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Young Adults Who Save for Retirement: A Grounded Theory Study of the Decision-Making Process

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**Young Adults Who Save for Retirement:
A Grounded Theory Study of the Decision-Making Process**

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Abstract

The retirement saving decisions of young adults are important because of the widely recommended best practice to begin saving for retirement early in adulthood. This study investigated how young adults make retirement saving decisions through qualitative analysis of the decision-making process using Grounded Theory methodology. Twenty-five young adults between the ages of 18 and 35 who are currently saving for retirement were interviewed about their experience. Each interview addressed seven topics concerning life-stage transitions, time preferences, incomplete information, budget constraints, compound investing, financial literacy, and future expectations. Research analysis of data saturation revealed eight propositions about factors that influence how young adults decide to save for retirement. From these propositions, the researcher developed a theoretical model that integrated concepts into an illustrative framework of the decision-making process.

Keywords: Retirement Saving, Young Adults, Financial Literacy, Compound Investing, Investment Risk, Lifecycle-permanent Income Hypothesis, Behavioral Lifecycle Hypothesis

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Chapter I: Introduction

Starting to save early for retirement is a widely recommended best practice. There are examples from media (Lieber & St. John, 2017), industry (Benz, 2021), and government (Employee Benefits Security Administration, 2019) sources that promote the idea as an effective strategy for accumulating wealth. Academic studies show that the likelihood of adequate retirement savings increases the earlier that a worker begins to save (Munnell et al., 2011). However, the percentage of retirement plan participation is lowest among young adults, as is the average savings rate (Vanguard, 2020). Furthermore, many of the methods used to forecast retirement adequacy grow less effective the longer the career time horizon becomes, due to a reliance on estimates and assumptions (Burnett et al., 2018). This makes retirement saving during early career largely a matter of personal choice, which is guided by heuristic rules of thumb (Benartzi & Thaler, 2007).

Defined contribution plans place the responsibility on individuals to make a series of decisions that influence future retirement adequacy (Huang, 2017), such as plan participation, savings rate, investment choices, and withdrawals. How young adults think about these choices is largely unknown and could depend on many dimensions including budget constraints, behavioral bias, social influences, financial literacy, and career outlook. Young adults are in a distinct phase of their career lifecycle, with competing priorities and unique considerations for retirement planning. Yet the attention paid to this group in retirement-related literature is minimal, with greater focus placed on retirees and older workers. Knoll et al. (2012) note, “Although the link between early-life retirement savings and later-life financial well-being has

been increasingly recognized, there is little empirical basis for understanding heterogeneity in the retirement-specific savings of young adults” (p. 86).

Retirement assets are determined by three primary variables: time horizon, savings rate, and investment return. Young workers have the unique opportunity to maximize the time horizon over which they save and invest. The importance of time in retirement saving is due to the power of compound investment growth. Compounding occurs when investment returns are multiplied year over year, creating an exponential growth factor that is amplified inside of a tax-deferred retirement account where the principal is likely to stay intact. Whereas older workers can also affect the time horizon by delaying retirement, and thereby increasing Social Security benefits, young adults have the opportunity to take full advantage of compound investment growth. Munnell et al. (2011) conclude, “The age at which one begins to save and the age at which one retires are pivotal decisions determining the required savings rate and can make the difference between a secure or insecure retirement” (p. 1).

Although young adults have the most to gain from long-term retirement planning, they are also chronologically the furthest from receiving the benefits. Therefore, retirement saving represents an *intertemporal* allocation of resources, by deferring current income for use later in life. The rationale for this transfer is provided by the lifecycle-permanent income hypothesis, which is considered the standard economic theory on the relationship between consumption and saving. Combining the work of Modigliani and Brumberg (1954) with Friedman (1957), “The lifecycle model can be loosely defined as a framework where individuals maximize utility over time given a set of intertemporal trading opportunities” (Attanasio & Weber, 2010, p. 695). A brief summary of the hypothesis states that individuals seek to achieve consistent utility from

lifetime consumption, despite the cyclical pattern of income over the lifecycle (Browning & Crossley, 2001). Saving occurs when income is high in order to maintain spending during low-income periods, which is referred to as “smoothing” the consumption function (Browning & Crossley, 2001). As a result, “Saving is future consumption: a positive level of savings is motivated by the fact that consumers rationally expect a future decline in their income patterns” (Lugilde et al., 2019, p. 482).

The cyclical pattern of lifetime income distribution is evident in labor statistics. Median weekly income rises to a peak between the years of 45 and 54 in the United States and declines thereafter (U.S. Bureau of Labor Statistics, 2020). Labor force participation follows a similar pattern, rising in early life, and then declining with advancing years. These two measures demonstrate that income-earning potential typically declines late in life. However, compared to their older counterparts, young adults are in a distinctly different phase of the income distribution cycle. Whereas older workers are facing near-term declines to income, young adults are still on an upward trajectory, with their peak earning years in the future.

Table 1.1

U.S. Median Weekly Income and Labor Force Participation by Age Group

Age Group	Median Weekly Income	% Change from prior period	Number of Workers (in thousands)
16-19 Years	\$506	-	1,169
20-24 Years	\$640	26%	7,257
25-34 Years	\$918	43%	25,958
35-44 Years	\$1,135	23%	24,526
45-54 Years	\$1,144	0.7%	22,951
55-64 Years	\$1,090	-4.7%	18,169
65+ Years	\$1,018	-6.6%	4,457

Note. Source: U.S. Bureau of Labor Statistics, 2020

In comparison to the consistent pattern of income and labor distribution, retirement saving is subject to a high degree of statistical heterogeneity. Heterogeneity simply refers to significant differences in retirement wealth, which are observed even among groups with similar characteristics. Heterogeneity matters to the extent that it impacts variations in retirement saving adequacy. Bajtelsmit and Rappaport (2018) write, “The research fairly consistently concludes that there are wide disparities in retirement adequacy both within and across population sub-groups” (p. 72). Heterogeneity in retirement saving is evident at every stage of the career lifecycle, as data from Vanguard (2020) suggests.

Table 1.2

Retirement Plan Balances

Age	Average Balance	Median Balance
<25	\$5,419	\$1,817
25-34	\$26,839	\$10,402
35-44	\$72,578	\$26,188
45-54	\$135,777	\$46,363
55-64	\$197,322	\$69,097
65+	\$216,720	\$64,548

Note. Source: Vanguard (2020)

The difference between average and median account balances points to a retirement system with widely variable outcomes. The average balances are skewed higher because a minority of individuals have saved large sums in retirement accounts, thereby inflating these figures. Meanwhile, the consistently lower median balances indicate that a majority of individuals in each age cohort possess substantially lower retirement assets, half of which are below this mid-point.

The causes of heterogeneity in retirement wealth have been the subject of scrutiny and debate. Bernheim et al. (2001) explain the potential implications as follows:

The interpretation of this variation is a pivotal issue. If saving reflects rational, far-sighted optimization, then low saving is simply an expression of preferences...If, however, households are shortsighted, boundedly rational, dynamically inconsistent, impulsive, or prone to regret, then the adequacy of saving is a well-posed and important empirical issue. (p. 832)

Discrepancies in retirement wealth have been of special interest in behavioral economics, which has highlighted the difficulty of making optimal saving decisions across a lengthy timeline with incomplete information. Benartzi and Thaler (2007) argue:

Even among economists, few spend much time calculating a personal optimal savings rate, given the uncertainties about future rates of return, income flows, retirement plans, health, and so forth. Instead, most people cope by adopting simple heuristics, or rules of thumb (p. 82.)

There is a growing acceptance that retirement decision-making is a complex process that is encumbered by poor information, personal bias, ambiguous preferences, and bounded rationality (Huang, 2017).

While the lifecycle-permanent income hypothesis provides a strong justification for the intertemporal transfer of savings, Shefrin and Thaler (1988) proposed the behavioral lifecycle hypothesis to reflect the complexities of long-term saving decisions. Time preferences are a central issue in this model because “individuals are assumed to behave as if they have two sets of coexisting and mutually inconsistent preferences: one concerned with the long run, and the other with the short run” (p. 611). Choices that are viewed as inconsistent or irrational in a standard lifecycle model are interpreted by the behavioral lifecycle hypothesis as expressions of competing time preferences.

The model uses behavioral attributes of self-control, mental accounting, and framing to mediate between different time preferences. These attributes determine how well individuals balance competing priorities, but also explain the variations that lead to heterogeneity because they involve the effort of self-regulation, which varies from person to person. As the delay between short run and long run grows smaller, “willpower effort becomes less costly as retirement draws near” (Shefrin & Thaler, 1988, p. 613) because the time preferences eventually merge into one.

The centrality of time preferences in the behavioral lifecycle hypothesis has important implication for young adults. The length of the time horizon has a substantive impact on the psychic costs of retirement saving. As young adults have the longest time horizon, their effort required to mediate short-run and long-run preferences is the greatest of any life stage. That would also imply that the likelihood of heterogeneity during this period is substantial. The implications of the behavioral lifecycle hypothesis call out the different reality faced by young adults regarding retirement saving. Their particular life stage maximizes the behavioral costs of saving and increases the effort required to self-regulate the decision-making process. These differences highlight the need to understand the retirement saving decisions made by young adults and the unique factors that may influence their choices.

Research Purpose

The purpose of this study is to understand how young adults make retirement saving decisions by studying heterogeneity through an open-ended, qualitative research process using Grounded Theory methodology. Rather than approach heterogeneity as a statistical question, this study takes the view that differences in retirement saving originate from a complex

decision-making process that has not been well-documented for this age cohort. Young workers are a distinct age group whose retirement saving decisions require specific investigation through an interview process that collects data about direct experience. By allowing subjects to describe their own decision-making experience, a qualitative approach to research best serves to interpret how heterogeneity occurs. The study poses a single open-ended research question developed after a broad review of existing literature.

Question: How do young adults who are participating in the retirement system make decisions about retirement saving?

The question is focused on young adults who are already participating in retirement saving, based on the logic that this group is most likely to have personal experience and first-hand knowledge about the process they used to make decisions. The goal is to develop an integrated and holistic theory that sheds light on how young adults make decisions about retirement saving, in order to help us better understand the saving heterogeneity of this group.

This study follows the principles for Grounded Theory research that have been described by Corbin and Strauss (2015), which are based on the original theoretical method introduced by Glaser and Strauss (1967). Grounded Theory is an effective qualitative method for this research question for two reasons. First, it provides an open-ended framework for describing the potential subtlety of the retirement saving decisions that are determined by both rational and non-rational behaviors. Makri and Neely (2021) suggest that “The researcher has the opportunity to ‘see’ the research problem through the eyes of the practitioners” (p. 2).

Second, Grounded Theory offers more than just a descriptive analysis of the phenomenon through a rigorous process of theoretical development. Suddaby (2006) describes

Grounded Theory as “a compromise between extreme empiricism and complete relativism by articulating a middle ground in which systematic data collection could be used to develop theories that address the interpretive realities of actors in social settings” (p. 634). Grounded Theory offers the researcher a means through which to develop findings into theoretical constructs which demonstrate generalized conclusions. That is an important feature for a study pertaining to retirement saving, which is a subject intended for wide societal participation and accessibility.

Research Process

The plan of inquiry followed a three-stage research process, including pre-interview, interview, and post-interview activities designed to qualify participants, gather data, and analyze and verify results. A sample of 25 young adults was recruited through convenience, snowball, and theoretical sampling strategies. All individuals met two primary criteria in order to participate. First, they were within the age range of 18 to 35, which this study defined as a young adult. Second, all participants were currently saving for retirement through either a workplace plan or an individual retirement account (IRA). This information was verified during the pre-interview research stage through an online questionnaire which also gathered informed consent in order to collect participant data.

There were three opportunities for data collection which spanned all three stages of the research process. In practicality, all meaningful data was collected during the pre-interview and interview stages of research. Research was based on a set of interview questions that had been developed through analysis of existing literature spanning a range of fields. This analysis produced seven major research topics, which were the focus of investigation. Each research

topic was supported by one primary interview question and several probing or follow-up questions. The seven research topics that formed the basis of inquiry include life-stage transitions, time preferences, incomplete information, budget constraints, compound investing, financial literacy, and future expectations.

Participants were first introduced to the questions related to these topics during the pre-interview stage. Once they had qualified for the study, individuals had the optional choice to share initial feedback on each primary question in written form, which the researcher reviewed before the interview. Not all participants chose to provide information at this stage, but many did. However, all participants took part in research interviews, which made up the second stage of the research process. The interviews used a semi-structured format, which allowed for some flexibility based on participant responses while ensuring that all primary questions were addressed. The interviews were conducted remotely using video conferencing technology and were recorded by the researcher for documentation and transcription.

As is typical of Grounded Theory, data collection and analysis occurred simultaneously through a process called the constant comparative method. Data analysis used three stages of open, axial, and theoretical coding to take individual participant data and elevate shared themes that were developed into abstract concepts. These theoretical concepts formed the basis of the results presented in the study. The iterative process continued until the researcher determined that the benchmark of data saturation had been reached. Data saturation occurred at the point at which theoretical concepts were fully developed and further data collection failed to produce new insight.

During the post-interview stage, data analysis was shared with participants at certain points in the study to verify its accuracy and solicit additional feedback about emerging concepts. This process was adapted from the Delphi method in order to minimize the risk of researcher bias. The researcher verified the accuracy of coding at the individual level following each participant interview and shared results from ongoing data analysis to elicit feedback concerning conceptual development. The combination of pre-interview, interview, and post-interview stages comprised the primary research activities used to develop the results presented in this study.

Research Results

Results from the study took two forms. First, eight research propositions were developed directly related to the seven research topics explored in the study. These propositions described concepts in the data that had reached the benchmark of data saturation. They were supported by narrative analysis provided by the researcher and direct evidence drawn from interview data. Second, the researcher integrated these findings into a single, theoretical model representing the retirement saving decision process of young adults. This model serves as a generalized illustration of the relationships between findings that emerged during research.

Table 1.3*Research Propositions*

Number	Topic	Proposition
1	Life-stage Transitions	Young adults who save for retirement believe they have achieved a level of financial safety in the present.
2	Time Preferences	Young adults who save for retirement balance short-term and long-term time preferences.
3	Incomplete Information	Saving for retirement does not necessarily imply planning for retirement.
4a	Budget Constraints	A low cost of living minimizes budget constraints for young adults saving for retirement.
4b	Budget Constraints	Housing costs are the primary determinant of cost of living for young adults.
5	Compound investing	Young adults save for retirement because they know time horizon is important , although financial literacy determines how they explain why.
6	Financial Literacy	Financial literacy varied among young adults saving for retirement based on the number of influences they had experienced.
7	Future expectations	Young adults expected future expenses to increase , possibly limiting their ability to save for retirement.

Propositions

The first proposition is that retirement saving by young adults occurs after achieving financial safety. This proposition relates to the topic of life-stage transitions, which sought to determine if young adults shared similar milestones of adulthood. In fact, the research sample demonstrated the diversity of young adulthood, as participants came from a variety of lifestyles and circumstances. Yet the majority shared a common sense of financial safety, which was a concept developed by the researcher to embody several related attributes. One aspect of financial safety stemmed from income adequacy, meaning that young adults not only had surplus income, but also regularity of income. Another attribute derived from employment

confidence, which was the result of both job satisfaction as well as a positive outlook about future employment prospects. Emergency protection was the third aspect of financial safety, which meant young adults felt like they had developed some level of cushion against the financial impact of unforeseen events. These three precursors instilled a feeling of financial safety in young adults, which created the context for retirement saving.

Young adults saving for retirement also possessed the ability to balance short-term and long-term time preferences. However, many participants expressed inherent tension between present and future desires, which required a common behavioral trait of self-discipline in order to control their decision-making. Short-term spending elicited a stronger emotional pull, whereas long-term goals were more strategic and intellectual in nature. This meant that young adults frequently expressed conflicting or seemingly contradictory viewpoints about their time preferences. Another factor influencing the long-term thinking by young adults is pessimism about the future. Their pessimism often stemmed from the perception of political and economic instability, especially regarding safety net programs like Social Security. For pessimistic thinkers, retirement saving provided a proactive outlet to ensure financial independence in the face of future uncertainty.

Uncertainty about the future is an implicit challenge for young adults saving for retirement. The issue of incomplete information means that most young adults do not engage in extensive retirement planning before deciding to save. Retirement saving and retirement planning are viewed as two separate activities by young adults which are not necessarily interdependent. For most young adults, retirement saving decisions are made informally based on present financial realities rather than long-term retirement goals. Incomplete information

about the future and the length of time until retirement means that retirement itself lacked significant meaning for most young adults in the sample. Therefore, retirement planning activities that focus primarily on the future are likely to be less relevant and lose interest among this age group.

The study also looked at budgetary constraints on retirement saving by young adults. In general, participants maintained a relatively low cost of living which helped minimize the effect of budgetary constraints. The low cost of living was primarily derived from two sources. First, many young adults benefit from qualitatively simple lifestyles which decrease overhead and limit the need for spending. Second, many demonstrate frugal characteristics about discretionary spending. Although young adults in the study were not necessarily affluent, a low cost of living meant that many were insulated from budgetary strain.

At the same time, the researcher also observed that as lifestyle choices grew more complex, budgetary pressure on young adults began to increase. This form of lifestyle creep was driven in large part by housing costs, which proved to be the most important determinant of cost of living. Housing was the most important financial priority for young adults, more so than debt relief, retirement saving, and other concerns. The researcher observed the destabilizing effects of homeownership on the budgetary equilibrium of young adults. The direct cost of homeownership stretched the financial resources of young adults. However, the indirect costs had an equally significant and ongoing impact by initiating a process of lifestyle creep that raised the cost of living over the long term. It is this increase in cost of living that had the most insidious effect on the ability of young adults to save for retirement.

The study turned from its focus on budget constraints to examine how young adults approached retirement investing. The study found that most young adults believed that a long time horizon provided an important advantage; however, only a small number explicitly connected this idea with compound investing. The concept of compound investing did not have widespread saturation; the more prevalent issue concerned the topic of risk tolerance. There was a significant divergence in how young adults interpreted the benefit of the time horizon, depending on their level of financial literacy. Those with a low level of financial literacy believed that a long time horizon allowed them to save less per month and invest more conservatively. Those with a high level of financial literacy believed that the time horizon protected them from investment risk, thereby leading them to save and invest more aggressively. These diverging attitudes towards risk create material differences in the growth of retirement assets over the long term. Those who lacked financial literacy chose more conservative investments, especially when presented with risk-based investment guidance or plan defaults. Further complicating the analysis is the fact that financial literacy also determined how well individuals understood how to critically analyze investment returns, using market benchmarks or personal calculations. This led to highly divergent attitudes towards investing retirement savings, which were based primarily on an individual's level of financial literacy.

The study found that financial literacy varied widely among young adults saving for retirement. Some participants expressed little confidence, while others were highly proficient. Many were somewhere in between, engaging in a process of personal development to improve their knowledge. Research analysis determined that financial literacy depended on a range of influences, which varied by person. The main influences identified by the researcher included

family, education, career, media, and financial advisors. The researcher determined that an individual's financial literacy improved as the number of influences they had experienced increased. Exposure to some of the influences was a matter of luck or upbringing, yet others depended on an individual's level of curiosity and interest in both personal finance and retirement saving. Much like financial literacy itself, curiosity levels varied widely, from those with an active interest in learning to those who found the subject tedious.

The final topic addressed in participant interviews related to the future expectations of young adults and the possible implications for retirement saving. Overall, young adults expected significant changes to occur in the future, affecting both their personal and professional lives. However, there was a difference in how young adults interpreted these changes financially. The majority of young adults expected their expenses to increase in the future. Young adults associated increased expenses with changes to their personal lives, especially concerning family formation and having children. Meanwhile, there was no similar consensus about expected increases to future income. Although young adults expected significant professional changes in the future, those changes were not commonly associated with increased income. The discrepancy of expectations regarding future income and expenses led the researcher to conclude that rising expenses may in fact influence the willingness of some young adults to continue saving for retirement.

The eight propositions introduced here formed the core of the data analysis performed by the researcher. Chapter 4 presents more detailed narrative analysis of these findings, along with direct quotations from participants that support and illustrate the concepts discussed. The

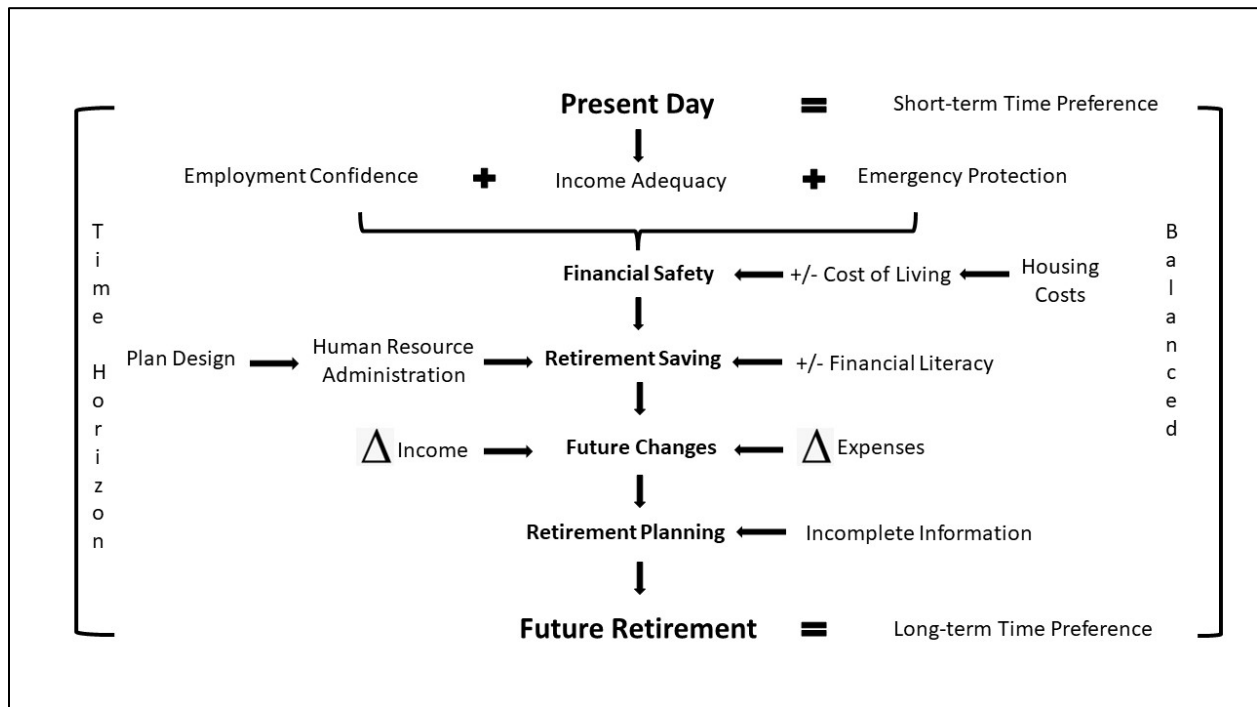
eight propositions met the benchmark of data saturation consistent with the methodology of Grounded Theory.

Theoretical Model

The propositions also served as the basis of a theoretical model, which was developed to illustrate the retirement saving decision process made by young adults. The theoretical model is presented in detail at the conclusion of Chapter 4 because it integrates concepts that have been introduced in the preceding results. The illustration is a generalized representation of the decision-making factors that lead to retirement saving by young adults. However, it also depicts the time horizon between the present day and future retirement date, to represent the intertemporal features of the decision process.

Image 1.1

Theoretical model of retirement saving decision process



The model incorporates all of the major concepts presented in the propositions and creates a single framework through which to understand and interpret retirement saving decisions. That is an important and novel outcome of the current study, because it looks holistically at the entire retirement saving process from the vantage point of someone in early adulthood. The model also depicts relationships between factors in the decision-making process and demonstrates the interconnectedness of these features better than the written propositions can in isolation. There have been many studies and articles, such as those by of Huang (2017), Benartzi and Thaler (2007), and Knoll (2010), that have argued for the complexity of the retirement saving decision process. The model presented in this study both confirms those arguments and makes the complexity more tangible by arranging elements in a cohesive fashion.

Chapter I Conclusion

The remainder of this study is organized in sequential chapters that explain the research process in greater detail and present its findings.

- Chapter 2 brings together a **review of existing literature** from a range of sources that have informed the current study and helps better frame the context from which this study arose. From this literature review, Chapter 2 also establishes the seven research topics that are the primary focus of data collection.
- Chapter 3 explains the **methodology** of the study based on the research activities that were used to recruit participants, collect data, and analyze results.

- Chapter 4 reviews research activities and presents the **results** of the study as a series of propositions, culminating in a theoretical model that integrates findings into a single illustration.
- In Chapter 5, the researcher discusses **theoretical implications** of the results, while addressing the risks and limitations, and recommending opportunities for further research.

These chapters are unified by an overarching focus on better understanding the retirement saving decisions of young adults.

Chapter II: Literature Review

An estimated 66 percent of young adults have no money saved in a retirement account (Brown, 2018). Yet numerous examples highlight the benefit of starting to save early for retirement. Lieber and St. John (2017) described a scenario in which two individuals started investing \$5,000 annually in retirement accounts and earned the same six percent return before retiring at the same time at age 67. One individual who began saving at age 22 would accumulate \$1,063,717.57, compared to the other individual who began saving at age 32 and earned \$557,173.80. In other words, extending the time horizon by ten years nearly doubled the account value.

Evidence suggests that retirement saving behavior is extremely variable, leading to a high degree of heterogeneity in retirement wealth. Young adults are in a distinct phase of their career lifecycle, when retirement is still a distant prospect, and other priorities compete for time and attention. In addition, many young adults are still learning about financial decision making (Tang & Peter, 2015) and have limited information with which to accurately forecast for retirement (Bajtelsmit & Rappaport, 2018). A study by Laibson et al. (2009) determined that the quality of financial decision making follows an inverted U-shaped pattern over the lifecycle, peaking during middle age at around 53 years old. Conversely, they determined that young adults, along with the elderly, are the two groups most likely to make financial mistakes. However, the expectation that young adults will begin saving for retirement during their early career makes the assumption that this age group are willing, able, and know how to do so.

For these reasons, there is a compelling need to understand the decision-making process that leads young adults to participate in retirement saving (Knoll et al., 2012), either

through a workplace plan or in an individual retirement account. Those who are participating represent a minority among their age cohort, but they can also provide a window into the thinking that determines why young people save. It also helps to know more about the context in which young adults make these decisions, both in terms of their economic and social influences. Therefore, this review examines information related to both retirement saving and the socioeconomic reality of young adults.

Retirement saving is a component of household wealth, which is the subject of different forms of research. Whereas some research is targeted at micro-analysis of specific retirement issues, other research takes a macroeconomic approach to understanding larger demographic trends about the distribution of wealth. Therefore, research can vary widely in terms of its scope of analysis. Similarly, research is conducted and published by a wide range of sources on retirement, including academic, institutional, industry, and government reports. The research produced by each of these groups often reflects the intended audience and their specific interests. Lastly, different studies use inconsistent definitions to determine who is a young adult. Research related to Millennial retirement saving is especially prevalent in the literature as a placeholder for the young demographic. Millennials are historically defined as a generation born after 1980, which means the oldest of this cohort are now in their early 40s. However, the term young adult is frequently intended to refer to individuals in their 20s and 30s.

With those precursors in mind, the following review is structured into eight sections. The first section addresses the evolution of the retirement system, which has led to an increased level of individual responsibility. The second section documents evidence demonstrating widespread heterogeneity in retirement wealth, which is a manifestation of a

highly individualized system. The review then shifts its focus in section three to provide an overview of demographic trends and household wealth related to young adults in the United States. That is supplemented in section four with a discussion of research concerning the financial literacy of young adults and the ways in which financial literacy contributes to retirement saving behavior.

Section five looks at retirement saving trends among young adults, including access to workplace retirement plans, participation levels, and savings rates, and the importance of compound investment growth. The retirement decision process is addressed in the next two sections. Section six discusses tools used in financial analysis, such as replacement ratios and simulation models, that try to measure the adequacy of retirement saving empirically. Section seven then addresses the behavioral research into how cognitive and psychological dimensions impact retirement saving, through the influence of rules of thumb, time preferences, and personal bias. The final section is a summary that draws from all of the previous literature discussed. The summary will highlight research questions that have been raised in the literature, which will then serve as the basis for interview questions used in this study. The goal is to provide a comprehensive and integrated analysis of the disparate subjects that inform our understanding of how young adults save for retirement.

Table 2.1*Chapter Sections*

1. History of the US Retirement System	5. Retirement Saving Trends Among Young Adults
2. Household Wealth and Retirement Saving Heterogeneity	6. Retirement Saving Adequacy
3. A Financial Portrait of Young Adults	7. Behavioral Influences on Retirement Saving
4. Financial Literacy Among Young Adults	8. Conclusion

Section 1: History of the U.S. Retirement System

The retirement system in the United States has undergone frequent change due to the progressive evolution of legal rules and employment practices. No change has been more significant than the widespread switch from defined benefit plans (DB plans) to defined contribution plans (DC plans) as the preferred form of retirement benefit in the private sector. This transition is a relatively recent phenomenon. Among the Fortune 500, the percentage of employers offering traditional pension plans fell from nearly half in 1998 (236 companies), to three percent (13 companies) in 2019 (McFarland, 2020). Likewise, by 2019, 86 percent of the Fortune 500 (430 companies) offered defined contribution plans as their primary retirement benefit (McFarland, 2020).

DB plans once made up one part of the three-legged stool, a metaphor for the US retirement system, whose other legs consisted of Social Security and personal savings. They are known as defined benefit plans, because they pay out a defined income stream at retirement age, which is typically calculated based on variables such as working salary and tenure. Pension

assets are funded and managed by the employer, which removes risks to the individual participants such as lifetime longevity and market volatility.

Code Section 401(k) of the Revenue Act of 1978 introduced defined contribution plans to the retirement system. DC plans represent a different approach to retirement benefits because they are savings plans whose major incentives derive from their favorable tax status, both in the form of pre-tax salary contributions and tax-deferred investment growth. Even though they are employer-sponsored, DC plans are geared to the individual, who defines a contribution level from his salary into the plan, in a process known as elective deferral.

Individual retirement accounts (IRAs) were created by the Employee Retirement Income Security Act (ERISA) in 1974 as pre-tax personal savings accounts. Originally intended for workers not covered by employer-sponsored retirement plans, eligibility was expanded to all taxpayers with the 1981 Economic Recovery Tax Act (ERTA). In 1997, the Roth IRA was introduced as an alternative option, using after-tax contributions whose earnings growth is tax free. Although there are additional forms of retirement assets such as annuities and certain insurance products, defined contribution plans and IRAs are the primary mechanisms through which Americans save for retirement.

Table 2.2*Milestones in Retirement System*

1875	The American Express Company starts the first private sector pension plan.
1935	Social Security is founded, establishing 65 as a national retirement age.
1974	The Employee Retirement Income Security Act (ERISA) updates standards of fiduciary governance practices, disclosure rules, and establishes the Pension Benefit Guarantee Corporation.
1978	Code Section 401(k) of the Revenue Act of 1978 creates qualified deferred compensation plans which allow pre-tax employee contributions.
1981	Economic Recovery Tax Act expands IRA eligibility to all taxpayers.
1983	Amendments to Social Security gradually raise national retirement age to 67.
1997	Taxpayer Relief Act of 1997 introduces Roth IRAs.
2006	Pension Protection Act encourages plan design modernizations such as automatic enrollment and qualified default investments.
2020	The SECURE Act updates rules and regulations concerning part-time employee eligibility, minimum distributions, and lifetime income.
2020	In response to the coronavirus pandemic, the CARES Act allowed for emergency withdrawals, loosened limitations on plan loans, and suspended minimum distribution requirements.

