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This research paper has the title:

USING PRIMING INTERVENTIONS TO INCREASE RETIREMENT SAVINGS BEHAVIOR FOR SERVICE MEMBERS IN THE MILITARY RETIREMENT SYSTEM

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To my family, friends, and teachers.

"The veterans of our military services have put their lives on the line to protect the freedoms that we enjoy. They have dedicated their lives to their country and deserve to be recognized for their commitment" – Judd Gregg (Peterson, 2012, p. 1982)

ABSTRACT

Retirement is one of the most significant problems facing the military currently, considering the impact of inflation on the defense budget and the externally applied pressure through the population regarding the national debt. The accelerating pace of population aging and the difficulty that service members encounter in retirement reinforce the present concerns about the prevalent poverty among veterans. Although several studies on retirement have been conducted, the emergence of behavioral finance and the incorporation of psychological principles in managing finances and saving practices have made the issue more prominent.

The study looks at the interactions between psychological and cognitive factors that affect service members' retirement savings behavior. This research investigates the possibility of adapting the Department of Defense's current retirement plan with an alternative military retirement framework. The new structure would encourage contributors to the retirement fund to transition from a more rigid and long-term oriented contribution system to a more individualistic-orientated pension plan. The findings and consequent modifications aim to improve the effectiveness of the retirement system and utilize the priming effect towards delivering a refined framework for service members while simultaneously improving retirement savings.

After conducting a thorough literature review, testable hypotheses are obtained to test the impact of the proposed independent variables. The findings indicate that the favorable effect stems from the positive correlation between the dependent variable retirement savings and the independent variables risk tolerance, parental influence, retirement goal clarity, and propensity to plan. Moreover, priming has a substantially moderating role in influencing both propensity to plan and retirement savings behavior. Consequently, a conceptual framework to adapt the current military retirement system is proposed and discussed.

Keywords: *Retirement, conceptual framework, military, restructering, behavioral finance, financial decision-making, retirement savings, priming interventions*

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LIST OF SYMBOLS AND ACRONYMS

BRS Blended Retirement System

DoD Department of Defense

E-1 Private E-1

E-2 Private E-2

E-3 Private First Class

E-4 Specialist

E-5 Sergeant

E-6 Staff Sergeant

GC Retirement Goal Clarity

MOS Military Occupational Specialty

MRF Military Retirement Fund

OLS Ordinary Least Squares

P1 Phase 1

P2 Phase 2

PI Parental Influence

PP Propensity to Plan

PRM Priming Impact

RC Risk Capacity

RP Risk Preference

RSI Retirement Savings and Investments

RT Risk Tolerance

TSP Thrift Savings Plan

U.S. United States

VIF Variance Inflation Factor

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CHAPTER 1   INTRODUCTION

1.1   Background

Retirement can either be a stage of psychological contentment or anxiety, based on the retirement-related behaviors that were established throughout the years leading up to retirement (França and Vaughan, 2008). In recent research (França and Soares, 2009; Yeung, 2013; Boehs et al., 2018), the significance of retirement planning in a variety of areas, including finances and psychology, has been established. Thus, improving the retirement system would be advantageous for both the government in terms of public perception and minimizing expenditure and the military service members with respect to financial well-being.

According to previous research, achieving well-being in retirement entails a variety of characteristics (Muratore and Earl, 2015). Among all of the determinants which influence the financial well-being of veterans, financial stability in terms of financial savings emerges to be the most crucial factor for service members since healthcare is guaranteed for retired personnel (Seidl et al., 2018).

Furthermore, people frequently exhibit the so-called status-quo bias, which is the inclination to maintain the status quo and choose the default option even when a better alternative is available. Hence, an increasing amount of literature in behavioral economics and psychology indicates the possibility that non-price initiatives that take into consideration these systematic biases may be just as effective as prices in changing decisions and behavior—and arguably less expensive for the government. According to behavioral economists, service members can be gradually encouraged to adjust their decisions, for instance, to a generally more acceptable behavior (Samuelson and Zeckhauser, 1988).

A restructured concept for retirement has been postulated, in which the response variable reflects the retirement savings behavior. This is due to the significance of planning for retirement and the variety of components that can affect savings for retirement. The framework models how psychological, social, and demographic factors impact such behavior (Hershey and Mowen, 2000). This model is the basis for the subsequent priming interventions through which the service members will be nudged to adjust their decisions to a more sustainable behavior (Figure A.1).

While several studies examined the factors which influence retirement planning, the research on the determinants of military retirement is limited. This cross-sectional research aims to determine service members' perceptions concerning financial and non-financial factors

for retirement. In this study, retirement savings and investments (RSI), as the dependent variable, is featured through a model with the following antecedents: propensity to plan (PP), risk tolerance (RT), parental influence (PI), and retirement goal clarity (GC). This research aims to form direct and moderating relationships as an innovative model.

Restructuring the current retirement system by adopting a new priming intervention strategy that concurrently enables a more protective and individualistic-orientated system will make up a significant portion of the solution. Changing the way service members perceive retirement so that it can be changed and influenced by their own decisions and actions is the key to leveraging priming to transform the military retirement system. The military retirement system may become more sustainable, flexible, and adaptable if service members are primed to approach retirement in this manner.

1.2 Research Relevance

Military retirement is a complicated topic with wide-ranging repercussions for society, the economy, and science. Armed forces members devote years of their lives to serving their country, frequently overcoming formidable physical and emotional obstacles in the process. But once they retire, they encounter special difficulties that can have an everlasting effect on both their lives and society. Military retirees encounter a variety of issues, such as trouble regulating their finances and transitioning to civilian life. Many retirees experience trouble adapting to civilian life after living in a highly controlled military setting, which can result in problems obtaining employment and consequent financial struggles. Several military retirees also experience problems with their finances and mental health as a result of their service.

1.2.1 Scientific Relevance

The scientific implications of military retirement are significant because they emphasize the importance of research and approaches to the problems military veterans experience. According to studies by Elbogen et al. (2012) and Kamarck (2022), military retirees may be more likely to experience financial mismanagement due to an inadequacy of financial expertise along with higher risks of lower earnings and the inability to pay expenses due to post-deployment issues. Both risks can result in financial instability, which can distress well-being, motivation, and job performance. Since the issue of military retirement savings is so underdeveloped in science, a study to determine the influence of priming interventions on retirement savings would contribute significantly to enabling proactive efforts to increase retirement savings and improve the connected issues mentioned above.

1.2.2 Societal Relevance

From an economic-political point of view, the unsustainability of the military retirement system in terms of cost inefficiency and the long-term health of the retirement fund (see Chapter 2.1.2) forms a significant risk to the federal defense budget and the national debt (Figure A.2). Within the past ten years, the United States (U.S.) defense expenditures have increased substantially, especially in regard to federal military employee retirement costs (Figure A.3). The top-line funding for the U.S. Department of Defense (DoD) may now level (Figure A.4) and be unable to match inflation as a new cycle is approached. Inadequate retirement preparation is a severe issue on all levels—economically, politically, and individually. Insufficient retirement financial savings may have a detrimental impact on pensioners, who risk not having enough money to live on in their final years and cannot be supported further during their retirement since the defense budget is at full capacity (Chewning et al., 2022). Hence, non-cost related alternatives need to be integrated into the retirement system to avoid such a negative impact, for example through priming interventions.

1.2.3 Priming Interventions

Understanding the difficulties military retirees confront is crucial to creating comprehensive policies and initiatives that both assist these people and deal with the issue's wider ramifications. With priming interventions that promote retirement stability, proactive steps to improve retirement savings are to be started.

The purpose of priming treatments is to activate mental connections in order to change behavior. Priming interventions may be employed in the framework of military retirement to affect retirement-related behaviors, including retirement savings. For instance, a priming intervention can entail informing military people about retirement benefits earlier in their tenure to motivate them to develop retirement plans and increase savings efforts. Providing information on financial options and enticing military members to seek assistance when necessary, could be part of a priming intervention.

The application of priming treatments in the area of military retirement may have wider economic and societal repercussions. Priming measures could decrease financial dependence on publicly financed retirement programs like Social Security by encouraging individuals to save for retirement.

1.3 Related Work

This research collected, compiled, and reviewed selected articles on the determinants of retirement savings. The following listed references are the main sources of literature.

Table 1.1 Previous Studies

Reference	Findings	Limitations
Tomar et al., 2021	Favorable correlation between retirement planning behavior and future time perspective, retirement goal clarity, and social group support, which is mitigated by financial literacy. Future time perspective and retirement goal clarity are further mediating factors.	Specific for one type of entity.
Schuabb et al., 2019	Relationship between parental influence and retirement savings was mediated by goal clarity, and retirement activity was found to influence the degree of retirement saving.	Specific for one type of entity.
Kimiyagahlam et al., 2019	The direct relationship between financial literacy, propensity to plan, future time orientation, and retirement planning behavior. Also discovered to partially moderate these correlations is the saving attitude. Retirement planning is not linked to materialism or family education, though.	Specific for one type of entity.
Wallace et al., 2013	A four-pillar structure is suggested, along with a proposal that will benefit service members in terms of value and the armed forces in its entirety in terms of cost savings.	Reform proposal centers too narrowly on cost containment.
Hira et al., 2009	Age, employment, income, savings activity, sources of financial information, and investor behavior, such as future financial planning, were significant factors in the projection of the maximization of retirement contributions.	Research focuses on retirement planning behavior as the dependent variable.

1.4 Research Objective

There are three primary objectives of this research paper, consisting of identifying key trends in the literature on the determinants of retirement savings, verifying the range of determinants through empirical analysis, and proposing a reform of the military retirement system.

This study focuses on the extent to which four psychological variables are related to individuals' tendencies to save. The sections of the paper are structured as follows:

Chapter 1 focuses on the research relevance of the subject matter and provides an introduction to the topic. Following that, Chapter 2 constructs a literature review on the factors that affect retirement savings to understand the underlying concepts behind the problem. In Chapter 3 the methodology of the study is outlined to ensure the verifiability and reliability of the data. Then, Chapter 4 presents the trial and empirical findings, while the conceptual framework and a discussion are shown in Chapter 5. Subsequently, the paper concludes in Chapter 6 with a summary of the findings, research limitations, and a discussion of implications.

CHAPTER 2   LITERATURE REVIEW

2.1   Military Retirement

2.1.1   Current Retirement System

The military retirement system is a federally funded, non-contributory, defined pension system that leads to a major inducement to keep career military personnel in the service. A survivor annuity program is currently available for qualifying survivors of deceased veterans, as well as monthly payments for eligible active-duty and reserve veterans, disability allowance for those considered medically unfit for duty, and current veterans. The remuneration is determined by the length of service, retirement pension, and yearly cost-of-living adjustments. Military retirees are furthermore eligible for non-cash benefits, such as access to certain amenities and activities, exchange and commissary facilities, and health care coverage (Kamarck, 2022).

Presently, there are three main classifications of military pensioners – the active-duty component, the reserve component, and medically retired veterans. At 20 years of service, active-duty retirees component employees are vested and entitled to a pension. According to a points-based system, reserve members are entitled after 20 years of service, however, they normally cannot start receiving pension benefits until they are 60 years old. Finally, individuals who qualify for a medical retirement are not required to have completed 20 years of service in order to receive retired pay; they only need to have been determined to be ineligible for future service due to a sustained, long-term disability (Kamarck, 2022).

Depending on the enlistment date in the military and the decision to opt-in to the Blended Retirement System (BRS), service members fall either under the BRS or the Legacy High-36 system. Service members continue to be a beneficiary of the legacy retirement system if they enlisted before January 1, 2006. Soldiers who enlisted on or after January 1, 2018, were entered into the BRS by default. Service members had the option to change to the new BRS option if they entered the service between January 1, 2006, and December 31, 2017. The BRS's enrollment period ended on December 31, 2018. The BRS is comprised of a monthly annuity after the completion of 20 years of service, matching contributions to the Thrift Savings Plan (TSP), and mid-career retention bonuses. The annuity is set at 2% for each year of service times the average of the highest 36 months of basic pay. Depending on the state of the main residence after retirement, retirement benefits may be subject to pension taxes. According to the Internal Revenue Service, lower-income wartime retirees and their

survivors can be eligible for tax-free retirement pay. The Department of Veterans Affairs installments are determined by financial need (Military Pay and Pensions, 2022).

The paper is focused on the scope of active-duty regular military retirement and does not center around non-regular and disability retirement since service members can either rely on other pension benefits or their involuntary separations follow a random walk respectively.

2.1.2 Anticipated Long-Term Health of the Fund

The Military Retirement Fund (MRF) provided payouts of around USD 71.5 billion to about 2.379 military veterans and survivors in FY 2022. All three of the MRF's income streams are intragovernmental transfers between government accounts. Only transactions flowing into or out of the government, including tax revenues ("in") and beneficiary payments ("out"), have a direct impact on the deficit of the Unified Budget in a given year (Figure 2.1).

