indicating that they were 45 – 54 or 55 – 64 were lower than female respondents (OR \approx 0.85, $p = 0.450$) and (OR \approx 0.66, $p = 0.000$). More men than women identified as married (58% versus 53%) while more women than men indicated they were divorced (7.31% versus 5.33%) or widowed (1.91% versus 1.16%). Gender overall is statistically significant in predicting marital status ($F = 7.11$, $p < 0.000$) although not at every category level. Relative to the reference group of “married” gender was statistically significant ($p = .000$) for divorced ($p = .000$) and widowed ($p = .000$) respondents. Men had 50% lower odds of being divorced and 62% lower odds of being widowed than women. Having financially dependent children is statistically significant ($F = 2.18$, $p < 0.05$). Men have approximately 18% higher odds of having two children compared to none ($p < 0.10$, marginally significant) and 58% higher odds of having three children compared to no children (reference group; $p < 0.001$) relative to women respondents. Gender predicts income, both personal and household income. Relative to the reference group ($< \$20,000$) of personal income, gender was statistically significant ($F = 27.89$, $p < 0.001$) at all personal income levels. All coefficients were positive indicating that men are consistently more likely than women to be in a higher income bracket compared to women. While household income overall was statistically significant ($F = 7.44$, $p < 0.000$), gender was not statistically significant at levels two ($\$20,000 - < \$40,000$) and three ($\$40,000 - < \$60,000$) of household income relative to the reference group ($< \$20,000$). In this study, men were more likely than women to fall into an upper household income level, with statistical significance strengthening ($p < 0.05$ to $p < 0.001$) as household income increases. With reference to home ownership and relative to the base category of renting, gender was predictive for owning a home with a mortgage ($p = 0.027$),

not owning a home without a mortgage. Men had 22% higher odds of owning a home with a mortgage than women.

Table 5.1

Descriptive Statistics by Gender for Canadians aged 35 -65 (n = 3,258)

Variable	Men 1727	(\bar{x} /freq)	Women 1515	(\bar{x} /freq)	Total 3258	(\bar{x} /freq)	p- value
Demographics							
Marital status							
<i>Married (ref)</i>	1005	58.19	797	52.61	1808	55.56	
<i>Common-law</i>	222	12.85	200	13.20	424	13.03	
<i>Separated</i>	63	3.65	61	4.30	124	3.81	
<i>Divorced</i>	92	5.33	146	9.64	238	7.31	**
<i>Widowed</i>	20	1.16	42	2.77	62	1.91	**
<i>Single (never married)</i>	325	18.82	269	17.76	598	18.38	
Children at home (#)							
<i>None (ref)</i>	850	49.46	800	52.63	1660	51.00	
<i>One</i>	262	15.21	256	16.84	519	15.94	
<i>Two</i>	399	23.17	317	20.86	718	22.06	
<i>Three</i>	156	9.06	93	6.12	249	7.65	*
<i>Four</i>	39	2.26	38	2.50	77	2.37	
<i>Five</i>	14	0.81	13	0.85	27	0.82	
<i>Six</i>	1	0.00		0.20		0.12	
<i>Seven</i>	1	0.00		0.00		0.03	
Age (by group)							
<i>35 – 44 (ref)</i>	595	34.33	436	28.59	1034	31.60	
<i>45 – 54</i>	718	41.43	622	40.79	1346	41.14	
<i>55 - 65</i>	420	24.23	467	30.62	892	27.26	**
Level of education							
<i>Not high school (ref)</i>	97	5.61	80	5.25	177	5.42	
<i>High school dip</i>	321	18.55	247	16.22	570	17.45	
<i>Some post-secondary</i>	209	12.08	140	9.19	351	10.75	
<i>College diploma</i>	325	18.79	341	22.39	68	20.45	
<i>Undergraduate degree</i>	390	22.54	365	23.97	57	23.18	
<i>Graduate or prof degree</i>	388	22.43	350	22.98	743	22.75	

Socioeconomic Status

Variable	Men	\bar{x} /freq)	Women	(\bar{x} /freq)	Total	(\bar{x} /freq)	p-value
	1727		1515		3258		
Household income							
<i>Less than \$20,000(ref)</i>	108	6.73	145	10.69	254	8.54	
<i>\$20,000 - \$40,000</i>	142	8.85	173	12.75	319	10.73	
<i>\$40,000 - \$60,000</i>	152	9.84	159	11.72	312	10.49	
<i>\$60,000 - \$80,000</i>	170	11.00	151	11.13	324	10.90	*
<i>\$80,000 - \$100,000</i>	186	11.60	160	11.79	347	11.67	**
<i>\$100,000 - \$150,000</i>	360	22.44	282	20.78	644	21.66	***
<i>\$150,000 - \$200,000</i>	257	16.20	160	11.79	417	14.02	***
<i>\$200,000 +</i>	229	14.28	127	9.36	356	11.97	***
Personal income							
<i>Less than \$20,000(ref)</i>	152	9.37	298	21.44	454	15.01	**
<i>\$20,000 - \$40,000</i>	204	12.57	276	19.85	483	15.97	***
<i>\$40,000 - \$60,000</i>	263	16.20	261	18.78	526	17.39	***
<i>\$60,000 - \$80,000</i>	260	16.02	181	13.02	443	14.64	***
<i>\$80,000 - \$100,000</i>	256	15.77	157	11.29	414	13.69	***
<i>\$100,000 - \$150,000</i>	304	18.73	159	11.44	463	15.31	***
<i>\$150,000 - \$200,000</i>	100	6.16	31	2.23	131	4.33	***
<i>\$200,000 +</i>	84	5.18	27	1.94	111	3.70	***
Home ownership							
<i>Renting (ref)</i>	371	21.81	364	24.20	740	22.99	
<i>Own with mortgage</i>	937	55.09	756	50.27	1697	52.72	*
<i>Own without mortgage</i>	393	23.10	384	25.53	782	24.29	

Note: N = 3,258. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.2 presents the descriptive statistics for the dependent observed variables and latent construct, as well as the independent observed variables and latent constructs. The dependent latent construct - retirement preparedness behaviours is comprised of five observed variables. Of the total sample, 81% of participants had a retirement account while that differed slightly when examined by gender. Of the males surveyed, 83% indicated that they had a retirement account, while only 78% of females agreed with that statement. Gender predicts having a retirement account ($F = 14.26, p < 0.001$), as men have significantly higher log-odds ($\beta = 0.34, SE = 0.09, p < .001$) of reporting having a retirement account than women. Although approximately the same proportion of men (78%) and women (76%) reported actively saving for

retirement to determine the effects of gender, a logistic regression indicated a statistically significant difference. Men demonstrated 25% higher odds of saving for retirement than women (OR \approx 1.25; 95% [CI = 1.07 – 1.47; $p = 0.006$]. Gender was found to be a significant predictor of calculating retirement need ($F = 25.40$, $p < .001$). Men had 46% higher odds of calculating retirement need than women. Consistent with these results, 62% of men indicated they had calculated their retirement need, while only 53% of women had engage in this activity. The last two observed variables that comprised the dependent latent construct were seeking and accepting professional financial advice. Proportional rates between men and women are approximately the same (41%, versus 40%) for men in advice seeking, and gender is not statistically significant for this retirement preparedness behaviour. Gender is marginally predictive, and this is indicated in both the raw proportional rates and statistical significance. Approximately 51% of men, versus 46% of women are more likely to accept (trust) professional financial advice which differs from existing research (Financial Resilience Institute, 2023; Rollins-Koons et al., 2024). Specifically, the pooled results provided a coefficient for males of 0.120 (SE = 0.071), and a corresponding odds ratio of 1.13 (95% CI [0.98, 1.30]). $F = 2.89$; $p = .089$ indicates that gender is only marginally significant. While men in this sample show 13% higher odds of reporting accepting financial advice than women, the p-value exceeded the conventional minimum threshold of $p < .05$.

The dependent variable was also measured as a cumulative latent construct to assess more or less retirement preparedness. If participants indicated, they were engaged in all five observed behaviours, they received the highest score (5) on the retirement preparedness measures. Likewise, if a participant was not engaged in any of the observed behaviours, they received the lowest score (0) on the retirement preparedness measures. Results were as follows

for the total sample as well as for Canadian men and women. Engagement in all five retirement preparedness behaviours differed slightly between men (17%) and women (14%), but overall, relatively similar. Just over half of Canadian men (53%) and 47% women were engaged in three or four of the five activities. Less than 16% of men were engaged in one or no retirement preparedness behaviour, while approximately 20% of women were engaged in one or no retirement preparedness behaviours which is cause for concern given the greater income security threat and access to pensions for Canadian women in retirement.

The independent latent constructs – perceived barriers, benefits and threats were each comprised of a set of observed variables. Perceived barriers comprised four observed variables which included indebtedness, absence of emergency planning, poor or no credit and lack of financial control. According to the HBM, barriers differ from threats in that they are seen as roadblocks or obstacles, sometimes tangible that limit or prevent engagement in the desired behaviour.

In general, Canadians felt their level of personal debt was too high with approximately 63% agreeing or strongly agreeing with this statement. While men (63%) and women (64%) differed negligibly, upon a more detailed examination, approximately 40% of women versus 34% of men *strongly agreed* with this statement. In the context, of having an emergency fund, most men (67%) and women (58%) *certainly could* cover a financial emergency. An additional 18% of men and 22% of women *probably could* cover an emergency if one was to occur. Analysis of the poor credit measure indicated a nominal gender difference, with 78% of male respondents and 80% of female respondents having categorized their credit as *good to very good*. Furthermore, greater than 50% of both Canadian men and women rating their credit as *very good*. These results are particularly interesting given the elevated perceived level

of personal indebtedness. These findings suggest that despite a heightened sense of personal indebtedness, many Canadians feel confident in their ability to manage credit effectively. The final measure in perceived barriers considered a lack of feeling in control of one's personal finances. In the case of men and women, the results indicate that approximately 32% of men and 33% of women feel that their finances *often* control their lives, and an additional 31% of men and women *sometimes* feel their finances control their lives. In addition, slightly more men (11%) and women (12%) feel they never have any control versus 9% of men and 11% of women that feel like personal finances never controls their lives.

The descriptive results for the independent latent construct of perceived benefits, derived from six observed variables indicated that slightly more than half (51%) of all Canadians confirmed that their spending exceeded income, with a higher proportion of women (54%) than men (49%) agreeing with that statement. This reported spending imbalance appears to run counter with the findings that the majority of respondents have high credit rating confidence yet also feel financially constrained by personal debt. The results for feeling goal-oriented were again relatively similar for men and women, in that 49% of men and 47% of women felt uncertain (fits neither well nor badly) about the ability to work towards long-term goal. Only 7% of men and 8% of women felt this statement fits very well for them. Furthermore, 29% of men and 32% of women felt that their ability to work towards long-term goals does not fit (well) at all. The analysis of retirement confidence reveals that Canadians (44%) are not very confident about their income prospects in retirement. Specifically, 45% of men and 43% of women felt not very confident and an additional 20% of men and 14% of women felt not very confident at all. While there is existing research to suggest that there is a positive relationship between retirement confidence and preparedness, these findings indicate that very few Canadians (15%) feel very

confident about their income in retirement and an additional 24% feel fairly confident (Angrisani & Casanova, 2019; Joo & Grable, 2004; Kim, et al., 2005). Interestingly, the data revealed a potential gender discrepancy; a greater proportion of Canadian women (17% very confident and 27% fairly confident) reported retirement income confidence compared to men (12% very confident and 23% fairly confident), highlighting a potential need for further analysis. The findings for the financial informed measure demonstrated notable gender differences. Specifically, a higher proportion of women (21%) than men (14%) indicated that they were not very good at staying financial informed. Conversely, when assessing the opposite, 22% of men indicated they were very good at staying informed compared to only 14% of women agreeing with that statement. The analysis of the good money management measure reveals that most Canadians (62%) felt not very good to only fairly good concerning decisions related to making ends meet. Minimal gender differences presented, with women (30%) selecting good to very good only slightly more than men (27%). Examination of the financially engaged measure demonstrated that women (51%) compared to men (44%) feel good to very good about their level of financial engagement (preparing and planning purchases).

The descriptive results for the independent latent construct of perceived threats measured across six observed variables demonstrated that most Canadians (68%) were somewhat to completely concerned about running out of money in retirement. Conversely, only a small percentage of men (15%) and women (21%) were concerned not at all. The observed gender difference was surprising when considering existing research that suggest that women typically have lower levels of financial self-confidence and risk tolerances (Farrell et al., 2016; Fisher & Yao, 2017; Rothwell et al., 2016). This result may be indicative of other factors, such as financial knowledge, that were possibly influencing these perceptions. The findings for the

measure keeping track suggested that majority of Canadians (70%) rated themselves as good to very good at keeping track of their finances. While 7% of men and 9% of women felt they were not very good at keeping track of their money. In the case of both Canadian men and women, more than 50% (men – 58% and women 54%) felt that they had no problems keeping up with bill payments. Slightly more women (10%) than men (8%) indicated they were falling behind on their bill payments and approximately 35% of all Canadians struggled keeping up at times. The analysis of the getting by financially measure demonstrated a possible gender difference. Specifically, only 13% of men compared to 19% of women indicated that they perceived having no issues (very little to none at all) at getting by financially. By contrast, a somewhat higher percentage of men (47%), versus women (43%) completely agree that managing their finances was manageable. The final measure financial regret indicated an exceptionally high percentage of Canadians (85%) that either agree or strongly agree that they often make regretful financial decisions. Although the results were disappointing, they were not altogether surprising given the level of consumer indebtedness in Canada, other findings in this study as well as existing research (Financial Resilience Institute, 2023; Nepomuceno & Laroche 2015). Moreover, some possible gender inconsistencies emerged as well. More women (35%) than men (26%) supported the strongly agree response option for the regretful purchase decision. Finally, while not a substantial percentage differential, 14% of women compared to 11% of men disagreed with the regretful purchase decision, which might indicate that women perceived they made less/fewer regretful financial decisions or felt less regretful for the purchases they made (Hurwitz & Mitchell, 2025).