Note. Source: Georgetown University Law Center (2010)

The major transition from DB to DC plans also came with significant qualitative changes to the retirement system. Namely, it focused responsibility on individual households to make decisions and plan effectively for retirement (Huang, 2017). Inherent in their structure, DC plans possess a four-part decision matrix from which individual participants must evaluate and select options in order to save for retirement (Huang, 2017). Thaler and Sunstein (2008) describe the system as follows:

Defined-contribution plans are not very forgiving. Employees have to get around to joining, to figuring out how much to save, to managing their portfolio over a period of years, and then to deciding what to do with the proceeds when they finally retire. People can find the whole process frightening, and many seem to be making a mess of the task. (p. 106)

The combination of planning decisions will determine how successfully an individual saves for retirement. In addition, the multiplicity of decision-making outcomes adds to the complexity of evaluating the retirement system as a whole. The result is a heterogeneous system in which some households have saved large sums in retirement accounts, many more have modest savings, and nearly half have no retirement account at all (Morrissey, 2019). Furthermore, the personal choices inherent in the retirement system have led to a high level of uncertainty about retirement security in America. A report by the Federal Reserve (2020) showed that less than half of households across every age group feel like they are preparing adequately for retirement, while approximately a quarter of the youngest age cohort felt this way.

Table 2.3

Feeling Prepared for Retirement

Age	% Who Feel “Prepared” for Retirement
18-29	26%
30-44	35%
45-59	42%
60+	45%

Note. Source: Federal Reserve, Board of Governors (2020)

Section 2: Household Wealth and Retirement Saving Heterogeneity

Retirement wealth is the largest component of household wealth in the United States. At the end of 2020, approximately \$34.9 trillion was held in retirement funds (Investment Company Institute, 2021). That includes \$12.2 trillion held in individual retirement accounts, and \$9.6 trillion held in defined contribution plans. An analysis of wealth by the US Census Bureau broke down the asset composition of US households as follows:

Table 2.4*Composition of Household Wealth by Asset Type: 2017*

Retirement accounts	32.8%
Equity in own home	28.9%
Stocks and mutual funds	10.2%
Assets in financial institutions	8.9%
Business assets	5.6%
Other asset holdings (annuities, trusts, college savings accounts, etc.)	5.6%
Rental properties	5.0%
Other real estate	4.0%
Vehicles	2.3%
Bonds	1.1%
All unsecured debts	-4.4%

Note. Source: Eggleson et al., 2020

The composition of household wealth can be measured at a point in time, or it can be evaluated across time. Similarly, household wealth can be deconstructed in a number of different ways, to look at asset types, or according to demographic features such as age, education, or income. Although demographics tell part of the story, they do not appear to tell the entire story. Hurst et al. (1998) write, “Wealth is systematically related to income, point in the lifecycle, and other demographic characteristics. But apart from those differences, there remains great residual heterogeneity in wealth holding.”

The heterogeneity of household wealth beyond what is attributable to obvious demographic features poses a problem for economists because of the difficulty in defining and measuring its sources. Bernheim et al. (2001) write:

Households may differ with respect to patience (the rate of pure time preference), risk tolerance, exposure to uncertainty, health status, perceived life expectancy, relative tastes for goods complementary with leisure at advanced ages, levels of work-related expenses, lifetime earnings, or income replacement rates. (p. 832)

This potential list of personal preferences makes wealth accumulation difficult to model, although some have tried. Engen et al. (2000) developed a lifecycle model that attributes the major source of heterogeneity to different forms of income shocks. The model demonstrates that heterogeneity is not solely the result of behavioral preferences, but can also depend on different life experiences. The model by Yang (2009) showed that intergenerational transfers of wealth and earnings ability contribute to heterogeneity, especially among high income households. Others have looked beyond the lifecycle construct for answers to the question of heterogeneity. Bernheim et al. (2001) concluded, “The empirical patterns in this paper are more easily explained if one steps outside the framework of rational, farsighted optimization. If, for example, households follow heuristic rules of thumb to determine saving prior to retirement” (p. 855).

Moving beyond the theoretical, Poterba et al. (2011) provide a point in time analysis of wealth composition at retirement. Using data from the 2008 Health and Retirement Study, they break down the sources of wealth within an age cohort of households 65 to 69, who are ranked by percentile of wealth.

Table 2.5*Composition of Wealth for Households 65-69 in 2008 (in thousands)**

Wealth Percentile	Net Worth	Social Security	Defined Benefit Pension	Non-Annuitized Wealth	Financial Assets	Personal Retirement Account Assets	Housing & Other Real Estate
10%	\$197	0.0	0.0	0.1	0.0	0.0	0.0
30%	\$413.6	214.5	0.0	71.8	2.0	0.0	42.0
50%	\$731.1	315.3	0.0	221.7	15.0	5.0	120.0
70%	\$1,146.4	463.3	116.8	518.0	70.0	75.0	229.5
90%	\$2,103.0	643.1	468.9	1,274.0	358.0	347.0	585.0

Note. Source: Poterba, Venti and Wise (2011)

*Table displays asset values by category for households in different wealth percentiles. Dollar values have been abbreviated for clarity.

The data show that the composition of household wealth can have substantial differences within a single age cohort. Disparities in financial assets and personal retirement accounts are particularly steep. The wealthiest 10 percent have \$358,000 in financial assets on average, and \$347,000 in personal retirement accounts. However, half of households overall average \$15,000 or less in financial assets and under \$5,000 in retirement accounts. For households in the bottom half, Social Security represents as much as 50 percent of their net worth in retirement. The lack of pension wealth and personal savings for those outside of the 70th percentile creates a substantively different financial reality in retirement. That leads Poterba (2014) to conclude, “Retirement support arrangements of the elderly are heterogeneous. Only about one-quarter of the elderly population draws substantial support from all three legs of the ‘three-legged stool’” (p. 9).

Heterogeneity has been studied both statistically and qualitatively in the literature.

Samwick (2006) put forward a three-part framework for heterogeneity based on budget

constraints, saving motives, and household preferences. The budget constraints affecting heterogeneity begin with the initial endowment of resources received from family and education and are later shaped by earnings and investing potential determined by income growth and income shocks. Saving motives are not only concerned with retirement, but also compete with other priorities. Saving for liquidity (also known as precautionary saving) and for specific purchases like housing and education take away resources from retirement. Lastly, time preferences determine the discount rate for future savings, which influences how much value households place on retirement assets. Samwick (2006) argues, “We cannot effectively understand national saving or saving specifically for retirement without understanding this heterogeneity” (p. 22).

Retirement saving heterogeneity is not just an academic issue but can also be understood in practical terms. Poterba (2015) developed twelve realistic questions to evaluate sources of heterogeneity at retirement, which can help determine the adequacy of financial resources.

Table 2.6

Twelve Questions for Retirement Savers

How long are we likely to live?	Do we have a defined benefit pension?
How healthy are we likely to be?	What is our financial net worth?
When will we retire?	What will Social Security pay us?
What do we hope to do when we retire?	How will we finance health care costs?
Will family be able to support us?	How will we finance long-term care?
Will we leave a bequest or charitable contribution?	Are we prepared to sell our home if we own one?

Note. Source: Poterba (2015)

The questions posed by Poterba are a reminder that heterogeneity is more than just a statistical issue from academic literature. It is based on the specific circumstances of each household.

Poterba (2015) notes:

These 12 questions illustrate one of the reasons that economists and financial planners struggle to provide definitive answers to questions such as “what is the right savings rate?” and “how rapidly can I afford to draw down my resources?” The potential heterogeneity in the answers to the dozen questions posed above makes clear that a one-size-fits-all answer is unlikely to be satisfactory for addressing the retirement security of pre-retirement households. (p. 382)

Rather than search for generic rules in retirement planning, Poterba is recommending a flexible approach that is more contextual than prescriptive.

In order to make heterogeneity more tangible, the Employee Benefit Research Institute developed five representative profiles of retiree wealth based on an analysis of survey data from 2,000 retired households between the ages of 62 and 75 (Ebrahimi, 2021). These profiles are designed to conceptualize the financial reality of different retirement circumstances. They identified retiree groups as Average, Affluent, Comfortable, Struggling, or Just-Getting-By. The profile of each group included estimates of financial assets, retirement income and spending, debt levels, and home ownership, as well as demographic characteristics such as marital status, health, and confidence levels. Although the financial attributes of some groups were obvious, others were more subtle. For instance, lower levels of debt and a higher incidence of home ownership separated those Just-Getting-By from Struggling retirees, even though both had low levels of financial assets and income. Meanwhile, Comfortable retirees differed from Average retirees based on a higher level of financial assets held in workplace and personal retirement accounts. The profiles themselves provide a conceptual way to easily communicate the

underlying complexity of heterogeneous retirement wealth. Ebrahimi (2021) finds, “There is little homogeneity when it comes to the path retirees navigate” (p. 1).

One notable feature of the existing research on retirement saving heterogeneity is that it has primarily focused on end-stage planning either immediately before or during retirement. More work is needed to evaluate how differences in retirement saving occur throughout the career lifecycle. Young workers, especially, face unique financial circumstances during the transition to adulthood that are distinct from those nearing the end of their working careers. The next section details some of these issues.

Section 3: A Financial Portrait of Young Adults

The financial health of young Americans has been a focus of research due to growing evidence of a generational wealth gap. In 1989, the median household wealth for those 65 to 75 years old was \$155,000, compared to \$20,000 for those 25 to 35 (Kent, 2019). By 2016, median household wealth for those 65 to 75 had risen to \$228,000, while decreasing to \$18,000 for those 25 to 35. The trend has been most noticeable for the age cohort born after 1980, which is why it has been referred to as the Millennial wealth gap (Kent, 2019). According to Gale et al. (2020), “The millennial generation ... had less median and mean wealth in 2016 than any similarly aged cohort between 1989 and 2007.”

The gap has accentuated long-term trends in secular wealth distribution, which has seen the highest proportion of wealth accumulation go to older and better-educated groups. The gap is also a lingering effect of the Great Recession from 2008. The impact of the recession affected all age groups, as evidenced by declines in income and net worth between 2007 and

2010. However, the cohort born after 1980 was the only group who continued to experience further deterioration in both income and net worth between 2010 and 2016 (Kent, 2019).

Along with the measurable declines to income and wealth affecting young Americans, there are other qualitative factors in the demographic data that speak to a changing economic reality. Historically speaking, “Researchers have looked at a set of common experiences that signify the transition to adulthood: leaving home, working, marrying, and becoming a parent” (Vespa, 2017, p. 8). A report by the U.S. Census Bureau using the Current Population Survey (CPS) detailed changes over the period from 1975 to 2016 for young adults between 18 and 34 (Vespa, 2017). It found that “Today’s young adults look different from prior generations in almost every regard: how much education they have, their work experiences, when they start a family, and even who they live with” (p. 1).

In general, young people today have more education than predecessors and place greater importance on career progression. However, the trade-off has been a decreased emphasis on family formation by today’s young adults. Whereas 8 out of 10 young adults were married by the age of 30 in 1975, young adults in 2016 did not achieve the same percentage until age 45 (Vespa, 2017). Knoll et al. (2012) found that marital status had a significant influence on whether young adults prioritized retirement saving, especially among young women. This led them to highlight “the interplay between life events (e.g. marriage), psychological factors (e.g. future-self connectivity), and economic outcomes (e.g. retirement saving)” (p. 96). They found compelling evidence that “The long-term commitment implied by marriage may strengthen the extent to which individuals feel closer to their future selves by stabilizing individuals’ perceptions of future conditions” (p. 97). This is an important finding,

because it illustrates that young adults are in a distinctly fluid life stage where the ability to visualize and plan for future financial needs is limited by changing circumstances.

Housing is another attribute that is fluid at this life stage. While the living arrangements of young adults are highly diverse, the share of young people living independently has shrunk since 1975 (Vespa, 2017). Meanwhile, approximately 24 million young people live with their parents, and a large percentage also share housing with roommates or unmarried partners (Vespa, 2017). As a result, the majority of young adults utilize some form of hybrid housing arrangement. A study by Britt-Lutter et al. (2018) compared the financial implications of cohabiting with an unmarried partner compared to married home ownership. They concluded that cohabitation is associated with lower net worth and higher levels of consumer debt. Furthermore, they found that cohabitation allocates “resources in a way that hinders long-term asset accumulation leading to lower retirement preparedness” (p. 58).

The hybrid housing favored by young adults has an unintended consequence on our ability to track economic data at this life stage. The Federal Reserve conducts a triennial Survey of Consumer Finances (SCF), which is a widely used data source in retirement research. However, “because of the SCF sample design, the sample of young adults studied represents only the population of young adults living independently, not the entire population of young adults” (Dettling & Hsu, 2014, p. 306). With so many young people living in hybrid households, the SCF fails to reflect this reality. Furthermore, Dettling and Hsu find that those young people living independently have average incomes around \$10,000 higher than the rest of their age cohort, meaning that they represent an economically advantaged sub-group. This leaves

researchers in a position with a “lack of information on asset ownership for young adults not living in independent households” (Merry & Thomas, 2014, p. 396).

When it comes to home ownership, only 34 percent of households under age 35 own a home, a figure that has decreased 10 percent since 1960 (Mather et al., 2019). A study by Letkiewicz and Heckman (2018) found that home ownership among young adults was closely associated with marital status, education, and income. Married households with a college degree and children were the most likely to own a home. There are also significant financial barriers to home ownership. A report by Freddie Mac (2018) determined that rising home prices were the primary reason for declining home ownership among young households. In fact, the report stated that a one percent increase in the average home price lowered the likelihood of home ownership for young adults by 11 percent. Young home buyers tend to be in a vulnerable position in the housing market because of a lack of assets and high debt to income ratios. As a result, they have a difficult time competing with more established buyers. Taken together, both demographic and economic trends have conspired to shrink the percentage of homeowners among young households.

Debt is another feature that distinguishes the finances of young households, especially student loan debt. Student loan debt has become the second largest source of household debt in the United States after home mortgages, totaling more than \$1.7 trillion in 2021 (Federal Reserve Bank of St. Louis, 2021). The distribution of student loan debt primarily falls on young households: 66.7 percent of student loan debt belongs to households under 45, while 40.5 percent belongs to households under 35 (Copeland, 2021). The percentage of households under 35 with student loan debt reached 41.4 percent in 2019, an increase of over 70 percent

since 1992. Similarly, the average student loan debt balance has risen from \$12,498 in 1992 to \$40,550 in 2019.

The effect of student loan debt on household wealth has become a research priority because of its rapid growth and widespread implications. Multiple studies have found that student loan debt has a negative impact on the net worth of young households. Elliott and Nam (2013) concluded that the net worth of households without student loan debt is three times higher, whereas Fry et al. (2014) estimated the difference as seven times as much. Cooper and Wang (2014) found that student loan debt reduced home ownership rates. Meanwhile, Elliott and Lewis (2015) relate student loan debt to wider issues of inequality in educational outcomes based on family wealth. When student loan debt is combined with poor educational outcomes it has the potential to affect both earnings power and wealth accumulation, which can reinforce social inequality (Elliott & Lewis, 2015).

The specific impact of student loan debt on retirement saving is also evident. A study by Elliott et al. (2013) found that households without student loan debt (\$55,000) averaged over twice as much retirement savings as those with debt (\$25,000) based on data from the Survey of Consumer Finances. Hiltonsmith (2013) developed a model to simulate long term wealth accumulation and concluded that student loan debt led to a lifetime wealth loss of approximately \$208,000. Nearly two thirds of that loss was attributed to lower retirement saving (\$134,000). Rutledge et al. (2016) used the National Longitudinal Survey of Youth Cohort 1997 to compare workers at age 30 and found that having student loan debt of any amount appears to diminish retirement savings, regardless of the size of debt. Lastly, Munnell et al.

(2016) argue that the effects of student loan debt on retirement security are greatest for those who incur debt without earning a degree.

Retirement saving competes with student loan debt and other financial priorities for the attention of young adults. A study by O'Neill et al. (2019) sought to understand how individuals balance four competing priorities including student loan debt, retirement saving, homeownership and financial goals. They surveyed a group made up primarily of young adults under age 45 and used keyword analysis to examine responses to open-ended questions. Their analysis determined that individuals did not simultaneously fund these priorities, but rather addressed them sequentially. Furthermore, they found that retirement saving and homeownership were associated with delayed action statements like "as soon as" or "after I [action]." As a result, they concluded that young adults lacked either the financial resources or the necessary bandwidth to deal with all four issues concurrently.

The long-term financial health of young American households is open to interpretation. Gale et al. (2020) find both positives and negatives that impact wealth accumulation for this age group. They suggest, "The Millennials also face a distinctive set of issues and circumstances that will affect their ability to save for retirement, including both advantages and disadvantages compared to prior generations." Among the advantages, they claim that those born after 1980 are the most highly educated cohort in American history. This cohort also has higher earnings than predecessors at a similar stage, due in part to their high level of human capital. Gale et al. also claim that the retirement system offers an advantage to maximize tax-deferred saving and compound investment growth. Finally, they estimate that this age cohort is likely to inherit more wealth than any previous generation, being passed on by Baby Boomer parents.

These advantages to wealth accumulation are counterbalanced by alternate negatives. First, Gale et al. (2020) suggest that the Great Recession disproportionately impacted this age cohort at the start of their careers, and now they face the uncertain fallout of the COVID-19 pandemic. Furthermore, the nature of the job market has changed towards short-term contingent employment in the form of contract or freelance positions. There are well documented trends in delayed milestones such as marriage, home ownership, and having children. This age group can also look forward to longer life spans on average which will require more retirement assets in order to maintain their standard of living for longer. They also face the existential risk that shortfalls in Social Security and Medicare will lead to drastically reduced government benefits by the time they are eligible for these programs. Each of these considerations may have an impact on the wealth of young adults as they mature and plan for retirement. These examples help illustrate that retirement saving takes place in the context of wider social and economic realities.

Section 4: Financial Literacy Among Young Adults

The ability of young adults to accumulate wealth and save for retirement depends to a large degree on their level of financial literacy. Financial literacy is an individual measure of the cognitive ability to interpret financial information. Warmath and Zimmerman (2019) suggest that financial literacy consists of three primary characteristics. They “define financial literacy as one’s capacity to make effective financial decisions, where ‘capacity’ refers specifically to knowledge, skill, and self-efficacy” (p. 1623). Similarly, Mason and Wilson (2000) define financial literacy as “an individual’s ability to obtain, understand, and evaluate the relevant information necessary to make decisions with an awareness of the likely financial

consequences” (p. 17). Financial literacy should be understood as a precursor to financial decision-making. Although the two are closely related, financial literacy is an assessment of intellectual comprehension rather than good judgment.

The financial literacy of young adults has been a focus of research interest, in large part because the evidence is concerning. Bassa Scheresberg (2013) states that “Young Americans display very low levels of financial literacy, especially among certain demographic subgroups, such as women and minorities. Financial literacy is shown to increase with education, but even respondents with high levels of education display very low financial literacy” (p. 1). Her study found that among adults ages 25 to 34, just 34 percent could answer three basic financial questions correctly. Even among those with college degrees, 49 percent answered correctly, while this figure rose to 60 percent for those with post-graduate education.

Lusardi et al.(2010) studied financial literacy among the age cohort participating in the 1997 Longitudinal Survey of Youth when that group had reached approximately 24 to 28 years old. They found only 27 percent were able to answer three questions correctly concerning interest rates, inflation, and risk diversification. In addition, they also found that financial literacy is strongly related to demographic and social characteristics. In particular, women and minority groups scored consistently lower. Conversely, those with a high percentage of peers attending college, and those with highly educated parents scored significantly better. This led Lusardi et al. (2010) to conclude that there are very large differences in financial literacy among sub-groups of young adults. They write, “Young adults should not be considered one homogenous group of consumers. Rather, the differences by race, sex, educational attainment

and other observable characteristics should be considered both in research and public policy” (p. 375).

These disparities among young adults have naturally led to research interest in how young adults develop or acquire financial literacy. Tang and Peter (2015) highlighted three major sources stemming from financial education provided by formal programs, financial experience gained from real life, and the influence of the financial experience of parents. They connected these sources to the construct of a learning process based on education, observation, and experience. They found that these pathways were interconnected and complimentary, working concurrently develop a framework for attaining financial literacy.

The role of parents was explored further by Jorgensen and Savla (2010), who found that parents were especially important to the development of financial attitudes and behaviors. That was compared with a less significant impact on the development of financial knowledge. As a result, they concluded that the influence of parents on financial literacy may be more indirect than intentional. Parents appear to have a bigger influence based on the habits and attitudes observed by their children, rather than teaching any specific knowledge set.

Another study by Czar et al. (2021) distinguished between the concepts of financial literacy and financial capability by suggesting that financial capability is inclusive of financial self-efficacy and financial behavior. They examined the impact of the transition to living independently on young adults, noting that:

Leaving home represents a move towards financial independence, requiring young adults to pay bills, purchase insurance, manage budgets, and navigate asset purchases. New financial experiences may increase a young adult’s financial capability by either acquisition of new knowledge about financial matters, or by forcing a change in their financial behaviors. (p. 557)

Although they found significant improvement in financial capability among young adults living independently, they did not find similar development in financial literacy. This led them to a nuanced observation: “Individuals may be making good decisions without understanding the theory behind why their decision is sound” (p. 571). Their findings have important implications because of the number of young adults living with their parents or in hybrid housing arrangements, who may experience a delayed development of financial capability as a result.

As a cognitive skillset, Letkiewicz and Fox (2014) found that financial literacy has its greatest effect when combined with other behavioral traits. They paired financial literacy with the psychological construct of conscientiousness, measured during the 2008 iteration of the 1997 National Longitudinal Survey of Youth, when subjects were 24 to 28 years old. Both financial literacy and conscientiousness had a substantial positive effect on the accumulated asset holdings of young adults. They found “clear support for the role of financial literacy in asset accumulation, as even minimal increases in financial literacy increase liquid and illiquid asset holdings” (p. 295). However, they found a notable discrepancy related to the net worth of young adults. Although financial literacy had no direct relationship, it served as a moderating variable. Therefore, as financial literacy increased among subjects, the positive relationship between conscientiousness and net worth was magnified. The Letkiewicz and Fox study is a valuable illustration of how financial literacy interacts with other personal traits to determine actual behaviors.

Although financial literacy is an all-inclusive term, Hopkins and Pearce (2019) distinguish retirement income literacy as its own separate body of knowledge. They argue that retirement planning presents a unique situation due to the “complexity created by the wide range of

decisions and expertise that must be coordinated concerning an indeterminable amount of time.” Based on their findings, only 26 percent of retirement-age participants passed a retirement income literacy quiz, with an average score of 45 percent. Those who scored higher also shared other hallmarks of financial planning. Those who passed the quiz were 46 percent more likely to have a long-term care plan, 36 percent more likely to feel confident about retirement, 16 percent more likely to have a written retirement plan, and 8 percent more likely to have an estate plan in place.

Among the general population, there is strong evidence that financial literacy of any type is beneficial to retirement saving. For instance, Lusardi and Mitchell (2007) found that financial literacy led to a higher level of retirement planning. Consequently, those who reported even minimal planning averaged approximately twice as much retirement assets. Another study by Hauff et al. (2020) divided retirement behavior into three sequential stages of planning, saving, and investment management. They found that financial literacy had a significant positive effect on decision-making in all three stages, with the greatest impact observed on investment management.

The effect of financial literacy on investment selection has been documented elsewhere. A study by Clark et al. (2017) determined that financially literate employees contribute as much as three percent more annually to their employer retirement plan and hold a higher percentage of money in equities. Chatterjee et al. (2017) associate retirement investing with risk tolerance. They found that financial literacy helped mediate the perception of risk, leading to higher levels of equity investment for long-term saving goals. These findings are evidence that financial literacy can benefit retirement saving at several levels. It leads to a higher incidence of overall

awareness, which increases the likelihood that individuals will develop some sort of retirement plan. It also helps inform the sequential decisions that go into the retirement planning process, leading to better outcomes. The low level of financial literacy among young adults is a possible explanation for other trends related to retirement saving in this age group.

Section 5: Retirement Saving Trends Among Young Adults

There are meaningful differences in the degree to which age cohorts engage with the retirement system. Young people are the least engaged age group among working adults when it comes to retirement saving, experiencing lower rates of accessibility, enrollment, and saving. A Pew research study (2017) comparing cohorts of Millennials, Generation X, and Baby Boomers found that only 31 percent of Millennials participated in an employer-sponsored retirement plan. A similar study by the National Institute of Retirement Security (NIRS) estimated that 34.3 percent of Millennials participated in a workplace plan (Brown, 2018). Pew (2017) also found that 41 percent of Millennials did not have access to an employer-sponsored plan, whereas the NIRS determined this figure to be closer to 44 percent of Millennials (Brown, 2018). According to the NIRS study, fully 66.2 percent of Millennials have nothing saved in a retirement account, a figure that gets worse for certain demographic groups (Brown, 2018).

A separate Pew study (2018) found that the availability of retirement plans for young workers has shown modest improvement compared to earlier generations, especially among better educated groups. However, the employment trends of young workers create disadvantages for retirement plan access. One major reason is that young workers are less likely to meet eligibility requirements to participate in workplace retirement plans (Brown, 2018). For instance, a plan may require a three-month waiting period, or 1,000 hours in a year,

in order to qualify. Young adults work in a higher proportion of part-time positions and have shorter job tenures (Brown, 2018). Furthermore, eligibility requirements complicate and delay the enrollment process, which may never get completed. In fact, 51 percent of Millennials cite eligibility as a major barrier to retirement plan participation, compared to the 34 percent who cite affordability (Pew, 2017). The NIRS report determined that only 55 percent of Millennial workers with access to a workplace plan are eligible for it, compared to over 77 percent of Generation X and almost 80 percent of Baby Boomers.

Even young workers who are eligible for a workplace retirement plan participate at lower levels on average. Data from Vanguard (2020) shows that 45 percent of workers 25-34, and 74 percent of those under 25, do not enroll in an employer plan when voluntary enrollment is used. Similarly, salary deferrals among young workers are the lowest of any age group, averaging 6.1 percent for the 25-34 cohort, and 4.7 percent among under 25s. These average deferral rates are similar to those in the NIRS study, which found 82.4 percent of Millennials save less than 6 percent of their income in a retirement account (Brown, 2018).

Table 2.7

Plan Enrollment and Deferral Percentages

Age	Voluntary Enrollment	Average Deferral Rate
<25	26%	4.7%
25-34	55%	6.1%
35-44	66%	6.6%
45-54	69%	7.3%
55-64	71%	8.5%
65+	60%	9.0%

Note. Source: Vanguard, 2020

Although ostensibly similar, employer sponsored retirement plans are not identical and vary in quality. The way that workplace retirement plans are designed and implemented impacts the eligibility status and participation of young workers. The Pension Protection Act of 2006 modernized regulations around retirement plan governance, in order to allow employers greater latitude to implement design features that facilitate saving. Olsen and Whitman (2007) write, “The main components of a retirement savings program include options for enrollment, investment choices, employer matching contributions, and distributions” (p. 53). A large literature exists examining the efficacy of these plan design options and their impact on both participation and saving. Although this detailed analysis is outside the scope of the current study, a short review is helpful.

Choi et al. (2004) found that plan design has a fourfold benefit on employee participation, savings rates, investment allocation, and cash distributions. The employer matching contribution often receives the most attention because it is a form of supplemental compensation. Offering an employer match is optional, and formulas for calculating both the dollar amount and eligibility can vary. Engelhard and Kumar (2007) found that increasing a matching contribution by 25 cents per dollar raised plan participation rates by five percent and annual savings by \$365. Matching contributions place a dollar value on the incentive to save for retirement, because the compensation is forgone otherwise. Therefore, maximizing an employer match is a widely recommended best practice and is viewed as a minimum standard for retirement saving (Lieber & St. John, 2017).

A subtle but equally powerful plan design tool is the use of automatic enrollment, through which employees are registered for the retirement plan at some minimum savings rate

unless they choose to opt out. Automatic enrollment facilitates participation at much higher levels than voluntary enrollment and removes administrative barriers related to registration. For instance, in Vanguard's survey, 92 percent of workers between 25 and 34 participated in workplace plans using automatic enrollment compared to 55 percent with voluntary enrollment (Vanguard, 2020). Automatic enrollment can be enhanced by other design features that also improve savings outcomes. An employer can select a qualified default investment alternative such as an age-appropriate target date fund. Auto-escalation is another tool, which gradually raises participant deferral rates over time. Although there are benefits to these features, they also encroach on the personal choice of individual participants and expose employers to a higher degree of fiduciary liability.

Choi et al. (2004) write, "The key behavioral question is not whether employees participate in the 401(k) plan, but how long it takes before employees are actually enrolled" (p. 276). The enrollment process is considered a key determinant of retirement plan participation rates (Olsen & Whitman, 2007). Voluntary enrollment adds an extra step to the process which relies on individual participants to take action. However, that extra step frequently leads to delays and incomplete follow-through, causing a high rate of attrition in the enrollment process. Montgomery et al. (2012) suggest that workplace plans can increase their appeal to young workers by adapting the way they communicate to better match young employees' psychological outlook towards retirement. In particular, they argue that young workers respond better to long-term goal achievement rather than short-term action steps.

Delaying retirement saving has material costs for the worker. An example by Wallace (2021) demonstrated how maximizing the time horizon can lower the lifetime savings rate. This

scenario set a target of \$1 million in retirement assets by age 65, while assuming a 6 percent annual growth rate, and calculated how much would need to be saved if starting at different age thresholds. Those who began saving at age 25 needed to contribute \$6,461 annually to achieve the goal of \$1 million, whereas those who began saving at age 40 needed to contribute \$18,226, nearly three times the amount.

Munnell et al. (2011) analyzed how lengthening the time horizon at either the beginning or end of the career changes retirement saving scenarios. In their example, they varied both the saving start date and the retirement date for a worker earning \$50,000 a year who hopes to replace 80 percent of pre-retirement income through retirement saving. They find that beginning to save at age 25 as compared to 45 lowers the required savings rate by approximately two thirds, as does delaying the retirement age from 62 to 70.

Table 2.8

Required Savings Rate for Retirement

	Start saving at:		
Retirement Age	25	35	45
62	22%	35%	65%
65	15	24	41
67	12	18	31
70	7	11	18

Note. Source: Munnell et al. (2011)

Lengthening the time horizon also helps mitigate uncertainty about investment risk. Blanchett et al. (2017) estimated that the 10-year return on a portfolio made up exclusively of bonds can be calculated with 92 percent accuracy. However, the ten-year return on an equity portfolio can only be predicted with 27 percent accuracy. In response to that uncertainty, they calculated optimal savings rates for a married household earning \$100,000 per year under

three different market conditions: historical average returns, mid-level returns, and low-level returns. Even in the case of a low return market, households who begin saving at age 25 would need a lower savings rate than those who began saving at age 40, but experienced historical returns.