The DoD budget is therefore impacted by financing. Legislators now account for the influence on future retirement expenses when they determine personnel selections, which might have a considerable effect on subsequent federal budgets once the normal cost payments are incorporated in the DoD budget. For instance, the DoD budget would instantly see a surge in retirement liabilities if it opted to increase the strength of the active duty and reserve forces (Department of Defense, 2022).

The Fund is anticipated to remain solvent substantially above the 20-year projection horizon, provided the sources of funding continue paying the necessary contributions to the MRF regularly. As of September 30, 2021, an unfunded liability of USD 745.1 billion remains (Department of Defense, 2023). Additionally, predicting developments for a specific year is challenging. The anticipated benefit and expectations with regard to the MRF changes in the upcoming fiscal years. For instance, on August 10, 2022, Public Law 117-168 was declared a law. A secondary effect on the MRF in respect to enhanced disability retirements and disbursements is predicted as a result of the PACT Act, which will substantially inflate the disability compensation and health care services provided by the Department of Veterans Affairs (Department of Defense, 2022). Additionally, the framework is in jeopardy from the ongoing review of non-economic assumptions, such as the impact of COVID-19 on prospective fatality rates, as well as the ongoing review of economic inferences, such as the prevailing inflationary environment and additional BRS legislative and policy changes (Department of Defense, 2022).
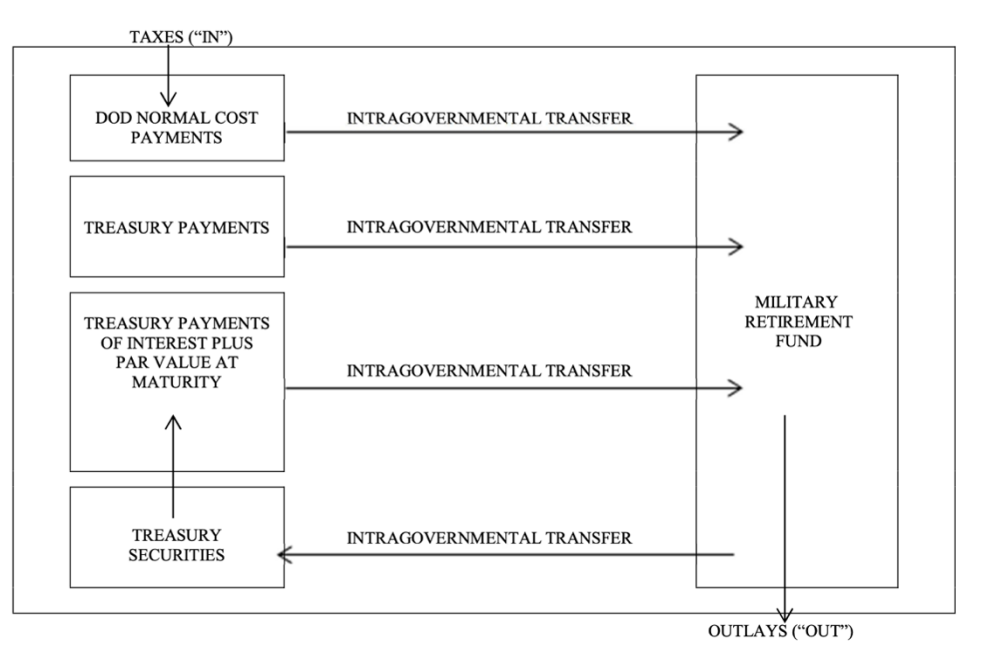
Figure 2.1 Unified Budget (Department of Defense, 2022)

2.2 The Effect of Determinants on Retirement Savings Behavior

2.2.1 Retirement Savings and Investments

Americans' insufficient retirement savings and investments raise questions about their ability to support themselves in retirement. In fact, according to Warshawsky and Ameriks' (2000) prediction, more than half of all people between the ages of 25 and 71 will not have enough money saved to sustain themselves in retirement, which is consistent with Yuh et al.'s findings (1998). All of this means that it will be problematic for pensioners in the future to maintain their financial independence in their later years. Researchers are concentrating on the elements that affect the propensity to plan and save in an attempt to comprehend the motives why individuals are not saving at an appropriate pace.

Veterans constitute a distinct demographic that has encountered experiences that are different from those of the general population. For instance, they may have experienced catastrophic situations or injuries, been exposed to combat, or dealt with mental health issues. Their decisions toward wealth may be affected by these circumstances in the long run. Veterans frequently encounter particular difficulties as they adjust to civilian life. They might experience problems obtaining employment or adjusting to a new environment, which could cause social and financial problems. As a result, researching veterans offers insightful information about how society may help and support this population group (Keeling, 2018).

Studying veterans offers a further understanding of how traumatic experiences affect people. Veterans may not conform to the general population's hypotheses, and research on veterans offers further understanding. Identifying these disparities is crucial for policymakers who engage with this demographic because they may have a significant influence on their ability to fund their retirement. This perspective is helpful for comprehending trauma generally as well as the perspectives of veterans (Janoff-Bulman, 1989). Veterans' studies can also offer important insights into the effectiveness of initiatives and policies intended to serve this demographic.

Because many, if not most, veterans are likely to depend on individual savings to sustain a respectable replacement income, it is crucial to understand the motivations behind people's retirement saving patterns. Furthermore, psychological factors that affect saving are frequently ignored. Hershey (2004) makes the case in a recent paper that while demographic characteristics have an impact on retirement saving decisions, their impact is mediated by psychology (Jacobs-Lawson and Hershey, 2005). Hence, priming interventions will be introduced in order to influence service members' decisions.

2.2.2 Propensity to Plan and Retirement Savings

Propensity to plan defines an individual's tendency to plan for a long-term goal that can result in objective, goal-setting behavior (Ameriks, Caplin, and Leahy, 2003). For decades, research has shown a connection between personal savings activities and planning tendencies (Lusardi, 1999). The level of retirement planning effort has been shown to be directly related to retirement savings, both in terms of perceived saving capacity and actual savings contributions (Hershey et al., 2007, 2010; França and Hershey, 2018). Because of this, planning activity is a metric used to analyze how frequently in the previous year both information-seeking and successful planning activities happened (Hershey et al., 2010). These comprise a variety of actions that encourage financial education and, as a result, saving habits (Stawski et al., 2007). A positive and direct relationship was theorized in recognition of preceding findings that showed planning activity to be a predecessor of retirement savings (Hershey et al., 2007, 2010; Stawski et al., 2007).

While the armed forces do not classify the average age of enlistment, the mean age of enlisted personnel is 27.1 years as of 2021. The enlistment early in life is suggesting that joining the service may not have been a thought-out choice. The data further recommends that separation from service may also not be intentional since in 2021, 26.8% of separations were involuntary, and perchance this explains the gap in perceived and actual retirement planning (2021 Demographics, 2021). It is expected that the survey respondents have a low perceived

and actual propensity to plan.

The instrument has four parts, i.e., "I have made calculations to estimate how much I have to save to retire comfortably". The format of the responses was binary (1 = yes, 0 = no). Other research with good Cronbach's alpha coefficients such as França and Hershey's (2018) and Hershey et al.'s (2010) revealed significant findings. The Cronbach's alpha in this research was measured and found to be moderate at 0.5253.

Hypothesis 1: The propensity to plan is directly related to and positively correlated with retirement savings.

2.2.3   Retirement Goal Clarity and Retirement Savings

Analyzing expectations for one's quality of life after retirement is a necessary step in defining retirement goals. Clear objective toward retirement savings encourages planning and enables individuals to establish projections about the demands they will have at particular points in time (Petkoska and Earl, 2009). This concept entails the process of considering, debating, and setting retirement objectives, particularly those connected to retirement quality (Hershey et al., 2007). Prior research has shown that retirement clarity is one of the key components for the level of retirement savings (Hershey et al., 2007). These findings resulted in the hypothesis that there might be a strong positive association between defined retirement objectives and retirement savings (Hershey et al., 2010; Koposko and Hershey, 2014).

Veterans' distinct experiences associated with military service may cause them to have differing retirement goals than the regular populace. A clear understanding of purpose and significance is frequently present during military service, and this can influence retirement planning and goal-setting. Service members may also have alternative objectives and retirement goals than the general populace, such as using military retirement entitlements, which could affect how precise their retirement goals are (Dexter, 2020). Hence, it is expected that the survey respondents have a high retirement goal clarity.

The variable has four components, i.e., "I set clear goals for gaining information about retirement". The form of the response was dichotomous (1 = yes, 0 = no). With strong Cronbach's alpha coefficients of 0.87 (Hershey et al., 2007) and 0.87 (Koposko and Hershey, 2014), various studies yielded significant results. This study yieled a significant Cronbach's alpha of 0.8770.

Hypothesis 2: Retirement goal clarity has a direct and positive effect on retirement savings.

2.2.4 Risk Tolerance and Retirement Savings

Identifying an individual's preference to tolerate risk and the financial capacity to absorb risk are the two key components of measuring overall risk tolerance. In the thesis, a risk tolerance questionnaire is used for this, addressing a set of items including, but not limited to, time horizon, available assets, need for income, and attitudes toward risk, to generate a weighted risk rating (Cordell, 2002).

The drawback to this one-dimensional method is that by aggregating risk capacity (RC) and risk preference (RP) assessments, the decision may unintentionally place service members with relatives-risk risk preference (or capacity) in strategies that are significantly risky for their circumstances. Therefore, instead of employing a single spectrum that simply averages the two, risk preference and risk capacity must be tested independently and then rated on a two-dimensional scale that takes into account the contributory and restricting characteristics of each (Cordell, 2002).

There are two areas in which to place these statements about risk tolerance. The former are inquiries into risk capacity, or the individual's financial capability to experience a negative outcome in the portfolio without jeopardizing the associated objectives. The other questions determine the individual's preference toward risk, or more specifically, their actual preference for market risk, with reference to readiness to accept market volatility and remain invested (Cordell, 2002). Due to the risk-return payoff, a positive and direct relationship between risk tolerance and retirement savings is postulated (Campbell and Viceira, 2005).

Based on their experiences in the military, service members might have a differing risk tolerance compared to the overall population. Military training entails exposure to significant risk, which might increase one's perception of risk tolerance. This is especially true for service members who have experienced combat or other risky situations like deployments. Moreover, because of the circumstances surrounding their employment, veterans could interpret risk differently. To serve in the military, one must be able to make decisive judgments under pressure, which frequently entails putting oneself at risk to protect others. A stronger tolerance for risk-taking in other spheres of life may result from this kind of experience. On the contrary, because of the possible repercussions of their choices, veterans might potentially be more risk-averse. To guarantee the protection of themselves and their fellow service members, anyone serving in the military must adhere to tight standards and rules. This mentality can enable a more circumspect approach to accepting financial risks. Veterans' risk tolerance may also be affected by the possibility that they suffered financial difficulties while serving. Reduced risk tolerance can emerge from a need for more stability and security caused by financial instability. Because of their particular experiences during military service, veterans

generally have a differing risk tolerance compared to the overall populace (Killgore et al., 2006; Eckles and Schaffner, 2011). The survey participants are anticipated to have a high risk preference and a low risk capacity.

The variable has four items, i.e., "The overall growth potential of a retirement investment is more important to me than the level of risk associated with the investment". The format of the responses was binary (1 = yes, 0 = no). To ensure consistency, it is suggested that a risk-tolerance evaluation index must generate a reliability coefficient in the range of 0.5 to 0.8. Grable and Lytton (1999) have found a reliable Cronbach's alpha coefficient of 0.7507, ensuring the consistency for the instrument. The Cronbach's alpha, which was significant in this study, was 0.88143 and 0.7896 for risk capacity and risk preference respectively.

Hypothesis 3: The risk tolerance is directly related to and positively correlated with retirement savings.

2.2.5   Parental Influence and Retirement Savings

Given that the development of financial abilities frequently starts with parental education on financial planning, this effect can also be seen in retirement planning (Grinstein-Weiss et al., 2012). Consequently, parental influence is a metric intended to assess how much of an impact parents have on their children's saving and financial management abilities (Palaci et al., 2017). This is a crucial factor to take into account, especially for the motivational force of development, as opposed to factors like wealth and personality attributes, which are more difficult to modify through exogenous measures (Koposko and Hershey, 2014). The instrument examined the impact of parental influence on children's financial literacy and ability to develop a saving practice (Koposko and Hershey, 2014).

There are limited studies available on how parents' perspectives and behaviors affect service members' views and actions toward retirement savings. Given their elevated probability of having parents who had served in the military, some research shows that veterans may have a different parental effect than the general population (Clever and Segal, 2013). This implies that veterans may have grown up with exposure to military culture and values, which may have influenced their views and behaviors toward saving. Also, studies by Rossiter et al. (2016) and Chandra et al. (2010) discuss how military children may be more prone to stress, anxiety, poor coping mechanisms, and neglect and the necessity to treat these concerns. Therefore, is projected that the survey participants have a low parental influence and that the reduced parental influence will lead to lower retirement savings.