Table 5.2

Descriptive Statistics by Gender for Canadians aged 35 – 64 (n = 3258)

Variable	Men 1727	(\bar{x} /freq)	Women 1515	(\bar{x} /freq)	Total 3258	(\bar{x} /freq)	Sig. p-value
Dependent Variables							
Observed							
Retirement behaviours							
<i>Retirement acct</i>	1443	83.27	1190	78.03	2643	80.78	***
<i>Retirement saving</i>	1324	77.70	1092	75.54	2422	75.66	**
<i>Calculating need</i>	1010	62.38	739	52.97	1756	58.01	***
<i>Seeking advice</i>	712	41.08	617	40.46	1335	40.80	
<i>Accepting advice</i>	878	51.32	694	46.30	1579	48.99	†
Latent							
Prepared for retirement							
<i>Engaged in 5</i>	292	16.85	218	14.30	512	15.65	**
<i>Engaged in 4</i>	478	27.58	377	24.72	859	26.25	**
<i>Engaged in 3</i>	444	25.62	346	22.69	791	24.17	**
<i>Engaged in 2</i>	253	14.60	257	16.85	513	15.68	**
<i>Engaged in 1</i>	157	9.06	182	11.93	340	10.39	**
<i>Unengaged</i>	109	6.29	145	9.51	257	7.85	**
Independent Variables							
Perceived Barriers							
(Obs)							
Personal Indebtedness							
<i>Strongly agree</i>	248	34.25	223	38.98	475	36.43	
<i>Agree</i>	207	28.59	142	24.83	352	26.99	
<i>Disagree</i>	168	23.20	132	23.08	301	23.08	
<i>Strongly Disagree</i>	101	13.95	75	13.11	176	13.50	
No Emergency Fund							
<i>Certainly could</i>	1150	67.13	862	57.51	2020	62.62	***
<i>Probably could</i>	303	17.69	326	21.75	633	19.62	***
<i>Certainly could not</i>	260	15.18	311	20.75	573	17.76	***
Poor credit							
<i>Very good</i>	407	56.69	316	56.73	730	56.90	
<i>Good</i>	156	21.73	129	23.16	286	22.29	
<i>Average</i>	103	14.35	76	13.64	179	13.95	
<i>Bad to very bad</i>	52	7.24	36	6.46	88	6.86	
No Financial Control							
<i>Always</i>	82	11.15	69	11.90	153	11.56	
<i>Often</i>	235	31.97	189	32.59	426	32.20	
<i>Sometimes</i>	226	30.75	180	31.03	409	30.91	
<i>Rarely</i>	126	17.14	79	13.62	206	15.57	
<i>Never</i>	66	8.98	63	10.86	129	9.75	

Variable	Men 1727	(\bar{x} /freq)	Women 1515	(\bar{x} /freq)	Total 3258	(\bar{x} /freq)	Sig. p-value
Perceived Benefits							
(Obs)							
Lower Expense							
<i>Spending < income</i>	878	51.32	894	46.30	1579	48.99	**
<i>Spending > income</i>	833	48.68	805	53.70	1499	51.01	**
Goal Oriented							
<i>Fits very well</i>	53	7.24	46	8.01	100	7.61	
<i>Fits fairly well</i>	109	14.89	78	13.58	187	14.23	
<i>Fits neither well nor badly</i>	360	49.18	267	46.52	633	48.17	
<i>Does not fit (well) at all</i>	210	28.68	183	31.88	394	29.89	
Retirement Confidence							
<i>Very confident</i>	199	11.95	250	17.34	455	14.58	***
<i>Fairly confident</i>	381	22.88	370	25.66	754	24.17	***
<i>Not very confident</i>	745	44.74	619	42.93	1367	43.81	***
<i>Not confident at all</i>	340	20.42	203	14.07	544	17.44	***
Financially Informed							
<i>Very good</i>	232	13.62	336	22.43	572	17.79	***
<i>Good</i>	525	30.81	508	33.91	1036	32.21	***
<i>Fairly good</i>	584	34.27	451	30.11	1040	32.34	***
<i>Not very good</i>	363	21.30	203	13.55	568	17.66	***
Good Money Mgmt.							
<i>Very good</i>	109	6.36	112	7.44	222	6.87	
<i>Good</i>	348	20.32	343	22.78	696	21.53	
<i>Fairly good</i>	536	31.29	416	27.62	956	29.57	
<i>Not very good</i>	720	42.04	635	42.16	1359	32.04	
Financially Engaged							
<i>Very good</i>	283	16.91	327	22.51	615	19.58	***
<i>Good</i>	461	27.54	415	28.56	879	27.98	***
<i>Fairly good</i>	544	33.09	413	28.42	971	30.91	***
<i>Not very good</i>	376	22.46	298	20.51	676	21.52	***

Note: N = 3,258. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

<i>Variable</i>	Men 1727	(\bar{x} /freq)	Women 1515	(\bar{x} /freq)	Total 3254	(\bar{x} /freq)	Sig. p-value
<i>Afford No Wants</i>							
<i>Completely</i>	172	23.40	149	25.69	322	24.34	
<i>Very well</i>	225	30.61	150	25.86	376	28.42	
<i>Somewhat</i>	199	27.07	139	23.97	342	25.85	
<i>Very little</i>	68	9.25	61	10.51	131	9.90	
<i>Not at all</i>	71	9.66	81	13.96	152	11.49	
<i>Money Runs Out</i>							
<i>Completely</i>	98	13.33	66	11.38	165	12.47	**
<i>Very well</i>	164	22.31	98	16.90	262	19.80	**
<i>Somewhat</i>	253	34.42	208	35.86	466	35.22	**
<i>Very little</i>	110	14.97	86	14.83	196	14.81	**
<i>Not at all</i>	110	14.97	122	21.03	234	17.69	**
<i>Keeping Track</i>							
<i>Very good</i>	623	36.28	573	37.77	1200	36.95	
<i>Good</i>	593	34.54	472	31.11	1069	32.91	
<i>Fairly good</i>	387	22.54	352	23.20	742	22.84	
<i>Not very good</i>	114	6.64	120	7.91	237	7.30	
<i>Expenses Too Much</i>							
<i>Having no trouble</i>	987	58.33	802	53.79	1794	56.13	**
<i>Struggle at times</i>	574	33.92	539	36.15	1118	34.98	**
<i>Falling behind</i>	131	7.74	150	10.06	284	8.87	**
<i>Financial Getting By</i>							
<i>Completely</i>	348	47.35	249	42.93	600	47.35	**
<i>Very well</i>	195	26.53	136	23.45	336	26.53	**
<i>Somewhat</i>	99	13.47	86	14.83	185	13.98	**
<i>Very little (at all)</i>	93	12.65	109	18.79	202	15.27	**
<i>Financial Regret</i>							
<i>Strongly agree</i>	190	26.24	197	34.56	389	29.92	*
<i>Agree</i>	433	59.81	283	49.65	720	55.38	*
<i>Disagree</i>	82	11.33	81	14.21	163	12.54	*
<i>Strongly disagree</i>	19	2.62	9	1.58	28	2.15	*
<i>Financial Self-Efficacy</i>							
<i>Very knowledgeable (ref)</i>	216	12.56	294	19.51	513	15.83	**
<i>Knowledgeable</i>	702	40.81	714	47.38	1421	43.86	**
<i>Fairly knowledgeable</i>	571	33.20	391	25.95	966	29.81	**
<i>Not very knowledgeable</i>	231	13.43	108	7.17	340	10.49	**
<i>Obj Financial Knowledge</i>							
<i>Zero correct responses</i>	1011	58.34	966	63.34	1983	60.61	***
<i>One correct response</i>	25	1.44	50	3.28	76	2.32	***
<i>Two correct responses</i>	149	8.60	179	11.74	329	10.06	***
<i>Three correct responses</i>	548	31.62	330	21.64	884	27.02	***

Note: N = 3,258. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Demographic & financial characteristics. In the study sample, approximately 32% of respondents were aged 35 to 44, 41% were between the ages of 45 - 54 years old, and 27% were between 55 and 64 years old. Women constituted 47% of the sample and 69% of survey respondents were married or in a common-law relationship. Interestingly, only 49% of the desired sample indicated that they had children who are financially dependent. This finding aligns with the persistently low birthrate in Canada and the limited levels immigration at the time this survey was conducted (Finlayson & Globerman, 2025; Statistics Canada, 2024).

In the desired sample, the distribution of total annual income was fairly consistent with the six lower bands (each approximately \$20 000) each representing approximately 14 – 16% of the total population. The only exceptions were the two highest income categories, of \$150 000 - \$200 000 and \$200 000+, which accounted for only 8% of respondents. Greater variability presented in total annual household income, whereby approximately 22% of respondents had a total annual household income of \$100 000 to \$150 000 and a greater percentage of household had a total annual household income of \$150 000+ (26%). Most of the respondents in the sample owned their home (77%). Education levels were evenly distributed across the five secondary and post-secondary categories (17 – 23%), except for “having some college or university without a diploma, certificate or degree”; selected by only 11% of respondents. Individuals with less than a high school diploma represented approximately 5% of the aggregate sample.

Ordinal Logistic Regression Results

To evaluate the contribution of the observed variables to the latent constructs of the HBM, a set of ordered logistic regressions were conducted. Table 5.3 reported the results for both Canadian women and men for the four observed variables of the latent construct – perceived barriers: indebtedness, no emergency fund, poor credit and lack of financial control.

The coefficient, standard error, odds ratio and p-value significance are detailed for each gender. The results for both men and women reported a significant and negative association between indebtedness and retirement preparedness behaviours. For women, a one-unit increase in indebtedness resulted in reduced odds of retirement preparedness behaviours by 37% ($\beta = -.464$, $SE = .067$, $OR = .629$, $p < .001$). Similarly, the effects for men were ($\beta = -.448$, $SE = .066$, $OR = .639$, $p < .001$).

Not having an emergency fund was robust ($p < .001$) and negatively associated with retirement preparedness behaviours. There was no gender effect, and men that lacked emergency savings reported 51% lower odds of retirement preparedness behaviours ($\beta = -.716$, $SE = .070$, $OR = .489$, $p < .001$), while women witnessed a 55% reduction in odds ($\beta = -.790$, $SE = .072$, $OR = .454$, $p < .001$). The final two observed variables - poor credit and lack of financial control were also negatively associated with retirement preparedness behaviours for both men and women. For women ($\beta = -.435$, $SE = .073$, $OR = .647$, $p < .001$) the results indicated 35% reduced odds of engaging in retirement preparedness behaviours when experiencing poor credit and for men ($\beta = -.440$, $SE = .079$, $OR = .644$, $p < .001$) the odds were reduced by approximately 36%. The results for lack of financial control were consistent for both women and men. Lacking financial control was statistically significant and negatively associated with retirement preparedness behaviours (women: $\beta = -.382$, $SE = .054$, $OR = .682$, $p < .001$; men: ($\beta = -.324$, $SE = .062$, $OR = .723$, $p < .001$). Women demonstrated higher odds (32%) of reduced retirement preparedness behaviours than men (28%).

H1a – H1d. Hypotheses 1a – 1d which detailed each of the observed indicators of perceived barriers were also fully supported. Each of the four barriers – indebtedness, no emergency fund, poor credit and lack of financial control yielded statistically significant results

and odds ratios less than one, while no gender difference was confirmed given overlapping 95% confidence intervals.

Table 5.3

Ordinal Logistic Regression Results for Perceived Barriers on Retirement Preparedness Behaviours by Gender (n= 3,240)

Variable	Coefficient Men	SE Men	OR Men	Coefficient Women	SE Women	OR Women	<i>p</i>	<i>p</i>
Perceived barriers								
<i>Indebtedness</i>	-.448	.066	.627	-.464	.067	.451	***	***
<i>No Emergency Fund</i>	-.716	.070	.489	-.790	.072	.454	***	***
<i>Poor Credit</i>	-.440	.079	.644	-.435	.073	.647	***	***
<i>No Financial Control</i>	-.324	.062	.723	-.382	.054	.682	***	***

Note: N = 3,240. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

There were six observed variables for the latent construct perceived benefit, and the results are presented in Table 5.4. All observed benefit indicators had a positive and statistically significant result for both men and women at the *p* < .001 threshold. Although the 95% confidence intervals overlapped, men reported slightly higher odds for perceiving the value of lower expenses (men: $\beta = 2.36$, SE = .110, OR = 10.64; women: $\beta = 2.26$, SE = .118, OR = 9.61) and engaging in financial research (men: $\beta = .209$, SE = .050, OR = 1.23; women: $\beta = .176$, SE = .050, OR = 1.20), while women demonstrated slightly higher odds for retirement confidence (women: $\beta = .781$, SE = .064, OR = 2.18; men: $\beta = .739$, SE = .058, OR = 2.00), staying informed (women: $\beta = .368$, SE = .062, OR = 1.44; men: $\beta = .344$, SE = .059, OR = 1.41), being goal-orientation (men: $\beta = .298$, SE = .069, OR = 1.35; women: $\beta = .331$, SE = .075, OR = 1.39), and keeping track of money (women: $\beta = .531$, SE = .055, OR = 1.70; men: $\beta = .464$, SE = .053, OR = 1.59). It warrants emphasizing the effects of having lower expenses as a perceived benefit relative to the other observed variables. Specifically, women and men who agreed with this statement had 9.61 and 10.64 times the odds of retirement preparedness behaviours respectively.

H1a – H1f. Hypotheses 1a – 1f which detailed each of the observed indicators of perceived

benefits were fully supported. Each of the six benefits indicators – of having lower expenses, being goal-oriented, having retirement confidence, keeping track financially, effective money management and engaging in financial research (shopping around) produced statistically significant results and odds ratios greater than one. No significant gender effect was noted.

Table 5.4

Ordinal Logistic Regression Results for Perceived Benefits on Retirement Preparedness Behaviours by Gender (n = 3,240)

Variable	Coefficient Men	SE Men	OR Men	Coefficient Women	SE Women	OR Women	<i>p</i>	<i>p</i>
Perceived benefits								
<i>Lower expenses</i>	2.36	.110	10.64	2.26	.118	9.61	***	***
<i>Goal oriented</i>	.298	.069	1.35	.331	.075	1.39	***	***
<i>Retirement confidence</i>	.738	.058	2.00	.781	.064	2.18	***	***
<i>Keeping track</i>	.344	.059	1.41	.368	.062	1.44	***	***
<i>Good money Management</i>	.464	.053	1.59	.531	.055	1.70	***	***
<i>Financial research</i>	.209	.050	1.23	.178	.050	1.20	***	***

Note: N = 3,240. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.5 presented the results for the observed indicators for perceived threat to retirement prepared behaviours. The following six variables were included: having no money for wants, fear that money will run out, lack of money awareness, not keeping up, experiencing financial regret and financial struggles. All results were negatively associated with retirement preparedness behaviours, no significant gender differences were noted, and the statistical significance for all variables was *p* < .001 except for financial regret which met the conventional significance level of *p* < .01. Of the six perceived threats, the results indicated both women and men reported that not keeping up (bill problems) had 59.8% and 53.3% lower odds of retirement preparedness behaviors respectively (women: $\beta = -.906$, SE = .078, OR = .402; men: $\beta = -.762$, SE = .076, OR = .467). Conversely, the findings indicated that not keeping track produced the lowest negative odds ratios for women and men (women: $\beta = -.301$, SE = .053, OR = .740; men:

$\beta = -.262$, SE = .053, OR = .769). The perceived threats of having no money for wants (women: $\beta = -.420$, SE = .051, OR = .657; men: $\beta = -.394$, SE = .066, OR = .774), the fear that money would run out (women: $\beta = -.416$, SE = .065, OR = .660; men: $\beta = -.400$, SE = .057, OR = .670), that just getting by (women: $\beta = -.536$, SE = .066, OR = .585; men: $\beta = -.554$, SE = .069, OR = .575) and the feeling of regret related to financial decision-making (women: $\beta = -.360$, SE = .098, OR = .698; men: $\beta = -.323$, SE = .107, OR = .724) were also not as impactful as not keeping up with bill payments.

H1a – H1f. Consistent with the findings for Model One – Hypotheses 1a – 1f which detailed each of the observed indicators of perceived threats – not affording life’s wants, fear money will run out, lack of money awareness, struggling to pay bills, just getting by financially and having financial regrets were also fully supported. Each of the six threat indicators revealed statistically significant results and odds ratios less than one; no gender effect can be confirmed given overlapping 95% confidence intervals.