Table 2.9

Comparison of Savings Rate by Starting Age and Market Scenario

	Savings Rate by Market Scenario		
Age	Historical Return	Mid Return	Low Return
25	6.88%	9.7%	12.46%
30	8.48	11.54	14.28
35	10.05	13.41	16.83
40	12.60	16.54	19.04

Note. Source: Blanchett, Finke, and Pfau, 2017

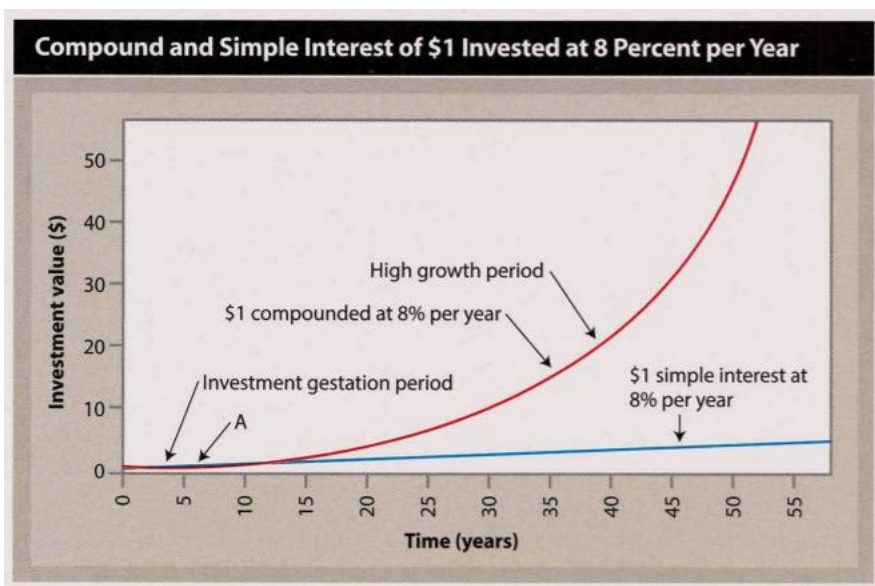
These examples rely on the same basic mathematical premise of compound growth. Einstein is reputed to have described compound growth as the eighth wonder of the world (Parsons, 2014). Retirement accounts have been designed with tax incentives intended to facilitate compounding by sheltering money from taxes and penalizing early withdrawals so that assets have time to build up exponentially. Poterba (2004) notes, “‘Inside buildup’ can make the retirement resources generated by a dollar held inside a tax-deferred account more valuable than those from a dollar outside such an account, particularly if the account holder has a long investment horizon” (p. 490). Effectively this means that a dollar held in a retirement account by a young worker is more valuable than at any other point in time because of the expected investment multiple.

It is helpful to think about the slope of the compound growth curve to understand its implications. Parsons (2014) analyzed the shape of the curve to describe how compound

investing translates into practical reality. He observed that the curve can effectively be divided into two segments. The first segment is a “gestation” period, during which growth remains relatively linear. The second segment is a “growth” period, when the slope of the curve becomes increasingly steep over time. Although investors naturally prefer the growth phase, money invested during the gestation phase actually experiences the highest rate of return, and therefore has a higher time value than money invested later on.

Image 2.1

Compound Investment Growth Curve



Note. Source: Parsons (2014)

The problem is that the length of the gestation period does not offer instant gratification, nor are the implications of compound growth immediately apparent to all investors. There is no standard duration to guide investors, and the length of gestation can depend on contribution levels, market returns, and withdrawals. For young workers making smaller contributions, the gestation period can stretch out even longer. Therefore, Parsons

(2014) concludes that compound investing is a difficult strategy to implement with investors, because it requires consistent long-term planning and communication.

Early withdrawals from retirement accounts counteract compound investing for long-term growth by diminishing the account balance. Yet according to a report by E*TRADE (2021), 61 percent of Millennial investors have already taken money out of a retirement account. The reasons cited for this decision included paying for a medical emergency (27 percent), education (17 percent), unemployment (17 percent), and a major purchase (16 percent).

Some of these reasons are in line with previous research by Amromin and Smith (2003), which associated early withdrawals with household shocks, including job loss, divorce, and home purchases. They found that each of these events increased the likelihood of early withdrawal by 3 to 10 percent, with the effect being greatest on low-income households. Amromin and Smith (2003) determined, “A significant portion of early withdrawals from retirement accounts reflects consumption-smoothing behavior by liquidity-constrained households who experience financial shocks, rather than squandering of pension assets simply because they have become available” (p. 596). These early withdrawals are subject to both regular income taxes and a 10 percent penalty, unless they meet certain hardship designations. However, the cost of the withdrawal should not be thought of solely in terms of today’s dollar value, but also by the loss of future investment growth.

It should be noted that although saving early for retirement is widely recommended, this view is not entirely unanimous. A recent paper by Scott et al. (2021) concluded that in the current low interest rate environment, young workers who expect steep future earnings growth would be better served to delay retirement saving. Instead, they found that early saving was of

the greatest benefit to workers with flat earnings growth potential. However, this study has been criticized based on how accurately earnings growth can be forecasted during early career (LaPonsie, 2021). Some practitioners emphasize that under-saving is a more meaningful risk for young workers due to the variability of long-term income growth. With that said, the study is a reminder that young workers are in a distinct phase of the income distribution cycle, looking forward to increasing wages as they mature in their careers. Those expectations help shape the context in which retirement saving decisions occur. Although future wage increases may be likely, they are not guaranteed, and the shape of the income curve will have an important influence on achieving financial security.

Section 6: Retirement Saving Adequacy

Academic literature increasingly accepts that retirement saving decisions are characterized by both economic and behavioral determinants (Knoll, 2010). Therefore, it is important to review both sides of this topic in order to span the full breadth of literature. Research that is anchored in the economic perspective uses lifecycle theory as its guidepost, whereas behavioral research extends the theory to incorporate cognitive and psychological dimensions. This section introduces the lifecycle perspective, which seeks to optimize retirement saving according to lifetime income distribution. A series of tools, including ratios and simulations, have been developed that measure the adequacy of retirement assets. However, these same tools demonstrate the complexity of applying the lifecycle theory to realistic scenarios.

In their critique of the retirement system, Thaler and Sunstein (2008) describe the lifecycle perspective as follows: “The standard economic theory of saving for retirement is both

elegant and simple. People are assumed to calculate how much they are going to earn over the rest of their lifetime, figure out how much they will need when they retire, and then save up just enough to enjoy a comfortable retirement” (p. 104). In this simplified description, the retirement saving decision is based on two primary variables: lifetime income distribution and retirement spending needs. From these two estimates, an individual can calculate an optimal savings rate to put aside just enough working income to meet his retirement needs.

Lusardi and Mitchell (2007) provide a more technical summary of the life-cycle approach to retirement saving:

The standard economic model of wealth accumulation posits that consumption decisions are made in a life-cycle framework, where consumption-smoothing requires one to save during the working years to support consumption after retirement. Specifically, this framework models the consumer as maximizing his discounted lifetime expected utility such that consumption flows and wealth stocks at each point depend on his permanent income, i.e., anticipated lifetime resources, as well as preference parameters. (p. 206)

Although this description contains more detail, it makes essentially the same point. Retirement consumption is funded by a portion of lifetime earnings and is calculated based on retirement income needs.

Determining how much to save for retirement is an abstract question because it requires forecasting future events and establishing personal preferences. The amount of income needed in retirement is the practical threshold for what constitutes adequate savings. As Bajtelsmit and Rappaport (2018) write, “Retirement adequacy can only be judged by reference to a target that is deemed to be adequate” (p. 72). There are two primary ways to understand retirement saving adequacy. The Congressional Budget Office (2017) reports, “Researchers have defined the adequacy of retirement income in two main ways: whether it

satisfies basic needs and whether it allows retirees to maintain the standard of living they experienced before retirement” (p. 1). For the purposes of most research, “Economists and financial advisers generally use the second definition because large drops in consumption in retirement are typically considered undesirable” (Congressional Budget Office, 2017, p. 1). Therefore, the goal of retirement saving is to sustain a level of income that is equivalent to pre-retirement income. This is a proportional approach to retirement saving, because the target is not based on a hard dollar figure, but rather on a ratio of retirement income to working income, known as a replacement ratio.

Replacement ratios are calculated by dividing post-retirement income by pre-retirement income, to estimate a percentage of income replacement in retirement. Fox (1982) noted, “At first glance, the concept of an earnings replacement rate is simple: it is the ratio of retirement benefits to preretirement earnings. This change approximates the change in living standards at retirement” (p. 3). Replacement ratios have become a popular tool, in part because they are conceptually simple. However, Fox also noted, “Debate can arise over virtually every aspect of the replacement rate calculation” (p. 3).

There is no standard way to calculate replacement ratios, and without consistent definitions and assumptions comparing different rates from one study to the next is problematic (Congressional Budget Office, 2017). Ratios can differ according to three assumptions: whether the unit of analysis is based on individual or household income, how income is defined before and after retirement, and what threshold is used for adequacy. It is generally assumed that the cost of living declines during retirement, hence replacement ratios are often equivalent estimates that are less than 100 percent (Purcell, 2012). In addition,

replacement ratios are thought to be higher for low income workers because they spend a larger percentage of income on non-discretionary essentials (Purcell, 2012). The 2017 report by the Congressional Budget Office used 70% as a representative minimum of current research estimates but noted a high degree of customization. Similarly, Mackenzie (2020) reported, “It is common for advisers to set a replacement rate target in the neighborhood of 70% to 75% on the assumption that the standard of living obtained while working can be maintained at that ratio” (p. 4).

Translating a replacement ratio into an actionable savings goal relies heavily on estimates and assumptions. Munnell et al. (2011) provide a useful example, based on an individual who is 25 in 2010, earning \$43,000, who will retire at 67 in 2052 with an inflation-adjusted income of \$71,000. In this situation, Social Security will replace 41 percent of pre-retirement income. If the replacement ratio is estimated as 80 percent, then the individual needs to save enough to replace 39 percent his income, or \$27,700 annually in retirement. The scenario uses a rule of thumb that recommends spending no more than four percent of retirement assets each year. In order to guarantee retirement income until age 90, that means that the individual needs to save approximately \$667,000 by 2052. If he starts saving at 35, and earns a 4 percent annual return, that translates to an 18% savings rate per year.

This example is not only useful as an illustration, but also because it elucidates the assumptions that are required to make the estimate work. Replacement ratios need a number of inputs in order to be useful that are difficult to predict for young workers looking years into the future, such as changes to income, household composition, career length, longevity in retirement, and investment growth. That leads some to argue that replacement ratios are too

generic to be truly helpful as a tool for individual retirement planning. Inglis (2019) writes, “Replacement ratios are useful for policymakers and plan designers who want to create systems that target the right level of savings in general or on average. However, they are not always useful for individuals” (p. 14).

Replacement ratios are the core methodology of the National Retirement Risk Index (NRRI), conducted by the Center for Retirement Research at Boston College. The strength of the NRRI is that it is a comparative measure with consistent assumptions. It estimates specific target ratios across three income subgroups (low, medium, and high), which are further organized by household type (couple-two earners, couple-one earner, single male, single female). Then, using a representative sample of 4,500 households from the Survey of Consumer Finances, it calculates actual replacement ratios using predefined measures of income before and after retirement. These actual ratios are compared to the target, and any household more than 10 percent below target is classified as at risk (Munnell et al., 2006). In the past decade, the NRRI has consistently estimated that approximately half of US households are at risk of losing income in retirement (Munnell et al., 2021).

Table 2.10

National Retirement Risk Index (NRRI) Historical Trends

2004	2007	2010	2013	2016	2019
41%	40%	51%	51%	50%	49%

Note. Source: Munnell et al. (2021)

Another approach to measuring retirement adequacy is the use of simulated models. Simulation is based on the premise that retirement outcomes are a function of both planning and probability. Retirees face a range of risks, such as investment risk, longevity risk, health

care risks, and even political risks that could alter the trajectory of their retirement plans. As a result, several researchers have developed proprietary models that attempt to account for both the known and unknown events in retirement through the use of stochastic variables. These models use financial data as inputs, and then run different scenarios to determine the probability of retirement adequacy.

Simulation models require far more data to develop accurate projections, which makes them conceptually complex and less practical for many types of research. One of the best-known examples is the Retirement Security Projection Model (RSPM) developed by VanDerhei and Copeland (2010) for the Employee Benefit Research Institute (EBRI), which was originally created for a project with the State of Oregon. The RSPM produces two measures of retirement adequacy, the Retirement Readiness Rating (RRR) and the Retirement Saving Shortfall (RSS), which is a present value calculation of the total dollar shortfall.

In order to calculate these projections, the model uses time series data from the administrative records of several million 401(k) participants to simulate asset accumulation. This is combined with additional income measures for Social Security, individual retirement accounts, defined benefit annuities, and housing equity. The expenditure side of the RSPM model is divided into two parts. One part is a deterministic measure of expected spending, using the Consumer Expenditure Survey and health coverage estimates to provide an average baseline for annual retirement costs. The other portion of the expenditure model uses stochastic variables to estimate the likelihood of four scenarios, including the probability of death, needing nursing home care, home health care, or not requiring care. The simulation

itself consists of over 1,000 possible scenario-specific permutations. A household “at-risk” will run out of retirement savings in more than half of these projected scenarios.

Bajtelsmit et al. (2013) developed another simulation model for the Society of Actuaries in order to study risk factors in retirement saving. They based the simulation on the case of the median American couple in the 2010 Survey of Consumer Finances, who earn \$60,000 a year at retirement, and have \$100,000 in non-housing wealth. The probability scenarios run by the simulation model found only a 29 percent likelihood that the median couple would have positive wealth at death. Their research highlighted the degree to which shock events during retirement can change the financial picture of retirees. Therefore, basing decisions on average outcomes underestimates the potential for risk. According to their simulation, the assets needed to fund retirement 50 percent of the time would be \$170,000. However, in order to reach a 95 percent success rate, the couple would need to save \$686,000. This discrepancy displays the danger in using average estimates to plan for retirement, because of the risk exposure it creates to unlikely or unforeseen events.

Whereas simulations provide a highly detailed way to model retirement planning, replacement ratios offer a more accessible planning tool which tends to underestimate the risks involved in retirement. Furthermore, both approaches to retirement planning are only as good as the estimates and assumptions that are used in their calculations. The further an individual is from retirement, the more likely it is that the inputs and estimates are flawed or inaccurate. That leads Bajtelsmit and Rappaport (2018) to conclude, “While it is difficult to project income and needs for current near-retirees, it is even harder to make these projections for younger

generations” (p. 72). This statement seems to concede the difficulty that young adults face trying to optimize their retirement saving decisions in an empirical way.

Section 7: Behavioral Influences on Retirement Saving

A significant body of literature exists that argues behavioral factors are equally, if not more influential than financial planning in determining how individuals decide to save for retirement. Retirement saving decisions have been a research focus in behavioral finance because they manifest a series of questions related to time preferences, incomplete information, abstract thinking, and long-term planning.

Benartzi and Thaler (2007) explain their skepticism about the retirement planning process:

The standard economic theories of saving (like the life-cycle or permanent income models) contain three embedded assumptions, one explicit and two implicit. The explicit assumption is that savers accumulate and then decumulate assets to maximize some lifetime utility function... The first implicit assumption is that households have the cognitive ability to solve the necessary optimization problem. The second implicit assumption is that the households also have sufficient willpower to execute this optimal plan. (p. 81)

They question these assumptions due to their degree of complexity and ambiguity, suggesting that “even among economists few spend much time calculating a personal savings rate, given the uncertainties about future rates of return, income flows, retirement plans, and so forth” (p. 82). As an alternative, Benartzi and Thaler argue that individuals adapt the process by simplifying the decision-making criteria. However, the act of adaptation introduces the opportunity for bias and other behavioral factors to influence how decisions are made. They write, “Most people cope by adopting simple heuristics, or rules of thumb. However,

psychology teaches that such heuristics, though often useful and accurate, can lead to systematic biases” (p. 82).

Knoll (2010) described four major categories of behavioral issues that impact retirement saving. The first is informational issues such as an aversion to ambiguity, or a reliance on anecdotal evidence. A second category is made up of heuristic behaviors, such as rules of thumb, status quo bias, and an over-reliance on default choices, which all stem from the desire to simplify the decision-making process. Another category consisted of issues related to intertemporal choice, such self-control and procrastination. The fourth category described by Knoll concerned the decision context, through which individuals frame, reference, and bracket issues according to personal background. According to Knoll, “Behavioral economics research demonstrates a disconnect between intentions and behavior, and between doing what we ought to do and what we want to do” (p. 2).

The idea that behavioral traits implicitly detract from retirement saving is not necessarily the case, according to Binswanger and Carman (2012). They divide retirement decision makers into three types: those with detailed plans, those who use rules of thumb, and those with no plan of any type. They found that “planner and rule of thumb types accumulate substantially more retirement wealth than the remaining category that we have dubbed unsystematic” (p. 56). According to Binswanger and Carman, both formal planning and rules of thumb represent evidence of systematic thinking when it comes to retirement saving. They argue that any type of systematic thinking is beneficial, because it leads to intentionality that influences behavior. However, there are still substantive differences between the two types of

systematic thinking. Most notably, planning represents an objective approach to retirement saving, whereas rules of thumb are subjective in nature.

The difference between the objective and the subjective distinguishes behavioral versus economic decision making. Kim and Hanna (2015) identified a significant level of inconsistency between subjective perceptions of retirement preparation, versus an objective analysis. In their research on working age adults, Kim and Hanna discovered that only 52 percent had retirement assets that objectively matched the level of savings adequacy many felt they had attained. In their study sample, 42 percent had achieved objective retirement adequacy based on the researcher's analysis, whereas 46 percent believed that they had.

Another area where subjective perception matters to retirement saving is in relation to personal confidence. For instance, Sturr et al. (2021) studied the effect of financial self-efficacy on retirement planning, which they define as "the belief in one's own abilities to accomplish a financial goal" (p. 87). They found that high levels of financial self-efficacy resulted in greater planning in large part because individuals felt more confident that they could successfully reach their goal. Muratore and Earl (2010) studied a similar construct known as core self-evaluation (CSE), which they borrowed from the field of psychology. CSE is defined as "a basic, fundamental appraisal of one's worthiness, effectiveness, and capability as a person" (p. 101). Previous research in psychology had determined that people who measure high in CSE are more likely to plan for an event because they feel confident in their ability to succeed. Muratore and Earl were able to confirm that this same premise extends to retirement planning as well.

Subjective attitudes represent conscious thoughts and feelings, but there are other behavioral traits that are more implicit yet also play a role in shaping retirement decisions.

Economists refer to time preferences as a way to distinguish how individuals view intertemporal choices. Thaler and Benartzi (2004) note:

Economists have known that intertemporal choices are time consistent only if agents discount exponentially using a discount rate that is constant over time. But there is considerable evidence that people display time-inconsistent behavior, specifically, weighing current and near-term consumption especially heavily. (p. 167).

Present bias describes behavior that consistently prioritizes near term benefits. However, time preferences are rarely explicitly stated. They are often evident in the behaviors and actions taken by individuals. That includes actions taken regarding retirement planning.

Present bias can be interpreted as a form of narrow framing, by which “people neglect the association of a present problem with other existing problems” (Shin et al., 2019, p. 976). In retirement saving, Shin et al. (2019) suggest that individuals “have a tendency to neglect the future benefit of retirement saving and focus on the current disutility that results from the reduction in current disposable income” (p. 976). They find that narrow framing leads individuals to contribute less to retirement saving, as well as making them less willing to increase contribution levels.

A study by Clark et al. (2019) found that individuals with highly discounted time preferences were least likely to engage in some kind of planning for retirement, whereas those with greater time patience were most likely to have planned ahead. They write:

Individuals who are more willing to defer utility into the future are more likely to report engaging in retirement planning behavior and to take actions to prepare for retirement, such as saving for retirement. We find evidence that those who are more patient not only plan more, but also are nearing retirement with more savings. (p. 129)

Their finding provides evidence that actions related to retirement savings follow the intention created by retirement planning. This is consistent with a construct from psychology known as the theory of planned behavior (TPB), which “proposes that subjective norms, attitude towards the behavior, and control beliefs influence intentions to perform a given behavior and those intentions directly influence the likelihood of performing that behavior” (Muratore & Earl, 2010, p. 99). The conclusion reached by Clark et al. (2019) is that those who are present biased are less likely to develop intentionality through the process of retirement planning.

The relationship between time preferences and retirement saving is especially relevant for young people according to Finke and Huston (2013). They write, “The motive to save for retirement, particularly among younger individuals, may be particularly sensitive to the rate to which future utility is discounted” (p. 24). In addition, they state, “Future utility is discounted to some degree according to an individual’s impatience, uncertainty, or even their sense of a finite lifespan” (p. 24). Finke and Huston surveyed a group of college-age students about a range of activities influenced by intertemporal decision making and found that these behaviors were remarkably consistent with each other. Those who agreed with the importance of retirement saving were also more likely to take actions such as exercising, eating healthy, avoiding cigarettes, and safe sex. This led Finke and Huston to conclude that behavioral habits are the best way to identify time preferences.

In addition to inconsistent time preferences, the intertemporal nature of retirement saving leads many to underestimate the effects of compound investment growth. The reason is known as exponential growth bias, which stems from a cognitive tendency towards linear thinking. As a result, many people fail to comprehend the multiplier effect that leads to

exponential growth. Levy and Tasoff (2015) argue that this has two important effects related to lifecycle consumption. First, it leads individuals to misperceive the value of income over time, by overvaluing future income. Second, individuals misperceive relative prices over time, causing them to overestimate the price of future consumption. Levy and Tasoff find that exponential growth bias is widespread; they estimate that over one third of subjects are fully biased. They also conclude that exponential growth bias is negatively associated with asset accumulation.

McKenzie and Liersch (2011) looked at how well college age students understand the investment growth of retirement savings. They found that the majority expected retirement savings to grow linearly. They write that:

people have a deep and fundamental misunderstand of savings growth: Due to compound interest, savings grow exponentially over time, but most undergraduate students believe that savings grow linearly, and they therefore grossly underestimate how much money can accumulate over the span of a typical career. (p. 52)

Linear thinking makes individuals underestimate the cost of waiting to save, according to McKenzie and Liersch. That makes postponing retirement saving more appealing than it should be. Although compound growth is conceptually complicated to communicate, they find that even indirect demonstrations of its effects can change the behavior of their subjects.

Eliminating present bias and exponential growth bias could increase retirement savings by as much as 12 percent, according to a study by Goda et al. (2019). They found that “both EGB and PB are important predictors of retirement assets with their importance increasing over the life-cycle such that they explain economically meaningful differences in retirement assets at age 65” (p. 1655). However, they make an interesting observation that these behavioral biases “seem to operate on the intensive margin, as neither is a significant predictor of the likelihood of having any savings at retirement” (Goda et al., 2019, p. 1655). Therefore, they suggest that

the effect of behavioral biases is greatest on the intensity, or involvement with an activity like retirement saving, which leads to growing disparities in wealth over the long term.

Intertemporal retirement saving requires making decisions with future outcomes that are not immediately clear. When an individual facing a series of important and potentially complex decisions decides to do nothing instead, the behavior is known as status quo bias. Counterintuitively, the effects of status quo bias appear to grow stronger as they become more entrenched. A study by Krijnen et al. (2018), found that individuals were more likely to start saving one year later as opposed to ten years later. They also found that individuals were more likely to start saving if intervening market returns had been modest, thereby reducing the perception of lost opportunity. Indeed, the authors find that communication is key to overcoming status quo bias. Certain messages, such as emphasizing the advantage of saving early, can be counter-productive because it reminds some people of earlier procrastination. These feelings then reinforce the inaction inertia that perpetuates status quo bias. Instead, they suggest that communication related to retirement saving should focus almost exclusively on the future upside of saving, no matter the timeframe or circumstance.

The combination of economic and behavioral influences that impact retirement saving speak to a complex decision process. Huang (2017) describes that complexity in great detail, starting with the economic components:

Effective retirement planning in America currently involves many decisions that require various types of expertise, knowledge, and reasoning abilities. There are many decisions Americans have to make about retirement before, at, and after retirement. For example, Americans have to decide when to start saving for retirement, how much to save, how to invest those savings, when to retire, when to claim social security, and how to take required minimum distributions. (p. 194)

Next, Huang turns his attention to the behavioral dimensions, writing, “Retirement planning also requires certain amounts of critical thinking, curiosity, energy, money, motivation, time, and understanding” (p. 195). Clearly, Huang considers no single attribute as the primary determinant of successful retirement planning. Rather, it is a combination of many factors working dynamically and simultaneously that influence retirement decisions. However, Huang is skeptical that these attributes are common among a large percentage of the population.

Indeed, Huang is highly critical of the complexity of the U.S. retirement system, and the decision-making responsibility it places on individuals. He writes:

American retirement policy is premised on a cognitively misleading and unrealistic model of people who have the ability, energy, motivation, time, and understanding to make informed, thoughtful retirement decisions. This is counterfactual and clearly so. Most Americans are simply too busy, confused, exhausted, misinformed, and overwhelmed to make informed, thoughtful retirement decisions. (p. 196)

Whether or not Huang’s criticism is warranted, it demonstrates an understanding that the decision-making process is the critical element in determining retirement behavior. Analyzing and understanding that process becomes extremely significant in a system designed for individual choice. Whatever the intentions of the policy makers, Huang suggests that the most important outcome is how individuals actually behave.

Chapter II Conclusion

The issues discussed in this review suggest that retirement saving is a complex decision process that depends on knowledge, behavior, and external influences. This review presented literature from a range of sources that demonstrates how the economic, social, and behavioral characteristics of young adults are distinct from the rest of the adult population. The evidence

supports the idea that further research is necessary to understand how young adults make decisions about a long-term financial goal like retirement saving.

Specifically, this review has identified a series of topical issues that can be further explored through a qualitative research process that gathers information from the experiences of young adults themselves. There are seven topics that will be addressed in this study moving forward, including:

- Time preferences
- Compound investing
- Financial literacy
- Incomplete information
- Future expectations
- Life-stage transitions
- Budget constraints

The research process will use these topics to develop exploratory questions based on the literature that has already been reviewed. Each topic represents a potential inflection point in the decision-making process that is likely to influence how young adults save for retirement.

The length of time until retirement is the most obvious attribute that distinguishes young adults from others in retirement saving. Therefore, the issue of time preferences is especially important for this group. The time horizon can either be interpreted as an advantage, or it can detract from the self-discipline needed to save. According to Finke and Huston (2013), time preferences are evident across a range of personal behaviors, which show consistent long-term thinking about health, family, career, and finances. Do young adults who participate in retirement saving share similar time preferences?

The time horizon is an important variable in retirement saving due to the significance of compound investing. McKenzie and Liersch (2011) point out a widespread misunderstanding of

how savings growth occurs. In addition, Parsons (2014) questions whether investors understand the time frame for compound investment growth. A dollar invested early in a career has the highest rate of return, yet that implication is not immediately obvious to all investors.

Numerous examples have been created to demonstrate the power of compound growth by media and industry sources. Yet it still remains unclear if young adults view compound investing as a compelling reason to save for retirement.

Financial literacy may influence whether young adults understand the potential for compound investment growth. Evidence by Hauff et al. (2020) found that financial literacy not only impacts if someone saves for retirement, but also how they invest. However, there is widespread evidence that financial literacy is lacking in young adults, who are also inexperienced with financial decisions. Are young adults who are saving for retirement more likely to be financially literate? If not, how do they adapt their decision making because of their knowledge deficit?

Another topic related to the time horizon of young adults is the issue of incomplete information. Since young adults are the furthest from retirement, they have the least amount of quality information regarding their future needs with which to plan for retirement. How then do they deal with this ambiguity? Although it is possible to make decisions based on complicated estimates and assumptions, it is also easier to use rules of thumb. Alternatively, a lack of information about the future may result in retirement saving that is based on short-term budget constraints, or default options such as accessing an employer match.

A corollary to the problem of incomplete information is the influence of future expectations. Future income growth is one of the variables that is unknown to young adults,

but is likely the source of expectations related to career prospects, profession, and education. Young adults differ from their older counterparts because they have reason to expect future earnings growth as they advance in their careers. Some young workers may expect large increases, while others may face more uncertainty. Does the expectation of future income growth have an influence on how young adults make retirement saving decisions in the near term?

Research by Knoll et al. (2012) predicted that major life transitions, such as marriage, lead to higher levels of retirement savings in part by making the future seem more concrete. Young adults live in a fluid life stage that is signified by hybrid housing arrangements, low incidence of marriage, and frequent career changes. However, as Lusardi et al. (2010) point out, young adults are not homogenous. Some young people have made personal and financial commitments that make their future prospects more certain. Does clarity about the future increase interest in retirement saving? How do life events shape the long-term thinking of young people, as they transition to a more settled lifestyle?

Young adults also deal with a range of competing financial priorities, especially student loan debt and home ownership. The cost of these commitments creates budget constraints that limit the capacity to save for retirement. O'Neill et al. (2018) found evidence that young adults manage competing financial priorities by funding them sequentially rather than simultaneously, leading to delayed retirement saving until after other financial goals have been accomplished. It is important to understand how young adults work with budget constraints. Do other priorities force young adults to forgo retirement saving entirely, or do they simply reduce the capacity to save?

Although each of these topics has received some degree of research separately, they have not been integrated into a holistic decision-making framework that is specific to young adults. The current study seeks to ascertain their relevance to how retirement decisions are made by the youngest participants in the retirement system. The next chapter provides further detail about the methodology used in the research process.

Chapter III: Methodology

According to Creswell (2014), the construction of a research framework is prefaced by three primary components: philosophical worldview, research design, and research methods. Before engaging in research, it is critically important to consider these components in order to develop an integrated and consistent approach that is well-suited to the subject being studied.

Makri and Neely (2021) write:

Choosing the most suitable methodology for a study is potentially the most important and most difficult part of the research process. The choice should depend on various parameters, such as the state of the relevant literature, the research objective, the resources available, and the researcher's philosophical worldview. (p. 2)

Qualitative research is often premised on a philosophy of social constructivism, which supports the idea that "individuals develop subjective meanings of their experiences ... These meanings are varied and multiple, leading the research to look for the complexity of views rather than narrowing meanings" (Creswell, 2014, p. 8). The current study is based in a social constructivist philosophy, because it seeks to understand the multiplicity of individual experiences that influence retirement saving decisions.

Qualitative research is also notable for its inductive form of data analysis, which extrapolates from specific data to draw out general themes. This approach places "a focus on individual meaning, and the importance of rendering the complexity of a situation" (Creswell, 2014, p. 4). This process of inductive data analysis matches the goals of the current study, by capturing greater detail about the attributes that influence young adults who are saving for retirement. The result is a richer and more nuanced understanding of the phenomenon.

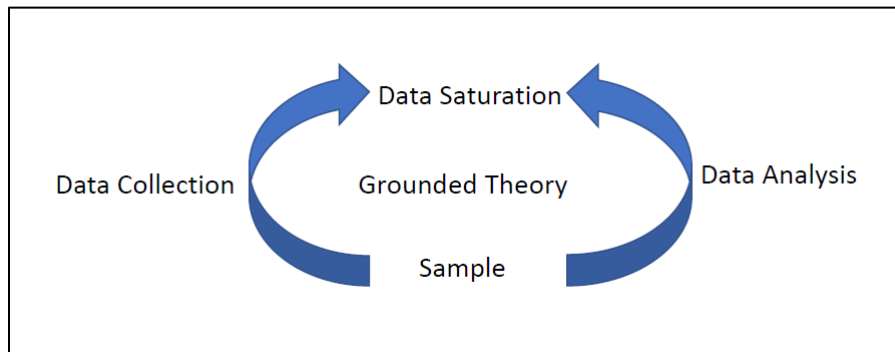
Major forms of qualitative design include Grounded Theory, Phenomenological research, Case Study, Ethnography, and Narrative research (Creswell, 2014). This study is based on a Grounded Theory design in the belief that it is best suited to analyze the underlying influences that impact retirement saving by young adults. Specifically, Grounded Theory provides a systematic approach to synthesizing individual data into higher-level conceptual categories. Equally important, Grounded Theory goes beyond descriptive analysis, and seeks to understand the influential relationship between categories, as they apply to a single phenomenon like retirement saving. This allows for greater nuance and depth in identifying properties that moderate or mediate the decision-making process.