The instrument has four components, i.e., "Saving money for the future was an important

lesson I learned as a child". The format of the response was binary (1 = yes, 0 = no). With strong Cronbach's alpha coefficients of 0.78 and 0.77 (Gutierrez and Hershey, 2014) and 0.86 (Koposko and Hershey, 2014), prior research resulted in significant findings. A substantial Cronbach's alpha of 0.8324 was found in the present study.

Hypothesis 4: Parental influence has a direct and positive relationship with retirement savings.

2.3   Priming

2.3.1   Exposure to Priming as a Moderating Variable

When an individual is exposed to a stimulus and then responds to a consequent stimulus without being aware of the link, this is known as priming or the priming impact (PRM). These stimuli are frequently connected with words or pictures that individuals perceive on a regular basis (Molden, 2014). According to psychological research by Cherry (2020), long-term memory stores knowledge in units known as schemas. Memories are more accessible when these schemas are active. According to priming, some schemas are simultaneously activated, which causes connected or linked units of information to also be active. It is simpler for humans to recall relevant information once linked schemas are active.

Repetition or positive priming is a kind of priming which takes place when a stimulus and reaction are frequently matched. Because of pairing, every time the stimulus emerges, individuals are more inclined to act or think in a particular way. By being conscious of priming, individuals may both lessen the detrimental impacts of this cognitive bias and simultaneously take advantage of its positive effects. Through being cognizant of the priming effect, individuals can continue to be aware of how decisions in the present might be influenced by events from the past. Understanding how priming functions can assist in minimizing some of the cognitive bias's most detrimental impacts. To condition minds to develop positive behaviors and qualities, the volume of currently available research can be utilized (Lee et al., 2020).

When decisions are made based on financial considerations, the priming effect is also evident. According to research by Vohs (2006), priming participants with visuals of money significantly altered their subsequent conduct. Vohs (2006) found that participants adopted a more individualistic mindset and preferred to be financially independent. The report's self-sufficient behavior pattern serves as an example of how priming might alter human behavior.

2.3.2 Priming Effects on Behaviour and Decision Making

According to studies about goal priming, environmental cues can influence both cognition and behavior without the need for consciously held intentions (Custers and Aarts, 2005). As a result, there is potential for employing goal priming as an intervention method to subtly change behavior in accordance with an individual's long-term objectives. The development of long-term investment goals above temporary hedonic goals can be encouraged through the instrument of goal priming, which is considered a situational intervention tool (Papies, 2016).

Goals are linked with situational clues to pursue them via their repeated adoption, frequently under comparable circumstances. Hence, a situational cue might work as a prime to engage goal representations, which may result in goal-directed behaviors. Increased cognitive resources are joined to facilitate the pursuit of the representation of behavior to the extent that it is preferable and consequently linked with reward, for instance, to retain the goal active in consciousness until an appropriate opportunity for goal pursuit emerges and to constrain impulses that would conflict with the goal pursuit (Custers and Aarts, 2007).

Conforming to preceding studies, using a strength-inducing intervention with a positive frame increases retirement self-efficacy, which in turn strengthens progress toward retirement goal clarity. Due to the strong correlation between having a clear retirement goal and enhanced financial performance, these findings are significant (Petkoska and Earl, 2009). Significantly, studies have also shown that a rise in a person's locus of control accounts for the favorable impact of the intervention on individual self-efficacy for retirement. Additionally, in the three months after an initial intervention, individuals' real retirement planning activity is favorably impacted by having a clearer understanding of their retirement goals. Establishing an internal locus of control is a necessary prerequisite before people's judgments of their capacity to attain financial security may be translated into an improvement in retirement self-efficacy.

Lastly, earlier studies show the value of taking potential effects into account in the framework of retirement planning (Joireman et al., 2005). The reason why several individuals lack the motivation to prepare for retirement is mostly due to uncertainty regarding the lengthy time frame and the distant effects of one's current actions (Eberhardt et al., 2021). The impact of improving retirement self-efficacy on the clarity of retirement goals is smaller for individuals who give careful consideration to potential implications. The negative moderation may be explained by the fact that these people are already anticipating the time ahead and do not require a rise in self-efficacy to enhance their goal clarity. As a result, they might require elevated and consistent levels of self-efficacy to shift their behavior compared to those who are defined by a reduced level of contemplation of future implications because they perceive

a significantly larger threat from having insufficient capabilities (Lindsay and Strathman, 1997). A further argument is that people may become overly fixated on the future and engage in excessive ruminating, which can make it difficult for them to create clear retirement objectives and implement appropriate behavior (Moss et al., 2017).

Hypothesis 5a: The priming effect causes improvements in individuals' attitudes and behaviors, and hence moderates the relationships between the model construct retirement goal clarity and retirement savings.

Hypothesis 5b: The priming interventions affect moderates the relationships between the model construct propensity to plan and retirement savings.

2.3.3 The Significance of Nonconscious Intervention Tools

The surroundings in which service members reside commonly present them with stimuli that activate ingrained routines and temporary hedonic impulses, such as conserving or investing money. When exposed to appealing stimuli, simulations of engaging with it are likely to be triggered, making it harder to think about a competing long-term objective (Barsalou, 2016; Papies et al., 2015). The development of long-term goals becomes increasingly impossible in these circumstances, especially in situations with inadequate inhibitory control and high activity levels, such as military bases (Hoffmann et al., 2008). Therefore, even when people have the best of intentions, pursuing short-term hedonic goals frequently means sacrificing long-term investment objectives, such as future retirement funds (Hoffmann et al., 2012; Unsworth et al., 2013). Interventions can influence the first reactions to the crucial situation such that the long-term objective is reactivated to permit the development of a long-term objective in such problematic environments. Methods for contextual interventions, including goal priming, can contribute to that (Papies, 2016).

2.3.4 Situating Intervention Methods

According to Papies (2016), intervention strategies are situated if they aim to influence the cognitive processes that are generally prompted in the crucial moment when behavior change is required. Recent studies have indicated that these interventions usually occur in the structure of training interventions, which alter the cognitive processes (e.g., implementation intentions, approach-avoidance retraining), or stimulus control interventions, which affect which cognitive processes are activated by situational stimuli (e.g., goal priming, nudging) (Papies, 2016; Unsworth et al., 2013). In actuality, an intervention can be placed by being physically present in the critical moment when it is being carried out, as in numerous goal-priming interventions. Alternately, an intervention can be placed by incorporating elements

from the crucial circumstance within the intervention (Unsworth et al., 2013), as is occasionally done in training interventions, to elicit a mental image of the context as the intervention is being carried out. Importantly, a contextual intervention understands that changing behavior requires altering the cognitive responses that are prompted by the situation since the behavior to modify is impacted by those cognitive processes. Papies (2016) suggests that contextual interventions are more inclined to be impactful for behavior modification than non-situated interventions because of the significant impact of situational cues on individuals' behavior, particularly through processes that arise beyond conscious recognition and are therefore difficult to regulate. A goal priming intervention can be seen as situated in terms of priming if it effectively activates a long-term goal representation in the demanding situation. This may be the case, for instance, in a priming intervention where resource-conscious service members are alerted of their objective of preserving resources in terms of retirement savings via a display on a website as they are debating whether to save money toward retirement or spend it on consumer goods. More research into the mechanisms underlying these effects points to the possibility that providing participants with individual long-term goals inhibits views about short-term hedonic goals that might get in the way of achieving those long-term objectives and restricts focused perception to cues for those objectives.

Previous studies in fields connected to goal-priming have demonstrated that exposing individuals to cues associated with long-term goals might cause goal-directed behavior. Goal primes may therefore function by redirecting focus from cues for competing short-term hedonic goals and onto information that is consistent with long-term investment goals. Individuals who had been primed with a given objective through the poster conformed to the anticipated behavior, but only if they agreed with the priming goal, as opposed to a control situation without such an intervention. Combined, these studies demonstrate that goal primes can successfully alter behavior in circumstances where short-term hedonic objectives generally rule and enable individuals who value long-term goals to pursue them.

CHAPTER 3   RESEARCH METHODOLOGY

3.1   Approach

This study implemented a questionnaire to gather the primary data to test the hypotheses by applying positivist ontology, empirical epistemology, and quantitative methodology. The positivist paradigm mandates probability sampling as a theoretical requirement. Conversely, there can be some circumstances that prevent the research from using probability sampling to acquire data (Visser et al., 2000). Obtaining a database of individuals involved in the present research was difficult because it was not made available through any official portal. As a consequence, convenience-quota nonprobability sampling was used in the survey. Time, budget, and practicality considerations were also taken into account while using a nonprobability technique. Several measures were used in this analysis to attempt to mitigate bias and uncertainty, including the evaluation of the sample's representativeness and diversity (Table C.2) (Skowronek and Duerr, 2009).

3.2   Survey Development

For each variable, most of the questions were based on previously published research. To improve understanding, several phrases were changed. Table B.1 provides more information about the sources of the questions. All of the statements for the research were closed-ended and had either a binary answer option or a single-choice option (Table B.2).

3.3   Sample and Data Selection

This quantitative study involves enlisted military members (E-1 through E-6) from the Military Occupational Specialty (MOS) 11B of the U.S. Army Garrison Bavaria. The population was identified based on a number of factors: (a) the department of the army is the most manpower-intensive branch; (b) members of the department of the army have a higher likelihood of receiving deployment orders; and (c) a higher rate of poverty is prevalent among junior enlisted ranks (CFR.org Editors, 2020; Institute of Medicine, 2013).

To assure that the sample accurately reflects the population, a confidence level of 95% was employed. Using a 5% margin of error and a population of 388,646 enlisted active-duty personnel in the U.S. Army, a minimum sample size of n=384 can be derived to ensure a reasonable number of participants from the public sector (2021 Demographics, 2021).

The results from the participants were collected using the following procedure. First, the researcher contacted a large overseas military base under the command of the United States Army Europe and Africa to introduce the project to the 2nd cavalry regiment at the U.S. Army Garrison Bavaria; then, approval was requested to carry out this study within the facility. Following clearance, a Google Forms survey was sent to the regiment members between 01.03.2023 and 31.03.2023 for Phase 1 (P1) and 01.05.2023 to 31.05.2023 for Phase 2 (P2).

3.4 Non-response Bias

The non-response bias is a possible constraint of survey research. According to Weiss and Heide (1993), there is no reason for concern about the non-response bias if the research's participation level is significant. Conversely, a subpar participation level increases the risk that the sample is not representative of the population, which leads to a non-response bias. These limitations undermine the study's validity and make it difficult to draw reliable conclusions from the data (Barriball and While, 1999). Due to the high participation rate of 407 service members, compared to the 384 individuals needed, the non-response bias can be neglected.

3.5 Model Variables

A conceptual model was utilized for a clearer analysis, beginning with the direct relationship between the dependent and independent variables, and incorporating the input and moderating determinants. A clear overview of the variables is shown in Table B.2, depicting the variable description and expected impacts respectively.

According to the theoretical sources examined, a cross-sectional study model depending on the relevant antecedents— propensity to plan, retirement goal clarity, parental influence, and risk tolerance —was chosen to evaluate and interpret saving behavior. These four independent variables for retirement savings were selected for a variety of reasons. The degree of propensity to plan was chosen as an antecedent of financial savings for retirement because prior research (Hershey et al., 2007) has shown a strongly favorable association between this component and saving for retirement. Furthermore, the propensity to plan and retirement goal clarity were considered as relevant variables that may be accessed and modified by interventions through priming. Contrarily, parental influence and risk tolerance cannot be altered by this research (Stawski et al., 2007).

3.6 Data Analysis

Numerous data-cleansing steps were completed to obtain the data set used for the empirical analysis in this research paper. Missing data is not anticipated to be of concern for this sample because the majority of the items required a forced response. The raw data, the corresponding .do-file, and the coding book can be found in the supplementary material.

To conduct the analysis, the software Stata 17 is used. The theoretical model's posited relationships between the research constructs were tested using ordinary least squares (OLS) regressions. The primary justifications for using this approach are the capability of this technique to analyze cross-sectional data, minimize the sum of squared residuals, and explanation of variance. In combination with that, a hierarchical regression model is utilised to gain further understanding regarding the different interactions. Furthermore, path coefficients are in use to reveal the true nature of cause-and-effect relationships.

To avoid heteroskedasticity, the Breusch-Pagan test is conducted in Stata, followed by the application of robust standard errors due to the presence of heteroskedasticity. In this study, the Shapiro-Francia W' test for normal data was used to test for the normality assumption. Correlation coefficients and tolerance/variance inflation factor (VIF) values are utilized to deal with multicollinearity.

To categorize variables and identify missing and abnormal data points, the database was examined. Since this was the first application in the field, it was opted to analyze the instruments' structure and determine an appropriate model. Accordingly, a simple factor analysis is performed.