Table 5.5

Ordinal Logistic Regression Results for Perceived Benefits on Retirement Preparedness Behaviours by Gender (n = 3,240)

Variable	Coefficient	SE	OR	Coefficient	SE	OR	<i>p</i>	<i>p</i>
	Men	Men	Men	Women	Women	Women		
Perceived threats								
<i>No wants</i>	-.394	.066	.674	-.420	.051	.657	***	***
<i>Runs out</i>	-.400	.057	.670	-.416	.065	.660	***	***
<i>Not keeping track</i>	-.262	.053	.769	-.301	.053	.740	***	***
<i>Money (bill) problems</i>	-.762	.076	.467	-.906	.078	.402	***	***
<i>Financial regrets</i>	-.554	.069	.575	-.536	.066	.585	***	***
<i>Just getting by</i>	-.323	.107	.724	-.360	.098	.698	***	***

Note: N = 3,240. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Generalized Structural Equation Model (GSEM) Results

A series of four generalized structural equation models (GSEM) was estimated to assess how the health belief model (HBM) perceptions related to retirement preparedness behaviours. Model 1 assessed perceived barriers, Model 2 perceived benefits, Model 3 perceived threats and Model 4 included all three perceptions simultaneously. For each model, four separate analyses were conducted: no moderators, objective financial knowledge (moderator), financial self-efficacy, and both moderators (parallel) together. Each model reported the full sample ($n = 3,240$), then individual analyses for Canadian women ($n = 1,510$) and Canadian men ($n = 1,719$). Within each GSEM estimation, the primary predictor (perceived barriers, benefits and threats), as well as controls (marital status, children, age group, level of education, household income, personal income, home ownership, objective financial knowledge and financial self-efficacy) were presented. For all path analyses, the primary indicators have been mean-centred, SEs, 95% confidence intervals, p-values significance and path coefficients are presented. Centring is preferred when data is both categorical and ordinal by nature as it improves interpretability and model convergence. Standardizing is not appropriate for non-continuous variables.

GSEM for Perceived Barriers on Retirement Preparedness Behaviours (Model 1)

Tables 5.6 – 5.8 examined the relationship between perceived barriers, control variables and retirement preparedness. This analysis aimed to assess the extent to which perceived barriers (financial obstacles) influenced individuals retirement preparedness behaviours. Perceived barriers demonstrated a consistent, negative association with retirement preparedness across all groups; aggregate sample ($\beta = -.225$, $SE = .019$, 95% CI $[-.263, -.188]$, $p < .001$), Canadian women ($\beta = -.219$, $SE = .028$, 95% CI $[-.275, -.164]$, $p < .001$), and Canadian men ($\beta = -.229$, $SE = .026$, 95% CI $[-.281, -.178]$, $p < .001$) confirming a significant demotivator to retirement

preparedness. Household income, personal income, home ownership and financial self-efficacy were consistently, positive predictors of retirement preparedness for Canadian men and women. While the 95% CIs exhibited minimal overlap, evidencing inconclusive results at conventional significance levels, a possible gendered difference was noted in level of education (women: $\beta = .076$, SE = .012, 95% CI [.051, .010], $p = .000$; men: $\beta = .027$, SE = .010, 95% CI [.006, .047], $p = .010$) and objective financial knowledge (women: $\beta = .038$, SE = .013, 95% CI [.012, .064], $p = .004$; men: marginal significance $p = .072$) whereby both covariates demonstrated stronger effects for women. **H1.** Perceived barriers are negatively associated with Canadian women's engagement in retirement preparedness behaviours is fully supported by the data in the GSEM analysis.

Table 5.6

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.226	.019	[-.263, -.188]	***
<i>Marital status</i>	-.010	.027	[-.062, .042]	
<i>Children</i>	-.117	.025	[-.165, -.068]	***
<i>Age group</i>	.010	.016	[-.021, .040]	
<i>Level of education</i>	.049	.008	[.034, .064]	***
<i>Household income</i>	.119	.010	[.099, .139]	***
<i>Personal income</i>	.043	.010	[.025, .062]	***
<i>Home ownership</i>	.123	.018	[.088, .158]	***
<i>Financial self-efficacy</i>	.121	.013	[.095, .147]	***
<i>Objective financial knowledge</i>	.025	.008	[.009, .042]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.7

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.219	.028	[-.275, -.164]	***
Marital status	.024	.041	[-.057, .105]	
Children	-.105	.037	[-.178, -.032]	**
Age group	.032	.024	[-.015, .079]	
Level of education	.076	.012	[.051, .100]	***
Household income	.123	.015	[.094, .152]	***
Personal income	.048	.014	[.020, .076]	**
Home ownership	.094	.026	[.043, .145]	***
Financial self-efficacy	.120	.020	[.080, .160]	***
Objective financial knowledge	.038	.013	[.012, .064]	**

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.8

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p-value
Perceived Barriers	-.229	.026	[-.281, -.178]	***
Marital status	-.014	.035	[-.083, .055]	
Children	-.117	.033	[-.182, -.052]	***
Age group	-.003	.021	[-.044, .039]	
Level of education	.027	.010	[.006, .047]	*
Household income	.105	.014	[.077, .133]	***
Personal income	.049	.014	[.021, .077]	**
Home ownership	.144	.024	[.097, .192]	***
Financial self-efficacy	.131	.017	[.097, .165]	***
Objective financial knowledge	.020	.011	[-.008, .041]	†

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Tables 5.9 – 5.11 introduced objective financial knowledge as a moderator for perceived barriers on retirement preparedness behaviours. Perceived barriers retained strong, direct, negative effects across all samples. Although the effect size presented stronger in men ($\beta = -.893$,

SE = .099, 95% CI [-.483, -.094], $p < .01$) versus women ($\beta = -.273$, SE = .080, 95% CI [-.430, -.116], $p < .01$), both women and men yielded equivalent statistical significance levels and the CIs overlapped, suggesting an unreliable gender difference in reduced retirement preparedness behaviours. Women with higher levels of objective financial knowledge ($\beta = .038$, $p < .01$), education ($\beta = .075$, $p < .001$), greater household income ($\beta = .123$, $p < .001$) and increased confidence in managing financial (financial self-efficacy; $\beta = .120$, $p < .001$) had a greater likelihood of engaging in retirement preparedness behaviours than those that do not. While financial knowledge was positively associated with retirement preparedness behaviours, it did not moderate the relationship between perceived barriers ($\beta = .038$, $p = .473$) and retirement preparedness behaviours. Objective financial knowledge for men, did not reach the traditional statistical significance threshold of $p < .05$. **H2** - objective financial knowledge will moderate/strengthen the relationship between perceived barriers and Canadian women's engagement in retirement preparedness behaviours was not supported. Higher levels of objective financial knowledge did not strengthen the relationship between perceived barriers and retirement preparedness behaviours for Canadian women, or men.

Table 5.9

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived barriers	-.278	.062	[-.399, -.157]	***
<i>Objective financial knowledge</i>	.026	.008	[.009, .042]	**
<i>Perceived barriers X objective financial knowledge</i>	.021	.024	[-.025, .067]	
<i>Marital status</i>	-.009	.028	[-.062, .043]	
<i>Children</i>	-.118	.025	[-.166, -.069]	***
<i>Age group</i>	.010	.016	[-.021, .041]	
<i>Level of education</i>	.049	.008	[.034, .064]	***
<i>Household income</i>	.119	.010	[.099, .138]	***
<i>Personal income</i>	.043	.009	[.025, .062]	***
<i>Home ownership</i>	.123	.018	[.088, .158]	***
<i>Financial self-efficacy</i>	.121	.013	[.095, .147]	***

Note: N = 3,240. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.10

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived barriers	-.273	.080	[-.430, -.116]	**
<i>Objective financial knowledge</i>	.038	.013	[.012, .064]	**
<i>Perceived barriers X objective financial knowledge</i>	.023	.033	[-.041, .088]	
<i>Marital status</i>	.024	.041	[-.057, .106]	
<i>Children</i>	-.106	.037	[-.17, -.034]	**
<i>Age group</i>	.032	.024	[-.015, .078]	
<i>Level of education</i>	.075	.012	[.051, .100]	***
<i>Household income</i>	.123	.015	[.094, .152]	***
<i>Personal income</i>	.048	.014	[.020, .076]	**
<i>Home ownership</i>	.093	.026	[.042, .144]	***
<i>Financial self-efficacy</i>	.120	.020	[.080, .160]	***

Note: N = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.11

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.289	.099	[-.483, -.094]	**
Objective financial knowledge	.020	.011	[-.001, .042]	†
Perceived barriers X objective financial knowledge	.023	.036	[-.049, .094]	
Marital status	-.014	.035	[-.083, .055]	
Children	-.117	.033	[-.182, -.052]	***
Age group	-.003	.021	[-.045, .038]	
Level of education	.027	.010	[.006, .047]	*
Household income	.105	.014	[.077, .133]	***
Personal income	.049	.014	[.021, .077]	**
Home ownership	.145	.024	[.098, .193]	***
Financial self-efficacy	.131	.017	[.097, .165]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

The results of the GSEM analysis (Tables 5.12 – 5.14) for financial self-efficacy as a moderator of perceived barriers to retirement preparedness behaviours, indicated that financial self-efficacy significantly moderates the relationship between perceived barriers and retirement preparedness behaviours for the aggregate sample ($\beta = .042$, $SE = .021$, 95% CI [.002, .082], $p < .05$) and Canadian men ($\beta = .056$, $SE = .027$, 95% CI [.002, .110], $p < .05$) and was not significant for women. These findings suggested that higher levels of financial self-confidence may mitigate the effects of perceived barriers, particularly for men. **H3**. Financial self-efficacy will strengthen the relationship between perceived barriers and Canadian women’s engagement in retirement preparedness behaviours was not supported, but FSE did moderate the relationship between perceived barriers and retirement preparedness behaviours for Canadian men and the aggregate sample.

Financial self-efficacy and household income remained strong, direct, positive predictors for all samples. For women, the direct effect of level of educational attainment was a strong predictor of retirement preparedness behaviours ($\beta = .075$, $SE = .012$, 95% CI [.051, .100], $p < .001$) as was objective financial knowledge ($\beta = .040$, $SE = .012$, 95% CI [.014, .066], $p < .01$). While the negative effect size and level of statistical significance for children was greater for men ($\beta = -.118$, $p = .000$) than women ($\beta = -.106$, $p = .004$), the CIs overlapped, suggesting no conclusive statistically significant difference.

Table 5.12

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived barriers	-.334	.053	[-.438, -.230]	***
<i>Financial self-efficacy</i>	.121	.013	[.095, .146]	***
<i>Perceived barriers X financial self-efficacy</i>	.046	.021	[.00, .086]	*
<i>Marital status</i>	-.010	.027	[-.062, .043]	
<i>Children</i>	-.118	.025	[-.166, -.069]	***
<i>Age group</i>	.009	.016	[-.022, .040]	
<i>Level of education</i>	.049	.008	[.034, .064]	***
<i>Household income</i>	.118	.010	[.099, .138]	***
<i>Personal income</i>	.044	.009	[.025, .062]	***
<i>Home ownership</i>	.124	.018	[.089, .158]	***
<i>Objective financial knowledge</i>	.028	.009	[.011, .045]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.13

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.300	.079	[-.454, -.146]	**
<i>Financial self-efficacy</i>	.120	.020	[.080, .160]	***
<i>Perceived barriers X financial self-efficacy</i>	.037	.033	[-.028, .102]	
<i>Marital status</i>	.024	.041	[-.057, .106]	
<i>Children</i>	-.106	.037	[-.178, -.033]	**
<i>Age group</i>	.032	.024	[-.014, .079]	
<i>Level of education</i>	.075	.012	[.051, .100]	***
<i>Household income</i>	.123	.015	[.094, .152]	***
<i>Personal income</i>	.048	.014	[.020, .076]	**
<i>Home ownership</i>	.093	.026	[.043, .145]	***
<i>Objective financial knowledge</i>	.040	.013	[.014, .066]	**

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.14

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.372	.075	[-.518, -.226]	***
<i>Financial self-efficacy</i>	.131	.017	[.097, .164]	***
<i>Perceived barriers X financial self-efficacy</i>	.056	.027	[.002, .110]	*
<i>Marital status</i>	-.016	.035	[-.084, .053]	
<i>Children</i>	-.118	.033	[-.183, -.053]	***
<i>Age group</i>	.006	.021	[-.047, .036]	
<i>Level of education</i>	.027	.010	[.007, .047]	**
<i>Household income</i>	.105	.014	[.077, .133]	***
<i>Personal income</i>	.049	.014	[.021, .077]	**
<i>Home ownership</i>	.146	.024	[.098, .193]	***
<i>Objective financial knowledge</i>	.023	.011	[.001, .045]	*

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Tables 5.15 – 5.17 detailed the GSEM results for financial self-efficacy and objective financial knowledge as parallel moderators for perceived barriers to retirement preparedness

behaviours. Perceived barriers continued to demonstrate strong, negative effects across the aggregate sample and two subsamples, with potentially the strongest negative effect for men ($\beta = -.403$, $SE = .115$, 95% CI $[-.627, -.178]$, $p < .001$). Specifically, for every one unit increase in perceived barriers for men, there was a 0.404 unit decrease in retirement preparedness behaviours, holding all else constant. Financial self-efficacy demonstrated both a direct positive effect ($\beta = .131$, $SE = .017$, 95% CI $[.097, .165]$, $p < .001$) and a moderating effect of perceived barriers for men ($\beta = .060$, $SE = .029$, 95% CI $[.004, .116]$, $p < .05$), suggesting that men who felt more financially confident were affected to a lesser degree by the financial barriers they perceived. Statistical significance was noted in the full sample ($\beta = .044$, $p = .05$), and non-significance in the women-only subsample for the moderating effective for financial self-efficacy. Conversely, objective financial knowledge remained a strong and significant, direct predictor of the retirement preparedness behaviours for the full sample ($\beta = .028$, $p = .001$) and Canadian women ($\beta = .040$, $p = .003$), but it did not significantly moderate the relationship between perceived barriers and retirement preparedness behaviours for any of the three samples. These results continued to highlight a potential gendered pattern wherein financial self-efficacy may have created a layer of protection for men against perceived financial barriers, while objective financial knowledge and level of education appear to be more influential factor for women in their retirement preparedness behaviours. **H4.** Objective financial knowledge and financial self-efficacy will moderate the relationship between perceived barriers and Canadian women's engagement in retirement preparedness behaviours was not supported. Interestingly, financial self-efficacy moderation achieved significance ($p < .05$) for the men-only subsample, and ($p < .05$) for the aggregate sample.