As a research design, Grounded Theory embodies the philosophical attributes of the qualitative approach. Holton (2008) explains that,

Grounded theory's particular value is in its ability to provide a conceptual overview of the phenomenon under study. It focuses on participants perspectives and provides them with opportunities to articulate their thoughts about issues they consider important, allowing them to reflect on these issues of concern to gain understanding and acquire new insights. (p. 3)

Glaser, one of the originators of Grounded Theory, succinctly describes the intent as "the discovery of emerging patterns in data" (Walsh et al., 2015, p. 593). He elaborates this point further: "All you're doing is looking for patterns of behavior that explain a main concern, and then you name the patterns. Patterns are what people are doing to resolve their main concern" (Walsh et al., 2015, p. 594). In the context of the current study, the main concern is the retirement saving decision process. Meanwhile, the patterns to be determined consist of influences and motivations that may affect how young people make those decisions.

The research procedures which are detailed in this chapter are consistent with the qualitative framework suggested by Creswell (2014) and follow a systematic approach to Grounded Theory as described by Corbin and Strauss (2015).

Image 3.1*Systematic Research Approach*

Note. Source: Author

Through this process, they write that,

The procedures can be used to uncover the beliefs and meanings that underlie action, to examine rational as well as nonrational aspects of behavior, and to demonstrate how logic and emotion combine to influence how persons respond to events or handle problems through action and interaction. (Corbin & Strauss, 2015, p. 11)

Grounded Theory offers the current study the flexibility to explore both rational and behavioral dimensions of retirement saving, and to navigate between the duality of short-run and long-term thinking. Furthermore, it provides an integrative research design that offers equal measure to all forms of potential influence that lead young adults to save for retirement.

In order to explore that topic, the following chapter lays out a plan for research, and describes the process used to gather and analyze data about retirement saving decisions made by young adults. It includes the following eight sections.

Table 3.1*Methodology Chapter Sections*

1. Problem Statement	5. Data Analysis
2. Study Purpose	6. Risks and Limitations
3. Sample	7. Reliability and Validity
4. Plan of Inquiry	8. Conclusion

Section 1: Problem Statement

The majority of young adults have nothing saved for retirement, despite that fact that starting to save early is a widely recommended best practice. The retirement system relies on highly individualized decisions, that depend on personal knowledge, behavior, and influences. Yet individual decisions lead to heterogeneous outcomes, resulting in significant discrepancies in retirement wealth. Although some research has addressed the retirement saving heterogeneity of older adults, very little is known about the retirement saving decisions of young adults (Knoll et al., 2012). Furthermore, this group has the longest time horizon until retirement, making it difficult to forecast accurate savings goals in any meaningful way without relying on complex estimates and assumptions (Bajtelsmit & Rappaport, 2017). This situation creates an open question as to how young adults make decisions about retirement saving. It also raises the likelihood that those decisions are subject to behavioral and social influences, such as rules of thumb, personal bias, career trajectory, and life stage. If the retirement system continues to recommend early saving as a key ingredient to future retirement security, then more research is needed to understand the complexity of retirement decisions among young adults.

Section 2: Study Purpose

As previously stated, the major research question addressed in this study is “How do young adults who are participating in the retirement system make decisions about retirement saving?” The question inherently limits the scope of research to those who are already saving through either a workplace retirement plan or an individual retirement account, because these individuals are most likely to have gone through some sort of decision-making process related to retirement. The purpose of the current study is to develop a theoretical framework that models how young adults make decisions about retirement saving by gathering data directly from those who have done so.

Corbin and Strauss (2015) write, “Underlying the use of qualitative methods is the assumption that all of the concepts pertaining to a given phenomenon have not been identified, or aren’t fully developed, or are poorly understood” (p. 35). In the case of retirement saving, previous literature has detailed that the retirement system places significant responsibility on individuals to make decisions about saving. However, the decision-making process is a complex subject that incorporates rational, behavioral and external influences. Furthermore, young adults represent a distinct sub-group, who are furthest chronologically from retirement. Evidence by Shefrin and Thaler (1988), as well as Knoll et al. (2012) and Bajtelsmit and Rappaport (2017), supports the idea that this age group face unique challenges in making long-term decisions about retirement saving.

The Grounded Theory design utilized in this study is a novel approach to the study of retirement decision making because it is based on the interpretive experiences of its subjects. This is a fundamentally different approach to understanding the decision-making process,

because it is based on the feedback of real participants in the retirement system. By basing analysis on qualitative data, this study provides a different perspective on the decision-making process. Namely, it allows for a richer framework through which to study the contrasting influences that lead young people to prioritize retirement saving. The information generated by this study is relevant to a range of potential stakeholders, including financial professionals, the retirement industry, policy makers, and employers. All of these groups have a vested interest in engaging individuals in the practice of retirement saving at the earliest possible point in time.

Section 3: Sample

According to Vasileiou et al. (2018), “Sample adequacy in qualitative inquiry pertains to the appropriateness of the sample *composition* and *size*” (p. 2). In terms of general guidelines:

Samples in qualitative research tend to be small in order to support the depth of case-oriented analysis that is fundamental to this mode of inquiry. Additionally, qualitative samples are purposive, that is selected by virtue of their capacity to provide richly textured information. (p. 2)

Qualitative research is based on purposeful sampling strategies that differ from the probabilistic sampling used in quantitative studies. Purposeful sampling has been defined as “the selection of participants with shared knowledge or experiences of the particular phenomena” (Breckenridge & Jones, 2009, p. 118). Therefore, one of the hallmarks of the qualitative sampling method is to focus on individuals with direct knowledge of the phenomena being studied, which in this case is the decision to start saving for retirement as a young adult.

Grounded Theory is noted for its theoretical sampling method, in which the purpose is to reach data saturation rather than a predetermined sample size. Theoretical sampling is “an iterative process of data collection, data analysis and theory development whereby data

collection is governed by emerging theory rather than predefined characteristics of the population” (Vasileiou et al., 2018, p. 3). Breckenridge and Jones (2009) write, “The selection of participants in theoretical sampling, and the reason underpinning that selection, will change in accord with the theoretical needs of the study” (p. 118). In turn, the theoretical needs of the study are determined by the researcher’s goal of reaching data saturation.

Data saturation occurs at “the point in the research when all major categories are fully developed, show variation, and are integrated” (Corbin & Strauss, 2015, p. 135). Charmaz (2006) has described saturation as the point at which “gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories” (p. 46). Breckenridge and Jones (2009) distinguish that “saturation within generic qualitative data analysis and saturation within classic Grounded Theory are inherently different. Whereas the qualitative researcher seeks descriptive saturation, the grounded theorist is concerned with saturation at a conceptual level” (p. 120). In theoretical terms, the search for data saturation means that, “sample size in Grounded Theory cannot be determined a priori as it is contingent on the evolving theoretical categories” (Vasileiou et al., 2018, p. 3).

The potential size of a qualitative sample can depend on the nature of the research according to Thomson (2011). For instance, a broad research question may require a larger sample than a narrow focus. Similarly, the sensitivity of the phenomena may require a larger sample if the topic is related to deeply held beliefs or values. In a study of 100 research articles that combined Grounded Theory design with data collection by interviews, Thomson (2011) found that the average sample size was 25, with a range of five to 114. Thomson (2011) estimated that Grounded Theory research should start with a plan to sample approximately 30

subjects in order to reach data saturation, which can be adapted as needed during the course of research. Based on Thomson's estimate, this study employs sampling strategies intended to reach 30 participants, with the intention to continuously reevaluate the sample size during research in accordance with the emerging theoretical needs of the study.

Having defined the sample size, we will now turn to the sample composition. There are two primary criteria to qualify for the sample used in this study. The first qualification is that a participant must be actively saving for retirement through either a workplace retirement plan or an individual retirement account. Saving in a workplace plan means that the individual has completed the enrollment process and has defined a monthly contribution that is deducted from his gross wages. Individual retirement accounts can be funded in a number of ways, but for the purposes of this study they must be in active use. That means that the individual has a current balance and has made a deposit in the account within the last twelve months.

The second criteria is that participants qualify as a young adult. Defining who is a young adult is somewhat subjective. The US Bureau of Labor Statistics defines working age groups based on increments in order of ages 20-24, 25-34, 35-44, 45-54, and 55-64 (U.S. Bureau of Labor Statistics, 2020). This same method is used by other major publications, such as Vanguard's *How America Saves* to organize demographic age-related data (Vanguard, 2020). According to data by the US Bureau of Labor Statistics, median weekly income continues to increase until the period from 45-54, meaning anyone younger than age 45 can reasonably expect future increases to income. In addition, age 45 represents roughly the midpoint in a working career beginning in the early 20s and ending in the mid-60s.

In terms of retirement saving, 45 years old may be too late to maximize the benefit of compound investment growth. For instance, Munnell et al. (2011) estimated that an individual who began saving for retirement at that age would need to save as much as 41 percent of his gross income to achieve a replacement rate of 80% at age 65. Similarly, Wallace (2021) estimated that a 45-year-old would need to save \$27,184.56 annually to reach \$1 million by age 65. In comparison, the savings rate necessary to achieve these same outcomes was roughly half if an individual began saving by age 35 in both the Wallace example and the data provided by Munnell et al. (2011). Therefore, age 35 represents a critical transition point after which the long-term benefits of saving early for retirement begin to diminish quickly. As a result, the current study defines a young adult as someone between 18 and 35 years old.

Sampling Strategies

With the size and composition of the sample now defined, we turn attention to the sampling strategies that are employed by the current study. The need to ensure data saturation means that multiple sampling strategies are employed, including convenience sampling, snowball sampling, and theoretical sampling. Convenience sampling is defined as “a sampling strategy where participants are selected in an ad hoc fashion based on their accessibility and/or proximity to the research” (Jager et al., 2017, p. 15). It is a natural starting point for the current study because “it is cheap, efficient, and simple to implement” (p. 15). According to Jager et al. (2017), the generalizability of convenience sampling improves when pre-qualifying criteria are used to create a degree of homogeneity based on some sociodemographic characteristics. As mentioned previously, the current study uses two such criteria based on age and active retirement saving.

Snowball sampling is a process by which respondents are used to refer researchers to other respondents. At a high level, “snowball sampling can be placed within a set of link-tracing methodologies which seek to take advantage of the social networks of identified respondents to provide a researcher with an ever-expanding set of potential contacts” (Atkinson & Flint, 2001, p. 1). Snowball sampling is frequently used in qualitative research to access hidden or hard-to-reach populations. The strategy confers credibility to the researcher because “trust may be developed as referrals are made by acquaintances or peers rather than more formal methods of identification” (Atkinson & Flint, 2001, p. 2). There are two reasons why snowball sampling is an effective strategy for this study. One is that retirement saving is not an easily observed behavior, and thus eligible subjects are a hidden population. Secondly, Atkinson and Flint observe that traditional quantitative samples “often suffer from a lack of responses from particular groups, often the young” (p. 2). As this study focuses specifically on young adults, snowball sampling provides a way to elicit participation through a network of eligible subjects.

Theoretical sampling is part of Grounded Theory’s iterative research process. Glaser and Strauss (1967) originally described it as:

The process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges. (p. 45)

As a sampling strategy, theoretical sampling is distinguished by a focus on emergent data, rather than participants. Corbin and Strauss (2015) write that:

In theoretical sampling, the researcher lets concepts derived during analysis guide the data-collection process. The basis for sampling is concepts, not persons. Relevant concepts are elaborated, integrated, and refined through a process of purposefully going to populations and sites that will maximize the potential for discovering further properties and dimensions pertaining to these concepts. (p. 147)

Theoretical sampling requires constant analysis by the researcher, in order to direct the sampling strategy in the direction needed to complete the development of categories. While the current study uses selective criteria to pre-qualify its participants, this was supplemented by an ongoing process of thematic evaluation and development.

Corbin and Strauss (2015) emphasize that sampling in Grounded Theory is a fundamentally open and flexible process. They write, “In Grounded Theory research, there is an identified population and setting, but the rest is open” (p. 135). The current study maintains a similarly open approach to developing a theoretical sample that will fully explore the decision-making process that young adults use to save for retirement.

Section 4: Plan of Inquiry

The plan of inquiry details procedures and tools used to collect data from study participants. Data collection centers on an interview process consisting of three phases, including pre-interview, interview, and post-interview interaction with subjects. This multi-phase approach allows for a staged series of research activities that are centered around qualifying, collecting, and validating data from participants. Grounded Theory uses an iterative process in which data collection and analysis happen concurrently. For the purposes of clarity, the process of data analysis will be discussed in greater depth in a separate section. For now, we discuss the primary methods for data collection.

Pre-Interview

The pre-interview stage begins with a control process used to qualify participant eligibility. The introductory communication takes place in the form of a scripted email that describes the purpose of the research and identifies the criteria for eligibility. It asks

participants to provide their current age, and to confirm whether they are actively saving for retirement through their employer or in an individual retirement account. Individuals who do not meet the criteria or fail to provide the necessary information are removed from the study at this step.

Once a participant has qualified for the study, a second communication takes place whose purpose is threefold. First, participants will be asked to provide informed consent, which enables the researcher to use their data in the study. Next, the participant is asked to schedule an interview time using an online scheduling tool with regularly available interview slots. If the prescheduled slots are inconvenient, the participant is asked to provide alternative meeting times. Lastly, the participant is able to review the primary interview questions and provide written feedback as an initial data gathering exercise. By providing questions in advance, participants are able to reflect on their experiences and develop responses ahead of the scheduled interview.

The researcher will confirm the meeting date by providing an electronic meeting invitation for the date selected by the participant. The meeting invitation will include a link to a video conference platform, as well as a back-up phone number. Once the meeting invitation has been accepted, the participant has completed the pre-interview process. The researcher will send an email one day in advance of the scheduled meeting date to remind participants of the appointment.

Semi-Structured Interviews

The next stage of the research process is the participant interview. Creswell (2014) provided a general format for developing an interview protocol that includes procedures for

communicating and documenting interaction with participants. The interview format is defined as a semi-structured interview. Semi-structured interviews are a flexible research method that still provides enough consistency to collect comparable data from multiple participants. Corbin and Strauss (2015) write:

In semi-structure interviews, the same topics are covered in each interview. After the questions on the list have been covered, participants are free to add anything else to the interview that they might feel is relevant to the discussion. Also, researchers can ask additional questions to clarify certain points or to delve further into a topic. (p. 39)

Semi-structured interviews utilize a tiered series of interview questions, consisting of primary questions at the topical level, supported by follow-up or probing questions designed to further elaborate on a response. Primary questions are based on the emergent themes highlighted during the review of existing literature related to young adults and retirement saving. They serve as an interview outline which will be repeated with multiple participants and adapted through the Grounded Theory process of data analysis. In comparison, probing questions are contextual, and their use may vary by interview based on the response of participants.

Each interview will last approximately one hour. Building rapport with research participants and helping them to feel comfortable is an important step in facilitating their openness during the interview experience (Corbin & Strauss, 2015). Therefore, the interview will begin with an introduction by the researcher describing his personal background, the goals of the study, and the interview process. However, equally important is the ability of the researcher to allow participants to control large portions of the interview. Corbin and Strauss (2015) write:

A skilled interviewer lets the interviewee guide the course of the interview and allows him or her to reveal information at his or her own pace while accepting pauses as part of the process. Information is likely to become more personal as confidence builds and

participants realize that the interviewer is not there to pass judgment but to listen to what he or she has to say. (p. 40)

The issue of participant confidence is meaningful to the study of retirement saving decisions, because it reflects on the individual's ability to manage personal finances. Feeling judged is likely to have a detrimental outcome on the quality of responses, therefore it is vital for the researcher to maintain an impartial and empathetic tone in asking both primary and probing questions.

The interviews will be conducted by video conference platform and recorded for later data analysis. There are a number of ways to facilitate participant openness in order to encourage more thoughtful and engaged responses. One tactic is to begin with an introductory question that is relatively easy for participants to describe. Hence, the first question in the study asks subjects to evaluate their own financial situation, which is a reality they are best positioned to know. A second tactic is the use of open-ended questions which are interpretive rather than specific. This effectively means there is no wrong answer, as each participant is able to respond based on personal experience. In addition, the interview questions include an unstructured opportunity for participant input, as well as a request for additional referrals as part of a snowball sampling strategy. Table 11 organizes the interview questions used in the current study, by arranging them according to their intended topic. Each topic is investigated using a single primary question, and a number of supporting questions designed to elicit additional response.

Table 3.2*Interview Questions*

Topic	Primary Question	Probing Questions
Life-stage transitions	How would you describe your current financial situation?	<p>What type of assets do you possess? (education, car, home, etc.)</p> <p>What type of expenses do you have? (Rent, mortgage, childcare, utilities, debt)</p> <p>What type of commitments have you made? (Marriage, family, employer, financial plan)</p> <p>What are your financial strengths and weaknesses?</p>
Time Preferences	Hypothetically, if you received a large and unexpected bonus tomorrow, how would you use the money?	<p>Would you use it on short-term expenses?</p> <p>Would you use it on long-term goals?</p> <p>Would you spend it on something fun?</p>
Incomplete Information	How would you determine if you are saving enough for retirement?	<p>What would financial security look like in retirement?</p> <p>How much do you think about retirement?</p>
Budget Constraints	How do you decide how much to save for retirement?	<p>How do your short-term expenses impact your ability to save for retirement?</p> <p>What other financial goals compete with retirement saving?</p>

Compound investing	What type of investment growth do you expect for your retirement savings?	How have you invested your retirement savings?
Financial Literacy	How knowledgeable do you feel about retirement saving at this point in your life?	High Knowledge: What information would make you feel more knowledgeable? Low Knowledge: How did you develop knowledge about retirement saving?
Future Expectations	Looking forward into the future, how much do you think will change in your life between now and when you retire?	How do you expect your career will change in the future? How do you expect your personal life will change in the future?
Unstructured Opportunity	Is there anything else that you would like to say about retirement saving which we have not already discussed?	
Snowball Sampling	Is there anyone else that you would be willing to recommend for the study?	

Post-Interview

The post-interview stage is centered on data verification using a process modeled on the Delphi method. The Delphi method is discussed in greater detail in a later section concerning the reliability and validity of research data. For now, we will introduce the Delphi method as “structured anonymous communication between individuals who hold expertise on a certain topic with a goal of arriving at a consensus” (Brady, 2015, p. 1). In this instance, the individual participants are considered experts on their own experiences by virtue of saving for retirement as a young adult. Therefore, following individual interviews, each participant is engaged in a

series of follow-up communications designed to validate the data they provide and to build reliability through an iterative process of ongoing review and feedback.

The first step in the post-interview stage requires the researcher to send a follow-up email no later than five days after each interview highlighting the major topics discussed while organizing those topics into analytical codes. This provides the participant with an opportunity to review and confirm or correct the themes identified by the researcher. As multiple interviews occur, the researcher will also include emerging categories from prior interviews as a form of comparative analysis. Again, each participant will have the opportunity to confirm or correct the comparison with their own contribution. Through this process, the researcher is able to validate that he has accurately understood and analyzed the intended meaning of each participants comments.

The second step in the post-interview stage requires periodic updates to previous participants outlining the emerging categories that have been developed over the course of research. The researcher will invite further comment from participants in order to gauge the reliability of the categories as they emerge. Three communications are planned. One will occur around the tenth participant interview to share early-stage categories developed through open and axial coding. The second will occur around the twentieth interview when the study has identified a core category for further theoretical sampling. The final communication will take place after the thirtieth interview, or whenever data saturation has been reached, to share the fully developed categories. This process is designed to make sure that the researcher continually validates findings with the subject experts he has interviewed.

This three-stage research process makes up the plan of inquiry and consists of pre-interview, interview, and post-interview activities designed to gather data from participants. It also outlines how the researcher intends to engage participants in ongoing communication in order to utilize their expertise that provides feedback and verification of results. In the next section, we discuss how data are analyzed and coded by the researcher.

Section 5: Data Analysis

One of the hallmarks of Grounded Theory design is the use of coding to analyze data. Coding allows the research to turn qualitative data into abstract concepts, which can then be categorized at the theoretical level, thereby forming the basis of theory. Holton (2010) describes the importance of this process as follows:

The conceptualization of data is the foundation of grounded theory development. The essential relationship between data and theory is a conceptual code. Coding gets the researchers off the empirical level by fracturing the data, then conceptualizing the underlying pattern of a set of empirical indicators within the data as a theory that explains what is happening in the data. Coding gives the researcher a condensed, abstract view with scope and dimension that encompasses otherwise disparate phenomena. (p. 22)

The coding process encompasses three iterative stages, frequently described as open coding, axial coding, and theoretical coding (Corbin and Strauss, 2015). In effect, these stages coincide with a progressive process of theoretical development as data is collected and refined into theory.

The iterative process that is used in Grounded Theory is referred to as constant comparative analysis. Corbin and Strauss (2015) provide an overview of how the method works:

In doing constant comparisons, data are broken down into manageable pieces with each piece compared for similarities and differences. Data that are similar in nature (referring to something conceptually similar but not necessarily a repeat of the same action or

incident) are grouped together under the same conceptual heading. Through further analysis, concepts are grouped together by the researcher to form categories (sometimes referred to as themes). Each category is developed in terms of its properties and dimensions, and eventually the different categories are integrated around a core category. The core category describes in a few words what the researcher identifies as the major theme of the study. (pp. 7-8)

The method of constant comparisons is used to transform grounded theory research from a descriptive method into a theoretical one. Suddaby (2006) argues, “The movement from relatively superficial observations to more abstract theoretical categories is achieved by the constant interplay between data collection and analysis that constitutes the constant comparative method” (p. 636). A key feature of this method is that data collection and analysis occur simultaneously and inform each other as the process evolves. Therefore, it makes sense that the stages of open, axial, and theoretical coding are focused on increasing levels of analytical specificity.

As its name would suggest, open coding is the most open-ended stage of data analysis. At this point in the coding process, the researcher begins with a line-by-line analysis of the raw data in order to elevate ideas that form concepts. Holton (2010) suggests that the researcher can use a series of analytical questions to facilitate open-coding, such as “What is this a study of?, What category does this incident indicate?, What is actually happening in the data?, What is the main concern being faced by the participants?, and What accounts for the continual resolving of this concern?” (p. 24). According to Holton (2010), the main challenge for the researcher during open-coding is to elevate the coding process from descriptive to conceptual. Corbin and Strauss (2015) provide a template for open-coding that uses a memo-writing format. Each memo analyzes a specific piece of data provided by the participant. The memo

includes a date, a header identifying the concept, the relevant sample of the raw data, and the memo analysis provided by the researcher.

Axial Coding is the next stage of data analysis in grounded theory. Axial coding is an intermediate stage, when open codes are related to each other through a process of inductive analysis by the researcher to form thematic groupings called categories. Williams and Moser (2019) write:

axial coding further refines, aligns, and categorizes the themes. With the completion of open coding and transition to axial coding, collected data can be sifted, refined, and categorized with the goal of creating distinct thematic categories in preparation for selective coding. (p. 50)

The primary purpose of axial coding is to develop categories that draw linkages between concepts in the data. This process consolidates open codes with similar themes, thereby condensing the data into abstract ideas. Axial coding embodies the constant comparative method, because it requires the researcher to continually evaluate concepts in context to data and each other.

The final stage of data analysis is theoretical coding, which is also sometimes referred to as selective coding. Theoretical coding takes place in relationship to a core category, which is selected because of its centrality to the study. Holton (2010) writes, "Selective coding begins only after the researcher has identified a potential core variable. Subsequent data collection and coding is delimited to that which is relevant to the emerging conceptual framework" (p. 31). Corbin and Strauss (2015) provide the following criteria for how to identify a core category:

Table 3.3*Criteria for Core Categories*

1. It must be sufficiently abstract so that it can be used as the overarching explanatory concept tying all other categories together.
2. It must appear frequently in the data. This means that within all, or almost all, cases there are indications that point to the concept.
3. It must be logical and consistent with the data. There should be no forcing.
4. It should be sufficiently abstract so that it can be used to do further research leading to the development of general theory.
5. It should grow in depth and explanatory power as each of the other categories is related to it through statements of relationships.

Note. Source: Corbin & Strauss, 2015, p. 189

Holton (2008) provides additional perspective on identifying a core category, writing that:

The criteria for establishing the core variable with a grounded theory are that it is central, relating to as many other categories and their properties as possible, and accounts for a large portion of the variation in a pattern of behavior. The core variable reoccurs frequently in the data and comes to be seen as a stable pattern that is increasingly related to other variables. (p. 9)

Far from being isolated, Holton's (2008) description emphasizes the centrality and interconnectedness of the core category in relationship to other categories emerging from the data.

With a core category in place, theoretical (or selective) coding occurs in concert with theoretical sampling to explore this central premise. Holton (2010) explains that "selective data collection and analysis continues until the researcher has sufficiently elaborated and integrated the core variable, its properties, and its theoretical connections to other relevant categories" (p. 31). The purpose of theoretical coding is not only to describe the properties of the core category, but also to fully develop its relationship with other categories. According to Holton (2008), theoretical coding also serves the purpose of delimiting the study by solidifying the emerging theory, thereby reducing the number of categories and codes based on the

boundaries of the theory. In this way, theoretical coding leads the researcher to an ever-greater level of specificity that only stops at the point of data saturation. When the researcher judges that data saturation has been reached, then sampling and data analysis cease.

This study follows the three-part process of data analysis, employing open coding, axial coding, and theoretical coding to analyze interview data. For each interview, data will be analyzed in the form of an interview transcript, which will be analyzed electronically in word processing software. The researcher will be able to write memos about the data using the comment tool and color-code block text to identify relevant passages. Concepts will be drawn from these memos, and organized in a separate spreadsheet, that lists a side-by-side comparison of concepts and their associated codes. Each interview will have a tab on the spreadsheet, allowing the researcher to track the analysis of data from concept to code at the individual level. After each interview, the researcher will conduct comparative analysis with previous data to develop and refine axial coding into thematic categories. This process outlines the basic pattern of data analysis that will be used to develop theory about retirement saving among young adults.

Findings from the study will be presented in proposition form. Propositions are based on categories or groups of categories that emerge from the data. Each proposition describes some aspect of the theory that has developed during the course of research. Propositions will be accompanied by narrative analysis provided by the researcher that explains the conceptual development of each item as a theoretical construct. Similarly, propositions will be supported by evidence from data, citing quotations anonymously that demonstrate the idea in context.

Section 6: Risks and Limitations

In addition to explaining the research procedures used in the study, it is also important to identify the risks and limitations that potentially impact the outcome of results. Risks can be categorized as different types of uncertainty with the potential to compromise certain aspects of the study, whereas limitations are inherent in the study design itself. Three primary risks have been identified, including researcher bias, sample bias, and interview variability. Limitations to the study are created by the sampling criteria, the research methods, and the type of data collected. These issues are discussed here in greater depth, and the strategies used to minimize their effects are introduced in a later section concerning the reliability and validity of research results.

Researcher bias is a significant issue in qualitative research because the researcher plays a large role in collecting and interpreting data. Creswell (2014) writes:

Qualitative research is interpretive research; the researcher is typically involved in a sustained and intensive experience with participants. This introduces a range of strategic, ethical, and personal issues into the qualitative research process. With these concerns in mind, inquirers explicitly identify their biases, values, and personal background, such as gender, history, culture, and socioeconomic status that shape their interpretations formed during a study. (p. 187)

When it comes to researcher bias in grounded theory research, Corbin and Strauss (2015) write:

It is when it comes to analysis that perspectives, biases, and assumptions can have their greatest impact. The impact comes in the meaning given to data, the concepts used to stand for that meaning, the questions that are asked, and comparison that are made. (p. 46)

Researcher bias is manifested in both the personal background of the researcher, as well as the interpretive actions used in data analysis. The current study is conducted by a researcher who is currently employed in the retirement industry, which is likely to influence how he prioritizes

retirement saving among other financial goals. Similarly, working in the retirement industry means that the researcher is more familiar with concepts and terminology than a typical person, which may influence how he perceives the level of participant sophistication. Lastly, participants may change the way they interact with the researcher based on his professional experience in the industry.

Sample bias is a potential issue in grounded theory because of the nature of the theoretical sampling method. The sample criteria are loosely defined at the outset, but the ultimate sample size and its characteristics are unknown at the beginning of research. The goal of the sample is to reach data saturation, which requires a theoretical sampling strategy based on the direction of data. However, data saturation may result in an uneven distribution of sample demographics across categories such as gender, race, education, or age. This is a pertinent consideration for the current study in light of evidence that demographic factors do play an influence in retirement saving participation (Lusardi et al., 2010).

Lastly, the semi-structured interview format poses a risk due the potential variability of participant and researcher interaction. Hadjistavropoulos and Smythe (2001) point out that “the researcher interview may touch on issues that neither the researcher nor the participant was prepared to discuss” (p. 164). Furthermore, financial planning for retirement is highly personal in nature. Providing personal information in interviews can be problematic, “especially when these touch on autobiographical issues, they may lead participants to disclose sensitive psychological themes” (p. 164). At a more practical level, data collection depends on the quality of information provided by participants. Some participants might have a higher level of engagement or familiarity with the topic than others.

The limitations to the study begin with the sample criteria. The eligibility requirements exclude individuals whose retirement saving occurred in previous years, or those who choose to save outside of retirement accounts. Similarly, the definition of a young adult is a subjective determination, especially on the margins. Therefore, the sample criteria create natural limitations to the study which must be considered as a matter of judgment in the research design.

The research methods consist of semi-structured interviews, which are limited by the willingness and capability of the participants to share relevant information. The study is entirely dependent on its participants to describe honest and accurate reflections of their experience with retirement saving. Similarly, the data collected from participants is predominantly textual. The type of data limits the study in terms of what is collected and known about each individual. These limitations are considered acceptable in light of the research question being addressed, and the design being employed. Specific information about participants, such as financial data on assets or savings is less important to the study than understanding the motivations and influences that lead to retirement saving decisions.

Every academic study possesses some degree of risks and limitations. Equally important are the steps taken to minimize the impact on the quality of data collected. In the next section on reliability and validity, we address the process through which the study ensures a level of quality control in how data are collected and analyzed.

Section 7: Reliability and Validity

The reliability and validity of research is an indication of the quality of its findings. However, Corbin and Strauss (2015) suggest, “Quality in qualitative research is something that

we recognize when we see it, however explaining what it is or how to achieve it is much more difficult” (p. 341). The concepts of reliability and validity stem from quantitative research methods, and therefore pose an epistemological problem for qualitative forms of research.

Corbin and Strauss (2015) explain:

In reviewing the literature, I find that everyone agrees evaluation is necessary, but there is little consensus about what constitutes an appropriate set of evaluation criteria for qualitative research. Are researchers judging for validity, or would it be better when referring to qualitative evaluation to use terms like rigor, truthfulness or goodness, or something called integrity? (p. 341)

A notable example by Guba and Lincoln (1982) argued that the concepts of reliability and validity in qualitative research should be replaced by the idea of “trustworthiness,” which would be indicated through the qualities of credibility, transferability, dependability, and confirmability.