3.7 Research Equations

Phase 1: $\mathrm{RSI}_{1i} = \beta_0 + \beta_1 \mathrm{PP}_i + \beta_2 \mathrm{GC}_i + \beta_3 \mathrm{RT}_i + \beta_4 \mathrm{PI}_i + \epsilon_i$

Phase 2: $\mathrm{RSI}_{2i} = \beta_0 + \beta_1 \mathrm{PP\_PRM}_i + \beta_2 \mathrm{GC\_PRM}_i + \beta_3 \mathrm{RT}_i + \beta_3 \mathrm{PI}_i + \epsilon_i$

CHAPTER 4   TRIAL DESIGN, BASIC MODEL EVALUATION, AND EMPIRICAL FINDINGS

4.1   Trial Design

4.1.1   Evaluation Design

The study devised and carried out a two-phase experimental trial to ascertain whether these interventions were effective. In P1, a list on baseline data on employees' rank, gender, race, age, level of education, marital status, number of dependents, and their workload was compiled. This list was reviewed before P2 of the study to ensure the sample's representativeness and diversity of the data regarding their baseline equivalence (Table C.2). The evaluation design and analytical approach are described in this chapter.

4.1.2   Experimental Design

The analysis in P1 is non-experimental, in contrast to P2. P2 is essentially an exploratory analysis meant to offer further details about how the intervention functioned. To ascertain whether behaviorally informed treatments increased service member's participation in the TSP and their financial contributions, a randomized controlled study was conducted. Random assignment guarantees that, on average, the individuals in the treatment and control groups will have comparable observable and unobservable features. It may be equally argued that any observed variations in outcomes were caused by the treatment and not other factors that we may have neglected to account for since the only variation separating them is if they received the treatment. These extra variables for this study could be shifts in the employees' actual or anticipated earnings, variations in the traits of participants compared to non-participants, or the results of additional efforts made by the TSP or others to boost savings.

4.1.3   Research Sample Characteristics

Participants in the study consisted of DoD personnel who were stationed abroad and were assigned to the MOS 11B. Data were supplied on the analysis of the experiment at two different times: in P1 prior to interventions, then in P2 following the use of situational intervention tools. The study analyzed the data in P1 and P2 to contrast between the treatment group that received situational intervention tools and a control group that did not

obtain them. The timetables for gathering data for each phase are displayed in Table D.1. P1 of the study's sample was comprised of 407 service members, while the interventions were carried out on 107 participants in P2 of this research.

The sample of this study consists of 404 men and 3 women with 78.87% of respondents being between 20 and 30 years, more than half of which were single without any dependents. The cohort had a low level of formal education, with the majority of participants having graduated from high school. The primary area of work was a combat-related MOS (11B). The workload was significantly high, ranging from 40 to 70 h per week. In P2, sample characteristics were comparable (Table C.2).

Despite the persistence of initiatives to improve financial literacy, the study service members' opinion depicted that although many individuals consider such programs crucial, only 7.13% of the study's sample have used financial assistance programs. According to the respondents, 49.63% of service members furthermore stated difficulty receiving their initial TSP password due to regular relocation, leading to a lack of a permanent mailing address (Table C.2).

4.1.4 Confirming Baseline Equivalence

The studies that were carried out for this research are mentioned below. Even when random assignment protocols are strictly followed, incidents could undermine the study sample's comparability and potentially skew results. The study groups were equal at baseline, according to an analysis.

4.1.5 Outcomes of Interest

The study focused to determine how the intervention affected service members' behavior regarding their TSP contribution rate (for the entire sample). Furthermore, this research looks at the effect of situational intervention tools on service members' propensity to plan and retirement goal clarity to enable a higher retirement savings rate through their TSP.

4.2 Basic Model Evaluation

4.2.1 Test for Normality

In this study, the Shapiro-Francia W' test for normal data was used to test for the normality assumption. Under the null hypothesis that the data originated from a normal distribution, this correlation will be significant, causing W' values to cluster slightly below 1, with the peak narrowing and moving closer to 1 as n increases. W' will be smaller if the data severely

deviates from a normal distribution (Shapiro and Francia, 1972). The test conducted in STATA proved, that the data is normally distributed, with p-values of 1 and 0.07502, and W' values of 0.99998 and 0.97854 for P1 and P2 respectively (Table C.8).

4.2.2 Simple Factor Analysis

The simple factor analysis retains only three factors (Factor1, Factor2, and Factor3). It has dropped Factor4 because its Eigenvalue is negative. According to the mineigen (0) criterion, only factors with positive eigenvalues should be retained. If the Uniqueness is high, then the corresponding variable is not well explained by the factors. Values > 0.6 are usually considered as high. In this study, parental influence is retained due to its low uniqueness and corresponding high relevance of the variable in the factor model (Table C.1).

4.3 Empirical Test Results

4.3.1 Hierarchical Regression Model

The data is analyzed employing a hierarchical regression model with retirement savings as the primary variable. In this framework, level one has four predictors, level two contains two-way interactions, level three contains three-way interactions, and level four contains a four-way interaction.

The model's first level is statistically significant, according to the results, $F(4, 402) = 384.69$, $p = 0.0000$, $R2 = 0.7929$. Additionally, the p-values for three out of the four predictors are individually significant at the 0.05 significance level, with parental influence being statistically signisifcant at the 0.10 significance level. Higher scores are linked to increased saving scores across all of the predictors (Figure C.1).

Since the hierarchical model depicts statistically significant interactions within the different levels, interpreting the primary impacts, whether substantial or not, is deceptive. Recognizing that one independent variable has an impact when the other independent variables equal 0 simply suggests that the primary impact is significant. As a result, the sections that follow demonstrate the relevance of the impact of one variable as a function of the other variable in order to discover which values have an impact on other variables and vice versa.

Two-way interactions were added to the model at the second level, which significantly increased the explained variance, $F(10, 396) = 182.41$, $p = 0.0000$, $R2 = 0.8216$. Only a statistically significant interaction between the propensity to plan and risk tolerance, retirement goal clarity and risk tolerance, and retirement goal clarity and parental influence can

be observed when the coefficients for these two-way effects are examined (Figure C.1).

The two-way interaction between propensity to plan and risk tolerance implies that the cumulative impact of these two characteristics influences retirement saving scores. The variable risk tolerance was fixed, and the connection between propensity to plan and saving scores was analyzed in order to determine how it varied. A more substantial propensity to plan is correlated with enhanced retirement saving scores for individuals with high risk tolerance. The effect of propensity to plan on saving scores may be less apparent for those with low risk tolerance.

Parental influence and retirement goal clarity interact, thus influencing retirement saving scores. The parental influence variable was fixed, and it was analysed how the connection between saving scores and retirement goal clarity interpreted. Significant retirement goal clarity is correlated with improved retirement saving scores among service members with high parental influence. The consequences of retirement goal clarity on saving scores may be less obvious for those with low parental influence.

The two-way interaction between retirement goal clarity and risk tolerance indicates a combined impact of both variables, which affects retirement saving scores. The parameter risk tolerance was fixed, and it was observed how the connection between saving scores and the retirement goal clarity changed. More substantial retirement goal clarity is linked to improved retirement saving scores among individuals with low risk tolerance. The effect of retirement goal clarity on saving scores may be less significant for those with high risk tolerance, implying that risk tolerance has an increased effect on saving scores for service members with high risk tolerance.

The third level of the model's inclusion of the three-way interaction resulted in an additional significant improvement in explained variance, $F_{(14, 392)} = 215.42$, $p = 0.0000$, $R^2 = 0.8850$. All three-way interactions including parental influence were furthermore individually significant at a 0.05 significance level (Figure C.1).

The significant three-way interaction between propensity to plan, retirement goal clarity, and parental influence implies that the association between propensity to plan and saving scores is influenced by the combined impact of retirement goal clarity and parental influence. Studying the relationships between the three variables is a necessary step in interpreting this interaction. According to the analysis that fixed certain factors while allowing others to fluctuate, low retirement goal clarity along with inadequate parental influence jointly had a major effect of propensity to plan on saving scores.

The connection between retirement goal clarity and saving scores may be influenced by

the combined effects of risk tolerance and parental influence, according to the substantial three-way interaction between retirement goal clarity, risk tolerance and parental influence. High risk tolerance and strong parental influence combined yielded a significant impact of retirement goal clarity on saving scores.

The link between propensity to plan and saving scores may be driven by the combined effect of risk tolerance and parental influence, according to the substantial three-way interaction between propensity to plan, risk tolerance, and parental influence. Low risk tolerance along with substantial parental influence had a significant impact of the propensity to plan on saving scores.

The four-way interaction added to the model at the fourth level increased the explained variance only slightly, with $F_{(15, 391)} = 202.95$, $p = 0.0000$, $R2 = 0.8862$. The four-way interaction implies that there is a complicated interplay between propensity to plan, retirement goal clarity, risk tolerance, parental influence, and retirement savings scores. Even though the four-way interaction only marginally increased the explained variance, it remains statistically significant, suggesting that it is relevant for comprehending the diversity in saving scores (Figure C.1).

Including all aspects, 88.62% of the variation in retirement saving scores is explained by the model at level four (Figure C.1). The robustness of the interactions is commensurate with that of the main influences, as can be observed by juxtaposing the beta weights across independent variables in the first, second, and third levels. The hierarchical regression model suggests that there are considerable interaction effects that are crucial to saving.

4.3.2 Coefficients in OLS Regression

The p-value (0.0002) of the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity is smaller than the significance level (0.05), hence the null hypothesis of homoskedasticity (residuals are distributed with equal variance) is rejected and it can be concluded that heteroskedasticity is present in the regression model. Due to the presence of heteroskedasticity, robust standard errors were applied; no robust standard errors were applied for P2 of the experiment since no heteroskedasticity was present (Table C.7).

Propensity to plan and retirement savings behavior are strongly positively correlated (= 0.705, $p < 0.01$), supporting hypothesis 1. The findings of Hershey et al. (2010), Hershey et al. (2007), and Stawski et al. (2007) are all in agreement with this finding. In addition, H2 predicted that the way one prepares for the future in terms of retirement goal clarity would significantly and favorably influence how one saves for retirement. Table C.9 indicates that

H2 is supported (= 0.970, p < 0.01). Retirement goal clarity has a direct and beneficial impact on retirement savings behavior. This conclusion is supported by data from Hershey et al. (2007) and Koposko and Hershey (2014). H3 proposed that conduct related to risk tolerance would be positively and statistically related to retirement savings behavior. H3 is supported by Table C.9's findings (= 1.236, p < 0.01). The evidence provided by Campbell and Viceira (2005) is in line with this conclusion. H4, which proposed a correlation between parental influence and retirement savings behavior that was both positive and statistically significant, is likewise supported, even though only at a 10% significance level (= 0.138, p < 0.1). The evidence is reinforced by Grinstein-Weiss et al. (2012) and Koposko and Hershey (2014)'s conclusions.

4.3.3 Measuring Path Coefficients

According to Henseler and Fassott (2010) and Tomar et al. (2021), path coefficients show the variance in the response variable for a unit variation in the predictor variable. Using a t-test following a bootstrapping procedure, the study calculated the path coefficient values for each path and assessed their significance levels. The values of the path coefficient are listed in Table C.10. In contrast to the OLS regression conducted prior, the variable parental influence is in this regression significant at the 0.01 significance level. Meanwhile, all other independent variables remain significant at the 0.01 significance level, namely propensity to plan, retirement goal clarity, and risk tolerance.

4.3.4 Measuring the Coefficient of Determination (R2)

The coefficient of determination (R2) quantifies how well the statistical model predicts the outcome. Table C.9 shows that the four independent components account for 79.3% of the variation in retirement savings behavior. As stated by Chin (1998), R2 values of 0.67, 0.33, and 0.19 are regarded as significant, moderate, and weak, respectively. As a result, the R2 value in this research is significant.

4.3.5 Multicollinearity and Correlation

The tolerance/variance inflation factor is used to deal with multicollinearity. Due to all the individual VIF factors being below 5, with a mean VIF of 2.77 for P1 and 2.04 for P2, the variables are only moderately correlated, and the presence of multicollinearity can be disregarded (Table C.6). Tolerance, which is defined as 1/VIF, is further utilized to check for the degree of multicollinearity in this study. The mean VIF can be explained due to the high

positive correlation between the variable parental influence and the variables propensity to plan and retirement goal clarity with values of 0.6578 and 0.7737 respectively (Table C.3). This association can be attributed to the influence of parental upbringing among military personnel, as it conditions their propensity to plan and the clarity of their retirement goals from an early age.

4.4   Impact Estimation

The study performed analyses on the entirety of the sample and subgroup analyses to assess impacts and respond to the identified research topics. In order to answer the research question of whether situational intervention tools encourage service members to depict a generally more acceptable behavior regarding retirement savings, several analyses of the control and treatment group have been conducted prior to and after the interventions respectively to allow for a valid comparison. The research questions and the respective analyses conducted in order to address each study topic are shown below.

4.4.1   Impacts of Treatment on Contribution Rates

Do situational intervention tools encourage service members to make enough additional contributions to qualify for the full employer match? The treatment significantly increased the proportion of individuals contributing to their TSP accounts with at least 5% of their salaries. The interventions were as significant a 47.87 percentage points when the intervention was utilized, a fivefold increase at which individuals received the entire employer match, increasing the percentage of service members contributing at least 5% to their TSP from 10.07 to 57.94 percentage points (Table C.5). Although the average retirement savings rate does not show a consistent trend across military age or rank, the analysis shows that average retirement savings increased for both subgroups (Table C.4).