Table 5.15

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived barriers	-.359	.073	[-.502, -.215]	***
Objective financial knowledge	.028	.009	[.011, .045]	**
Financial self-efficacy	.121	.013	[.095, .146]	***
Perceived barriers X objective financial knowledge	.012	.024	[-.035, .059]	
Perceived barriers X financial self-efficacy	.044	.021	[.002, .085]	*
Marital status	.010	.027	[-.062, .043]	
Children	-.118	.025	[-.167, -.070]	***
Age group	.009	.015	[-.021, .040]	
Level of education	.049	.008	[.034, .064]	***
Household income	.118	.010	[.099, .138]	***
Personal income	.044	.009	[.025, .062]	***
Home ownership	.124	.018	[.089, .158]	***

Note: N = 3,240. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.16

Model 1 GSEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived barriers	-.335	.102	[-.535, -.135]	**
Objective financial knowledge	.040	.013	[.014, .067]	**
Financial self-efficacy	.120	.020	[.080, .160]	***
Perceived barriers X objective financial knowledge	.018	.033	[-.047, .083]	
Perceived barriers X financial self-efficacy	.034	.034	[-.032, .100]	
Marital status	.025	.041	[-.053, .106]	
Children	-.107	.037	[-.179, -.034]	**
Age group	.032	.024	[-.014, .079]	
Level of education	.075	.012	[.051, .099]	***
Household income	.123	.015	[.094, .152]	***
Personal income	.048	.014	[.020, .076]	**
Home ownership	.093	.026	[.042, .144]	***

Note: N = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.17

Model 1 GEM for Perceived Barriers with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.403	.115	[-.627, -.178]	***
Objective financial knowledge	.023	.011	[.001, .045]	*
Financial self-efficacy	.131	.017	[.097, .165]	***
Perceived barriers X objective financial knowledge	.013	.037	[-.059, .085]	
Perceived barriers X financial self-efficacy	.055	.028	[.001, .109]	*
Marital status	-.015	.035	[-.084, .053]	
Children	-.118	.033	[-.183, -.053]	***
Age group	-.006	.021	[-.047, .036]	
Level of education	.027	.010	[.007, .047]	*
Household income	.105	.014	[.077, .132]	***
Personal income	.049	.014	[.021, .077]	**
Home ownership	.146	.024	[.099, .193]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

The model statistics suggested that the inclusion of financial self-efficacy as a moderator provided a small improvement to the overall model fit ($\Delta AIC -2.135$ and $\Delta BIC + 3.835$) as indicated by the reduction in Akaike's Information Criterion (AIC) and the minimal increase in the Bayesian Information Criterion (BIC). The gains in log-likelihood were positive but modest for the single moderator model (FSE $\Delta LL = + 1.696$) and dual (parallel) model ($\Delta LL = + 1.818$), but the addition of the second moderator added unnecessary complexity as indicated by the change in AIC and BIC. The model specifications aligned well with the HBM framework that highlights the role that psychological factors play in financial behaviour engagement.

GSEM for Perceived Benefits on Retirement Preparedness Behaviours (Model 2)

The GSEM analysis results (Tables 5.18 – 5.20) revealed that the latent construct, perceived benefits have a significant and positive influence on retirement preparedness behaviours across the full sample and both gendered subsamples. Perceived benefits was a particularly strong predictor for women ($\beta = .389$, $SE = .023$, 95% CI [.344, .434], $p < .001$): a one unit increase in perceived benefits corresponds to a .389-unit increase retirement preparedness behaviours. Financial self-efficacy demonstrated a negative association with retirement preparedness behaviours across all samples but only produced statistically significant results for the aggregate ($\beta = -.037$, $SE = .014$, 95% CI [-.065, -.009], $p < .01$) and women-only subsample ($\beta = -.055$, $SE = .022$, 95% CI [-.097, -.012], $p < .05$). These results appear to contradict existing research (Asebedo et al., 2019; Fry & Risse, 2016; Sturr et al., 2021) and the correlation tests and basic regression analysis that were conducted in the existing study, that also reported a positive relationship between financial self-efficacy and retirement preparedness behaviours. A possible reason for these unexpected findings is that objective financial knowledge may have suppressed the effects of financial self-efficacy, producing counter-intuitive findings (Conger, 1974; Rothwell et al., 2016). Conversely, objective financial knowledge was statistically significant and positively associated with retirement preparedness behaviours for the aggregate sample ($\beta = .026$, $p = .001$) and both gendered subsamples (women; $\beta = .030$, $p = .017$; men: $\beta = .026$, $p = .011$). These results suggested that a one unit increase in objective financial knowledge yielded a .026 unit (full sample and man-only subsample) and a .030 (women) increase of retirement preparedness engagement. All socioeconomic status variables (household income, personal income and homeownership) remained positively associated across all samples, but home ownership only reached marginal significance for the

women-only subsample ($\beta = .044, p = .071$). Of the demographic characteristics, only children and education level achieved statistical significance which was present in all samples. The presence of children negatively affects retirement preparedness behaviours for the aggregate and gendered subsamples, with a noted gendered effect. For men, the presence of children produced the following results ($\beta = -.100, SE = .031, 95\% CI [-.161, -.038], p < .01$) while for women ($\beta = -.072, SE = .035, 95\% CI [-.140, -.004], p < .05$) the result indicated that the negative effects of children on retirement preparedness behaviours are stronger for men than women. Level of education was positively associated with retirement preparedness behaviours for aggregate sample ($\beta = .051, p = .000$) and both gendered subsamples (females: $\beta = .075, p = .000$; males: $\beta = .031, p = .002$).

Table 5.18

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.358	.015	[.328, .389]	***
Marital status	-.008	.025	[-.058, .041]	
Children	-.093	.023	[-.139, -.047]	***
Age group	.008	.015	[-.021, .037]	
Level of education	.051	.007	[.037, .066]	***
Household income	.105	.009	[.087, .124]	***
Personal income	.037	.009	[.019, .054]	***
Home ownership	.083	.017	[.050, .115]	***
Financial self-efficacy	-.037	.014	[-.065, -.009]	*
Objective financial knowledge	.026	.008	[.011, .042]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.19

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.389	.023	[.344, .434]	***
<i>Marital status</i>	.029	.039	[-.047, .104]	
<i>Children</i>	-.073	.035	[-.140, -.004]	*
<i>Age group</i>	.028	.022	[-.015, .072]	
<i>Level of education</i>	.075	.011	[.052, .097]	***
<i>Household income</i>	.105	.014	[.078, .132]	***
<i>Personal income</i>	.044	.013	[.019, .070]	**
<i>Home ownership</i>	.044	.024	[-.004, .092]	†
<i>Financial self-efficacy</i>	-.055	.022	[-.097, -.012]	*
<i>Objective financial knowledge</i>	.029	.012	[.005, .054]	*

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.20

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.333	.020	[.294, .373]	***
<i>Marital status</i>	-.016	.033	[-.082, .049]	
<i>Children</i>	-.100	.031	[-.161, -.038]	**
<i>Age group</i>	-.003	.020	[-.042, .036]	
<i>Level of education</i>	.031	.010	[.012, .051]	**
<i>Household income</i>	.096	.014	[.069, .122]	***
<i>Personal income</i>	.040	.014	[.013, .066]	**
<i>Home ownership</i>	.113	.023	[.067, .158]	***
<i>Financial self-efficacy</i>	-.015	.019	[-.052, .023]	
<i>Objective financial knowledge</i>	.026	.010	[.006, .047]	*

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Results from the GSEM (Tables 5.21 – 5.23) for perceived benefits moderated by objective financial knowledge revealed, across all three samples that perceived benefits was a significant, positive predictor of retirement preparedness behaviours at the *p* < .001 level (aggregate sample: $\beta = .348$, *p* = .000; females: $\beta = .375$, *p* = .000; males: $\beta = .326$, *p* = .000).

Although the direct effect of objective financial knowledge remained significant at a modest level (full sample: $\beta = .026$, $p = .001$; females: $\beta = .030$, $p = .016$; males: $\beta = .025$, $p = .016$), its moderating effect was not supported (**H2**). A notable gender effect emerged in level of education although the relationship is positive and statistically significant across all samples. For women ($\beta = .074$, $SE = .012$, 95% CI [.052, .098], $p < .001$), for every one-unit increase in level of education, there is a .075 unit increase in retirement preparedness behaviors while for men ($\beta = .031$, $SE = .020$, 95% CI [.012, .051], $p < .01$) the effect size is reduced. The presence of children remained negatively associated with retirement preparedness behaviours for both men ($\beta = -.099$, $p = .002$) and women ($\beta = -.071$, $p = .040$). While home ownership produced statistically significant results for men ($\beta = .112$, $p = .000$), the results for women ($\beta = .043$, $p = .078$) generated marginal significance at the $p < .10$ level. Household income and personal income remained positive and robust indicators for the aggregate and both gendered subsamples.

Table 5.21

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.348	.018	[.313, .383]	***
Objective financial knowledge	.026	.008	[.009, .041]	**
Perceived benefits X objective financial knowledge	.009	.009	[-.009, .027]	
Marital status	-.009	.025	[-.058, -.041]	
Children	-.092	.023	[-.138, -.046]	***
Age group	.008	.015	[-.020, .038]	
Level of education	.052	.007	[.037, .066]	***
Household income	.105	.009	[.087, .124]	***
Personal income	.037	.009	[.019, .054]	***
Home ownership	.082	.017	[.049, .114]	***
Financial self-efficacy	-.037	.014	[-.064, -.009]	*

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.22

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.375	.026	[.323, .427]	***
Objective financial knowledge	.030	.012	[.005, .054]	*
Perceived benefits X objective financial knowledge	.015	.014	[-.013, .043]	
Marital status	.028	.039	[-.047, .105]	
Children	-.071	.035	[-.139, -.003]	*
Age group	.029	.022	[-.014, .073]	
Level of education	.075	.012	[.052, .098]	***
Household income	.105	.014	[.078, .132]	***
Personal income	.044	.013	[.019, .070]	**
Home ownership	.043	.024	[-.005, .091]	†
Financial self-efficacy	-.054	.022	[-.097, -.012]	*

Note: *N* = 1,515. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.23

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (males)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.326	.024	[.278, .373]	***
Objective financial knowledge	.025	.011	[.005, .046]	*
Perceived benefits X objective financial knowledge	.007	.012	[-.016, .030]	
Marital status	-.017	.033	[-.082, .048]	
Children	-.099	.031	[-.160, -.037]	**
Age group	-.003	.020	[-.042, .037]	
Level of education	.031	.010	[.012, .051]	**
Household income	.096	.014	[.069, .122]	***
Personal income	.040	.014	[.013, .067]	**
Home ownership	.112	.023	[.066, .157]	***
Financial self-efficacy	-.014	.019	[-.052, .023]	

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

As summarized in Tables 5.24 – 5.26, the GSEM results for perceived benefits moderated by financial self-efficacy indicated that perceived benefits continued to persist as a significant determinant of retirement preparedness behaviours (full sample: $\beta = .452$, $p = .000$; females: $\beta = .421$, $p = .000$; males: $\beta = .452$, $p = .000$). The direct effect of financial self-efficacy was slightly, negatively associated with retirement preparedness behaviours for the full sample ($\beta = -.035$, $p = .017$) and women ($\beta = -.050$, $p = .027$), but not statistically significant for men. Conversely, financial self-efficacy as a moderator of perceived benefits demonstrated a negative statistical significance for the aggregate sample ($\beta = -.041$, $p = .002$) and the men-only ($\beta = -.042$, $p = .013$), not Canadian women. **H3** - Financial self-efficacy will strengthen the relationship between perceived benefits and Canadian women's engagement in retirement preparedness behaviours was not supported in the women-only sample, and in fact, the relationship produced counterintuitive results.

Women and men derived significant benefit from objective financial knowledge (women: $\beta = .029$, $SE = .012$, 95% CI [.005, .053], $p < .05$; men: $\beta = .025$, $SE = .010$, 95% CI [.005, .046], $p < .05$) with a .029 and .025-unit increase in retirement preparedness behaviours for every one unit increase in OFK respectively. Home ownership continued to report mixed results, demonstrating positive and statistically significant results for the aggregate ($\beta = .083$, $p = .000$) and men-only sample ($\beta = .112$, $p = .000$) and only marginal significance for the women-only sample ($\beta = .045$, $p = .065$). The level of education, household income and personal income consistently predicted with retirement preparedness behaviours with no notable gender difference between Canadian women and men.

Table 5.24

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived benefits	.451	.033	[.386, .516]	***
Financial self-efficacy	-.033	.014	[-.061, -.005]	*
Perceived benefits X financial self-efficacy	-.041	.013	[-.066, -.016]	**
Marital status	-.009	.025	[-.058, .040]	
Children	-.091	.023	[-.137, -.045]	***
Age group	.009	.015	[-.020, .037]	
Level of education	.052	.007	[.037, .066]	***
Household income	.105	.009	[.086, .123]	***
Personal income	.037	.009	[.020, .055]	***
Home ownership	.083	.017	[.050, .115]	***
Objective financial knowledge	.026	.008	[.010, .041]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.25

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	p
Perceived benefits	.455	.049	[.359, .550]	***
Financial self-efficacy	-.055	.022	[-.096, -.012]	*
Perceived benefits X financial self-efficacy	-.031	.020	[-.070, .009]	
Marital status	.026	.039	[-.050, .101]	
Children	-.070	.035	[-.138, -.002]	*
Age group	.029	.022	[-.014, .073]	
Level of education	.075	.012	[.052, .098]	***
Household income	.105	.014	[.078, .132]	***
Personal income	.044	.013	[.019, .070]	**
Home ownership	.045	.024	[-.002, .092]	†
Objective financial knowledge	.029	.012	[.005, .053]	*

Note: $N = 1,510$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.26

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.434	.045	[.345, .523]	***
Financial self-efficacy	-.008	.019	[-.046, .030]	
Perceived barriers X financial self-efficacy	-.042	.017	[-.075, -.009]	*
Marital status	-.015	.033	[-.080, .050]	
Children	-.010	.031	[-.161, -.038]	**
Age group	-.003	.020	[-.043, .036]	
Level of education	.032	.010	[.013, .051]	**
Household income	.096	.014	[.068, .121]	***
Personal income	.041	.014	[.014, .068]	**
Home ownership	.112	.023	[.067, .157]	***
Objective financial knowledge	.025	.010	[.005, .046]	*

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Results from the dual moderator (parallel interaction) GSEM analysis (tables 5.27 – 5.29) demonstrated that perceived benefits across all samples (full sample: $\beta = .442$, $p = .000$; females: $\beta = .442$, $p = .000$; males: $\beta = .426$, $p = .000$) continued to be robust, positive and statistically significant predictor of retirement preparedness behaviours. These findings persisted even when existing objective financial knowledge and financial self-efficacy research are recognized as significant motivational determinants of financial behaviour as well (Lind et al., 2020; Liya & Ambilikumar, 2021; Tang & Baker, 2016). While objective financial knowledge as a moderator did not meet the significance threshold ($p < .05$), as a direct predictor of retirement preparedness behaviours the results were positive and statistically significant for the aggregate ($\beta = .025$, $p = .001$) and gendered samples (women: $\beta = .029$, $p = .017$; men: $\beta = .024$, $p = .022$). For every one unit increase in objective financial knowledge, women demonstrated a 0.29-unit ($p < .05$) increase in retirement preparedness behaviours whereas men-only subsample reported had a

.024-unit ($p < .05$) increase. Analyses of the direct and moderated effect of financial self-efficacy on retirement preparedness behaviours demonstrated inverse and statistically significant effects for all samples except for men (direct – non-significant) and women (**H4** - dual moderation – non-significant). Moreover, the direct effect of financial self-efficacy remained consistent across the aggregate ($\beta = -.032$, $p = .024$) and women-only ($\beta = -.053$, $p = .014$) samples resulting in a decrease in retirement preparedness behaviours with an increase in financial self-efficacy. Conversely, moderation results indicated a decrease in retirement preparedness behaviours in the presence of a one unit increase in financial self-efficacy; the aggregate sample decrease was $-.042$ and for the male-only subsample, the decrease was $-.043$ at the $p < .05$ / $p < .01$ significance level respectively. The model covariates remained relatively unchanged, and the only notable gendered effect was education level (women: $\beta = .075$, $SE = .012$, 95% CI [.053, .098], $p < .001$; men: $\beta = .032$, $SE = .010$, 95% CI [.013, .051], $p < .01$) and possibly (while inconclusive) own-home (women: $\beta = .044$, $SE = .024$, 95% CI [-.003, .091], $p < .10$; men: $\beta = .111$, $SE = .023$, 95% CI [.066, .156], $p < .001$).