A seminal article by Morse et al. (2002) made the argument that qualitative research should reformulate the process of quality control, by integrating it into the actual research process. They wrote, “It is time to reconsider the importance of verification strategies used by the researcher in the process of inquiry so that reliability and validity are actively attained, rather than proclaimed by external reviewers on the completion of the project” (p. 17). They elaborated this idea further as follows:

Verification refers to the mechanisms used during the process of research to incrementally contribute to ensuring reliability and validity and thus, the rigor of the study. These mechanisms are woven into every step of the inquiry to construct a solid product by identifying and correcting errors before they are built into the developing model and before they subvert the analysis.

As an iterative process, qualitative research has the opportunity to integrate verification into the plan of inquiry, rather than determine its quality only at the end when it is too late to make any improvements.

The current study is aligned with the philosophical approach to research reliability and validity as argued by Morse et al. (2002). It utilizes research strategies designed to continuously analyze and verify results. One mechanism for accomplishing this goal is embedded in Grounded Theory design through the method of data saturation. Data saturation can only occur when theoretical findings are widespread across study participants, and new information becomes infrequent. In practice, data saturation means that the researcher is accountable to a process which he does not fully control. In addition, theoretical sampling requires that the researcher pursue increasing levels of specificity in order to fully saturate the theory. Evidence of theoretical sampling is an effective way to indicate that the researcher has reached a level of data saturation to rigorously complete the study.

Another mechanism to ensure the quality of research is the constant comparative method used in Grounded Theory. This is an inherently iterative process that lends itself well to data verification strategies. Morse et al. (2002) state, "Qualitative research is iterative rather than linear, so that a good qualitative researcher moves back and forth between design and implementation to ensure congruence among questions formulation, literature, recruitment, data collection strategies and analysis" (p. 17).

This study employs a post-interview protocol which is modeled on the Delphi method, through which results are shared with participants as an ongoing process of data verification.

This type of strategy was described by Guba and Lincoln (1982) as a “member check,” “whereby data and interpretations are continually checked with members of various groups from which data are solicited; done on a continuous basis throughout the study and again at the end when the full report is assembled” (p. 247). The ongoing interaction with study participants concerning the accuracy of data is modeled on the Delphi method by using participants as the ultimate experts on their own lived experiences.

Delphi techniques are used in this study to ensure the interpretive accuracy of the researcher’s analysis. The Delphi method has been described as a “structured, organized, and iterative process aiming to distill and to correlate opinions from a compositional group (panel) of individuals (usually experts) concerning a particular problem, topic, or task” (Alarabiat & Ramos, 2019, p. 86). The Delphi method complements Grounded Theory design because both are based on iterative strategies to develop feedback into theory. Writing about the Delphi method, Brady (2015) explains, “By emphasizing the participant consensus about practice, it allows for data to continually build and progress through subsequent waves of data collection as opposed to stalling as a result of difference between participants” (p. 3).

In this study, the principles of the Delphi method are used primarily to verify the development of codes and conceptual categories, through continued communication with participants during the post-interview stage of research. The communication includes an immediate follow up post-interview to verify the coding of the conceptual analysis drawn from raw interview data. The communication continues with ongoing updates after the tenth, twentieth, and final interviews to gather feedback and input on the developing theoretical categories. This process is designed to ensure that the researcher’s analysis throughout the

study are periodically subject to external review and verification to confirm the accuracy of the findings. In this way, verification process is built into the actual design of the study.

Chapter III Conclusion

A research framework should integrate a coherent philosophical worldview with a research design and methods that are well suited to the research question at the center of the process. This study is primarily concerned with how young adults make retirement saving decisions by learning from those who have already done so. This is an open-ended question with the potential to reflect both rational and behavioral influences, hence a qualitative methodology is an effective way to capture all facets of the decision-making process. Among qualitative methodologies, Grounded Theory has been selected for the research design because of the rigorous way it is used to generalize theoretical constructs from individualized experiences.

This chapter details the research design and methods, which are consistent with Grounded Theory practice as described by Corbin and Strauss (2015), among others. It includes an outline of the sample criteria used to qualify participants, and strategies including convenience, snowball, and theoretical sampling. The plan of inquiry consists of a three-stage research process, including pre-interview, interview, and post-interview protocols for interacting with participants. Grounded Theory design prescribes simultaneous data collection and analysis. The data analysis process utilizes three stages of open, axial, and theoretical coding which play a key part in the development of grounded theory. Risks and limitations to the study are defined and addressed, including issues of researcher bias, sampling bias, and variability during semi-structured interviews. Limitations are created by the sampling criteria,

the quality of the data provided by participants, and the type of data collected. Lastly, we discuss verification protocols modeled on the Delphi method, which takes place during stage three of the research process to ensure the reliability and validity of the study.

The retirement industry continues to recommend saving early as a best practice for retirement security, yet evidence suggests that young adults are the least likely group to participate. Therefore, learning from those young adults that do participate is one way to develop strategies for convincing more people to save earlier. Very little is known about this age group when it comes to retirement saving, therefore this study has the potential to contribute significantly to our understanding of what influences and motivates their decisions. The literature has previously identified potential characteristics that contribute or detract from the likelihood of young people saving for retirement, but we are still lacking a holistic theory that integrates the complexity and nuance of this stage of life.

Chapter IV: Results

In order to develop a theoretical understanding for how young adults (18 to 35 years old) make retirement saving decisions, this study gathered data directly from members of this age cohort who are currently participating in the retirement system. Young adults are rarely the focus of retirement research, and existing literature takes a piece-meal approach to investigating various rational, behavioral and social influences (Knoll et al., 2012). A qualitative research design was used in order to ensure all dimensions of the decision-making process could be adequately explored with participants. The underlying premise of this research approach is based on the logic that young adults who are actively saving for retirement will have first-hand knowledge of their own experiences and can therefore reflect on their actions.

The research method was based on principles of Grounded Theory as outlined by Corbin and Strauss (2015), which provided a framework for developing research protocols. For this study, Grounded Theory offered a pathway through which highly individualized data collection could be further refined into abstract concepts that are broadly applicable at the theoretical level. An intrinsic characteristic of Grounded Theory is a systematic approach to analyzing qualitative data by coding responses in increasingly abstract levels of development. This research process fits with the larger goal of the present study, which is to develop a theoretical model of how young adults make decisions about retirement saving.

Research Summary

The study format consisted of a three-stage research process designed to recruit and qualify participants, collect data, and analyze and verify results. Before discussing the results of the study in detail, an overview of the research process is presented here to summarize

research activities. A key facet of Grounded Theory is the concept of data saturation (Corbin & Strauss, 2015), through which the researcher fully explores and confirms theoretical concepts that emerge from the data. Presenting a summary of research activities helps to illustrate how data saturation was reached and provides context for the results discussed herein.

Research Sample

The study sample consisted of 25 young adults who are actively saving for retirement. The study defined a young adult between the ages of 18 and 35 years old, based on findings by Munnell et al. (2011) that shows the burden of retirement saving nearly doubles if started after age 35. Active retirement saving was defined through two primary activities: either currently saving through a workplace retirement plan or having made a contribution to an individual retirement account in the previous 12 months. Multiple sampling strategies were used to reach potential participants, including convenience sampling, snowball sampling, and theoretical sampling.

In order to qualify for the study, participants first needed to complete a qualification process consisting of an online survey. The qualification process was initially intended as a two-step communication process. However, the researcher was able to condense this step into a single online survey, which created a more efficient process for recruiting participants. The survey ensured that participants met the minimum criteria for participation. In addition, the survey also gathered participant consent and provided individuals with an optional opportunity to provide early feedback on the primary research questions. A total of 33 individuals took part in the qualification process, of which 28 qualified, and five did not. Three individuals who qualified later failed to participate in research interviews.

As part of the qualification survey, participants were asked to select an age range of either 18-25, 26-30, 31-35, or over 35. 12 participants selected the 26-30 age range, nine belonged to the 31-35 group, and four came from the 18-25 cohort. Any individuals over 35 were disqualified, which included two individuals. Through the survey, participants were asked to indicate how they are saving for retirement by selecting options for a workplace plan, individual retirement account or both account types. A total of 19 participants saved exclusively through a workplace plan, while five saved in both types, and one saved exclusively through an individual retirement account. Although gender was not tracked for research purposes, another notable feature of the sample is that 21 of the 25 participants were female.

After conducting 25 interviews, the researcher determined that data saturation had been fully achieved and ceased further participant sampling and interviewing. Thomson (2011) suggested that Grounded Theory researchers plan for approximately 30 interviews, but also remained open to variations in sample size depending on the research scope and its sources. In Grounded Theory inquiry, sample size is ultimately determined by the researcher's best judgement about data saturation during the ongoing and iterative research. The issue of data saturation will be addressed later in the presentation of results specific to each research topic.

Data Collection

The study was designed with three opportunities for data collection from participants, during the pre-interview, the interview itself, and post-interview phases of communication. In practice, all meaningful data was gathered during the first two phases leading up to and during participant interviews. The primary interview questions were included in the pre-interview qualification survey, after individuals had confirmed their eligibility and provided consent. At

this point, participants had the option to provide written responses in advance of the interview; and 17 out of 25 participants did so.

The majority of research data was collected during virtual interviews with participants. All 25 participants took part in virtual interviews, which were recorded and later transcribed using the virtual platform Zoom.com. A semi-structured interview format was employed to address the same seven research topics with each participant. However, the semi-structured nature of each interview allowed for some flexibility to customize the discussion with probing questions relative to individual circumstances. The average interview length across the study was 44 minutes, with the longest interview taking one hour and seven minutes, and the shortest interview conducted in 27 minutes.

A third opportunity for data collection was offered in the post-interview phase of research. Participants received multiple emails after being interviewed as part of the data verification process based on the Delphi method (Guba & Lincoln, 1982). Participants were encouraged to make further comments if necessary to emerging themes shared by the researcher. No substantial or meaningful new data was provided during this third phase of the research process, but it did confirm accuracy in data transcription, analysis, and findings.

Data Analysis & Verification

Analysis and verification of data collected from participants was an ongoing exercise during the study. Historically, Grounded Theory methodology has been synonymous with a process of analyzing qualitative data known as open, axial, and theoretical coding (Corbin & Strauss, 2015). In addition, this study created an extra layer of rigor modeled on the Delphi method that was designed to confirm the validity of the researcher's transcription, coding, and

analysis. Taken together, these two activities provided the analytical framework from which the results of the study were attained.

The first level of analysis concerned individual participant data provided by verbal and written responses to interview questions. After each interview, a transcript was generated using the online transcription tool Zoom. The accuracy of each transcript was reviewed by the researcher in comparison to an audio recording of the same interview. If the participant also provided written data, it was added to a single document containing all data from a given individual. Since this document was saved as a text file, the researcher was able highlight and code text within the document itself, creating the open codes that form the foundation of Grounded Theory research (Glaser & Strauss, 2017).

In a separate spreadsheet using Microsoft Excel, the researcher created a tab for each participant, and copied the coding along with its supporting textual basis. Codes were organized by interview question based on where they occurred in the transcript, or in written responses. There was an average of 65 codes generated per participant, with 91 codes being the highest number, and 47 codes representing the fewest. This step in the research process ensured that open coding was clearly documented and organized by individual participant. In addition, the researcher was able to validate individual data by sending this documentation to each participant following their interview to request review and feedback on any inaccuracies concerning misinterpretation or bias. Feedback from participants confirmed the accuracy of the coding with no significant or meaningful issues provided.

Image 4.1*Example of Open Coding Analysis of Individual Participant*

Column A:
Organizes analysis
by interview
question based on
where participant's
comments were
made in the
transcript.

Column B:
Open codes
assigned by
researcher to
transcript text.

Column C:
Direct transcript
quotations
supporting open
codes in Column B

	A	B	C
1	Q1	Code	From Transcript
2	Life Stage	Stability	stable month to month
3		Low cost of living	I don't have too many expenses to worry about
4		Living at home	I live at home
5		Housing is priority	my focus isn't as much on like retirement savings as it is on like saving for house
6		No need to use savings	I don't have to like go into my savings tap to pay for Anything right now
7		In first job	this is my first full time job
8		Transition from part time to full time work	that BI weekly paycheck coming in is really nice to have versus just being like part time in college.
9		Consistent salaried pay	not knowing how much you're gonna get in the month, or it's just a lot more reliable to know, like what you're getting, what you're working off
10	Q2		
11	Time Preference	Parental Influence - Long term planning	my mom growing up has influenced me that way
12		Homeownership goal	short medium term goal to be able to buy my own house
13		Goals provide motivation for saving	It's definitely a good motivation to want to put away money instead of spending it like right now
14		Housing market difficulty	the housing market, just it's insane right now.
15		Too far away to worry	Retirement wise, it's not as soon for me, so I'm not like I was worried about it right now
16		Sequential saving for housing then retirement	as soon as it's like kind of get the housing goal Under my belt, I'd like to start like raising my savings rate for retirement
17		Delayed family formation	I'd like to start a Family someday, but that's probably gonna be Further down the road
18		Cost of Children	kids are expensive

The second level of analysis consisted of axial coding, which compared coding across all participants in order to identify conceptual themes (Corbin & Strauss, 2015). Axial coding was accomplished using another spreadsheet that was organized by interview question. The coding from each individual participant (as seen above in Image 3: Column B) was then copied and pasted into columns, which created a side-by-side comparison across 25 participants for each question. The researcher used a system of color-coding to review this comparison and highlight similar concepts between different individuals. At the end of this process, the researcher could then rank concepts based on their recurrence.

Axial coding was an important step in the research process because of the role it played in assessing data saturation. The process is somewhat subjective, because comparing qualitative data necessitates that the researcher interprets shared meaning (Creswell, 2014).

For instance, terms like “stable,” “comfortable,” or “secure” have been interpreted to represent the same higher-level construct of financial safety. In other situations, where the ideas are more complex or nuanced, some loss of fidelity is unavoidable when moving from specific data to generalized theoretical concepts. As a result, the researcher used the participants in the study to verify the axial coding. At significant points in the study following the 12th interview and the 20th interview, the researcher shared higher level codes with all incumbent participants and invited their feedback. No disagreements were expressed in either case, and three individuals responded affirmatively to the findings without edit, providing external verification for the researcher’s conclusions.

Image 4.2

Example of Axial Coding of Participant Data

One column per participant

Open coding arranged for side-by-side analysis

Spreadsheet continues in Excel (not visible)

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6	Participant 7	Participant 8	Participant 9	Participant 10	Participant 11	Participant 12
1 Q1 Life Stage	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability
2 Participant 1	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability
3 Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability	Stability
4 Emergency Protection	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer	Emergency Buffer
5 Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage	Insurance Coverage
6 Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially	Financially
7 Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security	Job Security
8 Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage	Labor Shortage
9 Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity	Consistent Employment Opportunity
10 Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location	Migratory Location
11 Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses	Covering expenses
12 Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income	Increasing Income
13 Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving	Elevating Saving
14												
15												
16												
17 Axial Codes	Saturation											
18 Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety	Financial Safety
19 Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy	Income Adequacy
20 Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence	Employment Confidence
21 Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection	Emergency Protection
22 Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living	Cost of Living
23 Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle	Retirement Lifestyle
24 Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision	Investing Decision
25 Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status	Housing Status
26 Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden	Debt Burden
27												
28												
29												
30												
31												
32												

Color-coding used to group related concepts into axial codes

Spreadsheet tabs organized by interview question

Q1 Life Stage Q2 Time Preferences Q3 Retirement Planning Q4 Retirement Saving Q5 Investing Q6 Financial ...

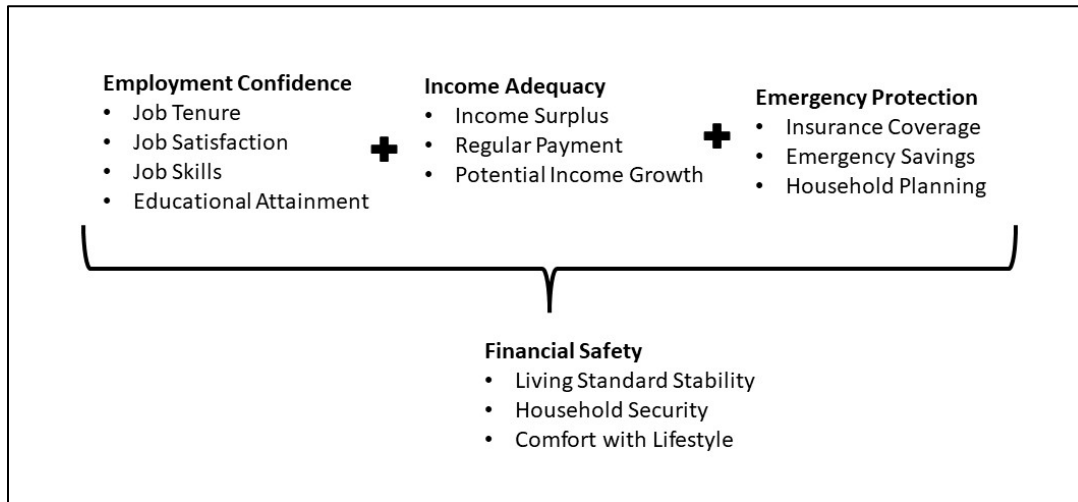
The third and final level of analysis consisted of theoretical coding, during which the researcher integrated concepts from the data into a theoretical model (Corbin & Strauss, 2015).

Corbin and Strauss (2015) write, “Concepts alone do not make theory. Concepts must be linked and filled in with detail in order to construct a dense and explanatory theory” (p. 188).

Theoretical integration required transforming concepts from the data into components of a generalizable theory. This was accomplished through the intensive analysis of the saturated concepts identified during axial coding.

The researcher used two primary techniques for the purpose of theoretical coding, consisting of illustrative diagrams and summary memos (Corbin & Strauss, 2015). The memos summarized the characteristic features of specific concepts. For instance, a higher-level concept like “Income Adequacy” could be defined by characteristics such as having a cushion between income and expenses, regular payment through a consistent paycheck, and the perceived potential for future income growth. Summary memos served as a tool to capture a higher degree of intricacy and subtlety from the data.

In addition to summary memos, illustrative diagrams were used to visualize the relationship between concepts. In the example depicted below, concepts related to a single interview question were arranged into a process diagram that depicts the researcher’s theoretical analysis. Illustrations like this were used to depict the complexity of research findings in a relatively simple yet concrete way.

Image 4.3*Example of Theoretical Coding Using an Illustrative Diagram***Conclusion**

Summarizing research activities provides context for the results that follow.

Understanding the research process is especially important when utilizing the Grounded Theory method, because it helps explain how data saturation was reached through an iterative process of data collection and analysis. The three-stage structure utilized in this study was intended to clearly demarcate critical steps in the use of Grounded Theory. Furthermore, it also ensured that the study would adhere to a set of research practices designed to maximize the strength of the data gathered and the results presented herein. The sampling process, the collection of data, along with its analysis and verification were conducted over the course of seven months. The results of this study should be evaluated through the context of Grounded Theory research as a qualitative form of open-ended, exploratory inquiry.

Research Results

The research results are presented as a series of proposition that relate to how young adults make retirement saving decisions. There are eight propositions in total, all of which stem from the seven specific interview topics established at the outset. The topic related to budget constraints produced two propositions, whereas all other topics have one associated proposition. The propositions are statements that summarize the most important findings. They are important based both on the theoretical analysis of the researcher, and also because of their saturation in the data. Table 4.1 presents a high-level summary of the propositions and their related topics. Each proposition will be explored in depth, before presenting an integrated model of the findings at the conclusion of this chapter.

Table 4.1*Research Propositions*

Number	Topic	Proposition
1	Life-stage Transitions	Young adults who save for retirement believe they have achieved a level of financial safety in the present.
2	Time Preferences	Young adults who save for retirement balance short-term and long-term time preferences.
3	Incomplete Information	Saving for retirement does not necessarily imply planning for retirement.
4a	Budget Constraints	A low cost of living minimizes budget constraints for young adults saving for retirement.
4b	Budget Constraints	Housing costs are the primary determinant of cost of living for young adults.
5	Compound investing	Young adults save for retirement because they know time horizon is important , although financial literacy determines how they explain why.
6	Financial Literacy	Financial literacy varied among young adults saving for retirement based on the number of influences they had experienced.
7	Future expectations	Young adults expected future expenses to increase , possibly limiting their ability to save for retirement.

Proposition 1

1	Life-stage Transitions	Young adults who save for retirement believe they have achieved a level of financial safety in the present.
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Knoll et al. (2012) suggested that deciding to save for retirement would be more likely as young adults reached major life milestones such as marriage that made their futures more tangible. The first interview question of this study asked participants to describe their current financial situation, in order to establish whether individuals shared common life-stage milestones. However, participants in the sample came from a range of backgrounds, including

those who were married, single, recently graduated, committed partners, or living with parents. The composition of the sample echoed the conclusion of Lusardi et al. (2010), who argued that young adults are a diverse group in a fluid stage of life, and therefore defy homogenous characterizations.

Results show that the most common life-stage characteristic shared by young adults who are saving for retirement is a sense of financial safety about their current situation. The concept of financial safety is proposed by the researcher to reflect a combination of intangible feelings that were widely observed among participants. In fact, this was one of the first concepts to emerge from the data. Four of the first five participants in the study independently used the word “stable” to describe their current financial situation. Other synonyms such as “secure,” “comfortable,” “normal,” or “solid” were also frequent expressions. In total, 22 out of 25 participants made comments inferring financial safety.

Financial safety is a modest concept, based on the desire to eliminate worst case scenarios and establish a consistent standard of living. Participants expressing financial safety felt confident that their standard of living could be sustained into the foreseeable future, and that they could endure an occasional budget shock. Research analysis identified three independent factors that contributed to the feeling of financial safety; these include income adequacy, emergency protection, and employment confidence.

Income adequacy exists when current income exceeds current expenses, creating an expense cushion that alleviates the pressure of living paycheck to paycheck. Participant 4 noted, “I have to pay attention to what I’m spending on, but I don’t have to be super, super attentive.” Another facet of income adequacy is the reliability of a regular paycheck. Young

adults work a higher proportion of part-time or irregular work schedules. The transition to full-time work with a dependable income stream can be transformative on their ability to plan for the future. Participant 6 noted, “That bi-weekly paycheck coming in is really nice to have versus just being part time.” Pay raises during early career also contribute to the sense of income adequacy and encourage retirement saving by young adults. Participant 2 noted that following a recent pay raise, it was “the first that I’ve had a salary where I’ve really been able to commit to contributing to retirement beyond the basic or required amounts.”

Emergency protection is another dimension of financial safety. The potential for emergency expenses spanned a wide range of concerns, including healthcare, housing, automotive, and even pet care. Although emergency expenses were viewed as inevitable, the ability to afford them without damaging financial consequences contributed positively to the sense of financial safety. Participant 2 suggested, “If something were to happen, you know an emergency or an unexpected vet bill or house issue, that I would feel like I have ways to cover that without exhausting all of my resources.” Participant 1 echoed this sentiment, stating, “I don’t think that there is any normal-ish emergency that could happen that would throw me off.”

Lastly, financial safety is predicated by employment confidence. Employment confidence derives from a combination of employment-related factors that go beyond simply having a job. Certainly, job related attributes such as tenure length and job satisfaction are part of the concept, contributing to a positive outlook about career progression. In addition, employment confidence is also derived from individual perceptions about employability that stem from other factors such as job skills, educational attainment, and labor market conditions.

The connection between employment and retirement saving for young adults is key. Their willingness to save for retirement is highly dependent on their employment status and career prospects. Participant 21 explained, “If I didn't have my job, I probably wouldn't be throwing as much into retirement.” Similarly, Participant 14 stated about retirement saving, “If I lost my job, yeah, that’s probably something I would cut in the short term.”

Financial safety is a more abstract achievement compared to other traditional milestones of young adulthood such as marriage or children. However, this study determined that it is a key inflection point when young adults begin to consider retirement saving. At this point, young adults move beyond short-term financial survival, and are willing to consider long-term investments such as saving for retirement. Financial safety makes young adults feel comfortable with the idea of allocating current income for the future, even if they are not eager to do so. Expressions of financial safety were widely observed among the study sample of young adults who are currently saving for retirement.

Proposition 2

2	Time Preferences	Young adults who save for retirement balance short-term and long-term time preferences.
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Intertemporal bias is an important issue in retirement decision making described by Thaler and Benartzi (2004) that is especially relevant for young adults because of the distance to retirement (Finke and Huston, 2013). Time preferences are considered a behavioral attribute, and the challenge has been in accurately measuring individual preferences. Finke and Huston (2013) believed that an individual’s time preferences would manifest in a range of

behavioral habits, related to finance, personal health, relationships, and other aspects of life. The current study investigated the question by posing a hypothetical scenario in which participants were asked how they would spend an unexpected financial windfall.

The study found that young adult participants balanced short-term and long-term time preferences, instead of demonstrating a bias for present consumption. In fact, 13 participants directly stated that they considered themselves “long-term planners.” A further seven participants gave responses indicative of long-term thinking. The concept of balanced time preferences began to emerge in the data relatively early in the research process. By the fifth interview, the concept had been identified for theoretical development. However, it was a difficult and complex concept to fully develop, not reaching satisfactory saturation until the twentieth interview, for reasons that will be explained shortly.

One issue complicating analysis stemmed from the permanent tension between short-term and long-term preferences. That meant that participants sometimes expressed conflicting and contradictory sentiments. As an example, Participant 20 explained, “Personally, I would love to just go ahead and blow it on something fun, but I know what the right thing is to do.” This sentiment echoed a common theme, in which participants acknowledged the importance of long-term planning at the intellectual level but lacked enthusiasm for the actual effort. Participant 7 stated, “It is genuinely hard to get excited about having money when you’re 60 years old.” There is an enthusiasm gap between short-term and long-term time preferences. Short-term preferences have a greater emotional resonance, whereas long-term preferences are more strategic and intellectual in nature.

Self-discipline is a corollary of the enthusiasm gap towards long-term time preferences. Saving money for retirement is a forced action, requiring intentional self-control and delayed gratification. Participant 3 explained, “When I put money in, it's not like ‘Oh, that feels so good.’ It's just like that's something that I've made myself do.” For some young adults, the sacrifice is tangible. Participant 5 stated, “My mentality is kind of different. I live on a very strict budget so that I can save aggressively.” The concept of self-discipline has obvious behavioral implications. Participant 19, who was familiar with the psychological experiment of the Stanford Marshmallow Test (Mischel et al., 1989), stated, “My mom used to do that with me as a kid in the car, but with peanut M&M's.” Evidence from the current study suggests that young adults who save for retirement share the common behavioral trait of self-discipline.

Another factor that complicated theoretical development stemmed from the prevalence of competing financial priorities, especially housing and debt relief. Retirement saving is not the only, or even the primary long-term financial priority for young adults. When participants were asked how they would spend a financial windfall, many chose to allocate the money to a house purchase or debt relief (primarily student loans). Participant 6 explained, “As soon as I get the housing goal under my belt, I'd like to start raising my savings rate for retirement.” Achieving homeownership and debt relief were viewed as transformative events because of their outsized burden on future prosperity. Participant 4 stated about homeownership, “Right now it just feels like all your money is dumped into it.”

Pessimism about the future is another notable factor that influenced the time preferences of young adults saving for retirement. This pessimism stemmed in part from recent political and economic events. Participant 3 stated, “Growing up in this era has just been very

tumultuous.” For some that turmoil made the future unpleasant to imagine. Participant 21 explained, “I’m feeling like the world isn’t particularly stable. For some reason, it makes me less able to think about the idea of retirement.” Alternatively, instability motivated others to prepare for the future out of fear. Participant 17 shared, “I always feel like I need to save and prep. Maybe I’m prepping for a doomsday.” The lack of a social safety net loomed large in this pessimism. Social Security was called out for its perceived problems. Participant 8 noted, “I see all those economic research papers that are saying Social Security is going to run dry by 2035.” He went on, “I am a long-term planner firstly because I can’t rely on such a system.” This study found that retirement saving is one way in which young adults who are pessimistic about the future take proactive steps to become self-sufficient. Participant 17 stated, “Should something happen, I want to make sure there is enough there and I’m not begging for money from people.” Even though it is a pessimistic outlook, negativity about the future appears to motivate young adults to think about the long-term and adapt their time preferences accordingly.

The balance of short-term and long-term time preferences is a nuanced and complex proposition which nevertheless has strong evidence in the data. The concept is highly contextualized, based on individual characteristics of self-discipline, financial priorities, and attitudes about the future. The balance that is struck varies by person. Participant 14 summarized, “I want to be smart about the future, but I don’t want to be so wrapped up in planning for every possible event that I don’t live now.” This statement effectively communicates the inherent tension between short-term and long-term time preferences that strikes a balance between the present and future.

Proposition 3

3	Incomplete Information	Saving for retirement does not necessarily imply planning for retirement.
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The problem of incomplete information stems from the fact that retirement planning requires preparation for a future scenario without knowledge of its circumstances. In fact, the topic of retirement planning proved difficult to research at first because young adult participants were confused by the interview question. In large part, that confusion stemmed from the absence of personal experience to discuss. After four interviews, the researcher chose to reorder the primary and probing interview questions related to this topic. The primary question changed from, “How would you determine if you are saving enough for retirement?,” and was replaced by a previous probing question: “How much do you think about retirement?” The change in questions refocused the topic and improved the clarity of responses. The new question placed greater emphasis on the relevance of retirement planning, compared to the original question, which sought specific details about the planning process.

Two complementary concepts emerged from this redesigned set of research questions. The first is that young adults were implicitly aware of the challenges created by incomplete information. The second is that despite this fact, incomplete information about retirement did not prevent young adults from deciding to save. Existing literature by Clarke et al. (2019) and Binswanger and Carman (2012) emphasized the important role of retirement planning as a behavioral trigger for retirement saving. In this study, findings suggest that the decision to save is not predicated by planning activity.

The concept of incomplete information frequently occurred in the data, even if participants never used the exact term. Participants addressed the subject in 21 of the 25 interviews but did so in different ways. Some expressed ignorance like Participant 17, who stated, “I don’t know what retirement would look like for me.” Others were philosophical like Participant 21, who said, “I don’t have a magic ball.” Still others were direct, such as Participant 13, who explained, “It’s hard to know what I will want in 30, 40, or 50 years.” Some offered more complex analysis, like Participant 15, who shared, “I haven’t gone down into specifics of what my monthly budget would be and for how long and if it’s enough to get me till I’m 90.” The researcher interpreted these statements as a reflection on the challenge of dealing with incomplete information about the future and vetted such conclusion via Delphi method with the sample.

The inability to plan for retirement did not discourage young adults from saving. Participant 13 stated, “I see retirement as something that I am supposed to think of and supposed to contribute to whether or not I actually envision what my retired life will be like.” Similarly, Participant 16 said, “I think just putting away any type of money as much as you can now is important.” The urgency to start early outweighed concerns about how incomplete information could impact future outcomes. Participant 17 shared, “You can’t get the years back. It’s more important to put in stuff now and let it grow up.”

Retirement saving and retirement planning are closely related topics, but this study finds that they can occur independently of each other. The value of planning depends on the input of information available to it. Although retirement saving may improve with additional information, it does not depend on it. Young adults find more benefit from taking advantage of

the value of time by saving early, even if they acknowledge the inability to forecast their future retirement needs.

Proposition 4a

4a	Budget Constraints	A low cost of living minimizes budget constraints for young adults saving for retirement.
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In addition to long-term planning, this study also investigated how short-term budget constraints influence retirement saving by young adults. The intention was to understand how young adults choose what amount to save and whether that amount was determined by budgetary pressures rather than retirement goals. This set of questions provided a rich amount of feedback. There were three questions in total, one of which was inconclusive, but two of which formed the primary basis for two propositions in this study. The first is presented here.