4.4.2   Impacts of Treatment on Hypothesis

In H5a, it is predicted that the priming effect causes improvements in individuals' attitudes and behaviors, and hence moderates the relationships between the model construct retirement goal clarity and retirement savings. H5a is supported by Table C.11's findings (= 0.816, p < 0.01 with p = 0.004). Furthermore, in H5b it is proposed that the priming effect on the propensity to plan has a positive and significant impact on retirement savings behavior, which is confirmed by the findings of this study (= 0.940, p < 0.01 with p = 0.001). The outcomes of the analysis are in line with what Custers and Aarts (2007), Hershey et al.

(2003), and Eberhardt et al. (2021) found, and provide evidence that both H5a and H5b are supported. Furthermore, both parental influence and risk tolerance, are not significant at the 10% significance level anymore. However, this does not indicate that priming has a reverse effect on those variables. The priming interventions were solely aimed at the variables propensity to plan and retirement goal clarity, hence further research would be needed.

Table 4.1 A Review of Selected Intervention Tools

Intervention Tools	Approaches, Underlying Mechanisms, and Methods to Increase the Situatedness of the Selected Cueing and Training Intervention tools
Goal Priming	Studies have demonstrated that the positive effects of priming interventions on an individual's self-efficacy for retirement are explained by an increase in the internal locus of control. According to prior research, an internal locus of control is positively correlated with wise financial decision-making (Cleveland et al., 2012; Perry and Morris, 2005; Cobb-Clark et al., 2016; Hoffmann and Risse, 2020). By triggering goal-directed cognition and behavior with an emphasis on retirement savings, priming can be utilized to improve the internal locus of control (Hazzouri and Main, 2018). Self-control is the capacity to suppress unacceptable impulses and refrain from acting on them. Therefore, individuals with strong self-control generally display lower levels of risky financial conduct (Baumeister, 2002; Tangney et al., 2004; Xiao et al., 2005). In addition, self-control is inversely correlated with financial stress, debt accumulation, unexpected credit spending, and discretionary spending when it comes to spending (Bearden and Haws, 2012). Individuals who perceive that they have limited financial control over their financial situation due to low economic mobility are more prone to partake in negligent financial conduct. Evidence proposes that one can be educated to increase self-control, even if it is principally an individual attribute variable (Tangney et al., 2004; Muraven et al., 2006). Similarly, techniques including concentrating on one's investment decisions might help those with poor self-control achieve improved results (Oaten and Cheng, 2007). To engage goal-directed cognition and behavior and prepare individuals to perceive they can save for retirement, positive goal-related stimuli were used to alert service members of their respective retirement savings objectives, and to emphasize the value of saving, visual signals were deployed. The study focused on the individuals by generating specific motivation through cues that draw attention at the appropriate moment when efficient goal-directed behavior is available, for instance, intervention techniques that show data on retirement savings (Papies, 2016).

Table 4.1 A Review of Selected Intervention Tools

Nudging and Prompting	An intervention can be situated by including aspects from the critical circumstance into the intervention (Papies, 2016), as is frequently employed in training interventions, to evoke a mental image of the context as the intervention occurs. Priming service members who are concerned about retirement savings with savings-related phrases or images before they make financial decisions may thereby boost the likelihood that they will make profound choices. For example, in a priming intervention, resource-conscious service members may be reminded of their goal to preserve resources in terms of retirement savings via a display as they are contemplating whether to save funds for their pension. The focus must be shifted away from signals that support conflicting short-term hedonic goals and toward data that supports long-term investment goals.
Cueing Social Norms	This method activates a representation of what is suitable to do by cueing behavior based on other people's expectations or behavior. These cues, such as referring to people who are extrinsically significant to the target group, are located non-directly in contrast to normative cues, which are embedded into the decision context when the decision is taken (Papies, 2017). Social cues were also employed to instill an awareness of social pressure to save and to emphasize the significance of retirement savings. For instance, soldiers participated in group activities that emphasize retirement planning.
High-repetition Training	The group activities concentrated on gamification to repetitively suppress responses or responsiveness to critical stimuli, to retreat from critical stimuli, or develop a coupling of critical and affective stimuli. The priming interventions comprised critical stimuli that involve behavior modification and contain circumstantial cues from the critical situation in training.
Mindfulness-based Training	The study held a workshop that had been developed specifically for military members and focused on financial preparation for retirement. The session featured financial goal-setting conversations, exercises in mindful spending and saving, and advice on long-term retirement planning. The workshop aims to enable a clearer understanding of retirement to obtain an improved knowledge of financial and social resources.
Implementation Intentions	In the workshops, precise if-then strategies for reacting to particular cues with particular behaviors were developed to promote imagery of crucial situational cues and imagery of executing crucial behaviors.

CHAPTER 5   CONCEPTUAL FRAMEWORK, EVALUATION, AND DISCUSSION

5.1   Conceptual Framework

Based on the preceding discussion regarding the implementation of priming interventions, there is a plausible case for restructuring the military personnel management system to (1) provide more adaptability in adjusting to individuals' circumstances and preferences, (2) allow for a focus on personal financial well-being, (3) provide the basis for an improved public perception due to lower veteran poverty and a higher reenlistment and retention rate, and (4) encourage lower overall program costs in favor of lowering the national defense spending.

In order to define the restructured pension system strategies that should be taken into consideration, the new framework utilizes a three-pillar model specifying the range of design features. Because multi-pillar structures are more flexible than monopillars, they can meet the requirements of the population's target groups and offer improved protection against the political, economic, and demographic concerns that retirement plans must contend with. When compared to multi-pillar structures, single-pillar structures are generally less efficient when taking into account the six evaluation criteria that are covered below (World Bank pension conceptual framework, 2010). The empirical research measured the impact of determinants on service members' financial savings and hence enables finding the optimal trade-off between the three pillars to restructure the military retirement system.

Despite the assessment of the literature review that there is no uniform solution to the wide range of complicated pension concerns or a straightforward reform model that can be used in all contexts, this study has produced analytical principles to direct the reform process. It is critical to note that adopting best practices from the corporate sector would be wrong. It is required to have a retirement program that is as innovative as the current retirement concept and complements the current system through interventions.

This conceptual framework proposes identifying key objectives and evaluating the capacities and initial conditions. It then advises using a multi-pillar model of prospective reforms to gauge the viability of various pension system modality options. Then, in an effort to produce a result that is tailored to military conditions and objectives, these potential concepts should be assessed under a range of primary decision criteria. Further, the research recommends implications for structural reforms.

The rationale for and limitations on workable reform alternatives are determined by an anal-

ysis of the starting circumstances. Initial conditions comprise inherited systems and the restructuring requirements for these systems. The scalability, relevance, viability, sustainability, dependability, and resilience criteria outlined below are applied to decide whether the suggested reforms are viable (World Bank pension conceptual framework, 2010).

After evaluating the underlying conditions and the potential to enhance the present system, the regulatory concept then centers on how to operate within these constraints to fulfill the primary objectives of retirement programs.

Table 5.1 The Conceptual Framework (Source: Adapted by Author from The World Bank pension conceptual framework (2010))

Criteria	Description
Prevalent conditions	I. Inherited Systems - Vulnerability of veterans and the incidence of old-age poverty - Current mandatory and voluntary retirement plans without individual-orientated options through priming II. Reform requirements, such as the 1. adjustment of current programs considering fiscal unviability, 2. the present inflationary environment, socioeconomic changes, 3. damaged public perception due to the high prevalent veteran poverty, 4. and the low financial well-being of service members are evaluated considering the primary evaluation criteria listed below.
Objectives of the framework	Protection against the risk of poverty in old age
Modalities for achieving core objectives	Pillar 1: A non-contributory first pillar (Interface between overall program costs and individual-orientated interventions) Pillar 2: A voluntary second pillar - Individual supplementary pension (Interface between financial well-being and overall program costs) Pillar 3: A mandatory third pillar - Employment-related pension (Interface between financial well-being and public perception)
Evaluation criteria	Primary evaluation criteria: Scalability, Relevance, Viability, Sustainability, Dependability, and Resilience - Scalability and relevance due to the low-touch and low-cost character of the interventions - Viability of implementation in terms of complexity and accessibility - Financial sustainability of the military retirement system and proposed interventions - Dependability of the framework to offer protection to service members - Resilience of the system to absorb significant shocks

5.1.1 Priming Interventions

When approaches to intervention (contextual interventions) seek to affect the cognitive processes that are typically stimulated at the critical moment when behavior change is required, they are said to be situated. Recent research has shown that these interventions typically take the form of training interventions, which change the cognitive processes (for example, implementation intentions, approach-avoidance retraining), or stimulus control interventions, which modify which cognitive processes are triggered by environmental stimuli (for example, goal priming, nudging) (see Figure A.5) (Papies, 2017; Unsworth et al., 2013). As with many goal-priming interventions, an intervention can be implemented by being physically present during the crucial moment when it is being carried out. In addition, as is occasionally done in training interventions, an intervention can be placed by including aspects from the essential circumstance within the intervention (Unsworth et al., 2013), in order to evoke a mental image of the context as the intervention is being conducted.

5.1.2 Rigid Three-Pillar Framework

Under the prior pension plans, 83% of enlisted did not fulfill the 20 years of service to be eligible for retirement and earned no substantial retirement compensation for their service (Kamarck, 2022). This was the main factor in the decision to add premature and flexible liquidity components in the restructured system.

Pillar 1: A non-contributory first pillar (Interface between overall program costs and individual-orientated interventions)

The non-financial first pillar will be composed of personal financial and non-financial support networks, such as programs to improve financial literacy and education. This pillar is designed to counteract the low levels of financial literacy and parental influence that could have helped individuals develop a solid financial understanding. This is where priming interventions help individuals achieve greater clarity about their retirement goal and improved propensity to plan by lowering the overall cost of the program through individually targeted priming interventions.

Pillar 2: A voluntary second pillar - Individual supplementary pension (Interface between financial well-being and overall program costs)

The voluntary second pillar will consist of an individual savings account (also known as a defined contribution plan) with a variety of design options, investment selection criteria, and withdrawal phase options. Contributions, investment performance, and benefits are all clearly linked in defined contribution plans. Service members may be exposed to financial

risks but can adjust their contributions with respect to their individual risk preferences and capabilities. The optional second pillar is commonly adjustable and discretionary in character. Examples include employer-sponsored defined contribution plans, individual retirement savings plans, and defined benefit plans. The second pillar makes up for other models' constraints in design. This pillar can be used by service members with a low-risk tolerance to limit their exposure from other pillars. Furthermore, as stated priorly, service members favor a higher degree of independence and due to the voluntary nature of the second pillar, the individuals will be less dependent.

Pillar 3: A mandatory third pillar - Employment-related pension (Interface between financial well-being and public perception)

A third pillar is required and has contributions that are to varied degrees correlated to wages with the aim of supplementing a part of pre-retirement earnings. The risks of personal myopia, inadequate earnings, and incorrect planning horizons caused by unknown life expectancy are only a few of the issues that this pillar addresses. This mandatory pillar mitigates the risk of low retirement goal clarity and low propensity to plan. The contributory pillar deals specifically with the goal of reducing poverty and would be implemented to offer all older people a minimal degree of protection. This makes sure that those with low lifetime incomes receive fundamental protection. This pillar is necessary for the military retirement system in order to shield service members from old-age poverty due to their limited financial literacy.

5.1.3 Primary Evaluation Criteria

By using a primary criterion, the regulatory framework assesses the variety of overall system designs. The reform's capacity to retain scalability, relevance, viability, sustainability, dependability, and resilience while attaining welfare-improving effects in a cost-effective way appropriate to the existing and anticipated environment constitutes the key criteria. The pillars focus on the critical determinants for retirement savings and evaluate the suggestions regarding primary evaluation criteria. When adopted under the proper circumstances, the three-pillar framework that is well-constructed will meet the evaluation criteria. The framework acts as a standard and a way to assess the possible welfare enhancement. Alternative retirement savings strategies can also be assessed in reference to this standard. Applying these criteria necessitates taking into account the relationships between the different components and the trade-offs that result from those relationships.

Because of a higher financial literacy, retirement goal clarity, and propensity to plan, service members can adjust their investment contributions according to their own preferences.

Service members with a lower risk preference can take lower risks by investing in a low-risk retirement fund instead of a stock portfolio-orientated fund. Therefore, a pension fund will take less risk on their behalf. The restructured retirement concept will be individually orientated, more flexible, and short-term focused.

Due to the low-touch and low-cost character of the intervention, the research is scaleable and has a wide range of relevance. The study's findings may be applicable to a wide range of individuals interested in enhancing retirement security, and it suggests that many companies may be able to implement such interventions and examine their effectiveness.