Table 5.27

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.442	.034	[.375, .508]	***
Objective financial knowledge	.025	.008	[.009, .040]	**
Financial self-efficacy	-.032	.014	[-.060, -.004]	*
Perceived benefits X objective financial knowledge	.011	.009	[-.006, .029]	
Perceived benefits X financial self-efficacy	-.042	.013	[-.067, -.017]	**
Marital status	-.010	.025	[-.059, -.040]	
Children	-.090	.023	[-.136, -.044]	***
Age group	.009	.015	[-.020, .038]	
Level of education	.052	.007	[.038, .067]	***
Household income	.105	.009	[.086, .123]	***
Personal income	.038	.009	[.020, .055]	***
Home ownership	.082	.017	[.049, .114]	***

Note: *N* = 3,240. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.28

Model 2 GSEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.442	.050	[.343, .540]	***
Objective financial knowledge	.029	.012	[.005, .054]	*
Financial self-efficacy	-.053	.022	[-.096, -.011]	*
Perceived benefits X objective financial knowledge	.016	.014	[-.012, .043]	
Perceived benefits X financial self-efficacy	-.032	.020	[-.071, .008]	
Marital status	.026	.039	[-.050, .101]	
Children	-.069	.035	[-.137, -.001]	*
Age group	.030	.022	[-.013, .074]	
Level of education	.075	.012	[.053, .098]	***
Household income	.105	.014	[.078, .132]	***
Personal income	.044	.013	[.019, .070]	**
Home ownership	.044	.024	[-.004, .091]	†

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.29

Model 2 GEM for Perceived Benefits with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived benefits	.426	.046	[.336, .517]	***
Objective financial knowledge	.024	.011	[.003, .045]	*
Financial self-efficacy	-.007	.019	[-.045, .031]	
Perceived benefits X objective financial knowledge	.009	.012	[-.014, .033]	
Perceived benefits X financial self-efficacy	-.043	.017	[-.076, -.010]	*
Marital status	-.016	.033	[-.081, .049]	
Children	-.098	.031	[-.159, -.037]	**
Age group	-.003	.020	[-.043, .036]	
Level of education	.032	.010	[.013, .051]	**
Household income	.094	.012	[.068, .121]	***
Personal income	.041	.012	[.015, .068]	**
Home ownership	.111	.023	[.066, .156]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Subsequent examination of the model statistics demonstrated that the single moderator (FSE) and both moderators (OFK and FSE) improved overall model fit (single moderator – FSE: $\Delta LL = +3.590$ $\Delta AIC = -3.549$ and $\Delta BIC = +.780$; dual moderator: $\Delta LL = +4.248$; $\Delta AIC = -4.496$; $\Delta BIC = +7.430$), although the most significant log likelihood improved was observed in the dual (parallel) moderation ($\Delta LL = +4.248$), but the improvement change from single moderator (FSE) to dual moderator was only $\Delta LL = +.658$ which suggested that model three (FSE moderation) balances fit and complexity best given the following model specifications ($\Delta = +3.590$; $\Delta AIC -3.549$; $\Delta BIC +.780$) as indicated by the reduction in Akaike’s Information Criterion (AIC) and the minimal increase in the Bayesian Information Criterion (BIC). These findings continue to align well with the HBM framework that highlights the role that psychological factors play in financial behaviour engagement.

GSEM for Perceived Threats on Retirement Preparedness Behaviours (Model 3)

Model three (Tables 5.30 - 5.32), which addressed perceived threats on retirement preparedness behaviours, demonstrated that for the aggregate sample and each gendered subsample, perceived threats were a robust and negative predictor of retirement preparedness behaviours ($p < .001$). For every one unit increase in perceived threats, retirement preparedness behaviours decreased by .257 (full sample), .267 (women) and .248 (men). **H1.** Perceived threats are negatively associated with Canadian women's engagement in retirement preparedness behaviours was fully supported. Objective financial knowledge in the face of perceived threats, generated statistically significant results for the aggregate sample ($\beta = .027$, $p = .001$) and both gendered subsamples (women: $\beta = .039$, $p = .003$; men: $\beta = .023$, $p = .033$). Financial self-efficacy also emerged as a robust indicator ($p < .001$) of retirement preparedness behaviours with significant effects for the full sample ($\beta = .090$, $p = .000$) and both subsamples (women: $\beta = .086$, $p = .000$; men: $\beta = .102$, $p = .000$). These results revealed that having financial self-confidence might act as a protective layer against perceived financial threats on retirement preparedness behaviours. Consistent with the findings for perceived barriers (model 1) and benefits (model 2), socioeconomic indicators such as household income, personal income and home ownership retained statistical significance for all samples with minimal differences in effect size. Level of education (and to a lesser degree – the presence of children) continued to demonstrate gendered results. In the context of perceived threats, level of education was positive and reported an increased effect size for women ($\beta = .071$, $SE = .012$, 95% CI [.047, .094] $p = .000$) than men ($\beta = .025$ $SE = .010$, 95% CI [.004, .045], $p < .05$). Conversely, children had an inverse effect on retirement preparedness behaviours for the aggregate ($\beta = -.091$, $p = .000$) sample, men-only subsample ($\beta = -.097$, $p = .003$), while producing marginally significant results

for the women-only subsample. ($\beta = -.071$, $p = .052$). Thus, despite differences in coefficient effect size and p-values, there is no evidence of a statistically significant gender difference in the effect of having children on retirement preparedness. The results continued to suggest that women may leverage/lean into formal education and objective financial knowledge as key determinants of retirement preparedness behaviours to mitigate perceived threats.

Table 5.30

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.257	.015	[-.287, -.228]	***
Marital status	-.007	.026	[-.058, -.045]	
Children	-.091	.024	[-.138, -.043]	***
Age group	.006	.015	[-.024, .037]	
Level of education	.046	.008	[.031, .061]	***
Household income	.108	.010	[.088, .127]	***
Personal income	.042	.009	[.024, .060]	***
Home ownership	.104	.017	[.069, .138]	***
Financial self-efficacy	.090	.013	[.065, .115]	***
Objective financial knowledge	.027	.008	[.011, .043]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.31

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.267	.022	[-.310, -.224]	***
Marital status	-.019	.040	[-.060, .098]	
Children	-.071	.036	[-.142, .000]	†
Age group	.025	.023	[-.020, .071]	
Level of education	.071	.012	[.047, .094]	***
Household income	.110	.015	[.081, .139]	***
Personal income	.049	.014	[.022, .076]	***
Home ownership	.069	.025	[.019, .119]	**
Financial self-efficacy	.086	.020	[.047, .125]	***
Objective financial knowledge	.039	.013	[.014, .064]	**

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.32

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.248	.020	[-.289, -.208]	***
Marital status	-.004	.034	[-.112, .063]	
Children	-.097	.033	[-.160, -.033]	**
Age group	-.004	.021	[-.046, .037]	
Level of education	.025	.010	[.004, .045]	*
Household income	.096	.014	[.071, .124]	***
Personal income	.045	.014	[.016, .072]	**
Home ownership	.132	.024	[.085, .178]	***
Financial self-efficacy	.102	.017	[.068, .136]	***
Objective financial knowledge	.023	.011	[.002, .044]	*

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

The GSEM analysis (Tables 5.33 - 5.35) for perceived threats on retirement preparedness behaviours, moderated by objective financial knowledge found that perceived threats was a negative and robust predictor (*p* < .001) for the full and gendered subsamples of retirement

preparedness behaviours (aggregate sample: $\beta = -.257$, $p = .000$; females: $\beta = -.282$, $p = .000$; males: $\beta = -.236$, $p = .000$), with minimal variation in the effect size. The direct effect of OFK on retirement preparedness behaviours was a positive predictor for the aggregate sample ($\beta = .020$, $p = .001$) and both gendered subsamples (women: $\beta = .039$, $p = .002$; men: $\beta = .022$, $p = .040$). In contrast, the moderating effect of objective financial knowledge was non-significant across all samples. **H2.** Objective financial knowledge will strengthen/moderate the relationship between perceived financial threats and Canadian women's engagement in retirement preparedness behaviours was not supported.

Financial self-efficacy retained its robust significance ($p < .001$) across all samples with effect-size variation (full sample: $\beta = .090$, $p = .000$; females: $\beta = .086$, $p = .000$; males: $\beta = .102$, $p = .000$). Although the estimated effect size reported larger for women than for men, the confidence intervals did overlap, indicating insufficient evidence to conclude a true gender effect. Consistent with the results from Models One and Two, household income, personal income and home ownership remained significant, positive indicators of retirement preparedness behaviours. Consistent with previous findings in this model analysis, level of education continued to generate gendered results. The results were positive and statistically significant for both women and men (women: $\beta = .070$, $SE = .012$, 95% CI [.047, .094] $p = .000$; men: $\beta = .025$, $SE = .010$, 95% CI [.005, .045] $p = .015$). For every one-unit increase in level of education, women demonstrated a .070-unit increase in retirement preparedness behaviours, while for men, the per unit increase was .025. The presence of children was statistically significant and inversely related to retirement preparedness behaviours for the aggregate sample ($\beta = -.091$, $p = .000$) and male-only subsample ($\beta = -.096$, $p = .003$) while for women ($\beta = -.070$, $p = .053$) the results generated marginally significant results only.

Table 5.33

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.257	.020	[-.297, -.217]	***
Objective financial knowledge	.027	.008	[.011, .043]	**
Perceived threats X objective financial knowledge	.000	.010	[-.020, .019]	
Marital status	-.007	.026	[-.058, .044]	
Children	-.091	.024	[-.138, -.043]	***
Age group	.007	.015	[-.024, .037]	
Level of education	.046	.008	[.031, .061]	***
Household income	.108	.010	[.088, .127]	***
Personal income	.042	.009	[.024, .060]	***
Home ownership	.104	.017	[.069, .138]	***
Financial self-efficacy	.090	.013	[.065, .115]	***

Note: *N* = 3,240. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.34

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.282	.029	[-.339, -.225]	***
Objective financial knowledge	.039	.013	[.014, .064]	**
Perceived threats X objective financial knowledge	.012	.015	[-.018, .042]	
Marital status	.018	.040	[-.060, .097]	
Children	-.070	.036	[-.141, .008]	†
Age group	.024	.023	[-.021, .070]	
Level of education	.070	.012	[.047, .094]	***
Household income	.110	.015	[.081, .139]	***
Personal income	.049	.013	[.023, .076]	***
Home ownership	.069	.025	[.019, .118]	**
Financial self-efficacy	.086	.020	[.047, .125]	***

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.35

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.236	.028	[-.291, -.180]	***
Objective financial knowledge	.022	.011	[.001, .043]	*
Perceived threats X objective financial knowledge	-.009	.013	[-.035, .017]	
Marital status	-.027	.034	[-.073, .062]	
Children	-.096	.033	[-.160, -.033]	**
Age group	-.003	.021	[-.044, .038]	
Level of education	.025	.010	[.005, .045]	*
Household income	.096	.014	[.069, .124]	***
Personal income	.045	.014	[.017, .072]	**
Home ownership	.130	.024	[.083, .177]	***
Financial self-efficacy	.102	.017	[.068, .136]	***

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Tables 5.36 - 5.38 provided the results for the GSEM analysis between perceived threats and retirement preparedness behaviour, moderated by financial self-efficacy. While the results across all samples produced robust ($p < .001$) negative associations (aggregate: $\beta = -.328$, $SE = .039$, 95% CI [-.404, -.252] $p = .000$; women: $\beta = -.267$, $SE = .056$, 95% CI [-.376, -.157] $p = .070$; men: $\beta = -.380$, $SE = .055$, 95% CI [-.487, -.273] $p = .070$, the predictive strength of perceived threats may have accounted for a greater proportion of variance for the male subgroup. For every one-unit increase in perceived threats, there is a .380 decrease in retirement preparedness behaviours for men. Despite perceived threats, financial self-efficacy produced robust ($p < .001$) and positive, direct effects for the aggregate and gendered subsamples. Results indicated for every one-unit increase in perceived threats, financial self-efficacy increased by .090 units (full sample), .086 units (women) and .104 units (men).

The interaction between perceived threats and financial self-efficacy produced interesting yet inconclusive results for women. In the aggregate sample, the moderation effect achieved significance ($\beta = .030$, $SE = .015$, 95% CI [.000, .094] $p = .047$) and it was statistically significant in the men-only subsample ($\beta = .054$, $SE = .021$, 95% CI [.013, .094] $p = .009$), indicating that financial self-efficacy strengthened retirement preparedness behaviors. Although the women-only subsample produced a similar effect size ($\beta = .000$), the interaction did not achieve statistical significance at the conventional level ($p < .05$). It is important to note, the confidence intervals for men and women overlapped, precluding a gender effect in the financial self-efficacy moderation between perceived threats and retirement preparedness behaviours. Contrary to expectations, hypothesis three **H3**. Financial self-efficacy will strengthen the relationship between perceived financial threats and Canadian women's engagement in retirement preparedness behaviours was not supported.

Objective financial knowledge produced statistically significant and positive results for all samples (aggregate: $\beta = .027$, $p = .001$; women: $\beta = .039$, $p = .003$; men: $\beta = .023$, $p = .029$). The presence of children remained statistically significant for the full ($\beta = -.091$, $p = .000$) and men-only ($\beta = -.099$, $p = .002$) subsamples, while only marginal significance was achieved in the women-only subsample ($\beta = -.071$, $p = .052$). Level of education continued to generate a gender-differentiated influence on retirement preparedness behaviours in the presence of perceived threats. For women ($\beta = .071$, $SE = .012$, 95% CI [.047, .094] $p = .000$), the effect size is nearly three times greater than that of men ($\beta = .025$, $SE = .010$, 95% CI [.005, .045] $p = .014$). This pattern continues to suggest that formal education may provide women with the skills needed to strengthen retirement preparedness behaviours when financial threats are present. Socioeconomic controls (household income, personal income and home ownership) were positive and significant

for all samples, suggesting an increased likelihood of retirement preparedness behaviours when personal and household income is higher, and respondents owned their homes.