The study found that many young adults who save for retirement have a low cost of living. The low living cost insulates them from budgetary pressure and makes it easier to save for retirement. The concept of cost of living emerged early on, within the first five participant interviews. However, the researcher misinterpreted the concept initially as frugality. Upon further analysis, the researcher determined that frugality is only one contributing factor that lowers the cost of living. By Sample 15, the researcher had concluded that cost of living is a more accurate concept of the true phenomenon. The cost of living can be thought of as the sum of short-term expenses. The working definition is intentionally vague, because the relevant definition that matters is determined by individual participants.

The cost of living is inextricably linked to personal lifestyle. The researcher concluded that the typical lifestyle of young adults is qualitatively *simple*, due to a variety of factors. Of course, the sample contained a range of individuals in different situations. Some lived at home with family, others lived in small apartments or with roommates, while still others were in committed relationships or had purchased homes. The researcher observed that as an individual's lifestyle became more complex, participant stress about budgetary constraints on retirement saving also increased. Participant 4, who had recently purchased a first home, said, "Now that I have a lot more things that I'm juggling, I save for my retirement a lot less." Participant 5 faced a similar situation, stating, "I just bought an apartment and like maintenance goes up and I have a parking spot that costs money and I find myself for the first time struggling a little with how much money I'm putting into my 401(k)."

In comparison, those with a simple lifestyle found that the cost of living was much more manageable. Participant 3 described the transition from working part-time as a student: "When I was working part time, I was able to live off that amount. While working full time I have part-time expenses, basically, so a good chunk of my funds just go into my retirement account." Participant 7 had a similar experience with the transition after college: "It quickly became clear that as long as you have a reasonable lifestyle, that's a ton of money. You can eat and pay rent and save money. And there isn't really that much more you need to be doing when you're 22."

Frugal spending habits are the other contributing factor that lowers the cost of living for young adults. The researcher interpreted frugality as a conservative attitude towards discretionary spending, which was observed in 18 of the 25 participant interviews. Frugality manifested itself in different ways; some participants demonstrated a lack of interest in

material goods, while others bragged about driving old cars. Participant 1 belonged to “a buy nothing group where we get stuff for free because we don’t want to buy it.” Participant 7 claimed, “I can go to Rite Aid and live like a king.” Participant 9 stated, “Spending money is actually like one of the hardest things for me because I feel like should save all of it.” By living simply and spending little, some young adults with regular income actually experience an income surplus instead of budget constraints. Participant 7 commented, “This is money that would be sitting in my savings account, so I might as well put it somewhere better.”

A low cost of living contributes to retirement saving because young adults are able to allocate excess income rather than spend it. Excess income is also one of the contributing factors discussed previously that contributes to financial safety for young adults. The likelihood of benefiting from a low cost of living increases when an individual’s lifestyle and spending habits align. As living costs increase, budget constraints make retirement saving more difficult. Yet young adults are frequently in a position to avoid these costs based simply on the way they live and spend money.

Proposition 4b

4b	Budget Constraints	Housing costs are the primary determinant of cost of living for young adults.
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A second proposition emerged from research into how budget constraints impact retirement saving by young adults. A probing question about competing financial priorities led to significant feedback about the role that housing plays in the financial outlook of young adults. Concerns about housing costs outweighed all other competing priorities, including debt relief, in terms of data saturation. Furthermore, the effect of housing costs on the ability to

save for retirement manifested in several different ways, creating a multi-faceted issue for young adults. The universality of housing meant that the subject appeared in every interview conducted during the study in some form, even among participants living with family. The housing status of young adults in the study varied, but the relevance of the housing issue remained significant across the sample population.

The researcher's analysis concluded that housing is a higher priority for young adults than retirement saving. Housing was viewed as a more immediate and basic need than holding retirement assets. Participant 11 asked rhetorically, "If I don't have my house, then what do I retire in?" In fact, long-term housing was viewed as a form of retirement security in and of itself. Participant 3 defined retirement security as "knowing that I have a stable roof over my head." Participant 1 stated, "I feel one of the things that people who are elderly who haven't planned that well always struggle with is rent or their income for shelter." Therefore, stable housing was associated with both immediate and long-term benefits.

The cost of housing manifested itself in two ways for young adults. The first was the direct cost to purchase housing or pay for rent. Rising housing costs created a sense of urgency about homeownership. Participant 6 stated, "My focus isn't as much on retirement savings as it is on saving for a house." Similarly, Participant 10 shared, "With the value of real estate, I definitely view it is more important currently." O'Neill et al. (2012) found that young adults practice sequential financial planning, prioritizing one major financial goal at a time. The current study found evidence supporting that conclusion, as several participants stated that saving for a home was their primary financial priority.

Housing costs had a second effect on young adults that came from the indirect costs of home ownership. Buying a home represented a sea change in all aspects of personal finance. Participant 2 stated, “When we first bought our house—it’s our first house—I wasn’t really sure what that was going to mean for my finances.” The cost of home ownership was not solely confined to a mortgage payment but also consisted of a range of secondary costs such as insurance, taxes, utilities, appliances, and maintenance. Participant 9 foresaw “incalculable overhead for having a house, you know, like tools for the house, like repairs on the house, all this [stuff] that I’m going to have to buy to put in this house.” Participant 4 stated, “I’ve lived in this house for less than a year. I bought it less than a year ago, so it’s all these times where I’m like, ‘Oh my gosh, I need to buy things like a ladder and things I didn’t know I needed to own.’” The secondary costs of homeownership contribute to an ongoing financial burden that changes the lifestyle and spending habits of young adults.

The cost of housing is an important factor in the retirement saving decisions made by young adults because it represents the greatest competing priority. In fact, this study determined that young adults view it as a more important financial priority than retirement saving. However, it is not just the direct cost of housing that poses a burden. The indirect and secondary costs of housing transform the cost of living experienced by young adults, effecting change in both their lifestyle and spending habits. In other words, housing costs help determine the wider context in which young adults make decisions about retirement savings.

Proposition 5

5	Compound investing	Young adults save for retirement because they know the time horizon is important , although financial literacy determines how they explain why.
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Starting to save early for retirement is based on the concept of compound investing. The investment time horizon for retirement savings is an important variable in determining long-term asset growth. However, McKenzie and Liersch (2011) and Parsons (2014) have argued that most people are likely to underestimate the long-term returns on retirement savings due to exponential growth bias. This study investigated whether knowledge of compound investing was a relevant reason that young adults save for retirement. It asked participants to describe their expected investment returns and discuss their investment choices.

The study revealed that the time horizon is an important factor in retirement saving by young adults. Sixteen participants expected to receive an advantage by beginning to save early. Although awareness of the time horizon had a high level of data saturation, that same knowledge did not extend to the concept of compound investing. The understanding of why the time horizon is important to retirement saving varied among participants. Many had at least a vague grasp of the principles of compound growth. However, only four participants directly identified compound investing as a concept. Furthermore, financial literacy played a significant role in determining individual sophistication about the principles of compound investing. The researcher observed a bifurcation between how those with low levels of financial literacy approached retirement investing compared to those with high levels of financial literacy.

The value of the time horizon was understood by those with both high and low levels of financial literacy. However, those with low levels of financial literacy had less knowledge about compound investing. They interpreted the time horizon differently, believing that saving itself would accrue advantages over a longer period. Namely, they thought that by beginning early, they could save less per month over the long term. Participant 4 stated, "If you wait until you're

40 or whatever it's going to take a lot more effort and you're going have to take a lot bigger piece of your budget.” Participants with low levels of financial literacy believed that by starting early, they could save a smaller portion of their income.

Low levels of financial literacy also contributed to how they perceived investment risk. In general, this group was more risk averse because of their lack of knowledge, which in turn was reflected in their decision-making. Participant 2 stated, “I don’t take a lot of risks. I think mostly because I don’t feel like I have a really strong understanding of investing in general.” Those who lacked financial literacy had a greater reliance on default investment options available in their retirement plans. Participant 18 explained one such example as follows: “You could choose aggressive, medium, or low, and I went with low.” Participant 18 justified this decision in part based on the perceived advantage of beginning early: “I can just start investing now in safer stuff and then hopefully by the time I retire I’ll have enough.” This kind of logic led those with low levels of financial literacy to select more conservative investments.

By selecting conservative investment options at a young age, those who lacked financial literacy unwittingly limited the potential for investment growth. Participant 18 noted, “I’m not getting a lot in return on what I’m putting in but it’s growing a little.” Similarly, Participant 21 observed, “It’s kind of depressing because I feel like I’m contributing a lot, but not really getting anywhere.” Without financial literacy, this group was largely unfamiliar with how to compare investment returns against market benchmarks. They lacked specific expectations for a return on investment, relying on the assumption that long-term growth would accrue with savings. Participant 2 explained, “Don’t get so focused on the short term of what you’re seeing in terms of growth. Just remember, it’s the long term that you’re supposed to think about.”

The outlook about the time horizon was different for those with higher levels of financial literacy. In terms of savings rate, this group was more aggressive about front-loading retirement accounts with contributions. In one case, Participant 9 stated, “I try to save 30% of my income.” Participant 5 shared, “My mentality is kind of different. I live on a very strict budget so I can save aggressively.” Participant 19 described “kind of stacking away dollars and maxing out my 401(k) as quickly as possible.” This aggressive approach to saving was based on an understanding of the compound value of money saved during early career. Participant 9 explained, “When you really look at the numbers, even if I were to contribute 15 percent, that’s a huge difference in how much money I’m going to have at 45.”

Young adults with more financial literacy also viewed risk differently because of the time horizon. They invested for growth in a higher percentage of equities and were willing to assume higher risk as a result. Participant 20 explained, “The more risk you take when you’re younger, the longer time horizon you have to make that back, should there be a market drop.” The idea that the time horizon insulated young adults from investment risk was shared by many in this group. There was a strong belief that the market will correct itself over time to generate positive investment returns. Participant 8 stated, “It’s always been that way. If you look at economic charts, it’s always been like that. Always. There was a steep decline, but when it rebounds, it’s either twice or three times better than it was.”

Lastly, young adults with more financial literacy also had clearer expectations about investment growth. Participant 7 expected his investments to match the “average S&P 500 year over year.” Participant 17 claimed to be happy “as long as I’m around however much the market is growing.” Participant 9 knew the exact rate of return on her accounts: “I think my

401(k) is returning 12% and my IRA is something like 16%, like it's very good." For the purposes of financial forecasting, Participant 9 used a more conservative figure: "I try to do that calculation based off of the 6% return." The point of these examples is not their veracity but their specificity. Financially literate young adults had more specific and clearly defined expectations about investment returns year over year.

The time horizon is an important factor in why young adults save for retirement. The same cannot be said of compound investing. How the advantage of the time horizon is interpreted depends on the financial literacy of the individual. The researcher observed differences between groups with high and low levels of financial literacy. The low-level group saved smaller amounts and invested more conservatively without clear expectations of investment growth. The high-level group saved aggressively and invested with more risk to achieve specific goals. Both groups justified these actions based on the advantage provided by a long time horizon.

Proposition 6

6	Financial Literacy	Financial literacy varied among young adults saving for retirement based on the number of influences they had experienced.
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Financial literacy refers to the level of sophistication an individual has towards financial topics. It is a cognitive trait based on knowledge and familiarity with the subject matter.

Previous studies by Hauff et al. (2020) and Lusardi and Mitchell (2007) found that financial literacy increased the likelihood of saving for retirement and led to other beneficial retirement saving outcomes. Other research by Scheresberg (2013) and Lusardi et al. (2007) has highlighted a concerning lack of financial literacy among young adults. This study investigated

financial literacy among young adults, by asking them to assess their own knowledge about retirement saving. It also asked participants to reflect on how they acquired financial literacy by learning about financial topics.

The study found that financial literacy varied among participants between those who professed confidence about their knowledge and those who did not. In addition, there was a range of in-between responses, such as those who professed to be knowledgeable compared to their peer group, or those who claimed to be more knowledgeable than they once were. No single level of financial literacy predominated among participants or reached the level of data saturation.

Based on this feedback, the researcher concluded that financial literacy varies among young adults who save for retirement. At one end of the spectrum, Participant 11 ranked themselves as “one out of ten” in terms of financial literacy. Participant 11 described the difficulty of reading retirement information: “I struggled to read it even and understand. I can’t even understand what the sentence is saying.” At the other end of the spectrum, Participant 9 stated, “I like to say that I feel knowledgeable,” whereas Participant 19 shared, “I feel like I know what the best practices are.” Others described a process of learning and developing knowledge that was incomplete. Participant 12 stated, “Because I’ve started doing retirement saving and started learning about it, I’m pretty well off.” Participant 15 described her literacy as “a solid amount, but I had to work.”

The evidence of young adults learning about financial literacy through retirement saving led the researcher to analyze how that learning takes place. Again, the data was varied and highly individualized. However, the researcher was able to identify common influences that

contribute to the learning process resulting in higher levels of financial literacy. The influences included family, education, career, media, and professional advisors. Although individual circumstances differed, the researcher observed a pattern that financial literacy increased among participants based on the number of influences that they had experienced in their life. For example, a participant who had experienced only one of these influences was likely to have a lower level of financial literacy than someone who had experienced three. Participant 7 had the advantage of numerous influences and stated, "Part of why I feel it's easy is because I have a ton of context. Context and background that made it possible for it to feel easy to me."

The most common source of influence was that of family, especially parents. In fact, family influence on retirement saving was a highly saturated idea that was mentioned by 22 of the 25 participants. Family members provided both a direct and indirect source of financial literacy. As a direct source of influence, many participants had received parental advice about their financial decisions, including retirement saving. For instance, Participant 5 received advice from her mother: "She was always telling me about why I needed a 401(k)." As an indirect source of influence, participants shared personal experiences in which they observed their parents dealing with retirement saving. Some of these could be positive, such as Participant 7, who benefited from "having parents that were saving for retirement. Having one parent who kind of works in the business and talks about it." Other experiences were more cautionary, such as Participant 11, whose father had recently retired, "seeing the struggles that he went through because he didn't save up anything. He didn't have anything."

Another possible influence was education. Several participants had an educational background that enhanced their knowledge of retirement saving, such as Participant 8, who

shared, “I studied supply chain management back in college at the same time when I was a finance major as well.” However, other participants studied in other fields where the topic of financial planning was never discussed. Participant 15 stated, “I think that’s really upsetting and not cool that I walked across a fancy stage with a degree twice, and no one bothered to tell me about it.” Participant 17 wondered about how educational disparities were magnified by the complexity of the retirement system: “It was very confusing, and I’m just realizing, how do people who maybe don’t have a college education figure this out?”

The researcher identified at least two career-related influences that contribute to financial literacy about retirement saving. The first stems from learning via interaction with an employer’s retirement plan and its associated human resource function. Several participants became aware of retirement saving only when an employer offered them the benefit. Participant 1 explained, “Once I ran into a 401(k) the first time and I looked at it, and I’m like ‘oh, people are giving me free money.’ This is a thing then. I do have the drive to know more.” Participant 12 had a similar experience: “The first thing I mainly learned about is with my first job, because it’s my first job and they’re like, oh we give 401(k)s.” Participant 21 praised her employer’s HR department: “It was helpful that it was set up for me to do that. It was very accessible and easy.” However, not all employer experiences have a positive influence. Participant 7 stated, “My new employer, they’re kind of disorganized. They don’t really have formal HR and so I just haven’t set up retirement deductions yet.”

The second career-related influence comes from coworkers, who help young adults learn about retirement saving on the job. These contacts are a source of informal learning but are a trusted influence because of their knowledge about specific employer practices.

Participant 15 explained, “I became really good friends with another teacher and we were both kind of drawn to each other by our weird retirement interest.” Participant 12 got help from “my coworkers because they work with the same company so they have prior experience and they’ve been doing it for a while.” Coworkers influence young adults because they are able to provide practical advice, which is trusted because it is based on their own experience.

Popular media sources are another means of influence on the financial literacy of young adults. They are used as a tool for self-education by those who are curious about learning more. The type of media varies, from traditional sources to social media. Participant 15 stated, “I was literally buying books when I was 23 and 24 like *I Will Teach You to Be Rich*.” However, the broad availability of media gave some concerns about the quality of the information. Participant 13 said, “I would search around different websites. You know it started with a Google search. I would Google something and you know certain blog sites or companies would have information laid out in a way that made sense to me.” Some young adults turn to social media, like Participant 14, who shared, “I have a few friends that post on Facebook” about financial planning. Others cited websites like YouTube, Twitter, and Instagram that provide easily accessible information for research to those who want to learn more.

In comparison, financial advisors were a less frequent source of influence. Only three participants in the study utilized a financial advisor, but five others expressed a desire to do so. The three who did work with a financial advisor had positive experiences. Participant 9 stated, “I think his bits of advice and encouragement and like sense of assurance is very very very very valuable to me.” Participant 13 shared, “I have the backup confidence also from working with a financial planner, so I feel like I can feel more confident in my investing knowledge because I

have a resource at my fingertips where I can ask questions.” Those who hoped to work with a financial advisor wanted more personalized financial advice. Participant 2 stated, “It would be interesting and probably beneficial to actually meet with an advisor and have a clearer, more individualized plan.” Participant 8 speculated, “Maybe it’s helpful, maybe it’s not, but it’s a different perspective that I can learn from.”

Whereas some of these influences were the result of luck, background, or upbringing, others were achieved by the proactive effort made by participants. The level of individual curiosity in financial planning and retirement is hard to quantify but plays a large role in whether young adults sought out resources for financial literacy. Those who were curious made the effort to track down information and sources to learn from. Participant 3 stated, “I just had to look it up myself and I wanted to look it up myself.” Participant 16 explained, “I love to learn about things. I think that stuff is really interesting, so I’ll keep track of stuff like that.” For those without curiosity, learning about retirement saving was a burden rather than an opportunity. Participant 4 said, “It sounds like a big huge time suck. You know, something that’s going to take a lot of my time to look into and to figure out.” Participant 21 shared, “It’s additional work. I’m already tired. It’s going to be difficult to focus. I honestly view it as boring.”

This study found that the financial literacy of young adults depended on the number of influences they had experienced. Analysis of the data revealed that the most common influences for financial literacy included family, education, career, media, and financial advisors. Individuals who experienced more of these influences also demonstrated higher financial literacy. However, the researcher found that young adults with all levels of financial literacy participate in retirement saving. No single subgroup predominated in the results.

Proposition 7

7	Future expectations	Young adults expected future expenses to increase , possibly limiting their ability to save for retirement.
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A long future differentiates young adults from other groups saving for retirement. Rather than face near-term declines to their income earning ability, in theory, the average young adult can expect future income growth. This study looked at how future expectations shape the retirement saving behaviors of young adults. It asked participants to assess how much change they expected by the time they retire in both their personal and professional lives. Further, it asked them to reflect on how those changes might impact their retirement saving decisions.

Young adults anticipate a significant amount of change both personally and professionally before they retire. Participant 4 stated, “I feel like everything is going to change. I have no idea what it's going to be like. I have no idea.” Sixteen other participants shared similar outlooks about the degree of change ahead in their lives. However, the researcher identified an important difference in how young adults perceive the financial impact of these potential changes.

In their personal lives, young adults expected that the primary agent of change would occur through forming relationships and starting families. The data showed that young adults associated family formation with an *increased* cost of living; therefore, they expected their expenses would go up. Meanwhile, young adults anticipated career and job changes would impact their professional lives. However, the data was inconclusive about whether participants thought that changes to their professional lives would lead to higher income. From these

findings, the researcher concluded that young adults expect their living costs will rise in the future but do not share the same confidence that their incomes will keep pace.

The data showed that most young adults expected their cost of living to increase in the future. Participant 3 said, "Everything in terms of expenses, it's going to go up whether I spend more or whether cost of living just increases." Some who anticipated higher living costs in the future saw the present as an opportunity to save for retirement. Participant 5 said, "I don't think I'm ever going to have this low of overhead again." Participant 2 added, "I'm able to contribute a good chunk right now, and that may not be the case in the future." The cost of family formation was a major reason why young adults expected their expenses to increase in the future. Participant 2 stated, "We do want to have kids, so I think that's a big change financially." Participant 5 elaborated, "I do plan to have kids, so I'm expecting all my money to be siphoned away to college and expenses for them." Participant 10 said simply, "Kids are expensive."

The data was less clear on whether young adults thought their income would rise commensurate to their expenses. Some foresaw increases, while others anticipated stagnant or declining income based on their career choices. The ability to save for retirement was closely connected to income trajectory. Participant 6 stated, "If my income grew I definitely would be more comfortable setting aside a larger amount of my paycheck each month." However, others foresaw tighter budgets that put pressure on their ability to save for retirement. Participant 18 said, "I can recognize that probably saving for retirement is going to be a little bit tougher depending on how expensive these things are going to be." Participant 13 added, "At some

point we need to pull back on the retirement saving in order to accomplish these other goals.”

Ultimately, the researcher determined that these results were inconclusive.

In theory, the average young adult can expect rising income until at least age 45, according to data from the U.S. Bureau of Labor Statistics. However, this study found that young adults felt more certain that their cost of living would increase in the future rather than their incomes. Rising living costs were connected to anticipated changes in their personal lives, whereas income level was associated with career and job-related changes in their professional lives. Research analysis concluded that the expectation of rising costs without an equivalent rise in income led young adults to feel like their ability to save for retirement would decrease in the future.

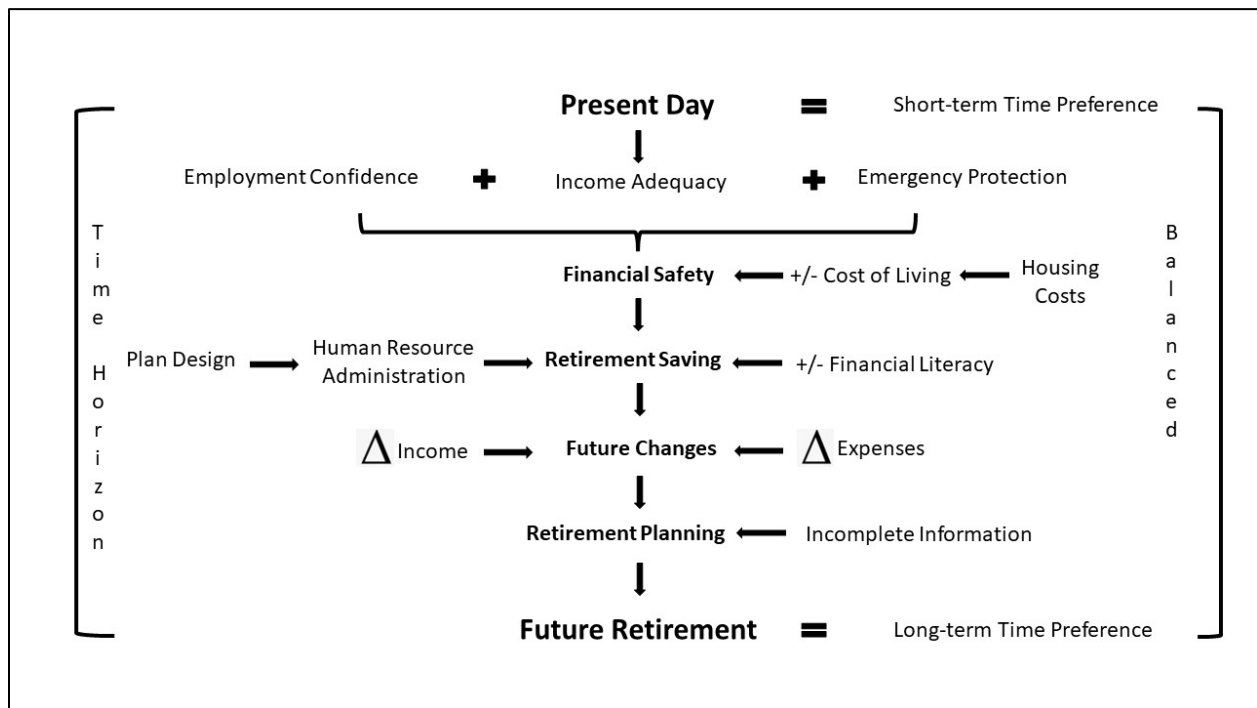
Chapter IV Conclusion

The results of this study are derived from qualitative data provided by 25 young adults who are currently saving for retirement. The insights they offered shaped the findings presented in this paper. It was the researcher’s responsibility to analyze the data collected from participants so that it could be developed into theoretical concepts, using the best practices of the Grounded Theory method. The data for these concepts were collected and verified using a three-stage research process that included iterative communication with each participant. There were seven research topics that were the focus of questions posed to the study sample. The researcher performed data analysis through an iterative process of open, axial, and theoretical coding. From this analysis, the research developed eight propositions based on concepts that reached the benchmark of data saturation.

Each proposition has been described in terms of its properties and supporting evidence to highlight its impact on the retirement saving decision of young adults. The next step is to integrate the concepts into a theoretical model that illustrates the decision-making process. Image 4.4 shows a visual representation of an integrated framework based on the results of the study. The process diagram shows the direction of the retirement saving decision from the present day to future retirement and integrates concepts that underly the propositions that were introduced earlier.

Image 4.4

Theoretical Model of Retirement Saving Decision Process



The diagram begins at the present day. It is contained inside two brackets that span the length of the model, indicating the intertemporal span of retirement decision making. The brackets represent the time horizon and depict the balance between short-term and long-term time preferences. The time horizon ends at the date of future retirement.

The entry point into the diagram begins with three factors that determine financial safety: income adequacy, employment confidence, and emergency protection. They are at the beginning of the decision-making process because they reflect immediate concerns and present-day realities. They are the key inputs used by young adults to evaluate their sense of financial safety. Establishing financial safety directly precedes retirement saving. Financial safety in the present is a precondition for deferring income to the future. The cost of living has a direct influence on the financial safety of young adults. This study concluded that young adults have a relatively low cost of living that facilitates retirement saving. However, housing-related costs are the major determinant of cost of living, and as housing costs change, the budget constraints on young adults will typically increase.

The action of retirement saving appears midway into the diagram on purpose. It reflects the fact that retirement saving by young adults is only the beginning of a lengthy process that extends into the future. Furthermore, this study found that young adults pursue retirement saving even though they have incomplete information about the future, which limits the value of retirement planning.

In the short-term, financial literacy has larger impact than retirement planning on the decisions young adults make about retirement saving. The study observed that financial literacy had an important influence on how young adults interpret the role of the time horizon. Those with high levels of financial literacy made substantively different choices related to savings rate and risk tolerance compared to those with low levels of financial literacy.

The diagram also includes a stage for future changes, reflecting the high degree of change that young adults expect before retirement. In real life, these changes exist in the future

but still precede retirement itself. By dividing these events into personal and professional changes, the study uncovered that young adults expected changes in their personal lives will increase their expenses. Meanwhile, the study was inconclusive about whether young adults expect long-term professional changes to produce similar increases to their incomes. The study determined that young adults anticipate their ability to save for retirement would decrease in the future. Ultimately, future changes to income and expenses remain unknown, but will influence how young adults adjust retirement saving decisions moving forward.

Retirement planning is inserted into the diagram as a late-stage activity, reflecting the fact that young adults anticipate its value later in life, when relevant information is available with which to plan. Notably, it is also separated from retirement saving, as these two activities occur at different stages in the process. The diagram concludes at the end stage of future retirement, which is at the end of the time horizon.

A static model has difficulty depicting that retirement saving is an intertemporal process, with the potential to evolve over time. There are two concurrent factors that make retirement saving a dynamic process. The first concerns changes to the present, affecting the immediate reality in which decisions are made. The second is that the time horizon until retirement is always shrinking, gradually shifting time preferences as outlined by the behavioral lifecycle model proposed by Shefrin and Thaler (1988).

The advantage of the theoretical model presented in this study is that it is based on a specific age demographic in which the time horizon is a known quantity. That has allowed the researcher to arrange stages in the decision-making process according to their relative proximity on a reliable time scale. The result is a model that is grounded in the present but

looks to the future. It incorporates both immediate variables but also identifies future unknowns. The theoretical model developed by this study helps young adults by identifying phases in the process, both in the present and future, in which individual decision-making is needed to effectively save for retirement.

Chapter V: Discussion

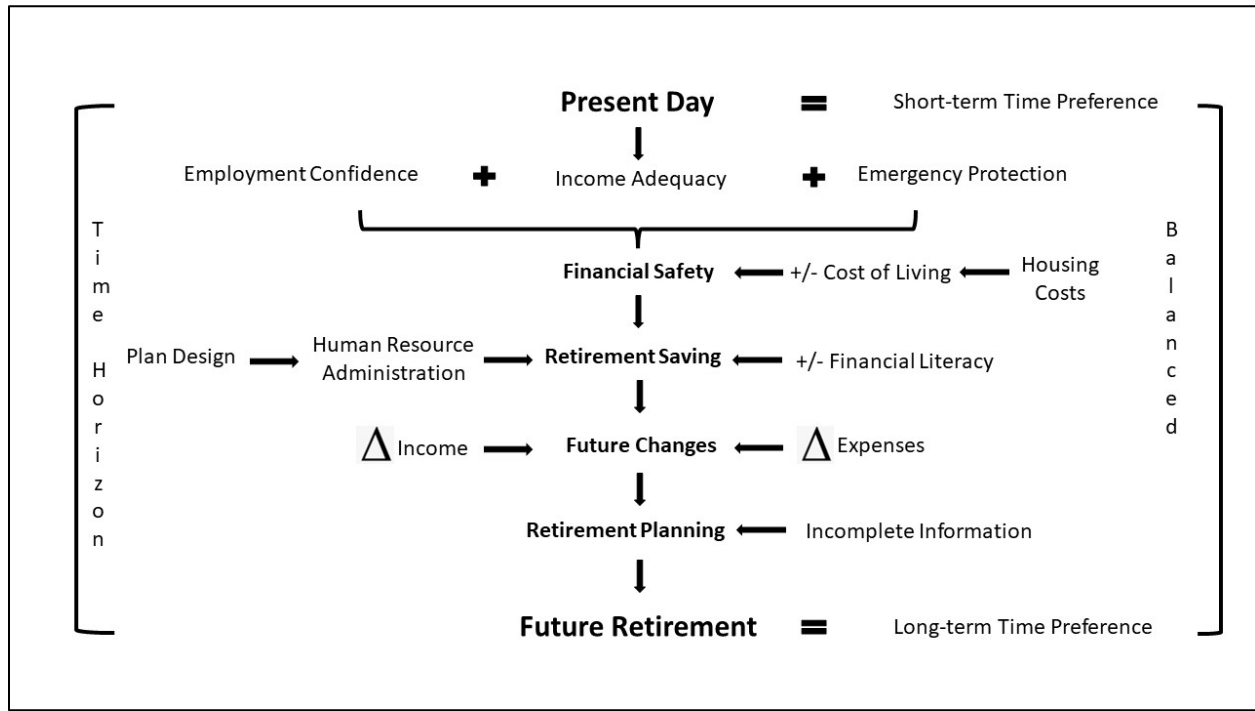
The retirement saving decisions of young adults are important because of the opportunity this age group has to maximize long-run investment growth. Despite the fact that starting to save early for retirement is a widely recommended best practice, data shows that young adults are among the least likely to participate in the retirement system (Vanguard, 2020). There are several reasons why retirement saving by young adults deserves specific study. This age cohort is at a distinct stage in life, with its own realities regarding career, relationships, living arrangements, and life experiences. There are generational factors concerning demographic trends, wealth distribution, and employment opportunities. There is the issue of financial literacy, and the degree of experience young adults have with making financial decisions. There are also behavioral questions, based on the reality that the retirement system is dependent on individual decision-making.