The system is viable due to offering advantages to the overall population in a manner capable of preventing old-age poverty. The restructuring of the retirement system enables an improved public perception due to lower veteran poverty and higher enlistment and retention rates since service members have increased financial well-being. The priming interventions do not unreasonably conflict with other societal or economic objectives and do not have unsustainable financial effects. Whereas the old system was unsustainable due to the criticized cost-inefficiency and the missing focus on the service members and the determinants that influence retirement decision-making. Under a wide range of plausible assumptions, the concept can be sustained over a foreseeable period of time and is financially viable. This is especially relevant in the scope of cost-efficiency which has been mentioned in the prior section to enable the system to be sustainable in its nature and hence the long run.

The proposed framework is furthermore dependable to offer benefits that are (i) predetermined by law and not at the whim of policymakers, (ii) have indexation clauses to protect the veteran from inflation and compensation adjustments before and after retirement, and (iii) shield the retired person from longevity uncertainties. This is ensured due to the optional second pillar, which is commonly adjustable and discretionary in character, and the mandatory third pillar. Hence, service members are not at the whim of policymakers to guarantee their financial well-being in the future. Furthermore, the cost-of-living adjustments already present in the current framework protect the veteran from inflation and compensation adjustments before and after retirement. Due to the non-financial first pillar which is composed of personal financial and non-financial support networks, individuals are partly shielded from longevity uncertainties since they possess improved financial knowledge to make sound decisions.

Moreover, the system is resilient and can absorb significant shocks, such as those caused by unpredictable economic, demographic, and political conditions. Because the concept is based on a stable three-pillar framework, it is well-constructed to meet the required standards.

5.2 Potential Consequences and Impacts

5.2.1 Possible Effects on Retention

According to a study (Grefer et al., 2016) that simulated possible retention outcomes, it was discovered that modifications in the retirement system had only a minimal impact on force profiles. The study also found that retention varies depending on the MOS, confirming the assumption that flexibility may be required for the services in order to prolong the mandatory minimum service obligation for high-demand areas. Hence, priming interventions could act as a MOS-specific primer, focusing on the individual preferences of the service members of that MOS and enabling them to display a generally more acceptable retirement behavior.

5.2.2 Financial Welfare Impacts

Reservations about enlisted personnel's decisions regarding individual contributions to the TSP are among those related to financial security under the BRS. The percentage a person contributes to the TSP will determine their lifetime benefits, including whether they take full opportunity of the government match by contributing at the 5% threshold. Individuals who commence employment after January 1, 2018 are automatically registered in the TSP under the BRS at a rate of individual contribution equal to 1% of their monthly basic pay. At that juncture, the services will also start automatically depositing 1% of the servicemember's basic pay each month into his or her TSP account. Additionally, beginning two years following the service member's initial enlistment, the DoD will match enlisted personnel's contributions up to 5% of their basic pay. To obtain government matching of 5%, the service member must contribute a total of 5% on their own (Table A.1) (Kamarck, 2022). The TSP contribution trends for active component soldiers covered by the BRS were examined as part of the 13th Quadrennial Review of Military Compensation in 2020 (U.S. Government Accountability Office, 2019). Results showed that older service members saved more money. It was prevalent for service personnel from all four services to fall short of receiving all of the available matching payments. These findings are consistent with those from this research (Table C.4, Table C.5). Hence, it is advised to monitor individuals who were already enrolled and send targeted emails to those who were not giving the required 5%, informing participants about the benefits of spacing contributions out over the course of the year.

5.2.3 Advantages of Financial Education Programs

The requirement that service members complete financial literacy training is one way the issues mentioned before can be managed. It is necessary to perform an assessment of the

DoD's financial literacy education programs, paying particular attention to how the program assisted members in making important decisions on retirement funds. To ascertain whether the training had an effect on each participant's understanding of the topics, effective pre- and post-assessment methods are lacking in the present training programs (U.S. Government Accountability Office, 2019). The results of this study suggest that computer-based training and traditional financial assistance might not be as successful in conveying knowledge, especially for newly enlisted recruits who have limited real-world experience and poor financial literacy, compared to interactive workshops and group sessions. As a result, the suggestions are to identify areas where service members' financial literacy is insufficient and to make necessary revisions to future education. Furthermore, the DoD should give military personnel disclosures outlining key details about their salary, retirement contributions, and social security benefits, including a comparison of their relative value, possible financial benefits, and drawbacks of varying contribution amounts.

5.2.4 Impact of Improved Assessability

In order to prevent further delays in service members being able to obtain and operate their accounts, the DoD must look into alternative choices, such as online resources, for service members to obtain their initial TSP login. According to this study, 49.63% of service members had trouble receiving their passwords (Table C.2). To forgo the waiting time of retrieving the login data and the connected loss of potential retirement savings, this research proposes an automatic 5% enrollment for all newly enlisted service members. The employee will automatically reenroll each year at the standard rate of 5% enrollment for all newly enlisted service members unless they decide not to pay individual contributions and opt-out.

5.3 Discussion

This chapter examines the findings made, how they align with those of related trials, and what they recommend for further research. This paper also looks at the lessons learned while developing and executing this trial. The review of the lessons learned can be used to direct similar attempts in different contexts. Hence, this section focuses on the kind of support system required to conduct these focused interventions and the crucial factors in trying to assess these strategies. The findings imply that behaviorally informed priming interventions can be an effective and cost-efficient method to encourage retirement security. The DoD personnel who were already enrolled in the federal TSP program were encouraged to boost their contributions and take full advantage of the employer match by using these intervention tools. Because of the low-touch and low-cost character of the intervention, the outcomes are

very encouraging. The study's findings may be applicable to a wide range of individuals interested in enhancing retirement security, and it suggests that many organizations may be able to implement such interventions and examine their effectiveness.

These situational intervention tools were as significant as 47.87 percentage points when the intervention was utilized, a quintuple increase at which individuals received the entire employer match. This has a significant impact, especially because there was little space for improvement given the high percentage of respondents who already invested in the TSP and earned the full employer match (100% and 10.07% respectively) (Table C.5). Additionally, these effects are greater than those seen in the DoD-SBST trials aimed at increasing TSP enrollment among military personnel (Amin et al., 2017).

It is impossible to determine which single components of these techniques were effective or most crucial because they were combined; what is known is that they collectively provided large and substantial outcomes for individuals who were already contributing to their retirement funds. Therefore, it could be beneficial to compare different aspects of the tactics used. Finally, it may be useful to study how the efficacy of such intervention tools varies as they are employed more regularly. When considering the size of the effects seen, it becomes apparent that these intervention tools may have been particularly successful because they were the first of their kind to be given to DoD personnel. Receiving, for instance, TSP-specific treatments for the first time may have enabled people who were already contributing to the program to become more aware of retirement and the benefits of the program, which may have led them to raise their contributions. Research demonstrates that procrastination and spending behavior, particularly when it pertains to saving, are more influenced by salience than by self-control (Karlan et al., 2016).

5.3.1 Implementation Lessons

This study has further considered implementation lessons learned during the development of this trial for individuals who would be interested in pursuing similar tests and trials done in this research.

The development and implementation of the interventions proceeded rather fast. The research was able to formulate interventions once the objectives of the interventions and the target population had been determined. By carefully going over all the available information and data, the study was able to rapidly and effectively get underway by identifying any unanswered questions pertaining to the trial design.

It was crucial to be adaptable and sensitive to the limitations that military personnel experi-

enced. The study made adjustments to these limitations in both the intervention instruments themselves and their implementation processes. In order to maximize intervention effectiveness while reducing the cost of the DoD, the study carefully balanced these trade-offs. The most important features received precedence, and those that put pressure on staff resources were left out. For instance, utilizing first and last names to personalize interventions is known to increase response rates, but doing so would have required far more work than sending out a mass intervention that was tailored for example to different risk preferences and capacities, thus the research chose the latter.

The study discovered that navigating the online TSP system proved to be difficult because links and navigation buttons were not consistently straightforward to find or placed in appropriate areas. Since the TSP system could not be altered, the study created a visual tutorial as the best substitute. According to user testing, these were favorably received. Hence, low-tech alternatives can occasionally serve as good stand-ins.

The DoD can now concentrate on examining further whether undercontributors' decisions can be impacted by alternative tactics. The first step might be to perform further research to see whether the causes of undercontributors' lack of savings are structural (such as financial limitations) or behavioral (such as excessive future optimism). If the latter, it could be worthwhile to test out different strategies (such as staff follow-up in person or more frequent and tailored interventions). Any technique chosen would benefit greatly from being thoroughly tested. The research will be able to assist more service members in preparing for a comfortable retirement by providing more evidence regarding the effectiveness of behaviorally enabled interventions to save more and how various individuals respond to them.

5.3.2 Outlook and Suggestions for Further Research

This study provided intervention suggestions for further research, including priming regarding risk tolerance which was not included in the scope of this study. Due to the high relevance of individuals' risk tolerances for their respective retirement savings, further research into interventions affecting risk capacity and risk preference is suggested. Aldrovandi et al. (2017) found that individuals exposed to negative priming were less inclined to make risky decisions, demonstrating the priming effects on risk tolerance. However, this adverse priming effect was limited to straightforward and non-experiential financial contexts, like gambling. It can be argued that basic financial gambles may serve as a simplified representation of the decisions people make when selecting financial products, as opposed to financial products including pension provisions. The foregoing discrepancy might be explained by the possibility that individuals perceive financial risk differently depending on the decision-making context. Instead

of fundamental decision-making processes, it is reasonable that the individuals' risk-inclined behavior is influenced by features of the interface with which they are interacting. In particular, it may be argued that individuals' reactions to circumstances influence their choices even when risk data is explicit—a blending of experience and the impact of risk descriptions on preferences. This theory has the effect that, despite the risk and reward of other alternatives being understood, individuals do not have consistent underlying preferences for risk; rather, context and experience affect inclinations. In further research, the DoD can focus on assessing whether undercontributors' risk preferences can be impacted by alternative tactics. In this context, individuals' risk capacity and risk preference could yield a corresponding strategy to align the two dimensions.

CHAPTER 6   CONCLUSION

6.1   Conclusion

Leveraging a hand-collected set of data on retirement savings determinants, this research uses an empirical analysis to enable a proposal to restructure the military retirement system. In this research, the drivers of financial retirement well-being are studied through the variable retirement savings by analyzing the questionnaire results of individuals of the U.S. Armed Forces. According to this study, a significant range of prospective determinants have an expected impact on the restructering of the retirement system concept. The likelihood and strength of retirement savings are strongly tied to the following variables: propensity to plan, retirement goal clarity, parental influence, and risk tolerance. Furthermore, priming effects have a significant moderating effect on the propensity to plan and retirement goal clarity. Overall, this work sheds new light on the previously unexplored area of the drivers of retirement savings for the armed forces and reveals significant criteria that affect the potential restructering of the military retirement system. In its entirety, positive, goal-related situational intervention methods aimed at activating soldiers' goal-directed cognition and behavior can be beneficial in increasing retirement savings. Military organizations can assist soldiers in achieving their long-term financial goals by utilizing behavioral economics ideas and applying them to retirement savings.

6.2   Research Limitations

This research has several constraints. First, a cross-sectional research approach will be employed in this analysis. The results only provide a sample of the soldiers' retirement savings at a specific point in time, so the study is unable to measure how the factors vary over time. This issue is partly addressed by using several racial groups and separate age groups as proxies for the respective individuals.

Second, this research is based on a nonprobability sampling methodology due to budget and accessibility restrictions with the population list, hence this restraint should be considered before generalizing the results. Further, the research may not be representative of the overall armed forces population because it was limited to enlisted and overseas stationed soldiers. By gathering information from various socio-demographics, this research attempted to reduce the consequences of this constraint.

Finally, as this study is a particular form of behavioral study, it was required to select critical

criteria for developing an acceptable framework by taking into account time and content. The identified behavioral variables were derived from prior research so the proposed framework may be more precise and comprehensive by incorporating more variables.

6.3 Implications

The individuals may be exhibiting less damaging financial behaviors through priming interventions. If a significant substantial number of service members are influenced by the priming effect to act or think in a certain way, society, service members, and the government may be favorably affected. Service members become more independent of military retirement and can pursue other careers without having to complete 20 years of service, as they are then no longer dependent on the pension. In addition, society will pay less taxes due to the phenomenon explained in Figure 2.1. By concentrating on interventions that are not cost-focused, the outlay can be reduced, and a lower contribution can be made through taxes. In addition, the government will benefit from a higher public perception. The prevailing poverty of veterans casts a negative light on the military, and the financial well-being of military personnel increases the public's perception of the military, and by extension, the government. This can (across a broader spectrum) lead to higher enlistment rates, but independence from the military pension system can have an adverse effect through lower retention rates.