Table 5.36

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.328	.039	[-.404, -.252]	***
Financial self-efficacy	.090	.013	[.065, .116]	***
Perceived threats X financial self-efficacy	.030	.015	[.000, .061]	*
Marital status	-.008	.026	[-.059, .044]	
Children	-.091	.024	[-.139, -.043]	***
Age group	.006	.015	[-.024, .036]	
Level of education	.046	.008	[.031, .061]	***
Household income	.108	.010	[.088, .127]	***
Personal income	.042	.009	[.024, .060]	***
Home ownership	.104	.017	[.070, .139]	***
Objective financial knowledge	.028	.008	[.012, .044]	**

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.37

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.267	.056	[-.377, -.157]	***
Financial self-efficacy	.086	.020	[.047, .125]	***
Perceived threats X financial self-efficacy	-.000	.024	[-.047, .047]	
Marital status	.019	.040	[-.060, -.098]	
Children	-.071	.036	[-.141, .000]	†
Age group	.019	.023	[-.020, .071]	
Level of education	.071	.012	[.047, .094]	***
Household income	.110	.015	[.081, .139]	***
Personal income	.049	.014	[.022, .076]	***
Home ownership	.069	.025	[.019, .119]	**
Objective financial knowledge	.039	.013	[.014, .064]	**

Note: $N = 1,510$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.38

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.380	.055	[-.487, -.273]	***
Financial self-efficacy	.104	.017	[.070, .138]	***
Perceived threats X financial self-efficacy	.054	.021	[.013, .094]	**
Marital status	-.005	.034	[-.072, .062]	
Children	-.099	.032	[-.163, -.036]	**
Age group	-.007	.021	[-.048, .034]	
Level of education	.025	.010	[.005, .045]	*
Household income	.096	.014	[.069, .123]	***
Personal income	.045	.014	[.018, .073]	**
Home ownership	.133	.024	[.087, .180]	***
Objective financial knowledge	.023	.011	[.002, .044]	*

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

In the dual (parallel) moderation GSEM analysis of perceived threats on retirement preparedness behaviours highlighted in Tables 5.39 - 5.41, the results underscored the persistence of perceived threats as a psychological factor that negatively impacted retirement preparedness behaviours. The direct effects of perceived threats on retirement preparedness behaviors remained robust ($p < .001$) and negative for the aggregate model and both subsamples (aggregate sample: $\beta = -.326$, $p = .000$; females: $\beta = -.279$, $p = .000$; males: $\beta = -.368$, $p = .000$). Specifically, for every one-unit increase in perceived threats, retirement preparedness behaviours decreased by .326 units for the full sample, .279 units for the women-only and .368 units for the men-only subsample. The direct effect of financial self-efficacy continued to be significant ($p < .001$) and positively associated with retirement preparedness across all samples (aggregate sample: $\beta = .090$, $p = .000$; females: $\beta = .086$, $p = .000$; males: $\beta = .105$, $p = .000$) Comparably, the direct effect for objective financial knowledge remained positive and statistically significant

for all samples (aggregate sample: $\beta = .028$, $p = .001$; females: $\beta = .039$, $p = .002$; males: $\beta = .022$, $p = .040$).

The dual (parallel) moderation of financial self-efficacy and objective financial knowledge on the relationship between perceived threats and retirement preparedness behaviours yielded mixed results. Financial self-efficacy as a moderator produced positive results, mitigating the effects of perceived threats on retirement preparedness behaviours for men ($\beta = .057$, $p = .006$) and the full sample ($\beta = .031$, $p = .045$). Financial self-efficacy did not appear to mitigate the effects of perceived threats for Canadian women. Objective financial knowledge did not significantly moderate the relationship between perceived threats and retirement preparedness in either the aggregate sample or gendered subsamples. Contrary to hypothesis four – **(H4)**, objective financial knowledge and financial self-efficacy will moderate the relationship between perceived threats and engagement in retirement preparedness behaviours was only partially supported. While the moderating effects of objective financial knowledge did not yield significant findings, financial-self-efficacy moderated the relationship for men and for the aggregate sample which includes Canadian women.

The demographic and socio-economic variables continued to produce results consistent with Models One and Two. Analyses confirmed a pronounced gender effect for level of educational attainment on retirement preparedness behaviours in the presence of financial threats. Canadian women's level of education reported a significantly stronger positive association (women: $\beta = .070$, $SE = .012$, 95% CI [.047, .094] $p = .000$) than men's ($\beta = .026$, $SE = .010$, 95% CI [.006, .045] $p = .012$). A comparable, but inverse pattern emerged for the presence of children. In the men-only subsample, the financial burden of children was significantly associated with reduced retirement preparedness behaviours (men: $\beta = -.098$, $SE =$

.032, 95% CI [-.162, -.035] $p = .002$), whereas, the corresponding effect for women was smaller and only marginally significant (women: $\beta = .070$, SE = .036, 95% CI [-.141, .001] $p = .053$), These gender divergent results cannot however be confirmed conclusively as their 95% confidence intervals did overlap. By contrast, household and personal income and home ownership remained robust, positive predictors of retirement preparedness behaviours for both genders, effectively mitigating the effects of perceived threats.

Table 5.39

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.326	.040	[-.404, -.248]	***
Financial self-efficacy	.090	.013	[.065, .116]	***
Perceived threats X financial self-efficacy	.031	.015	[.001, .061]	*
Objective financial knowledge	.027	.008	[.011, .044]	**
Perceived threats X objective financial knowledge	-.003	.010	[-.023, .018]	
Marital status	-.008	.026	[-.059, .044]	
Children	-.091	.024	[-.139, -.043]	***
Age group	.006	.015	[-.024, .036]	
Level of education	.046	.008	[.031, .061]	***
Household income	.108	.010	[.088, .127]	***
Personal income	.042	.009	[.024, .060]	***
Home ownership	.104	.017	[.070, .139]	***

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.40

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.279	.058	[-.392, -.159]	***
Financial self-efficacy	.086	.020	[.047, .125]	***
Perceived threats X financial self-efficacy	-.001	.024	[-.048, .041]	
Objective financial knowledge	.039	.013	[.014, .062]	**
Perceived threats X objective financial knowledge	.012	.015	[-.018, .042]	
Marital status	.019	.040	[-.060, .098]	
Children	-.071	.036	[-.141, -.001]	†
Age group	.024	.023	[-.021, .070]	
Level of education	.070	.012	[.047, .094]	***
Household income	.110	.015	[.081, .139]	***
Personal income	.049	.014	[.022, .076]	***
Home ownership	.069	.025	[.019, .118]	**

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.41

Model 3 GSEM for Perceived Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived threats	-.368	.056	[-.477, -.258]	***
Financial self-efficacy	.105	.017	[.071, .139]	***
Perceived threats X financial self-efficacy	.057	.021	[.016, .097]	**
Objective financial knowledge	.022	.011	[.001, .043]	*
Perceived threats X objective financial knowledge	-.014	.014	[-.041, .012]	
Marital status	-.006	.034	[-.074, .061]	
Children	-.098	.032	[-.162, -.035]	**
Age group	-.006	.021	[-.047, .035]	
Level of education	.026	.010	[.006, .045]	*
Household income	.096	.014	[.069, .122]	***
Personal income	.045	.014	[.018, .073]	**
Home ownership	.132	.024	[.085, .179]	***

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Model fit was evaluated using Log Likelihood (LL), Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) which assessed structural adequacy, parsimony and explanatory strength (Kuha, 2004). The results for model fit yielded conflicting indicators of parsimony and explanatory power. While financial self-efficacy as a single moderator produced the lowest AIC value (5192.66), the best (least negative) log-likelihood value (LL = -2583.31) was observed in the dual, parallel moderation, and the lowest BIC value (5265.48) was observed in the base model (no moderation). Given the focus of the current research is the predictive strength of the HBM framework and the relevance of financial self-efficacy in both prior and the current research it was concluded that the inclusion of financial self-efficacy only, as a moderator produced the best model fit ($\Delta LL = +1.645$ $\Delta AIC = - 1.288$; $\Delta BIC = + 4.673$).

GSEM for Perceived Barriers, Benefits and Threats on Retirement Preparedness Behaviours (Model 4)

The fourth GSEM analysis (Tables 5.42 – 5.44) served as a robustness check, to examine the combined effects of the HBM perceptions on retirement preparedness behaviours. This model moved beyond the three individual-construct models, exploring how perceived barriers, benefits and threats influenced retirement preparedness behaviours collectively. The first set of analyses compared the full sample, and the gendered subsamples, including covariates, with no interaction. This model provided several unique findings that did not emerge in the individual construct analyses.

Perceived barriers did not achieve statistical significance at the conventional level ($p < .05$) in the aggregate or gendered subsamples, which diverged dramatically from Model One that analyzed perceived barriers alone, wherein statistical significance was achieved ($p < .001$) by the

aggregate sample and both gendered subsamples (women: $p < .001$; men: $p < .001$). Specifically, the presence of perceived benefits and threats, attenuated barriers to non-significance for the women-only subsample and marginal significance for the aggregate, and men-only subsample in the fully specified model. The interplay of constructs reinforced the theoretical framework's assumption that perceived barriers can be suppressed or surmounted in the presence of strong perceived benefits (Carpenter, 2010; Karl et al., 2021; Subedi et al., 2022). In the comprehensive model, perceived benefits remained statistically robust across all samples ($p < .001$), whereas, the results for perceived threats were diminished across all samples (aggregate sample: $\beta = -.080$, $SE = .022$, 95% CI [-.123, -.037] $p = .000$) women-only: ($\beta = -.108$, $SE = .031$, 95% CI [-.169, -.046] $p = .001$) men-only: ($\beta = -.057$, $SE = .031$, 95% CI [-.117, .003] $p = .063$) relative to the single construct model (aggregate sample: $\beta = -.257$, $SE = .015$, 95% CI [-.287, -.228] $p = .000$) women-only: ($\beta = -.267$, $SE = .022$, 95% CI [-.310, -.2264] $p = .000$) men-only: ($\beta = -.248$, $SE = .020$, 95% CI [-.286, -.208] $p = .000$). In support of **H1**, individuals who perceive the benefit of retirement preparedness behaviours as having greater positive effect than the negative effect of barriers and threats, are more likely to engage in retirement preparedness behaviours.

Table 5.42

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.042	.025	[-.090, .006]	†
Perceived benefits	.302	.018	[.267, .337]	***
Perceived threats	-.080	.022	[-.123, -.037]	***
Marital status	-.008	.025	[-.057, .041]	
Children	-.081	.023	[-.127, -.036]	***
Age group	.009	.015	[-.020, .038]	
Level of education	.050	.007	[.035, .064]	***
Household income	.101	.009	[.082, .119]	***
Personal income	.036	.009	[.019, .053]	***
Home ownership	.073	.017	[.041, .106]	***
Objective financial knowledge	.026	.009	[.011, .042]	**
Financial self-efficacy	-.027	.014	[-.055, .001]	†

Note: *N* = 3,240. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.43

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.011	.036	[-.082, .059]	
Perceived benefits	.326	.026	[.275, .378]	***
Perceived threats	-.108	.031	[-.169, -.046]	**
Marital status	.029	.038	[-.047, .104]	
Children	-.059	.035	[-.127, .009]	†
Age group	.029	.022	[-.014, .072]	
Level of education	.072	.011	[.050, .095]	***
Household income	.099	.014	[.072, .127]	***
Personal income	.045	.013	[.019, .070]	**
Home ownership	.035	.024	[-.013, .082]	
Objective financial knowledge	.031	.012	[.007, .055]	*
Financial self-efficacy	-.045	.022	[-.088, -.003]	*

Note: *N* = 1,510. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

Table 5.44

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.065	.034	[-.132, .001]	†
Perceived benefits	.283	.024	[.235, .331]	***
Perceived threats	-.057	.031	[-.117, .003]	†
Marital status	-.019	.033	[-.083, .046]	
Children	-.088	.031	[-.149, -.027]	**
Age group	-.002	.020	[-.041, .037]	
Level of education	.030	.010	[.011, .050]	**
Household income	.093	.014	[.066, .119]	***
Personal income	.039	.014	[.012, .065]	**
Home ownership	.103	.023	[.058, .148]	***
Objective financial knowledge	.025	.011	[.005, .046]	*
Financial self-efficacy	-.005	.019	[-.043, .033]	

Note: *N* = 1,719. CI = Confidence interval. All predictors were mean centred before product term creation. **p* < .05. ***p* < .01 ****p* < .001 † *p* < .10

The subsequent GSEM (tables 5.45 – 5.47) examined the addition of the moderator - objective financial knowledge - to the tri-construct analysis of perceptions on retirement preparedness behaviours. The results for perceived benefits remained robust and positive (aggregate sample: $\beta = .307$, $p = .000$; females: $\beta = .315$, $p = .000$; males: $\beta = .302$, $p = .000$), while perceived barrier continued its non-significance and perceived threats retained significance, inversely interacting with retirement preparedness behaviours for the full sample ($\beta = -.075$, $p = .002$) and the women-only subsample ($\beta = -.117$, $p = .001$). The direct effect of OFK continued to demonstrate positive and statistical significance results for the aggregate ($\beta = .027$, $p = .001$) and gendered subsamples (women: $\beta = .032$, $p = .009$; men: $\beta = .027$, $p = .012$), although the moderated interaction of objective financial knowledge with any of the three individual constructs failed to achieved conventional significance ($p < .05$) in any of the samples. As a result, **H2** - objective financial knowledge will moderate the relationship between perceived

barriers, benefits and threats and Canadian women's engagement in retirement preparedness behaviours. While the direct effects of financial self-efficacy remained inversely and statistically significant for the women-only subsample ($\beta = -.045$, $p = .037$), the loss of statistical significance for financial self-efficacy in the male-only subsample of the structural model, despite prior statistical significance in the univariate analysis of barriers and threats might suggest the attenuating effects of perceived barriers on FSE. Furthermore, the persistent statistical significance of OFK in the benefits-only and the fully specified model, might suggest that in the face of complexity and competing priorities, men lean into their cognitive abilities more than their psychological beliefs and tendencies.

Table 5.45

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceptions & interactions				
Perceived barriers	-.110	.060	[-.228, .007]	†
Objective financial knowledge	.027	.008	[.011, .042]	**
Perceived barriers X objective financial knowledge	.032	.034	[-.034, .098]	
Perceived benefits	.308	.021	[.266, .35]	***
Perceived benefits X objective financial knowledge	-.006	.012	[-.029, .017]	
Perceived threats	-.075	.024	[-.122, -.028]	**
Perceived threats X objective financial knowledge	-.008	.028	[-.064, .047]	
Financial self-efficacy	-.027	.014	[-.055, .001]	†
Marital status	-.008	.025	[-.057, .041]	
Children	-.083	.023	[-.128, -.037]	***
Age group	.009	.015	[-.020, .038]	
Level of education	.050	.007	[.035, .064]	***
Household income	.101	.009	[.082, .119]	***
Personal income	.036	.009	[.019, .053]	***
Home ownership	.074	.017	[.041, .107]	***

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.46

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceptions & interactions				
Perceived barriers	-.069	.078	[-.222, .084]	
Objective financial knowledge	.032	.012	[.008, .056]	**
Perceived barriers X objective financial knowledge	.015	.050	[-.084, .115]	
Perceived benefits	.315	.031	[.255, .375]	***
Perceived benefits X objective financial knowledge	.013	.018	[-.023, .049]	
Perceived threats	-.117	.034	[-.183, -.051]	**
Perceived threats X objective financial knowledge	.019	.044	[-.068, .106]	
Financial self-efficacy	-.045	.022	[-.087, -.003]	*
Marital status	.029	.038	[-.046, .105]	
Children	-.059	.035	[-.127, .009]	†
Age group	.029	.022	[-.014, .072]	
Level of education	.072	.011	[.050, .094]	***
Household income	.100	.014	[.072, .127]	***
Personal income	.045	.013	[.020, .071]	**
Home ownership	.033	.024	[-.014, .081]	

Note: $N = 1,510$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.47

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceptions & interactions				
Perceived barriers	-.151	.096	[-.340, .038]	
Objective financial knowledge	.027	.011	[.006, .047]	*
Perceived barriers X objective financial knowledge	.043	.047	[-.050, .135]	
Perceived benefits	.302	.029	[.245, .360]	***
Perceived benefits X objective financial knowledge	-.018	.015	[-.048, .012]	
Perceived threats	-.041	.034	[-.107, .025]	
Perceived threats X objective financial knowledge	-.024	.037	[-.097, .049]	
Financial self-efficacy	-.005	.019	[-.043, .032]	
Marital status	-.018	.033	[-.083, .047]	
Children	-.090	.031	[-.151, -.028]	**
Age group	-.002	.020	[-.041, .038]	
Level of education	.031	.010	[.012, .050]	**
Household income	.092	.014	[.066, .119]	***
Personal income	.038	.014	[.011, .064]	**
Home ownership	.104	.023	[.059, .150]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Tables 5.48 – 5.50 explored the moderating effect of financial self-efficacy on the full model specification. Of the primary predictors, perceived benefits remained the only statistically significant ($p < .001$) and positive predictor for the gendered subsamples (females: $\beta = .433$, $p = .000$; males: $\beta = .358$, $p = .000$). Conversely, perceived barriers were statistically significant and negatively associated with retirement preparedness behaviours in the fully specified model for the aggregate sample ($\beta = -.136$, $p = .045$) only. Perceived threats (direct effect) did not yield statistically significant results for any of the samples, yet the interaction between barriers, benefits and threats with financial self-efficacy yielded mixed and intriguing results. The interaction between perceived benefits and perceived threats and FSE reported statistically (and

marginally) significant and negative results for the women-only subsample (perceived benefits: $\beta = -.050$, $SE = .025$, 95% CI $[-.099, -.001]$ $p = .044$; perceived threats: $\beta = -.064$, $SE = .035$, 95% CI $[-.133, -.005]$ $p = .071$). As a result, H3 - financial self-efficacy will moderate the relationship between perceived barriers, benefits and threats and Canadian women's engagement in retirement preparedness behaviours is partially supported.