At its outset, this study posed the research question: “How do young adults who are participating in the retirement system make decisions about retirement saving?” To answer that question, the study pursued seven research topics that had been identified from the existing literature as areas of interest. The goal of the study was to understand the factors that led young adults to save for retirement, and how they approached the decision-making process. After collecting qualitative data from 25 young adults who are currently saving for retirement, research analysis using Grounded Theory produced eight propositions that met the benchmark of data saturation.

Table 5.1*Research Topics and Propositions*

Research Topics	Propositions
Life-stage Transition	Young adults who save for retirement believe they have achieved a level of financial safety in the present.
Time Preferences	Young adults who save for retirement balance short-term and long-term time preferences.
Incomplete Information	Saving for retirement does not necessarily imply planning for retirement.
Budget Constraints	A low cost of living minimizes budget constraints for young adults saving for retirement.
Budget Constraints	Housing costs are the primary determinant of cost of living for young adults.
Compound Investing	Young adults save for retirement because they know time horizon is important , although financial literacy determines how they explain why.
Financial Literacy	Financial literacy varied among young adults saving for retirement based on the number of influences they had experienced.
Future Expectations	Young adults expected future expenses to increase , possibly limiting their ability to save for retirement.

The researcher integrated these findings into a cohesive theoretical model that depicts the decision-making process of young adults who save for retirement. The model offers a visual illustration of the interconnected relationships between concepts discussed in the study.

Image 5.1*Theoretical Model of Retirement Saving Decision Process*

In addition to analyzing results within the microcosm of the present study, it is also important to address the potential implications of these findings in a wider context. This chapter will address this task in three primary ways: (1) it discusses the theoretical implications of results in the context of earlier research; (2) it addresses risks and limitations of the current study, and (3) it proposes opportunities for further research.

Theoretical Implications

The theoretical implications of the study identify points at which findings either diverge or confirm preceding research. The current study draws from different sources in a range of fields that contribute context to the retirement saving decisions of young adults. Each of the

following sections compares results related to the seven research topics outlined earlier and highlights the theoretical implications drawn from the current study.

Life-stage Transitions

Because young adulthood is a fluid life stage, this demographic represents a diverse subgroup (Lusardi et al., 2010). Previous research by Knoll et al. (2011) as well as Britt-Lutter et al. (2018) has argued that young adults are more likely to make certain financial decisions if they have reached developmental milestones that make their future as adults seem more tangible. However, demographic trends as detailed by Vespa (2017) show that today's young adults are likely to delay traditional adult milestones such as marriage, starting a family, or homeownership in favor of a focus on career advancement. This study sought to evaluate whether young adults shared similar milestones before beginning to save for retirement.

In fact, what the current study found is that young adults who save for retirement share a common sense of financial safety. Financial safety was not associated with specific demographic traits, such as marriage or family status. Rather, it was the result of financial and employment circumstances, including income adequacy, employment confidence, and protection from emergencies. However, achieving financial safety was viewed as a kind of milestone by young adults, as it represented a transition beyond living paycheck to paycheck, and demonstrated increased stability and confidence.

Financial safety is not a future-focused concept, as many young adults in the study still professed a high degree of uncertainty about the future. Therefore, it is doubtful that financial safety makes young adults feel more connected with their adult futures. Instead, financial safety represents an evaluation of immediate and short-term concerns. The degree of

uncertainty about the future for young adults means that the retirement saving decision is primarily based on present realities.

The findings of this study suggest that reaching financial safety is the milestone most likely to result in retirement saving by young adults. Other traditional milestones were less relevant to the decision-making process. Much like Lusardi et al. (2010) described, the sample for the study consisted of a diverse group of young adults in a variety of situations. There was not a defining life-stage transition that characterized the group other than a common sense of financial safety about the present.

Time Preferences

Time preferences are a relevant issue in retirement saving because of the intertemporal transfer of wealth from the present to the future. The lifecycle-permanent income hypothesis is the orthodox economic theory that explains saving decisions and assumes that individuals value future spending equally with the present. Shefrin and Thaler (1988) proposed the behavioral lifecycle hypothesis, which introduced the idea of competing short-term and long-term preferences mediated by behavioral traits such as self-control and mental accounting. In other studies, Shin et al. (2019) addressed the issue of present bias, while Clark et al. (2019) and Finke and Huston (2013) both argued for the importance of time preferences in determining retirement saving decisions.

The current study found that young adults who save for retirement are willing to balance short-term and long-term time preferences. In other words, they foresaw the need for current savings to ensure future spending and reallocated money for that purpose. It is doubtful that they thought about the decision in these terms, but they implicitly valued the

future stability provided by savings. The ability to balance time preferences is a conclusion consistent with previous research. In previous studies, measuring time preferences empirically has been an issue (Finke and Huston, 2013). This study evaluated the subject using qualitative analysis, which provided flexibility for more context about how time preferences are internalized by participants.

The study found strong evidence supporting the behavioral lifecycle hypothesis (Shefrin & Thaler, 1988), as participants expressed an inherent tension between present and future spending. Short-term spending had an immediate emotional appeal, whereas long-term saving was viewed as intellectual and strategic. The researcher identified an enthusiasm gap, which was mediated by individual behaviors. Young adults in the sample demonstrated a high degree of self-discipline. Many also expressed pessimism about the future. These personal attributes contributed to their ability to balance time preferences.

Time preference remains an abstract concept from economic theory that is unfamiliar to most young adults. It is not an active part of the decision-making process but plays a behavioral role in naturally directing an individual's focus towards the future. In this subconscious way, time preferences play a role in influencing how young adults think about retirement saving.

Incomplete Information

The problem of incomplete information influences how young adults plan for retirement. Any type of planning ultimately requires information about the future, which becomes increasingly difficult to judge as the time horizon lengthens. Different approaches have been used in retirement research to estimate optimum retirement savings, such as replacement ratios and simulations. However, these methods have been subject to debate

because of their reliance on assumptions and forecasts about the future (Inglis, 2019). Benartzi and Thaler (2007) believe that the impractical complexity of retirement planning means that most individuals rely on heuristic rules of thumb to simplify the decision-making process. The issue is particularly acute for young adults. Bajtelsmit and Rappaport (2018) recognized the difficulty that young adults face in trying to optimize retirement saving decisions without relevant information about their future needs. The current study sought to understand how young adults dealt with the issue of incomplete information about the future.

Results showed that young adults recognized the difficulty of planning for retirement with so many unknowns, and therefore were not inclined to invest time or energy in the activity. That assessment confirms the appraisal of Bajtelsmit and Rappaport (2018) about the practicality of planning for retirement decisions. However, young adults in the study sample were not discouraged from participating in retirement saving by that reality, even though they lacked information about the future. Young adults separated retirement saving and retirement planning into two distinct activities and did not view planning as a necessary precursor to saving. Saving was viewed as a near-term activity that could be conducted in the present, whereas planning was viewed as a long-term activity for the future when better information became available.

The implication of these findings reinforces the idea that retirement saving decisions by young adults are based more on an individual's current situation rather than future goals. That idea contradicts an earlier study by Montgomery et al. (2012), which argued that effective communication with younger retirement plan participants required focusing on long-term goal outcomes. The current study found that young adults had a high degree of uncertainty about

the long-term future, leading to ambivalence or even pessimism about future planning. In comparison, focusing on the present provided a degree of empowerment. As an example, Participant 9 remarked, “I can't avoid many things in this life, but I can control how much I spend and how much I save.” Taking proactive steps in the short-term was one way that young adults exerted control over an uncertain future.

The emphasis on this short-term outlook suggests that young adults will be more likely to engage with retirement advice and education services that focus on their present lives. Retirement advising that concentrates on retirement itself in the distant future may lose relevance for young adults. For this age group, retirement saving is one part of a larger financial puzzle that incorporates competing priorities. Therefore, effective financial advising can help young adults figure out how to arrange puzzle pieces to ensure that retirement saving is included in their current plans.

Budget Constraints

The financial future of young adults is concerning to some, such as Kent (2019) and Dettling and Hsu (2014). Since the Great Recession, the Millennial wealth gap has led to the stagnation of income and net worth of young adults (Kent, 2019). Meanwhile, rising housing costs and student loan debt have increased financial pressure on this age group (Kent, 2019). Gale et al. (2020) argued that the Millennial cohort faces unprecedented challenges to building wealth. These studies portray a generation that is stretched thin financially and struggling to get by. If young adults are struggling financially, the potential implications for retirement saving are clearly important. The current study sought to gather data about how short-term budgetary constraints influence retirement saving decisions.

The study found that many young adults benefit from a low cost of living that lessens the effect of budget constraints on retirement saving. Low living costs mean that it is relatively easy for some young adults to achieve an income surplus that is redirected towards financial goals like retirement saving. The low cost of living primarily resulted from two factors: a simple lifestyle and frugal spending habits. Although the study did not measure net worth among its sample population, the qualitative research process was well-designed to get feedback on the financial stress felt by participants. Although individual circumstances varied, the idea that young adults share widespread financial struggles did not reach data saturation. As a group, their situation appeared less fraught than Kent (2019) or Gale et al. (2020) have described. Having said that, young adults were not necessarily affluent either. The muted effect of budget constraints was circumstantial rather than wealth-related. It is difficult for this study to predict how its participants will adapt to future changes in their circumstances.

One clue came from the young adults who had already transitioned to homeownership. Purchasing a home substantively changed the financial picture for young adults, not just in terms of direct costs, but also in terms of indirect and secondary costs. The cumulative costs of independent housing instigated a form of lifestyle creep that raised the cost of living. These young adults expressed a higher degree of financial strain than their counterparts, demonstrating that housing costs play a large role in determining the budget constraints of this age group. Ironically, the Survey of Consumer Finances only tracks data on young adults who live independently, whether through ownership or renting. Dettling and Hsu (2014) argued that those living independently were an economically privileged group, with average incomes around \$10,000 higher than the rest of their age cohort. Although the present study did not ask

for income data, it found that the financial strain on young adults increased as their form of housing became more independent.

The practical need for housing, and its rising costs, made it the most important financial priority for young adults. Although student loan debt was an issue for some, it did not rise to the level of data saturation. These competing priorities are a useful barometer for retirement saving because they influence the degree of budget stress felt by individuals. A study by O'Neill et al. (2019) suggested that young adults prioritize financial goals sequentially rather than simultaneously and lack the resources to focus on multiple priorities at once. The present study found evidence confirming that idea, as housing clearly predominated in the mindset of young adults. Therefore, it is important to understand that retirement saving is not the only or even the primary financial goal for young adults.

Compound Investing

Compound investing is the primary reason why saving early for retirement is a widely recommended best practice. Numerous examples exist that highlight the benefit of investing in a tax protected retirement account with a long-term time horizon, such as those by Wallace (2021), Munnell et al. (2011), and Blanchett et al. (2017). However, compound investing is subject to exponential growth bias and requires a consistent long-term investing strategy to bear fruit. Other studies by Parsons (2014), Levy and Tasoff (2015), and McKenzie and Liersch (2011) have discussed why compound investing is often underestimated or mismanaged by investors. Despite the importance of compound investing to future retirement wealth, it was unclear whether young adults factored the concept into their retirement saving decisions.

Therefore, the current study sought to understand what type of investment goals young adults had for their retirement savings.

The study found that young adults shared a common belief that a long time horizon created an advantage for retirement saving, but that only some connected the idea to compound investing. Therefore, compound investing was not a well-known concept among the sample. Furthermore, there was a notable difference in how those with low financial literacy interpreted the benefit of the time horizon versus those with high financial literacy. The low financial literacy group thought that a long time horizon allowed them to save at a lower rate while investing more conservatively. Those with high financial literacy believed the long time horizon protected them from investment risk and saved larger sums in order to invest aggressively early in life.

Neither viewpoint is necessarily wrong. Compound investing does not require a specific risk-based allocation or savings rate. Saving more and investing aggressively will theoretically lead to higher returns, but compound growth will still occur in any scenario in which the time horizon allows growth to accumulate. The key implication concerns the issue of risk tolerance. A study by Chatterjee et al. (2017) found that higher levels of financial literacy mitigated the perception of risk in retirement investing. The current study confirmed that many in the low financial literacy group stated that they invested conservatively because of the perceived risks stemming from their lack of knowledge. Retirement education aimed at young adults needs to emphasize that a long time horizon itself lowers investment risk and allows for more aggressive investing.

One way that choices about investment risk surface is through the use of default investment options used in employer retirement plans. Many plans use risk-based assessments to help guide employee investment choices, and some feature risk-based model portfolios that allow members to select predetermined “conservative” or “aggressive” allocations. Several of the participants with low financial literacy in this study had opted into “conservative” allocation models based on one of these default options. Instead, retirement plans should base default investment options on the time horizon of participants. The obvious way to do this is through age-based target date funds. Target date funds offer a better way to mitigate investment risk while still earning returns that are appropriate given the time horizon.

Financial Literacy

The beneficial role that financial literacy plays in retirement saving has been documented by Hauff et al. (2020), Clark et al. (2016), and Lusardi and Mitchell (2007). The financial literacy of young adults was studied by Scheresberg (2013), who found very low levels of knowledge. A study by Lusardi et al. (2010) found similarly low levels of financial literacy among young adults but also concluded that there were wide variations that prevented easy generalizations about this age cohort. Other studies have looked at how young adults acquire financial literacy, such as Tang and Peter (2015), who attribute it to the three primary sources of formal education, real life experience, and parents. Jorgensen and Salva (2015) argued that children learn financial literacy from parents by observing their attitudes and behaviors towards money. Another study by Czar et al. (2021) found that living independently produced a large improvement in financial behaviors by young adults but did not necessarily improve financial literacy. The current study wanted to understand how financial literacy plays a role in the

retirement saving decisions of young adults. It asked participants to evaluate their level of financial literacy by reflecting on how they learned financial knowledge, and what they would most like to learn.

Results showed that financial literacy among young adults varied greatly. Young adults with both low and high levels of financial literacy participated in retirement saving, although they were likely to make different decisions about how to save and invest. These results were consistent with findings by Lusardi et al. (2010), who found that this age group was a diverse cohort that is hard to generalize. Many young adults described themselves in intermediate terms, having acquired a base level of knowledge through an ongoing process of learning and development. There were a variety of sources that helped young adults develop financial literacy and served as important influences. These included family, education, career, media, and financial advisors. The study found that financial literacy increased for young adults who were exposed to more of these influences.

The most important implication from these findings is the need for accessibility in the retirement system, regardless of financial literacy. A system that requires a high level of financial literacy in order to successfully participate fails to achieve the goal of universal access. Simplification itself is a virtue, whether it be related to the enrollment, administration, or investing. Evidence from this study shows that the system is being used by those with both high and low levels of financial literacy, and it should work effectively for both. Young adults are actively learning about financial literacy and show various levels of curiosity about the subject. It is likely that some may never reach a high level of financial literacy, based simply on their lack of interest in retirement saving. Rather than place a burden on individuals to train themselves,

the retirement system needs to continue to evolve to achieve automated and simplified outcomes.

The administrative human resource function plays an important role in facilitating retirement saving by young adults. For some young adults, the first time they are offered an employer plan is also their first exposure to the subject of retirement saving. Therefore, many young adults learn about retirement saving using their employer plan as a frame of reference. Navigating the enrollment process and enrolling in a timely manner is viewed as a key step in engaging young adults in retirement saving (Choi et al., 2004). Employers impact enrollment in two primary ways. The first is in the complexity of the plan design and its enrollment provisions, such as rules for eligibility and vesting. The second is through the clarity of communication and organization provided by the human resource staff. Young adults are especially vulnerable to drop out of the enrollment process because of their inexperience and varied levels of financial literacy. On the other hand, some participants in this study stated that they enrolled in their employer's retirement plan precisely because the human resource process made it easy. Therefore, human resource administration can facilitate how young adults learn about and participate in retirement saving.

Future Expectations

The intertemporal nature of retirement saving means that it is subject to individual expectations about the future. Whereas older workers can expect near-term declines in income, labor statistics show that most working-age young adults will experience rising income until at least age 45 (U.S. Bureau of Labor Statistics, 2020). Scott et al. (2021) argued that income growth trajectory should shape how individuals decide to save for retirement. Income

trajectory is tied to career choice and professional advancement. In addition to changes of income, young adults are also likely to experience significant changes in their personal lives through milestones such as marriage, homeownership, and children (Vespa, 2017). This confluence of changes creates a dynamic situation in which young adults formulate expectations about the future. This study sought to understand how those expectations about the future shaped the outlook for retirement saving among young adults.

The study found that most young adults expect their expenses to rise in the future. Meanwhile, they did not share similar expectations about future income growth. Young adults expressed a range of views: that their incomes would likely grow, remain stagnant, or even decline. Increasing expenses were associated with expected changes to their personal lives, especially in starting a family, whereas the outlook on income growth was associated with career choice and professional advancement. Research analysis determined that many young adults foresaw increasing financial pressure on retirement savings in the future as expenses rose. Some even used this as motivation for starting early, anticipating that they might need to reduce or even cease saving for retirement later in life.

The findings were surprising, especially regarding the lack of consensus about the prospects for future income growth. Considering that the study sample was made up of individuals in the early stages of their careers, one would anticipate greater expectation for increasing income. Not only is this evidence found in labor statistics, but it is also an implicit assumption of lifecycle theory. Instead, the study concluded that this is not a widely held belief among young adults. There are at least two hypotheses that the researcher considers possible explanations for this finding. The first is related to the likelihood of career change, as some

participants remained open to changing long-term career paths. In fact, a study by Gorry et al. (2019) found that up to 20% of young adults between the ages of 18 and 28 change occupational careers each year. Another possible explanation stems from stagnant wage growth in the United States that may have conditioned young adults to expect the same in the future. An analysis by the Economic Policy Institute showed that real wage growth between 1979 and 2018 among those in the bottom 90% of wage earners equaled 23.9% (Gould, 2020).

With increasing expenses and uncertainty about income growth, research analysis concluded that most young adults expect their ability to save for retirement to come under financial pressure. Therefore, an important implication is the level of retirement saving persistence among young adults. Retirement saving persistence is an idea developed by the researcher to reflect the degree of commitment individuals demonstrate about prioritizing retirement saving. It reflects the fact that young adults who are saving for retirement today may not do so in the future if they experience too much financial pressure or career interruption. Persistence indicates that young adults are willing to overcome obstacles to save for retirement. The willingness to persevere is important when future expectations suggest increasing financial pressure on retirement saving.

The length of time until young adults retire means that retirement saving is not a finite, one-time process. Young adults may need to make the decision multiple times throughout their lives, as they transition between jobs, or overcome changing financial circumstances. Therefore, a persistent commitment to retirement saving may be needed to ensure ongoing participation over the long term.

Conclusion

The theoretical implications of this study have two levels. The first level relates back to the original research topics that formed the basis for interview questions and data collection. Each set of questions provided new information about specific topics drawn from previous research. The second level stems from a proposed theoretical model that integrates many different concepts into a single framework for evaluating the decision-making process of young adults about retirement saving.

The first level of implications identified notable findings where data either confirmed or diverged from existing literature. The qualitative design of this study offers a different lens through which to compare these findings. The interview format allowed for greater context and discussion with participants related to personal behavior, motivations, and decision-making. The results were developed through a process of iterative analysis following 25 interviews and organized into higher level concepts. Table 5.2 provides a brief summary of these findings:

Table 5.2*Confirmation/Divergence of Findings with Prior Literature*

Topic	Finding		Author
Life-stage Transitions	Young adults are a diverse subgroup that are difficult to generalize.	Confirms	Lusardi et al., 2010
Time Preferences	There is competing tension between short-term and long-term time preferences.	Confirms	Schefrin & Thaler, 1988
Incomplete Information	Lack of information discourages young adults from planning for retirement.	Confirms	Bajtelsmit & Rappaport, 2018
Incomplete Information	Young adults focus on near-term budgeting rather than long-term financial goal planning.	Diverges	Montgomery et al., 2012
Budget Constraints	Young adults prioritize financial goals sequentially, focusing on one major task at a time.	Confirms	O'Neill et al. (2019)
Compound Investing	Financial literacy changes the perception of risk in retirement investing.	Confirms	Chatterjee et al., 2017
Financial Literacy	Retirement plan design and administration has an important impact on saving for retirement.	Confirms	Choi et al., 2004

Future Expectations	More young adults expect expenses to increase than anticipate future income growth.	Diverges	Scott et al., 2021
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A second level of implications stems from the theoretical model that integrates the propositions introduced in this study. Although this model is unique in its conceptual integration, this study is not the first to identify that retirement saving is a complex, multifactor decision-making process. Others such as Huang (2017), Poterba (2015), and Benartzi and Thaler (2004) have recognized and discussed the inherent complexity. It is also evident in the detailed retirement simulations developed by Bajtelsmit et al. (2013) and VanDerhei and Copeland (2010) for proprietary use. However, in this instance the model is focused specifically on the life stage of young adults, which is an age group historically overlooked by retirement saving literature. The model demonstrates the interrelated factors of the decision-making process, moving from the present to the future state of retirement.

When combined together, the two levels of theoretical implication speak to the challenge of analyzing retirement saving decisions. There is nuance both within concepts and in the relationship between concepts. The current study has made a concerted effort to collect, analyze, and document these intricate attributes.

Risks and Limitations

The research methods were selected based on the subject matter to maximize the quality of the data collected. Inevitably, certain risks, limitations, and delimitations to the research process impact findings from the study and should be considered when interpreting results. Risks refer to inherent unknowns related to design, process, or analysis that could

influence the quality of the data or its results. Limitations include potential weaknesses in the study that may impact the validity of the findings. Delimitations relate to the boundaries or conditions that define the scope of the results. Risks, limitations, delimitations have been described and listed separately as bullet points, before the researcher assesses their potential impact on the current study.

Risks

- **Sample Risk.** The participants in the study sample were self-selected volunteers. Eligibility criteria ensured that participants met the qualifications specified at the outset of the study. The criteria included an age requirement and active retirement saving through an employer plan or individual retirement account (IRA). The study utilized several sampling strategies, including convenience sampling, snowball sampling, and theoretical sampling to reach potential participants. The willingness of volunteers to participate in the study may differentiate findings from this group. The private nature of financial decision making could have discouraged wider participation to make the sample more representative.
- **Gender Risk.** The sample consisted of 21 female participants out of a total of 25. As a result, the study had a wide gender imbalance. Some previous studies, including Knoll et al. (2011) and Lusardi et al. (2010) have identified discrepancies based on gender in retirement saving and financial literacy among young adults. All female participants met the basic criteria to qualify for the study. The study did not pursue specific questions related to gender or factor gender into its research analysis. However, gender-influenced differences may play a role in some of the findings of the study.

- Interview Risk. Even with a semi-structured format, the interview format introduces a level of formality that is amplified by the recording process. Although participants were provided with the primary interview questions beforehand, individual preparation ahead of each interview varied. The interview process depends on the ability of participants to accurately and effectively share their experiences using verbal communication. Some participants may find extemporaneous speaking difficult, hence this study also provided opportunities for written communication both before and after the interview to gather additional feedback.
- Researcher Bias. Corbin and Strauss (2015) write, “Objectivity as it is traditionally defined in research can’t be applied to qualitative research” (p. 77). The role of the researcher in both data collection and analysis means that researcher bias is an important risk in the interpretation of qualitative results. The researcher can address these issues through two primary steps: 1) acknowledging and describing sources of potential bias, and 2) seeking an independent source of data verification. This study designed an iterative research process that asked participants themselves to review the validity of the coding and analysis performed by the researcher.
- Researcher Sensitivity. In Grounded Theory research, “sensitivity requires that a researcher take the role of the other – walk, so to speak, in that other person’s shoes – and try to discern the meaning of words and actions of participants” (Corbin & Strauss, 2015, p. 78). The quality of research analysis depends in large part on sensitivity of the researcher. Sensitivity is an abstract concept that could depend on experience, perspective, knowledge, and other inherent characteristics. The sensitivity of the

researcher stems in part from the experience of reviewing existing literature and developing interview questions that are grounded in previous research. The sensitivity of the researcher was also verified by an iterative research process that asked participants to review the validity of the coding and analysis performed by the researcher.

Limitations

- **Interview Script.** The interview process used to collect data was based on a predesigned series of primary and probing questions. These questions guided the discussion focus and therefore influenced the information shared by participants. The questions were based on a thorough review of the literature, but ultimately the findings of the study are limited by the questions posed. Open-ended questions were used to allow flexibility in response. Similarly, the semi-structured interview format allowed for flexibility around each topic as responses dictated. In addition, the final question of each interview was an open-ended invitation for participants to address any topic that had not been discussed.
- **Data Variation.** The study design incorporated a three-stage research process consisting of pre-interview, interview, and post-interview activities with participants. Although all three stages were intended as opportunities to collect data, in practicality all meaningful data was provided during the pre-interview and interview stages. In addition, data collected during the pre-interview stage was inconsistent, with some participants writing substantive responses and some providing no data. As a result, the level of data provided by participants varied, as did the preparation during the pre-interview stage.

- Stage 3 Response Rate. The data verification activities of the research process took place in stage three. They consisted of a series of emails to participants in order to independently verify the accuracy of the researcher's analysis through three tiers of open, axial, and theoretical coding. The response rate during this phase of the research process decreased substantially. Five participants responded to the first level of verification confirming the accuracy of coding by the researcher. Subsequent communication following the twelfth and twentieth interviews only registered three responses total. All of these responses confirmed the accuracy of the researcher analysis, and none questioned the accuracy of the research findings. Therefore, the researcher proceeded with the existing conclusions.

Delimitations

- Definition of Young Adult. The study intentionally defined a "young adult" as ages 18-35. The definition of a young adult is ultimately subjective. However, the results of this study apply specifically to this age range.
- Definition of Retirement Saving. The study defined retirement saving as actively contributing to a workplace plan or making a contribution to an individual retirement account during the previous 12 months. Retirement wealth can be defined in many ways and ultimately is drawn from net worth. However, this study chose to focus on resources that have been allocated specifically for the purpose of retirement as evidence of retirement saving.

- **Active Retirement Saving.** The study specifically focused on young adults who are already participating in the retirement system. Therefore, the results are indicative of a group that is currently saving for retirement.
- **Cohort vs. Subgroups.** The study did not make an effort to categorize or separate participants based on demographic subgroups. All participants were treated as part of the same cohort as long as they met the basic qualification criteria. The purpose of the study was not to analyze differences in the sample based on demographics, but rather unifying concepts that demonstrated commonly shared characteristics.

Conclusion

Understanding the risks, limitations, and delimitations placed on the study adds important context to the theoretical constraints of its findings. The method and design of the study were intentionally chosen to maximize the opportunity to gather quality data. The research process of data collection and analysis faces constraints in a real-world setting. In this case, the researcher took steps to minimize these issues by strategically designing an iterative process of flexible data collection and verification with participants. Some activities, especially those requiring participant input, are intrinsically beyond the control of the researcher. However, the research process was successfully completed without significant procedural issues, leading to the results presented in this study.

Future Research

The theoretical model and eight propositions proposed by this study point to new opportunities for additional research into the retirement saving decisions of young adults. According to Glaser and Strauss (1967), the development of theory “should provide clear

enough categories and hypotheses so that crucial ones can be verified in present and future research” (p. 3). Furthermore, theory itself is not static. Rather, Glasser and Strauss describe, “*Theory as process*; that is, theory as an ever-developing entity, not as a perfect product” (p. 32). Grounded Theory is iterative both in terms of methodology and philosophy, meaning that theory is continually evolving through new research that builds on existing knowledge. With that in mind, the current study has identified a number of opportunities for continued research related to retirement saving by young adults.

Extending research to subgroups. The current study found evidence supporting Lusardi et al.’s (2010) assertion that the young adult population is a diverse group that cannot be readily generalized. However, the criteria for the current study were intentionally broad, and analyzed young adults as a single age cohort. The design of the current study could be replicated, and extended, by adding an additional qualification criteria that focused exclusively on specific subgroups. Possible subgroups could be based on relationship status, housing, racial demographics, or income levels.

Longitudinal retirement research. The current study focused on the life stage of young adulthood, but retirement saving is an interrelated activity that takes place across an individual’s lifecycle. Therefore, longitudinal research may be the most comprehensive way to understand the shifting attitudes and behaviors regarding retirement saving. Because of the scope and scale of such research, possible methods include a survey-based approach, or alternatively, a case study method focusing on just a few individuals over time.

Retirement Plan Survey of Young Adults. The current study found that workplace retirement plans were the primary method that young adults used to save for retirement,

especially among those who lacked investment experience or had low levels of financial literacy. Plan design is a known factor that influences individual participation in retirement plans (Choi et al., 2004). For many young adults, enrolling in an employer plan is the first time they have considered retirement saving. The importance of retirement plan design in framing how young adults interpret retirement saving decisions is a poorly understood phenomenon that needs additional research.

Developing Financial Safety Theory. Financial safety is an important concept proposed by this study as a necessary condition for retirement saving by young adults. The study identified several components of financial safety, including income adequacy, employment confidence, and emergency protection. This is a new theoretical concept grounded in data and developed by research analysis. Further research is needed to understand this financial milestone in the lives of young adults.

Risk Tolerance and Retirement Investing. Financial literacy was a key determinant in how young adults interpreted the benefit of a long time horizon for investing retirement savings. Those with low levels of financial literacy saved less and invested more conservatively, while those with high levels of financial literacy believed that the time horizon allowed them to invest more aggressively. There were different perceptions about how the time horizon protected young adults from investment risk. The subject of risk tolerance in retirement investing needs additional investigation to better understand how these differences are manifested in retirement saving decisions.

Young Adults NOT Saving for Retirement. The current study focused on young adults who are already saving for retirement, based on the logic that this group would have the most

valuable information to share about their own experiences. Another study focusing on young adults who are not saving for retirement would provide a valuable alternative, by focusing on the group outside of the retirement system. In some ways, the group who are not saving for retirement is of even greater interest, because of the desire to expand participation among young adults. However, reaching this group and collecting valuable data is likely to require a more advanced research design.

The opportunities for further research are many and varied. The scope and focus of retirement research can be adapted in many ways. Some research focuses on individual decision-making, whereas others look at institutional influences in plan administration or retirement policy. Still other research may concentrate on a specific age group at a point in time, while another tries to connect various life stages by making projections about the future. This leads to a varied research landscape, with a wide range of potential research questions.

Chapter V Conclusion

The findings of this study do not exist in isolation. They pull together numerous threads from existing research that are applied to the specific question about how young adults make retirement saving decisions. Those threads are then woven together to form an integrated model about how young adults think about retirement saving. Furthermore, they point to opportunities for additional research that will add to our knowledge about the retirement decisions of this age cohort.

Young adults are an under-represented group in retirement research, despite the fact starting to save early is a widely recommended best practice. The U.S. retirement system is based on a lifecycle theory of income and consumption and is intended to be used throughout

the working life of adults to prepare for old age. However, for practical purposes, the majority of research in both applied and academic settings has heretofore focused on late-career or retirement stage decisions making. By that stage, the opportunity has passed to maximize incentives such as compound investment growth. Data shows that young adults participate in the retirement system at much lower rates (Vanguard, 2020), yet that has not led to corresponding research into why.

This study sought to learn more about the retirement saving decisions of young adults by studying those who are already participating in the retirement system. It discovered that retirement saving by young adults is predicated on attaining a sense of financial safety resulting from regular income, employment confidence, and emergency protection. A lower cost of living helps young adults reach these benchmarks, but the issue of housing costs creates lifestyle creep that increases budgetary pressure.

When the right conditions are in place, young adults who save for retirement are influenced by their level of financial literacy as well as the design and administration of workplace retirement plans. Those with higher levels of financial literacy save and invest in different ways than those with low levels of financial literacy. Retirement plan design and administration also influence how well young adults understand their options by increasing or decreasing the complexity of the decision-making process.