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APPENDIX A   TABLES, GRAPHS, AND FIGURES
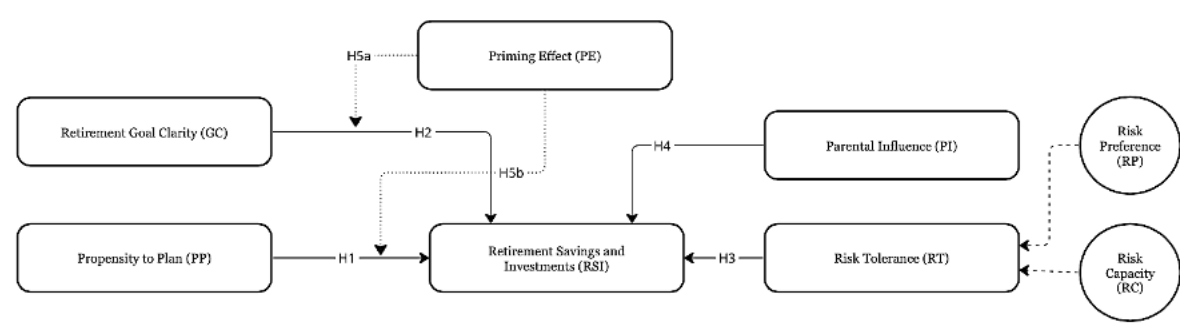
Figure A.1 The Conceptual Model of the Study (Source: Author's compilation).
Dotted lines reflect moderating relationships, dashed lined specify input variables, and straight lines indicate direct influences.

Table A.1 Government Automatic and Matching Contributions (Department of Defense, 2017)

Contribution	Automatic (1%) Match	Service Matching Contributions	Total Contribution
0%	1%	0%	1%
1%	1%	1%	3%
2%	1%	2%	5%
3%	1%	3%	7%
4%	1%	3.5%	8.5%
5%	1%	4%	10%
> 5%	1%	4%	Your Contribution + 5%
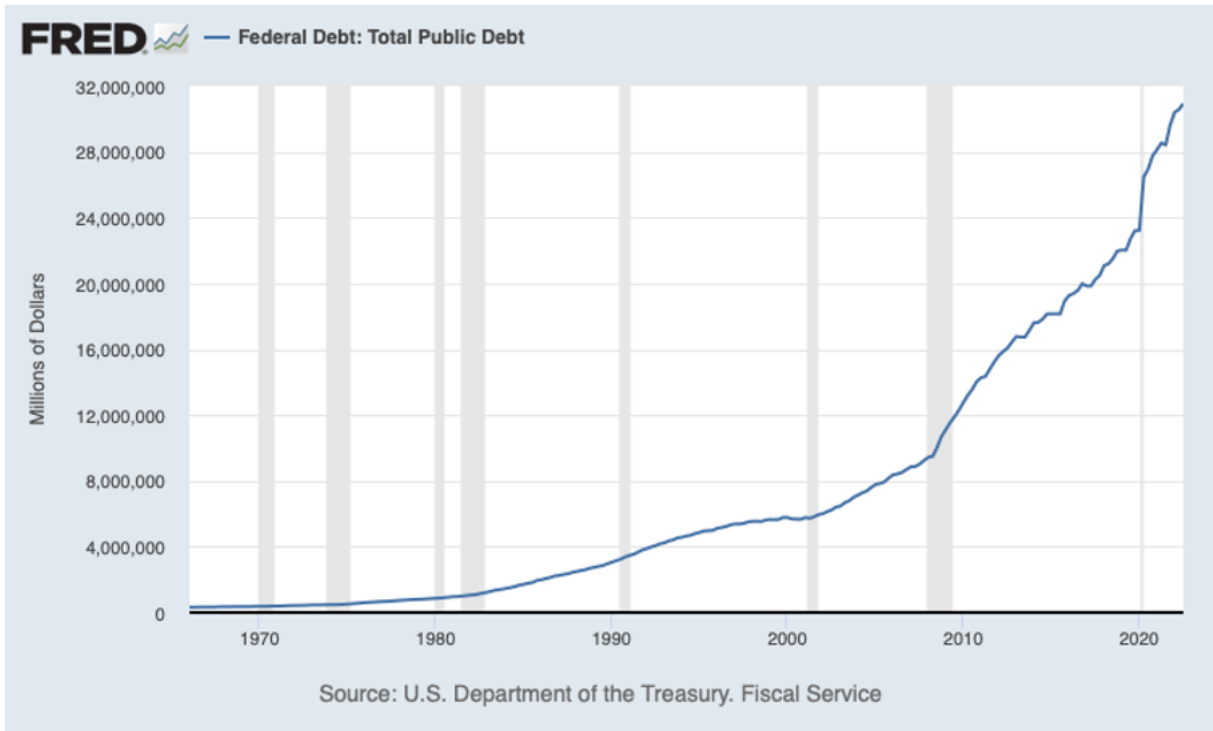
Figure A.2 Federal Debt: Total Public Debt (U.S. Department of the Treasury, 2023)
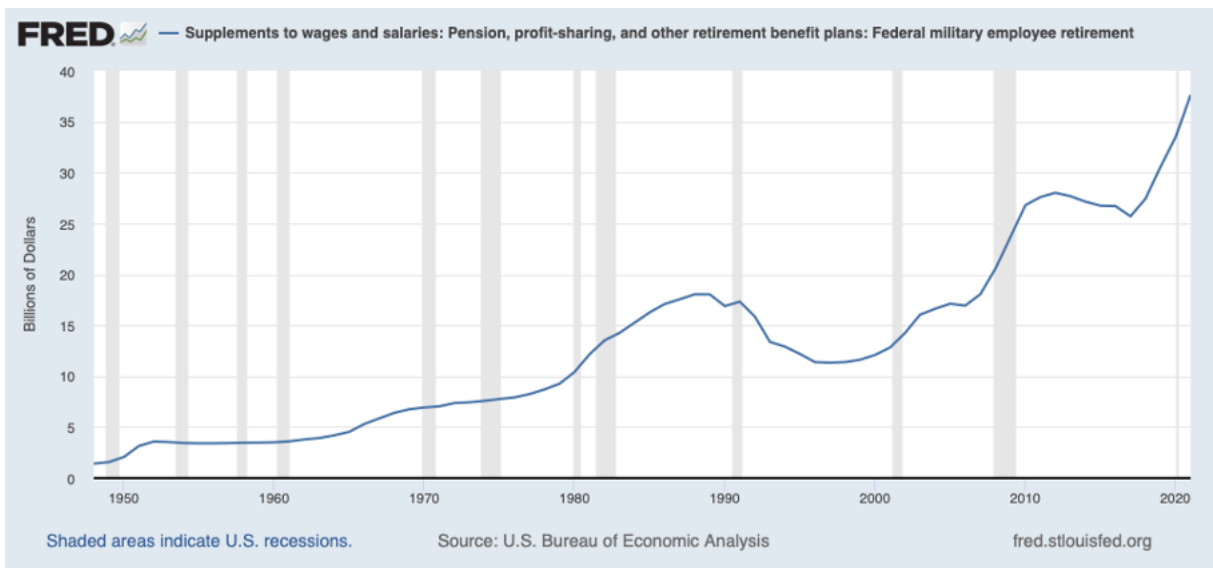
Figure A.3 Federal Military Employee Retirement (U.S. Bureau of Economic Analysis, 2023)
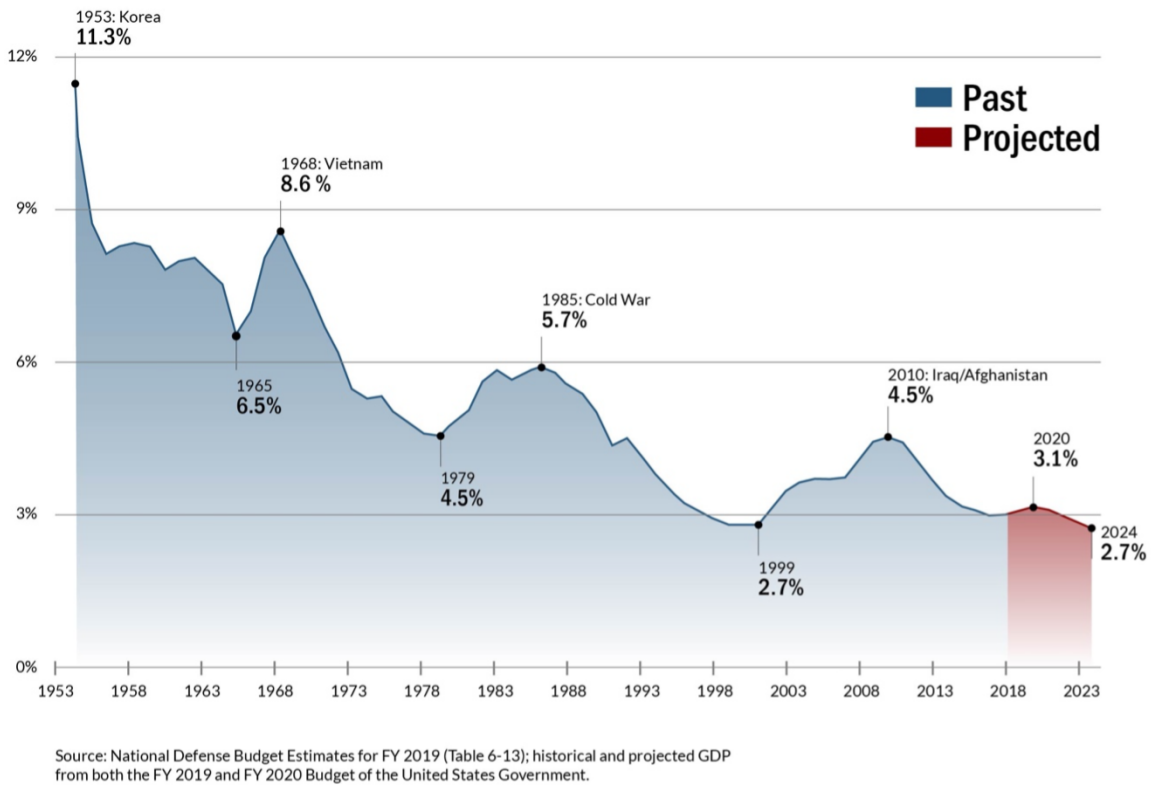
Figure A.4 Defense Spending as a % of Gross Domestic Product (U.S. Department of Defense, 2018)
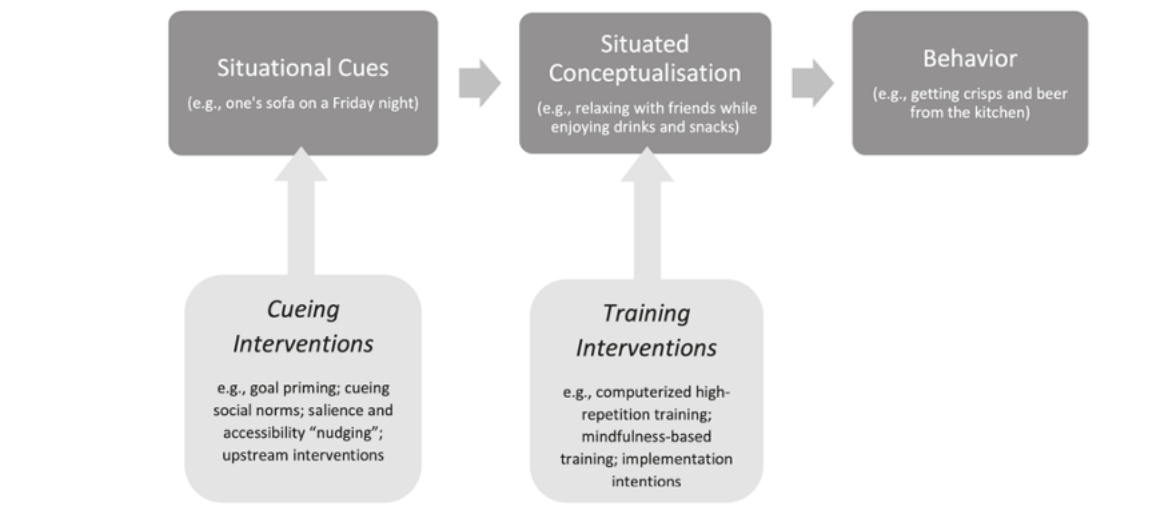
Figure A.5 Situated Interventions that Alter the Influence of Situational Cues on Behavior (Papies, 2017)

APPENDIX B   CONSTRUCT TABLES

Table B.1 References of Questions

Construct	Source of Questions
PP	Kimiyagahlam, Safari, and Mansori (2019); Schuabb, França, and Amorim (2019); Self-developed by the author.
RP	Tomar et al. (2021).
RC	Tomar et al. (2021); Self-developed by the author.
PI	Schuabb, França, and Amorim (2019).
GC	Schuabb, França, and Amorim (2019).