The aggregate sample demonstrated statistically significant results for the interaction between perceived benefits and FSE ($\beta = -.045$, $SE = .016$, 95% CI $[-.077, -.013]$ $p = .006$), but no interaction in the fully specified model reached the conventional level of statistical significance for the men-only subsample. A clear and conclusive gender difference cannot be confirmed as the results do not meet the "no overlap" threshold for confidence intervals, but this moderation analysis could merit from a targeted assessment with a larger sample. Objective financial knowledge produced statistically significant and positive results for the aggregate sample ($\beta = .028$, $p = .001$) and the gendered subsamples (females: $\beta = .033$, $p = .007$; males: $\beta = .026$, $p = .012$). Across the gendered subsamples and the aggregate sample, socio-economic predictors continued to demonstrate significant and positive associations with retirement preparedness behaviours and educational attainment (women: $\beta = .073$, $SE = .011$, 95% CI $[.050, .095]$ $p = .000$; men: $\beta = .031$ $SE = .010$, 95% CI $[.012, .050]$ $p = .002$) continued to produce statistically significant, positive gendered results in the fully specified model.

Table 5.48

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.136	.068	[-.269, -.003]	*
Financial self-efficacy	-.023	.014	[-.051, .005]	
Perceived barriers X financial self-efficacy	.040	.027	[-.014, .093]	
Perceived benefits	.406	.042	[.324, .488]	***
Perceived benefits X financial self-efficacy	-.045	.016	[-.077, -.013]	**
Perceived threats	-.017	.059	[-.134, .099]	
Perceived threats X financial self-efficacy	-.027	.024	[-.075, .021]	
Objective financial knowledge	.028	.008	[.012, .043]	**
Marital status	-.009	.025	[-.058, .040]	
Children	-.080	.023	[-.125, -.034]	**
Age group	.009	.015	[-.019, .038]	
Level of education	.050	.007	[.036, .065]	***
Household income	.100	.009	[.081, .118]	***
Personal income	.037	.009	[.020, .054]	***
Home ownership	.073	.017	[.041, .106]	***

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.49

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.130	.097	[-.320, .061]	
Financial self-efficacy	-.041	.022	[-.083, .001]	†
Perceived barriers X financial self-efficacy	.055	.042	[-.027, .136]	
Perceived benefits	.433	.060	[.316, .549]	***
Perceived benefits X financial self-efficacy	-.050	.025	[-.099, -.001]	*
Perceived threats	.030	.081	[-.130, .190]	
Perceived threats X financial self-efficacy	-.064	.035	[-.133, .005]	†
Objective financial knowledge	.033	.012	[.009, .057]	**
Marital status	.028	.038	[-.047, .103]	
Children	-.057	.035	[-.124, .011]	
Age group	.029	.022	[-.137, .072]	
Level of education	.073	.011	[.050, .095]	***
Household income	.099	.014	[.071, .126]	***
Personal income	.045	.013	[.020, .071]	**
Home ownership	.035	.024	[-.012, .083]	

Note: $N = 1,510$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.50

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.145	.097	[-.334, .044]	
Financial self-efficacy	.001	.019	[-.037, .039]	
Perceived barriers X financial self-efficacy	.030	.037	[-.043, .102]	
Perceived benefits	.358	.060	[.241, .475]	***
Perceived benefits X financial self-efficacy	-.031	.022	[-.075, .012]	
Perceived threats	-.073	.087	[-.244, .099]	
Perceived threats X financial self-efficacy	.007	.034	[-.060, .074]	
Objective financial knowledge	.026	.011	[.006, .047]	*
Marital status	-.019	.033	[-.083, .046]	
Children	-.089	.031	[-.150, -.028]	**
Age group	-.005	.020	[-.044, .035]	
Level of education	.031	.010	[.012, .050]	**
Household income	.091	.014	[.065, .118]	***
Personal income	.039	.014	[.013, .066]	**
Home ownership	.103	.023	[.058, .147]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

The fully specified, dual (parallel) moderation GSEM analysis (Tables 5.51 – 5.53) produced statistical significance for a single interaction; the moderating effect of financial self-efficacy on perceived benefits for the aggregate sample ($\beta = -.050$, $p = .006$). In the men-only subsample, no interaction between the HBM perceptions and objective financial knowledge or financial self-efficacy achieved statistical significance at the conventional threshold ($p < .05$). The women-only subsample reported differing results. For Canadian women ($\beta = -.050$, $SE = .025$, 95% CI [-.099, -.001] $p = .044$), the interaction between perceived benefits and financial self-efficacy produced statistically significant and negative results in the fully specified model. Financial self-efficacy does not strengthen retirement preparedness behaviour engagement. The

interaction between financial self-efficacy and perceived threats, while this interaction did not achieve the conventional level of statistical significance ($p < .05$), it did produce marginally significant results for the women-only subgroup ($\beta = -.064$, $SE = .035$, 95% CI $[-.133, -.005]$ $p = .071$) suggesting a possible opportunity for further exploration. These results demonstrated partial support for H4 - objective financial knowledge and financial self-efficacy, will moderate the relationship between perceived barriers, benefits and threats and engagement in retirement preparedness behaviours.

In the direct effect analysis, perceived benefits retained its statistical robustness ($p < .001$) for both the aggregate ($\beta = .406$, $p = .000$) and gendered samples (women: $\beta = .433$, $p = .000$; men: $\beta = .358$, $p = .000$) as did objective financial knowledge (aggregate sample: $\beta = .028$, $p = .001$; females: $\beta = .033$, $p = .007$; males: $\beta = .026$, $p = .012$). Financial self-efficacy produced only marginally significant results for the women-only sample ($\beta = -.041$, $p = .057$). The presence of children was predictive for the aggregate sample ($\beta = -.070$, $p = .001$) and male-only subsample (children: $\beta = -.089$, $p = .004$), while the socio-economic factors remained positive and statistically significant for the full sample and gendered subgroups, which consistently aligned with the individual construct analyses. Analogous to the results in the individual construct models, educational attainment continued to demonstrate robust, positive gendered results for retirement preparedness behaviour engagement. For women, formal education is a strong, positive predictor of retirement preparedness behaviours. Even in the face of complexity and conflicting financial priorities and pressures for every one-unit increase in level of education, retirement preparedness behaviour engagement increased by .073-units. Home ownership demonstrated some interesting, and potentially gendered results as well, although there is a small overlap (~ 0.024) in the confidence intervals. For women, home ownership in the fully specified

model did not achieve statistical significance, but for the men-only subsample home ownership is both statistically significant and positively associated with retirement preparedness behaviours ($\beta = .103$, SE = .023, 95% CI [.058, .149] $p = .000$).

Table 5.51

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (all)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.180	.082	[-.342, -.019]	*
Objective financial knowledge	.028	.008	[.012, .044]	**
Perceived barriers X objective financial knowledge	.025	.034	[-.042, .091]	
Financial self-efficacy	-.023	.014	[-.051, .005]	
Perceived barriers X financial self-efficacy	.036	.028	[-.018, .090]	
Perceived benefits	.409	.042	[.326, .493]	***
Perceived benefits X objective financial knowledge	-.003	.012	[-.026, .020]	
Perceived benefits X financial self-efficacy	-.045	.016	[-.077, -.013]	**
Perceived threats	-.015	.060	[-.132, .102]	
Perceived threats X objective financial knowledge	-.006	.028	[-.062, .050]	
Perceived threats X financial self-efficacy	-.027	.024	[-.075, .021]	
Marital status	-.008	.025	[-.057, .041]	
Children	-.081	.023	[-.126, -.035]	**
Age group	.009	.015	[-.019, .038]	
Level of education	.050	.007	[.036, .065]	***
Household income	.100	.009	[.081, .118]	***
Personal income	.037	.009	[.020, .054]	***
Home ownership	.074	.017	[.041, .106]	***

Note: $N = 3,240$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.52

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (women)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.175	.114	[-.398, .048]	
Objective financial knowledge	.034	.012	[.009, .058]	**
Perceived barriers X objective financial knowledge	.014	.051	[-.086, .113]	
Financial self-efficacy	-.040	.022	[-.083, .002]	†
Perceived barriers X financial self-efficacy	.049	.042	[-.033, .132]	
Perceived benefits	.425	.061	[.305, .545]	***
Perceived benefits X objective financial knowledge	.014	.018	[-.021, .050]	
Perceived benefits X financial self-efficacy	-.052	.025	[-.101, -.003]	*
Perceived threats	.022	.083	[-.140, .183]	
Perceived threats X objective financial knowledge	.021	.044	[-.065, .108]	
Perceived threats X financial self-efficacy	-.065	.035	[-.134, .004]	†
Marital status	.028	.038	[-.047, .104]	
Children	-.056	.034	[-.124, .011]	
Age group	.030	.022	[-.013, .073]	
Level of education	.072	.011	[.050, .095]	***
Household income	.099	.014	[.072, .127]	***
Personal income	.046	.013	[.020, .071]	**
Home ownership	.034	.024	[.014, .081]	

Note: $N = 1,510$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Table 5.53

Model 4 GSEM for Perceived Barriers, Benefits & Threats with Covariates on Retirement Preparedness Behaviours, moderated by Objective Financial Knowledge and Financial Self-efficacy (men)

Retirement Preparedness Behaviours	Coefficient	Standard Error	95% CI [Lower, Upper]	<i>p</i>
Perceived barriers	-.197	.127	[-.446, .051]	
Objective financial knowledge	.027	.011	[.006, .048]	*
Perceived barriers X objective financial knowledge	.036	.047	[-.057, .129]	
Financial self-efficacy	-.000	.019	[-.038, .038]	
Perceived barriers X financial self-efficacy	.027	.037	[-.046, .100]	
Perceived benefits	.369	.061	[.250, .488]	***
Perceived benefits X objective financial knowledge	-.017	.015	[-.047, .014]	
Perceived benefits X financial self-efficacy	-.028	.022	[-.072, .015]	
Perceived threats	-.065	.088	[-.237, .107]	
Perceived threats X objective financial knowledge	-.027	.037	[-.100, .046]	
Perceived threats X financial self-efficacy	.010	.034	[-.057, .078]	
Marital status	-.018	.033	[-.083, .047]	
Children	-.090	.030	[-.152, -.029]	**
Age group	-.003	.020	[-.043, .036]	
Level of education	.032	.010	[.012, .051]	**
Household income	.091	.014	[.065, .118]	***
Personal income	.039	.014	[.012, .065]	**
Home ownership	.104	.023	[.059, .149]	***

Note: $N = 1,719$. CI = Confidence interval. All predictors were mean centred before product term creation. * $p < .05$. ** $p < .01$ *** $p < .001$ † $p < .10$

Model fit was evaluated using Log-Likelihood (LL), Akaike's Information Criterion (AIC) and Bayesian Information Criterion (BIC). In the aggregate sample analyses for Model 4, the addition of financial self-efficacy interaction (perceived barriers, benefits and threats) balanced the additional complexity added, while provided a small improvement to the overall model fit ($\Delta LL = + 4.864$; $\Delta AIC = -3.730$; $\Delta BIC = + 14.150$). The increase in log likelihood exceeded the three additional degrees of freedom (+3), and while the ΔBIC surpassed the

conventional threshold of 10 indicating the base model is preferred, when balanced with the AIC and LL results, the model was deemed acceptable. Although the ideal ΔAIC is < 2.00 , the observed ΔAIC of -3.730 remained acceptable (Wagenmakers & Farrell, 2004). Collectively, these results indicated that Model 4 – financial self-efficacy moderation, was the most parsimonious and best-fitting model specification.

Chapter 6 - Discussion

Retirement preparedness is a critical policy and practice concern in Canada (Baldwin, 2016). Many Canadians are not sufficiently prepared for retirement (Lehrer et al., 2023; MacDonald et al., 2011); they lack financial sophistication, rarely seeking or engaging professional guidance and advice, while still retiring earlier and living longer than individuals in other countries (Boisclair et al., 2017; Palameta et al., 2016). This study applies the health belief model framework to the examination of how Canadian women approach retirement preparedness behaviours. It also compares how women and men are motivated by different combinations of the health belief constructs and whether women's perceptions and resulting behaviours align or diverge from men's in the context of their personal financial situations presently and into the future.

The literature review guides the analysis of how the HBM (Rosenstock, 1974) constructs influence engagement in retirement preparedness behaviours. This four-model study employs the HBM perceptions – perceived barriers, benefits and threats to identify and assess the financial motivators and demotivators to retirement preparedness behaviours. Given significant existing research that suggests objective financial knowledge and financial self-efficacy are positively associated with retirement planning behaviours, these covariates are included as moderators to

determine if they strengthened the relationship between these perceptions and retirement preparedness (Asebedo, 2016; Kaiser et al., 2022; Lind et al., 2020; Rothwell et al., 2016).

Focusing primarily on Canadian women, this paper sought to examine gender differences in motivators and demotivators for retirement preparedness behaviour engagement with the specific focus of women's perceptions and beliefs and the associated behaviours. Using the major constructs of the health belief model, this study examined whether Canadian women and men differed in their retirement preparedness. The only statistically significant difference between women and men was observed in formal education. Outside of that difference, perceived barriers, benefits and threats, objective financial knowledge and financial self-efficacy, the analyzes demonstrated that women and men share similarities in motivators and demotivators to retirement preparedness behaviour engagement. Overall, the health belief model received strong support as indicated by the framework, perceived barriers are deemed to be surmountable, and perceived threats can encourage behavioural engagement in the presence of strong perceived benefits that encourage engagement. The remainder of this discussion provides insights into the hypotheses tested.