Table B.2 Description of the Model's Constructs

Construct	Description	Measurement	Proposed Impact
RSI	Natural logarithm of the level of retirement savings.		
PP	Propensity to plan defines a individual's tendency to plan for a long-term goal that can result in objective, goal-setting behavior.	Binary questions: 1 for "yes" as a response. 0 in all other cases.	+
RT	Weighted composite score of four questions from risk preference and risk capacity respectively.	Binary questions: 1 for "yes" as a response. 0 in all other cases.	+
PI	Lagged variable defining the impact of past parental influence on retirement savings.	Binary questions: 1 for "yes" as a response. 0 in all other cases.	+
GC	The variable assesses expectations in regards to one's quality of life after retirement.	Binary questions: 1 for "yes" as a response. 0 in all other cases.	+

Table B.3 Variable and Statement Definitions

Item	Statement	Min.	Max.	Mean	SD	Min.	Max.	Mean	SD
PP	-	0	1	0.3372	0.2495	0	1	0.7733	0.3968
PP1	I have made calculations to estimate how much I have to save to retire comfortably.	0	1	0.1179	0.3229	0	1	0.7757	0.4190
PP2	I set financial goals for the future for what I want to achieve with my money.	0	1	0.2800	0.4495	0	1	0.7478	0.4363
PP3	I actively consider the steps I need to take to stick to my financial plan in the future.	0	1	0.2972	0.4576	0	1	0.7663	0.4251
PP4	Planning for distant future is easy.	0	1	0.6535	0.4764	0	1	0.8037	0.3990
RT	-	0	1	0.4993	0.0696	0	1	0.5327	0.2126
RP	-	0	1	0.6738	0.4163	0	1	0.8948	0.2453
RP1	The overall growth potential of a retirement investment is more important to me than the level of risk associated with the investment.	0	1	0.7223	0.4483	0	1	0.9252	0.2642
RP2	I prefer gamble over a "sure thing" when planning for retirement.	0	1	0.6879	0.4638	0	1	0.8691	0.3388
RP3	I prefer those investments which have higher returns even if they are riskier.	0	1	0.7149	0.4519	0	1	0.9252	0.2642
RP4	As a rule, I would never choose the safest investment when planning for retirement.	0	1	0.5700	0.4956	0	1	0.8598	0.3488

RC	-	0	1	0.3249	0.4110	0	1	0.1705	0.3392
RC1	I have the financial capacity to stay invested during a bear market.	0	1	0.2972	0.4576	0	1	0.1588	0.3672
RC2	I own enough assets to absorb a financial downturn.	0	1	0.2899	0.4542	0	1	0.1775	0.3839
RC3	I am not dependent on my retirement income, as I can provide for my pension elsewhere.	0	1	0.4324	0.4960	0	1	0.1775	0.3839
RC4	I am financially able to make risky investments in order to ensure financial stability in retirement.	0	1	0.2800	0.4495	0	1	0.1682	0.3758
PI	-	0	1	0.3415	0.4164	0	1	0.1752	0.2978
PI1	Saving money for the future was an important lesson I learned as a child.	0	1	0.3071	0.4618	0	1	0.1308	0.3388
PI2	My parents did a good job of planning and saving for their own retirement.	0	1	0.4299	0.4956	0	1	0.2429	0.4309
PI3	My parents would expect me to save for retirement.	0	1	0.3316	0.4714	0	1	0.2149	0.4127
PI4	My parents suggested to me concrete ways to save money on my own.	0	1	0.2971	0.4576	0	1	0.1121	0.3170
GC	-	0	1	0.4441	0.4616	0	1	0.7523	0.3862
GC1	I set clear goals for gaining information about retirement.	0	1	0.4447	0.4975	0	1	0.6635	0.4747

Table B.3 Variable and Statement Definitions

GC2	I have thought a great deal about quality of life in retirement.	0	1	0.4545	0.4985	0	1	0.7663	0.4251
GC3	I set specific goals for how much will need to be save for retirement.	0	1	0.4348	0.4963	0	1	0.7663	0.4251
GC4	I have discussed retirement plans with my spouse, friend or family.	0	1	0.4422	0.4972	0	1	0.8130	0.3916

Note: The percentage figures represent the percentage of the sample that selected "yes" to the respective questions. The average Likert score for all items on the scale is represented by the minimum score (Min.), maximum score (Max.), mean score, and standard deviation (SD).

Table B.4 Variable Description

Variable	Abbreviation
What level of education have you achieved?	Education
How many dependents do you have?	Dependents
Workload (on average) per week	Workload
Have you ever been deployed or stationed overseas?	Deployed
Are you enrolled in the TSP?	Enrollment
How much money are you contributing to your TSP per month? (in %)	RSI
Have you ever used one of the army's financial assistance programs?	Financialassistance
From which sources do you obtain your financial information?	Sources
Did you have issues retrieving you initial TSP password?	Password
Have you ever been exposed to a financial distress?	Financialdisaster
Have you experienced financial distress during your childhood?	Disasterchildhood
Rank, Gender, Age, Race, Maritalstatus	Self-explanatory

APPENDIX C   EMPIRICAL ANALYSIS

Note:

Regression values are standardized beta weights

*** p<0.01, ** p<0.05, * p<0.1

Standard errors in parentheses

Table C.1 Simple Factor Analysis

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.87548	1.58208	0.9340	0.9340
Factor2	0.29340	0.29095	0.1461	1.0801
Factor3	0.00246	0.16573	0.0012	1.0813
Factor4	-0.16327	.	-0.0813	1.0000
Variable	Factor1	Factor2	Factor3	Uniqueness
PP	0.6363	0.4085	0.0001	0.4282
PI	0.9386	0.0135	-0.0023	0.1188
GC	0.7664	-0.3532	0.0057	0.2878
RT	-0.0461	0.0404	0.0492	0.9938

Number of obs = 407; Retained factors = 3; LR test: chi2(6) = 682.14; Prob>chi2 = 0.0000

Variable Observations: 407	Level 1 $F(4, 402) = 384.69$, $p = 0.0000$, $R2 = 0.7929$	Level 2 $F(10, 396) = 182.41$, $p = 0.0000$, $R2 = 0.8216$	Level 3 $F(14, 392) = 215.42$, $p = 0.0000$, $R2 = 0.8850$	Level 4 $F(15, 391) = 202.95$, $p = 0.0000$, $R2 = 0.8862$
Level 1				
PP	0.705*** (0.0874)	-0.995** (0.504)	0.223 (1.416)	-1.932 (1.764)
GC	0.970*** (0.0561)	1.880*** (0.322)	3.309*** (0.447)	2.475*** (0.605)
RT	1.236*** (0.214)	1.988*** (0.521)	2.083 ** (0.867)	0.759 (1.081)
PI	0.138* (0.0788)	1.144*** (0.444)	3.666*** (0.829)	1.349 (1.406)
Level 2				
PP x GC		0.346 (0.297)	-1.902 (1.414)	0.775 (1.927)
PP x RT		2.556*** (0.888)	3.895 (2.801)	8.286** (3.526)
PP x PI		0.360 (0.243)	-4.101*** (1.184)	1.835 (3.145)
GC x RT		-1.629** (0.640)	-3.126*** (0.887)	-1.438 (1.211)
GC x PI		-1.180*** (0.194)	-6.554*** (0.892)	3.550** (1.722)
RT x PI		-0.526 (0.800)	0.358 (1.719)	5.152* (2.911)
Level 3				
PP x GC x RT			-1.585 (2.854)	-7.060* (3.913)
PP x GC x PI			8.624*** (0.605)	1.291 (3.651)
GC x RT x PI			3.9152** (1.804)	-2.248 (3.520)
PP x RT x PI			-4.870** (2.233)	-17.01*** (6.361)
Level 4				
PP x GC x RT x PI				14.96** (7.347)
Constant	0.323*** (0.111)	0.015 (0.259)	-0.538 (0.433)	0.113 (0.537)

Figure C.1 Hierarchical Regression Model

Table C.2 Sociodemographic Variables

Variables	Items	N	%	N	%
Rank	E-2	67	16.46	18	16.82
	E-3	84	20.64	29	27.10
	E-4	159	39.07	34	31.78
	E-5	74	18.18	16	14.95
	E-6	23	5.65	10	9.35
Gender	Male	404	99.26	106	99.07
	Female	3	0.74	1	0.93
Race	Caucasian (White)	92	22.60	23	21.50
	Asian	53	13.02	25	23.36
	Black or African-American	83	20.39	18	16.82
	Native Hawaiian/Pacific Islander	92	22.60	20	18.69
	American Indian/Alaska Native	6	1.47	3	2.80
	Hispanic or Latino	81	19.90	18	16.82
Age (in years)	< 20	57	14.00	15	14.02
	20 to 25	184	45.21	30	28.04
	26 to 30	137	33.66	41	38.32
	31 to 35	29	7.13	16	14.95
	> 35	0	0	5	4.67
Education level	High School Diploma or GED	346	85.01	92	85.98
	Associate Degree	50	12.29	10	9.35
	Bachelor's Degree	11	2.70	5	4.67
Marital status	Single	325	79.85	82	76.64
	Married	82	20.15	25	23.36
Number of dependents	0	323	79.36	82	76.64
	1-4	84	20.64	25	23.36
Workload	Up to 40 h a week	1	0.25	0	0
	Between 41 to 45 h a week	0	0	0	0
	Between 46 to 50 h a week	17	4.18	9	8.41
	Between 51 to 55 h a week	89	21.87	21	19.63
	Between 56 to 60 h a week	131	32.19	41	38.32
	Between 61 to 65 h a week	91	22.36	19	17.76
	Between 66 to 70 h a week	78	19.16	16	14.95
	More than 71 h a week	0	0	1	0.93
Issues retrieving password	Yes	202	49.63		
	No	205	50.37		
Financial Assistance	Yes	29	7.13		
	No	378	92.87		
Sources of financial information	Friends and family	225	55.28		
	Ex ante research	13	3.19		
	Classes	156	38.33		
	Review of information from mail	13	3.19		

Table C.3 Correlation Matrix

Variables	PP	GC	RT	PI
PP	1.0000	-	-	-
GC	0.3057	1.0000	-	-
RT	-0.0058	-0.0418	1.0000	-
PI	0.6578	0.7737	-0.0538	1.0000
Variables	PP_PRM	GC_PRM	RT	PI
PP_PRM	1.0000	-	-	-
GC_PRM	0.8191	1.0000	-	-
RT	0.0468	0.0134	1.0000	-
PI	0.1546	0.1297	0.1181	1.0000

Table C.4 Impacts of Treatment on Specific Subgroups

Age	Frequency (P1)	mean(RSI) (P1)	Frequency (P2)	mean(RSI) (P2)
< 20	57	1.6842	15	2.1333
20 to 25	184	1.5543	30	2.4333
26 to 30	137	1.7883	41	2.3902
31 to 35	29	1.6205	16	2.6875
> 35	0	0	5	2.5999
Rank	Frequency (P1)	mean(RSI) (P1)	Frequency (P2)	mean(RSI) (P2)
E-2	67	1.7910	18	2.1111
E-3	84	1.5476	29	2.4137
E-4	159	1.7232	34	2.5882
E-5	74	1.5675	16	2.4375
E-6	23	1.4782	10	2.4000

Table C.5 Impacts of Treatment on Contribution Rates

RSI	Frequency (P1)	Percent (P1)	Frequency (P2)	Percent (P2)
1%	181	44.47	24	22.43
2-4%	185	45.45	21	19.63
5%	41	10.07	55	51.40
>5%	0	0	7	6.54

Table C.6 Variance Inflation Factor

Variable	VIF (P1)	1/VIF (P1)	VIF (P2)	1/VIF (P2)
PP/(PP_PRM)	2.16	0.4634	3.07	0.3258
GC/(GC_PRM)	3.05	0.3283	3.04	0.3284
PI	4.88	0.2049	1.04	0.9636
RT	1.00	0.9952	1.02	0.9832
Mean VIF	2.77	-	2.04	-

Table C.7 Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

.

	P1	P2
H0	Constant variance	Constant variance
chi2 (1)	13.51	3.25
Prob > chi2	0.0002	0.0715
Result	Application of robust standard errors	No application of robust standard errors

Table C.8 Shapiro-Francia W' Test for Normal Data

Variable	Obs	W'	V'	z	Prob>z
RSI (P1)	407	0.99998	0.005	-11.295	1.00000
RSI (P2)	107	0.97854	2.065	1.439	0.07502

Table C.9 OLS Coefficients (P1)

Variables	RSI
PP	0.705***
	(0.0874)
GC	0.970***
	(0.0561)
RT	1.236***
	(0.214)
PI	0.138*
	(0.0788)
Constant	0.323***
	(0.111)
Observations	407
R-squared	0.793

Table C.10 Path Coefficients (P1)

Variables	RSI
PP	0.719***
	(0.0201)
GC	0.987***
	(0.0129)
RT	1.134***
	(0.0491)
PI	0.0933***
	(0.0180)
Constant	0.378***
	(0.0252)
Observations	8,140
R-squared	0.783

Table C.11 OLS Coefficients (P2)

Variables	RSI
RT	0.405
	(0.289)
PI	0.126
	(0.209)
GC_PRM	0.816***
	(0.276)
PP_PRM	0.940***
	(0.269)
Constant	0.843***
	(0.204)
Observations	107
R-squared	0.543

APPENDIX D   RESEARCH TIMELINE

Table D.1 Data Collection Timeline

Activity	Dates
Collection of baseline data	01/03/2023-31/03/2023
Interventions	01/04/2023-30/04/2023
Collection of treatment data	01/05/2023-31/05/2023