Model One – Perceived Barriers and Retirement Preparedness Behaviour Engagement

Financial barriers inhibit retirement preparedness behaviours. Within HBM, perceived barriers capture how individuals feel about obstacles to engagement. Specifically, personal indebtedness, the lack of an emergency fund, having poor credit and having no sense of financial control represented the perceived barriers latent construct. Not only did perceived barriers significantly and negatively impact Canadian women's engagement in retirement preparedness behaviours (H1 – Model 1), so did each of the observed variables as well (H1a – H1d –Model 1). While objective financial knowledge and financial self-efficacy have a positive relationship with

retirement preparedness behaviours, they do not strengthen the relationship between perceived barriers and retirement preparedness behaviours (H2 & H3 – Model 1). Moreover, these findings underscore the importance of identifying financial barriers to retirement preparedness behaviours to determine how best to avoid such barriers or develop strategies to overcome those barriers. Strong barriers (as demonstrated in this paper) are likely to discourage the requisite behavioural engagement (Carpenter, 2010). Unfortunately, any observed gender differences in coefficient estimates should be considered cautiously because of overlapping 95% confidence intervals.

Model Two – Perceived Benefits and Retirement Preparedness Behaviour Engagement

Examining the relationship between perceived benefits and retirement preparedness behaviours, the findings indicate that Canadian women who recognize the value of engaging in positive financial behaviours pre-retirement, were more likely to engage in retirement preparedness behaviours as well (H1 – Model 2). This research further evaluated the effects of the observed variables used to define perceived benefits, and the results consistently supported the hypothesized relationships (H1a – H1f - Model 2). According to the meta-analysis measuring the effectiveness of HBM, for behavioural engagement to occur, an individual must believe that the desired outcome behaviour will provide significant personal benefit; as it is the benefit perception that often exerts the strongest influence (Carpenter, 2010) or acts as the greatest behavioural catalyst (Rosenstock, 1988). Women that supported and agreed with having lower expenses than income, being goal-oriented and staying financially informed were more likely to engage in retirement preparedness behaviours. Equally valuable and predictive was feeling confident about a future retirement, effective money management, and financial decision-making due diligence. The only statistically significant gender difference is in formal education, any

other differences in coefficient estimates should be interpreted cautiously given overlapping 95% confidence intervals indicate they are not statistically conclusive.

Model Three – Perceived Threats and Retirement Preparedness Behaviour Engagement

Within the health belief model framework, perceived threats combine a person's sense of susceptibility (will this happen to me) and severity (how seriously will I be affected). In this study, perceived threats were mostly psychological in nature. Specifically, the construct comprised concerns and fears about money running out, feelings of financial regret, having no money for life's want. It also concerned the ability (inability) to keep up with bill payments, to keep track of money and feelings of barely getting by (financially). In their research on COVID-19, Subedi et al., (2023) indicated that health threats (like financial threats), are likely to invoke action, when the threat is both present and serious (Subedi et al., 2023). In the current study, perceived threats were statistically significant and negatively associated with retirement preparedness behaviours both as a latent construct (H1 – Model 3) and for each of the observed variables as well (H1a – H1f - Model 3). Notably, the presence of perceived threats reduced the likelihood of retirement preparedness behaviours when isolated from perceived barriers and benefits. Both women and men experienced a reduction in retirement preparedness behaviours. While the direct effects of objective financial knowledge and financial self-efficacy produced both positive and statistically significant results, the conditional effects for OFK and FSE on the relationship between perceived threats and retirement preparedness behaviours did not produce statistically significant results for women (H2 & H3 – Model 3). It is noteworthy that the results for the conditional effects of OFK and FSE were positive and significant for the aggregate sample and men-only subsample.

Although not hypothesized, the unexpected interaction that objective financial knowledge and financial self-efficacy may buffer perceived threats in men's retirement preparedness behaviours warrants further investigation to determine the potential driver for this differential. Additionally, the absence of a statistically significant buffering effect for women suggests that other factors may exert a greater influence on how women process or manage the threat perceptions relative to retirement preparedness behaviours. Prior research suggesting women's comparatively lower levels of objective financial knowledge and financial self-efficacy may contribute to the statistically insignificant buffering results (Farrell et al., 2015; Khan et al., 2017; Lind et al., 2020; Lusardi & Mitchell, 2017; Morris et al., 2022). Women consistently reported robust statistical significance and larger effect size compared to men relating to educational attainment which may compensate for or offset lower levels of OFK and FSE. Formal education may better explain gender differences in how perceived threats relate to retirement preparedness behaviour engagement.

Model Four – Perceived Barriers, Benefits & Threats and Retirement Preparedness Behaviour Engagement

The application of HBM has suggested that the strongest predictors of behaviours are perceived barriers and benefits (Subedi et al., 2023). The predictive powers and weights of HBM perceptions may vary with targets behaviours and some perceptions may be better at explaining engagement in a specific behaviour than others (Karl et al., 2022; Subedi et al., 2023). In the fully specified model of the current study, perceived benefits exerted sufficient predictive strength to attenuate the effects of perceived threats and to render the effects of perceived barriers to statistical non-significance for the women-only subsample. These findings are consistent with H1 – Model 4, stating Canadian women who perceive the benefit of retirement

preparedness behaviours as having greater positive effect than the negative effect of barriers and threats, are more likely to engage in retirement preparedness behaviours.

The interaction between objective financial knowledge and financial self-efficacy independently and in the dual (parallel) moderation produced some interesting findings not noted in any of the three measurement model analyses. The direct effect of FSE among women was positive and statistically significant in the presence of perceived financial barriers and threats in Models 1 and 3, and negative and statistically significant in Model 2. In the fully specified model, the results continue to support the theoretical assumption of the health belief model framework (HMB) that when barriers are conceived as surmountable and threats as attainable, the presence of benefits can motivate behaviour sufficiently to flip FSE negative. In the moderation analysis, financial self-efficacy across the four estimations produced negative effects and at most demonstrated statistical significance, $p < .05$ (some results achieved only marginal significance; $p < .10$). These findings may suggest that for Canadian women, financial complexity may undermine the positive effects of FSE or given the extensive prior research that confirms women demonstrate lower levels of FSE relative to men (Farrell et al., 2016; Lind et al., 2020; Lusardi & Mitchell, 2014; Morris et al., 2022), the observed negative association may be overshadowed by perceived benefits, thus decreasing the likelihood of retirement preparedness behaviours for Canadian women. The FSE moderation findings partially support H3 – Model 4 but only in the case of perceived threats in the fully specified model.

The moderation of objective financial knowledge on the relationship between perceived barriers, benefits and threats, and retirement preparedness behaviour engagement did not achieve statistical significance and therefore failed to support (H2) in the fully specified model; objective financial knowledge did not moderate the relationship between perceived barriers,

benefits and threats, and therefore did not increase the engagement for women in retirement preparedness behaviours.

The results for the demographic and socioeconomic status covariates did not produce differing results from those reported in each of the single construct models except for homeownership. The statistically significant, positive effects of homeownership on retirement preparedness behaviours for women in the Models 1 and 3, achieving only marginal significance in Model 2, and failed to reach conventional significance ($p < .05$) in any of the four estimations in Model 4. Homeownership and its relationship with retirement preparedness and financial security later in life for women, has often not produced positive effects. Women often hold fewer assets and the assets they do hold are often a home, which for women is associated with higher levels of home equity withdrawals to fund consumption (Sharam et al., 2016). Women who receive the family home to provide care for family and children in the event of death or relationship demise, has been associated with reduced labour market participation, lower income and thus lower ability to set aside savings for future consumption (Sharam et al., 2016). Women are also less likely than men to re-partner after divorce, the demise of a relationship or the death of a partner and re-partnering has a positive financial impact. The combination of these factors may provide some insights into why home ownerships did not produce statistically significant results for women in the current study.

Implications

Helping Canadian women overcome tangible financial barriers such as high indebtedness and the absence of an emergency fund, while reinforcing positive financial behaviours like spending less than earned, and building retirement self-confidence, attenuates the psychological financial threats that undermine retirement preparedness, particularly fear of running out of

money. Perceived benefits of preparedness persisted as a robust indicator across all samples in this study, indicating that strengthening the awareness and relevance of those benefits can motivate behavioural engagement even when barriers persist. Given formal educational attainment is a strong and statistically significant predictor of women's engagement in retirement preparedness behaviours in this study, practitioners should prioritize objective, task-focused financial education that translates knowledge into decision-ready actions for women. Women's general lower levels of financial self-efficacy encourage information and knowledge seeking, which all served to improve the likelihood that Canadian women will engage in retirement preparedness behaviours.

This study contributes to the literature on retirement planning preparedness and the motivators/demotivators for women in three important ways. First, there is a need for targeted education for women that emphasizes the benefits of retirement preparedness behaviours and positive associated financial behaviour present day, that should be encouraged to improve future retirement outcomes. By focusing on the benefits highlighted in this study that currently motivate women clients to engage, or to create a strategy to develop the benefits understanding more fully will support overall engagement by women. Second, helping women to identify their personal financial barriers that limit engagement in retirement preparedness behaviours and how the associated perceived benefits can reduce the obstacles to surmountable should be encouraged. Specifically, practitioners could screen for indebtedness issues and cashflow fragility both in the present and in the future, especially in the context of the disrupted life-course work patterns or pay-gap realities, and others that were highlighted in this study. Practitioners may wish to provide education that is task-based to help female clients become more decision-ready or develop catch-up strategies that help women recover from employment absences. Finally,

normalizing worry while being certain to help female clients create agency and ownership to improve the personal financial situation to manage the psychological threats present is also advisable. Canadians worry about their financial futures and the implications of the decisions they make today (Brennan, 2025; FP Canada, 2025). Third, at the policy level, financial education incentives need to be directly tied to behavioural change to ensure the gains are more than simply knowledge. Design programs that are habit-forming interventions such as savings or debt repayment automation and commitment devices that mitigate psychological worries or fears by locking in behaviours that support future planning. At a very macro level governments, employers must development resources and programs that women can tap into that mitigate the effects of the care-giving penalty. The demands of caregiving, such as universal childcare, to improve the precarious nature of women's employment, without which Canadian women will continue to lack in retirement preparedness.

Limitations & Future Research

This study is a first application of the health belief model using GSEM and IRT with categorical survey data to explore the motivators and demotivators to retirement preparedness behaviours of Canadian women. While it provides a sound foundation for future research into the perceptions and beliefs of individuals Canadians, there were some noteworthy constraints. The following will highlight several theoretical and methodological challenges that future research can tackle and remedy.

The need to combine the core and supplemental survey introduced some unplanned missingness that complicated initial attempts at convergence. Future primary data-gathering studies could mitigate convergence issues by including all needed questions into a single survey structure. Additionally, consistency in the categorical question design would eliminate the

potential for interpretation confusing of having to alter the decision-making process as question options change. This would help to improve the IRT analysis, in particular item discrimination as homogeneity in response options would reduce the signal-to-noise ratio improving respondent interpretation (Hubley et al., 2009). The difficulty component in the IRT framework would also benefit from response format consistency as it would create predictable property boundaries which would improve interpretability of its threshold (Schmucker & Moore, 2025).

Although the question used as a proxy for financial self-efficacy more accurately measures subjective financial knowledge and a full financial self-efficacy scale might provide more robust outcomes. Subjective financial knowledge is a self-reported assessment of a person's familiarity or comfort with financial topics, which does overlap with financial confidence and or optimism, but does not measure it directly (Rothwell et al., 2016; van Rooij et al., 2011). An improved measure would allow for more aligned measurement of the benefits, barriers, threats.

Finally, traditional model fit statistics such as Root Mean Squared Error of Approximation (RMSEA), Standardized Root Mean Squared (SRMR), Comparative Fit Index (CFI) and Tucker- Lewis index (TLI) are not yet fully developed, the data did not permit assumptions of normality, and they cannot be run using multiple imputations which was required. To generate model fit assessment statistics for GSEM, this study relied on Log-likelihood Ratio (LR), Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). To effectively use these model fit statistics, only the fully incorporate model in each of the three single constructs and fully specified models were compared to ensure variable sameness. Future research could engage a more parsimonious model that would permit the use of

GSEM and produce standard model fit results such as CFI and RMSEA although it does require additional computations to produce the fit indices correctly (Comulada, 2021).

Several theoretical limitations exist when using the HBM as a predictive behaviour change framework. Strecher, Champion and Rosenstock (1997) suggested that the basic four perception model of the HBM framework does not alter actual behaviour, and requires a more complex causal model, incorporating elements such as self-efficacy and cues to action that have been added to the HBM framework overtime. This would allow for greater examination of variable interaction. Having awareness of these limitations led to the addition of both objective financial knowledge and financial self-efficacy as moderators in this study to enhance the model's predictive power. Future analysis could incorporate not only financial self-efficacy, but cues to action as well, which could come in the form of guidance and encouragement by financial planners to their clients to improve engagement in positive financial behaviours. Research has identified large effect size for each of the HBM constructs in cross-sectional and retrospective studies that can exaggerate the strength of the relationships between the constructs (Skinner et al., 2015). As these findings have not been as pronounced in prospective studies, future research should focus on experimental design or longitudinal research to mitigate exaggerated relationships between the major constructs.

As the theory of planned behaviour has also been actively applied to behaviour change research, a possible two-theory analysis may help to confirm the strength of HBM empirically (Ajzen & Schmidt, 2020; Montanaro & Bryan, 2014). Moreover, while the HBM has been able to demonstrate significant relationships between the key constructs within the context of healthcare, there is still no clear understanding as to how the constructs influence behaviour in other domains (Skinner et al., 2015). As suggested in Skinner et al., (2025), this research used

generalized structural equation modelling to assess the uses and applicability of the health belief model in other domains, particularly the domain of personal finance. This enriched theoretical application provided for the assessment of reciprocal effects between the latent constructs. The health belief model lends itself well to personal finance because like personal health, both health and wealth are driven by personal beliefs and perceptions of the risks and benefits of future actions and behaviours.

Conclusion

The objective of this dissertation is to explore and substantiate the perceived barriers, benefits and threats to retirement preparedness behaviours. Specifically, it tested three measurement models and a fully specified structural model to confirm the predictive powers of these beliefs among Canadian women. Objective financial knowledge and financial self-efficacy were tested as moderators given their confirmed direct, positive association with retirement preparedness behaviours. The goal was to assess whether they (individually) strengthen the relationship between perception and behavioural engagement.

The three initial single construct analyses largely produced results in the expected direction, except for financial self-efficacy which did not align as predicted in the single construct analysis. Consistent with the health belief model, the full structural model demonstrated that when perceived benefits are strong, barriers are surmountable, and threats are attainable, behavioural engagement increases. Perceived benefits consistently predict preparedness, while perceived barriers and threats lose their explanatory power for both women and men. OFK continued its positive direct effects on preparedness, while FSE continued to produce negative direct effects for women. Only perceived threats were moderated by financial self-efficacy for women.

While the present research did not examine the structural inequities that challenge women's retirement preparedness in Canada, such as the disrupted life-course work patterns, limited access to employer pension plans or reduced ability to accumulate sufficient wealth for retirement given persist pay-gap challenges; the examination of these structural constraints would provide additional context and understanding of women's perceptions women and how to better support women's engagement. By way of this four-model analysis, this dissertation confirms that individual perceptions and beliefs influence retirement preparedness behaviours for Canadian women, and men. It also demonstrates that while objective financial knowledge and financial self-efficacy are strong, positive directly predictors of behavioural engagement, they do not positively moderate this relationship for Canadian women. An insightful finding that would likely have been assumed to strengthen the relationship prior to this analysis.

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