Ironically, retirement itself is not an integral factor in retirement saving decisions by young adults. The length of time until retirement lessens the value of retirement planning while reaching retirement is a distant prospect with vague significance. However, young adults who save for retirement have balanced short-term and long-term time preferences, based on the

desire to maintain future stability. In the face of uncertainty about the future, retirement saving creates utility for young adults as a tangible way to take proactive steps in order to safeguard financial well-being.

The results of this study demonstrate that retirement saving by young adults is framed by their stage of life. In fact, a significant implication of this study is to emphasize the importance of life stage in retirement research. The retirement system is based on the idea of lifecycle participation, which occurs throughout every stage of working life. Therefore, research needs to reflect the full cycle of maturation. Retirement saving not only represents an intertemporal transfer of wealth, but also a transfer of financial decision-making across time, and through every stage of adult life.

References

- Alarabiat, A., & Ramos, I. (2019). The Delphi method in information systems research (2004-2017). *Electronic Journal of Business Research Methods*, 17(2), 86-99.
- Amromin, G., & Smith, P. (2003). What explains early withdrawals from retirement accounts? Evidence from a panel of taxpayers. *National Tax Journal*, 56(3), 595-612.
- Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. (Issue Brief No. 33). University of Surrey.
<https://sru.soc.surrey.ac.uk/SRU33.html>
- Attanasio, O.P., & Weber, G. (2010). Consumption and saving: Models of intertemporal allocation and their implications for public policy. *Journal of Economic Literature*, 48(3), 693-751.
- Bajtelsmit, V.L., Rappaport, A., & Foster, L. (2013). *Measures of Retirement Benefit Adequacy: Which, Why, for Whom, and How Much?* Society of Actuaries.
<https://www.soa.org/globalassets/assets/Files/Research/Projects/research-2013-measures-retirement.pdf>
- Bajtelsmit, V.L., & Rappaport, A. (2018). Retirement adequacy in the United States. *Journal of Financial Service Professionals*, 72(6), 71-86.
- Bassa Scheresberg, C. (2013). Financial literacy and financial behavior among young adults: Evidence and implications. *Numeracy*, 6(2), 1-21.
- Benartzi, S., & Thaler, R.H. (2007). Heuristics and biases in retirement savings behavior. *Journal of Economic Perspectives*, 21(3), 81-104.

Benz, C. (2021). *An investing roadmap for early career accumulators*. Morningstar.

<https://www.morningstar.com/articles/799730/an-investing-road-map-for-early-career-accumulators>

Bernheim, B.D., Skinner, J., & Weinberg, S. (2001). What accounts for the variation of retirement wealth among U.S. households? *American Economic Review*, 91(4), 832-857.

Binswanger, J., & Carman, K.G. (2012). How real people make long-term decisions: The case of retirement preparation. *Journal of Economic Behavior and Organization*, 81(1), 39-60.

Blanchett, D., Finke, M.S., & Pfau, W.D. (2017). Planning for a more expensive retirement. *Journal of Financial Planning*, 30(3), 42-51.

Brady, S.R. (2015). Utilizing and adapting the Delphi method for use in qualitative research. *International Journal of Qualitative Methods*, 14(5), 1-6.

Breckenridge, J., & Jones, D. (2009). *Demystifying theoretical sampling in grounded theory research*. *Grounded Theory Review*, 8(2).

<http://groundedtheoryreview.com/2009/06/30/847/>

Britt-Lutter, S., Dorius, C., & Lawson, D. (2018). The financial implications of cohabitation among young adults. *Journal of Financial Planning*, 31(4), 56-63.

Brown, J.E. (2018). *Millennials and retirement: Already falling short*. National Institute for Retirement Security. <https://www.nirsonline.org/wp-content/uploads/2018/02/Millennials-Report-1.pdf>

Browning, M., & Crossley, T.F. (2001). The life-cycle model of consumption and saving. *Journal of Economic Perspectives*, 15(3), 3-22.

- Burnett, J., Davis, K., Murawski, C., Wilkins, R., & Wilkinson, N. (2018). Measuring the adequacy of retirement savings. *Review of Income and Wealth*, 64(4), 900-927.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London, UK: Sage Publications.
- Chatterjee, S., Fan, L., Jacobs, B., & Haas, R. (2017). Risk tolerance and goals-based savings behavior of households: The role of financial literacy. *Journal of Personal Finance*, 16(1), 66-77.
- Choi, J.J., Labison, D., & Madrian, B.C. (2004). Plan design and 401(k) savings outcomes. *National Tax Journal*, 57(2), 275-298.
- Clark, R., Lusardi, A., & Mitchell, O.S. (2017). Employee financial literacy and retirement plan behavior: A case study. *Economic Inquiry*, 55(1), 248-259.
- Clark, R.L., Hammond, R.G., & Khalaf, C. (2019). Planning for retirement? The importance of time preferences. *Journal of Labor Research*, 40(2), 127-150.
- Congressional Budget Office (2017). *Measuring the adequacy of retirement income: A primer*. Congressional Budget Office. <https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53191-retirementadequacy.pdf>
- Cooper, D., & Wang, J.C. (2014). *Student loan debt and economic outcomes*. (Current Policy Perspectives No. 2014-7). Federal Reserve Bank of Boston. <https://www.bostonfed.org/publications/current-policy-perspectives/2014/student-loan-debt-and-economic-outcomes.aspx>

Copeland, C. (2021). *Student loan debt: Who has it and how much?* (Issue Brief No. 524).

Employee Benefit Research Institute. <https://www.ebri.org/content/student-loan-debt-who-has-it-and-how-much>

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research 4th ed.* Thousand Oaks, CA: SAGE Publications.

Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods Approaches.* Thousand Oaks, CA: Sage Publications.

Czar, K., Gilbert, A., & Scott, A. (2021). Life lessons: Leaving home and financial capability of young adults. *Journal of Consumer Affairs*, 55(2), 556-579.

Dettling, L.J., & Hsu, J.W. (2014). The state of young adults' balance sheets: Evidence from the survey of consumer finances. *Federal Reserve Bank of St. Louis Review, Fourth Quarter 2014*, 96(4), 305-330.

Ebrahimi, Z. (2021). *Retirees in profile: Evaluating five distinct lifestyles in retirement.* (Issue Brief No. 529). Employee Benefit Research Institute. https://www.ebri.org/docs/default-source/ebri-issue-brief/ebri_ib_529_retireeprofiles-8apr21.pdf?sfvrsn=39e33a2f_8

Eggleston, J., Hays, D., Munk, R., & Sullivan, B. (2020). *The wealth of households: 2017.* U.S.

Census Bureau.

<https://www.census.gov/content/dam/Census/library/publications/2020/demo/p70br-170.pdf>

Elliott, W., Grinstein-Weiss, M., & Nam, I. (2013). *Student debt and declining retirement savings.* (Working Paper No. 13-34). Center for Social Development at Washington University-St. Louis.

https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1384&context=csd_research

Elliott, W., & Lewis, M. (2015). Student debt effects on financial well-being: Research and policy implications. *Journal of Economic Surveys*, 29(4), 614-636.

Elliott, W., & Nam, I. (2013). Is student debt jeopardizing the short-term financial health of U.S. households? *Federal Reserve Bank of St. Louis Review*, 95(5), 405-424.

Employee Benefits Security Administration, United States Department of Labor. (2019). *Top 10 ways to prepare for retirement*. Department of Labor.

<https://www.dol.gov/sites/dolgov/files/ebsa/about-ebsa/our-activities/resource-center/publications/top-10-ways-to-prepare-for-retirement.pdf>

Engelhard, G.V., & Kumar, A. (2007). Employer match and 401(k) saving: Evidence from the health and retirement study. *Journal of Public Economics*, 91(10), 1920-1943.

Engen, E.M., Gale, W.G., & Uccello, C.E. (2000). *The adequacy of household saving*. (Working Paper No. 2000-1). Center for Retirement Research at Boston College.

<https://crr.bc.edu/working-papers/the-adequacy-of-household-saving/>

E*TRADE (2021). *E*TRADE Financial Q2 2021 Streetwise Report*. Etrade.

https://cdn2.etrade.net/1/21050313140.0/aempros/content/dam/etrade/about-us/en_US/documents/newsroom/insights/streetwise-reports/Streetwise-Report.pdf

Federal Reserve, Board of Governors (2020). *Report on the Economic Well-Being of US Households in 2018 – May 2019*. Federal Reserve.

<https://www.federalreserve.gov/publications/2019-economic-well-being-of-us-households-in-2018-retirement.htm>

Federal Reserve Bank of St. Louis (2021). *Student Loans Owned and Securitized, Outstanding*.

FRED Economic Data. <https://fred.stlouisfed.org/series/SLOAS>

Finke, M.S., & Huston, S.J. (2013). Time preferences and the importance of saving for retirement. *Journal of Economic Behavior and Organization*, 89, 23-34.

Fox, A. (1982). Earnings replacement rates and total income: Findings from the retirement history study. *Social Security Bulletin*, 45(10), 3-53.

Freddie Mac (2018). *Locked out? Are rising housing costs barring young adults from buying their first home?* Freddie Mac Insight Report. Freddie Mac.

http://www.freddiemac.com/research/insight/20180628_rising_housing_costs.page

Friedman, M. (1957). *A theory of the consumption function*. Princeton, NJ: Princeton University Press.

Fry, R., Parker, K., & Rohal, M. (2014). *Young adults, student debt, and economic well-being*.

Pew Research Trust. <https://www.pewresearch.org/social-trends/2014/05/14/young-adults-student-debt-and-economic-well-being/>

Gale, W.G., Gelfond, H., Fichtner, J., & Harris, B.H. (2020). *The wealth of generations, with special attention to the millennials*. (Brookings Economic Studies). Brookings.

<https://www.brookings.edu/wp-content/uploads/2020/05/Generations-Working-Paper-2.pdf>

Georgetown University Law Center (2010). *A timeline of the evolution of retirement in the United States*. Georgetown.

<https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1049&context=legal>

- Glaser, B.G., & Strauss, A.L. (2017). *The discovery of grounded theory: Strategies for qualitative research*. New York, NY: Routledge.
- Goda, S.G., Levy, M., Manchester, C.F., Sojourner, A., & Tasoff, J. (2019). Predicting retirement savings using survey measures of exponential growth bias and present bias. *Economic Inquiry*, 57(3), 1636-1658.
- Gorry, A., Gorry, D., & Trachter, N. (2019). Learning and lifecycle patterns of occupational transitions. *International Economic Review*, 60(2), 905-937.
- Gould, E. (2020). *State of working America wages 2019*. Economic Policy Institute.
<https://www.epi.org/publication/swa-wages-2019/>
- Guba, E.G., & Lincoln, Y.S. (1982). Epistemological and methodological bases for natural inquiry. *Educational Communication and Technology*, 30(4), 233-252.
- Hadjistavropoulos, T., & Smythe, W.E. (2001). Elements of risk in qualitative research. *Ethics and Behavior*, 11(2), 163-174.
- Hauff, J.C., Carlander, A., Garling, T. & Nicolini, G. (2020). Retirement financial behavior: How important is being financially literate? *Journal of Consumer Policy*, 43(3), 543-546.
- Hiltonsmith, R. (2013). *At what cost? How student debt reduces lifetime wealth*. (Debt for Diploma Series June 2013). Demos.
<https://www.demos.org/sites/default/files/publications/AtWhatCost.pdf>
- Holton, J.A. (2008). *Grounded theory as a general research methodology*. *Grounded Theory Review*, 2(7). <http://groundedtheoryreview.com/2008/06/30/grounded-theory-as-a-general-research-methodology/>

Holton, J.A. (2010). *The coding process and its challenges*. Grounded Theory Review, 9(1).

<http://groundedtheoryreview.com/2010/04/02/the-coding-process-and-its-challenges/>

Hopkins, J.P., & Pearce, J.A. (2019). Retirement income literacy: A key to sustainable retirement planning. *Journal of Financial Planning*, 32(1), 36-44.

Huang, P.H. (2017). Achieving American retirement prosperity by changing American's thinking about retirement. *Stanford Journal of Law, Business, and Finance*, 22(2), 189-259.

Hurst, E., Luoh, M.C., & Stafford, F. *Wealth dynamics of American families: 1984-1994*.

(Brookings Papers on Economic Activity 1). Brookings.

<https://www.brookings.edu/bpea-articles/the-wealth-dynamics-of-american-families-1984-94/>

Inglis, R.E. (2019). *Replacement ratio: The dinosaur of retirement planning*. Society of Actuaries.

<https://www.soa.org/globalassets/assets/library/newsletters/retirement-section-news/2019/february/rsn-2019-iss97-inglis.pdf>

Investment Company Institute. (2021). *Retirement assets total \$34.9 trillion in fourth quarter 2020*. Investment Company Institute. <https://www.ici.org/node/836811>

Jager, J., Putnick, D.L., & Bornstein, M.H. (2017). More than just convenient: The scientific merits of homogeneous convenience samples. *Monographs of the Society for Research in Child Development*, 82(2), 13-30.

Jorgensen, B.L., & Savla, J. (2010). Financial literacy of young adults: The importance of parental socialization. *Family Relations*, 59(4), 456-478.

Kent, A. (2019). The millennial wealth gap: Trends, origins, and implications. Paper or poster session presented at the meeting of New America, Washington, DC. Federal Reserve

Bank of St. Louis.

https://www.stlouisfed.org/~media/Files/PDFs/HFS/assets/2019/New_America_Book_Event_102919.pdf?la=en

Kim, K.T., & Hanna, S.D. (2015). Do U.S. households perceive their retirement preparedness realistically? *Financial Services Review*, 24(2), 139-155.

Knoll, M.A.Z. (2010). The role of behavioral economics and behavioral decision making in Americans' retirement saving decisions. *Social Security Bulletin*, 70(4), 1-23.

Knoll, M.A.Z., Tamborini, C.R., & Whitman, K. (2012). I do...want to save. Marriage and retirement savings in young households. *Journal of Marriage and Family*, 74(1), 86-100.

Krijnen, J.M.T., Zeelenberg, M., Breugelmans, S.M., & Putten, M. (2018). Inaction inertia in retirement saving. *Journal of Behavioral Decision Making*, 33(1), 52-62.

Laibson, D., Agarwal, S., Gabaix, X., & Driscoll, J.C. (2009). *The age of reason: Financial decisions over the lifecycle and implications for regulation*. (Brookings Papers on Economic Activity, 2009, No. 2). Brookings. <https://www.brookings.edu/bpea-articles/the-age-of-reason-financial-decisions-over-the-life-cycle-and-implications-for-regulation/>

LaPonsie, M. (2021). *Should young adults really be saving for retirement?* US News & World Report. <https://money.usnews.com/money/retirement/401ks/articles/should-young-adults-really-be-saving-for-retirement>

Letskiewicz, J.C., & Fox, J.J. (2014). Conscientiousness, financial literacy, and asset accumulation of young adults. *Journal of Consumer Affairs*, 48(2), 274-300.

Letskiewicz, J.C., & Heckman, S.J. (2018). Homeownership among young Americans: A look at student loan debt and behavioral factors. *Journal of Consumer Affairs*, 51(1), 88-114.

Levy, M., & Tasoff, J. (2015). Exponential growth bias and lifecycle consumption. *Journal of the European Economic Association*, 14(3), 545-583.

Lieber, R., & St. John, T. (2017). *How to win at retirement*. The New York Times.

<https://www.nytimes.com/guides/business/saving-money-for-retirement>

Lugilde, A., Bande, R., & Riveiro, D. (2019). Precautionary Saving: A Review of the Empirical Literature. *Journal of Economic Surveys*, 33(2), 481-515.

Lusardi, A., & Mitchell, O.S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. *Journal of Monetary Economics*, 54(1), 205-224.

Lusardi, A., Mitchell, O.S., & Curto, V. (2010). Financial literacy among the young. *Journal of Consumer Affairs*, 44(2), 358-380.

Mackenzie, G.A. (2020). *Is there a retirement crisis: An exploration of the current debate*. CFA Institute. <https://www.cfainstitute.org/research/foundation/2020/is-there-a-retirement-crisis>

Makri, C., & Neely, A. (2021). Grounded theory: A guide for exploratory studies in management research. *International Journal of Qualitative Methods*, 20, 1-14.

Mason, C.L.J., & Wilson, R.M.S. (2000). *Conceptualizing financial literacy*. (Research Series Paper No. 2000:7) Loughborough University Institutional Repository. https://repository.lboro.ac.uk/articles/preprint/Conceptualising_financial_literacy/9494978/1

Mather, M., Jacobsen, L.A., Jarosz, B., Kilduff, L., Lee, A., Pollard, K.L., Scommegna, P., & Vanorman, A. (2019). America's changing population: What to expect in the 2020 census. *Population Bulletin*, 74(1). Population Reference Bureau.

- <https://www.prb.org/wp-content/uploads/2019/06/PRB-PopBulletin-2020-Census.pdf>
- McFarland, B. (2020). *Retirement offerings in the Fortune 500: 1998-2019. Insider*, 30(6). Willis Towers Watson. <https://www.willistowerswatson.com/en-US/Insights/2020/06/retirement-offerings-in-the-fortune-500-1998-2019>
- McKenzie, C.R.M., & Liersch, M.J. (2011). Misunderstanding savings growth: Implications for retirement savings behavior. *Journal of Marketing Research*, 48, S1-S13.
- Merry, E.A., & Thomas, L. (2014). Asset holdings of young households: Trends and patterns. *Federal Reserve Bank of St. Louis Review, Fourth Quarter 2014*, 96(4), 391-411.
- Mischel, W., Shoda, Y., & Rodriguez, M.L. (1989). Delay of gratification in children. *Science*, 244, 933-938.
- Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In Kurihara, K. (Ed.), *Post-Keynsian Economics* (p. 388-436). New Brunswick, NJ: Rutgers University Press.
- Montgomery, N.V., Szykman, L.R., & Agnew, J.R. (2012). *How can employers encourage young workers to save for retirement?* (Issue Brief No. 12-7). Center for Retirement Research at Boston College. <https://crr.bc.edu/briefs/how-can-employers-encourage-young-workers-to-save-for-retirement/>
- Morrissey, M. (2019). *The State of American Retirement Savings*. Economic Policy Institute. <https://www.epi.org/publication/the-state-of-american-retirement-savings/>
- Morse, J.M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13-22.

- Munnell, A.H., Webb, A., & Delorme, L. (2006). *A new national retirement risk index*. (Issue Brief No. 48). Center for Retirement Research at Boston College. <https://crr.bc.edu/briefs/a-new-national-retirement-risk-index/>
- Munnell, A.H., Golub-Sass, F.N., & Webb, A. (2011). *How much to save for a secure retirement*. (Issue Brief No. 11-13). Center for Retirement Research at Boston College. <https://crr.bc.edu/briefs/how-much-to-save-for-a-secure-retirement/>
- Munnell, A.H., Hou, W., & Webb, A. (2016). *Will the explosion of student debt widen the retirement security gap?* (Issue Brief No. 16-2). Center for Retirement Research at Boston College. <https://crr.bc.edu/briefs/will-the-explosion-of-student-debt-widen-the-retirement-security-gap/>
- Munnell, A.H., Chen, A., & Sciliciano, R.L. (2021). *The national retirement risk Index: An update from the 2019 SCF*. (Issue Brief No. 21-2). Center for Retirement Research at Boston College. https://crr.bc.edu/wp-content/uploads/2021/01/IB_21-2.pdf
- Muratore, A.M., & Earl, J.K. (2010). Predicting retirement preparation through the design of a new measure. *Australian Psychologist*, 45(2), 98-111.
- Olsen, A., and Whitman, K. (2007). Effective retirement savings programs: Design features and financial education. *Social Security Bulletin*, 67(3), 53-72.
- O'Neill, B., Xu, Y., Johnson, C., Kiss, D.E., & Buyske, S. (2019). "As soon as..." finances: A study of financial decision-making. *Journal of Personal Finance*, 18(1), 37-53.
- Parsons, J.C. (2014). Why investors need to understand the shape of the compound growth curve. *Journal of Financial Planning*, 27(5), 16-17.

- Pew Charitable Trusts (2017). *Retirement plan access and participation across generations*. Pew Trusts. <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2017/02/retirement-plan-access-and-participation-across-generations>
- Pew Charitable Trusts (2018). *Are today's young workers better able to save for retirement?* Pew Trusts. https://www.pewtrusts.org/-/media/assets/2018/05/retirement_savings_changes_in_retirement_behavior_for_young_workers_chartbook_v1.pdf
- Poterba, J. (2004). Valuing assets in retirement savings accounts. *National Tax Journal*, 52(2), 489-512.
- Poterba, J., Venti, S., and Wise, D. (2011). The composition and drawdown of wealth in retirement. *Journal of Economic Perspectives*, 25(4), 95-118.
- Poterba, J. (2014). Retirement security in an aging population. *American Economic Review*, 104(5), 1-30.
- Poterba, J.M. (2015). Saver heterogeneity and the challenge of assessing retirement saving adequacy. *National Tax Journal*, 68(2), 377-388.
- Purcell, P.J. (2012). Income replacement ratios in the health and retirement study. *Social Security Bulletin*, 72(3), 37-58.
- Rutledge, M.S., Sanzenbacher, G.T., & Vitagliano, F.M. (2016). *How does student debt affect early career retirement saving?* (Working Paper 2016-09). Center for Retirement Research at Boston College. https://crr.bc.edu/wp-content/uploads/2016/09/wp_2016-9_rev.pdf

- Samwick, A.A. (2006). Saving for retirement: Understanding the importance of heterogeneity. *Business Economics*, 41(1), 21-27.
- Scott, J., Shoven, J.B., Slavov, S., & Watson, J.G. (2021) *Is automatic enrollment consistent with a life cycle model?* (National Bureau of Economic Research Working Paper No. 28396). Stanford Institute for Economic Policy Research.
<https://siepr.stanford.edu/sites/default/files/publications/21-006.pdf>
- Shefrin, H.M., & Thaler, R.H. (1988). The behavioral life-cycle hypothesis. *Economic Inquiry*, 26(4), 609-643.
- Shin, S., Kim, H., & Heath, C.J. (2019). Narrow framing and retirement savings decisions. *Journal of Consumer Affairs*, 53(3), 975-997.
- Sturr, T., Lynn, C., & Lawson, D.R. (2021). Financial self-efficacy and retirement preparation. *Journal of Financial Planning*, 34(6), 86-98.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journal*, 49(4), 633-642.
- Tang, N., & Peter, P.C. (2015). Financial knowledge acquisition among the young: The role of financial education, financial experience, and parents' financial experience. *Financial Services Review*, 24(2), 119-137.
- Thaler, R.H., & Benartzi, S. (2004). Save more tomorrow: Using behavioral economics to increase employee saving. *Journal of Political Economy*, 112(1), 164-187.
- Thaler, R.H., & Sunstein, C.R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press, New Haven, CT.

Thomson, S.B. (2011). Sample size and grounded theory. *Journal of Administration and Governance*, 5(1), p. 46-52.

U.S. Bureau of Labor Statistics, United States Department of Labor. (2020). *Table 3: Median usual weekly earnings of full-time wage and salary workers by age, race, Hispanic or Latino ethnicity, and sex, second quarter 2020 averages, not seasonally adjusted*. Bureau of Labor Statistics. <https://www.bls.gov/news.release/wkyeng.t03.htm>

VanDerhei, J., & Copeland, C. (2010). *The EBRI retirement readiness rating: Retirement income preparation and future prospects*. (Issue Brief No. 344) Employee Benefit Research Institute. <https://www.ebri.org/content/the-ebri-retirement-readiness-rating-retirement-income-preparation-and-future-prospects-4593>

Vanguard. (2020). *How America saves*. Vanguard. <https://institutional.vanguard.com/ngiam/assets/pdf/has/how-america-saves-report-2020.pdf>

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: Systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, 18, 1-18.

Vespa, J. (2017). *The changing economics and demographics of young adulthood: 1975-2016*. (U.S. Census Bureau Report #P20-579). U.S. Census Bureau. <https://www.census.gov/content/dam/Census/library/publications/2017/demo/p20-579.pdf>

Wallace, K. (2021). *How to turn your money into superdollars*. Morningstar.

<https://www.morningstar.com/articles/880195/how-to-turn-your-money-into-superdollars>

Walsh, I., Holton, J.A., Bailyn, L., Fernandez, W., Levina, N., & Glaser, B. (2015). What grounded theory is...A critical reflective conversation among scholars. *Organizational Research Methods, 18*(4), 581-599.

Warmath, D., & Zimmerman, D. (2019). Financial literacy as more than knowledge: The development of a formative scale through the lens of Bloom's domains of knowledge. *Journal of Consumer Affairs, 53*(4), 1602-1629.

Williams, M., & Moser, T. (2019). The art of coding and thematic exploration in qualitative research. *International Management Review, 15*(1), 45-55.

Yang, F. (2009) *Accounting for the heterogeneity in retirement wealth*. (Working Paper No. 2009-6). Center for Retirement Research at Boston College. <https://crr.bc.edu/working-papers/accounting-for-the-heterogeneity-in-retirement-wealth/>

Appendix A: Internal Review Board Approval

2211041

Title: Young Adults Who Save for Retirement: A Grounded Theory Study of the Decision-Making Process

Date application completed: 9/30/2021


(The researcher needs to complete the information above on this page.)

✓ (1) The proposed research makes adequate provision for safeguarding the health and dignity of the subjects and is therefore approved.

____ (2) Due to the assessment of risk being questionable or being subject to change, the research must be periodically reviewed by the **HSRC** on a _____ basis throughout the course of the research or until otherwise notified. This requires resubmission of this form, with updated information, for each periodic review.

____ (3) The proposed research evidences some unnecessary risk to participants and therefore must be revised to remedy the following specific area(s) on non-compliance:

_____ (4) The proposed research contains serious and potentially damaging risks to subjects, and is therefore not approved.


Chair or designated member

10/21/21
Date

Appendix B: Pre-interview Eligibility and Scheduling Survey**Research Interview Sign-up****Part 1: Please complete the following to confirm if you meet the eligibility criteria**

* 1. Please indicate your age range:

☐ 18-24

☐ Over 35

☐ 25-30

☐ Under 18

☐ 31-35

* 2. Select all that apply

☐ You are currently enrolled and contributing to a workplace retirement plan (401k, 403b, etc.)

☐ You have made a contribution in the past 12 months to an Individual Retirement Account (Traditional or Roth IRA)

☐ None of the above

Research Interview Sign-up

Part 2: Consent and Contact Information

* 3. Please review the following statements and click each check box to provide consent for the study. Your information will be used anonymously and stored confidentially.

- ☐ I acknowledge and consent that the personal information I share can be used for the purposes of this academic study.
- ☐ I acknowledge and consent to participate in a recorded video interview, which will be used exclusively for the purposes of this academic study.
- ☐ To the best of my ability, I agree to provide accurate information that reflects my personal experience.

* 4. Contact Information

Name

Email Address

Phone Number

Research Interview Sign-up

Part 3: Interview Prep

Step 1: Please schedule a video interview using the link below. Clicking this link will open a separate window. Once scheduled, please return to this page to complete the survey. Doodle will gather your contact info and send you a calendar invite with a video link. Please note the link will appear at the very bottom of the email invite.

Schedule here: <https://doodle.com/mm/chadgreenwood/book-a-time>

If none of these dates and times work for you, please contact chgreenwood@gmail.com to suggest two additional one-hour time slots that work for your schedule.

Step 2: Please review the interview questions below, and provide responses.

5. How would you describe your current financial situation?

6. If you received a large and unexpected bonus tomorrow, how would you use the money?

7. How much do you think about retirement?

8. How do you decide how much to save for retirement?

9. What type of investment growth do you expect for your retirement savings?

10. How knowledgeable do you feel about retirement saving at this point in your life?

11. Looking forward into the future, how much do you think will change in your life between now and when you retire?

Appendix C: Participant Email Communication

Email 1: Recruitment Email

Hello [Name],

I am conducting doctoral research on retirement saving by young adults, and I am reaching out to schedule a time with you for a virtual interview.

The title of the project is: Young Adults Who Save for Retirement: A Grounded Theory Study of the Decision-Making Process. My goal is to understand more about how young adults under age 35 make decisions about retirement saving.

I would love to schedule a virtual interview, and I am actively scheduling interviews right now.

I am using a preliminary form on Survey Monkey to schedule participants:
<https://www.surveymonkey.com/r/CHGreenwood>

This form includes three sections:

Part 1: A couple of questions to make sure you meet the eligibility criteria for the study.

Part 2: A section for you to provide informed consent for the study and contact information.

Part 3a: Scheduling an interview using a Doodle calendar. You will need to click on the link to open Doodle, which will then ask you to select a date and time, and provide an email address. Doodle will then send you an automated calendar invite with a link to a Zoom video conference embedded at the bottom of the invite.

Part 3b: Preliminary interview questions so that you can provide written feedback prior to the interview.

Some additional things that I feel are important to mention:

1. The study focuses on your personal financial decisions around retirement saving, which will likely involve sharing general information about your financial situation.
2. The study uses an interview format to gather qualitative data from participants such as yourself, which includes oral and written responses. I do not ask for, and you do not need to provide me with detailed statistics about your income, net worth, personal debts, etc.
3. The interviews take place virtually over Zoom. I record the interview in order to generate a transcript of our conversation that I use for further data analysis.
4. The questions I ask are intended to be open-ended topics about your personal experience. There is no "right" answer. I only ask that you make a good faith effort to be accurate and honest in your appraisal.
5. Post-interview, I will include you in a few follow up communications about the ongoing progress of the study, which gives you an additional opportunity to provide further feedback about the emerging results.

Please let me know if you have any additional questions or concerns about participating.

I appreciate your time, and I hope to hear from you soon.

Sincerely, Chad Greenwood

Email 2: Post-Interview Participant Email

Hello [Name],

I am sending you the analysis I've completed from your interview. This is your opportunity to review my work and clarify anything that you think I may have misunderstood.

The analysis is drawn from the transcript of your interview, which I reviewed in conjunction with the recording we created. My analysis takes the form of qualitative coding - which is basically higher-level abstraction of your original comments. The coding does not cover everything we may have discussed, but my hope is that it does include the most relevant topics.

The coding from your interview will be compared anonymously with dozens of others, which will then form the basis of my research findings.

I am also still looking for a handful of additional participants who are under age 35 and saving for retirement. Please forward this link to anyone who you think would be interested:
<https://www.surveymonkey.com/r/CHGreenwood>

It was a pleasure learning more about you. Thank you for sharing your information.

Sincerely, Chad Greenwood

Email 3: First Data Verification Email (after 12 interviews)

Hi everyone,

Thank you again for participating in my study on retirement saving by young adults.

I'm writing to share early results with you, based on research analysis of the interviews I've conducted so far, of which you were a part.

The purpose of sharing this information is to solicit feedback and additional input. These results offer a condensed analysis of themes I've heard repeated in multiple interviews. The goal is to select themes that have reached a level of "data saturation." If you have additional comments or thoughts that you would like to share on these early results, please send them to me.

Sincerely, Chad Greenwood

Interview Question	Findings
How would you describe your current financial situation?	Stability, Security, Adequate Income, Emergency Protection, Not Affluent, Housing Focused
If you received a large and unexpected bonus tomorrow, how would you use the money?	Long-term planning, self-discipline, debt relief, non-materialism
How much do you think about retirement?	Ambivalence about retirement, too far away, future uncertainty, housing security
How do you decide how much to save for retirement?	Saving based on cashflow, excess cashflow, low cost of living, frugality
What type of investment growth do you expect for your retirement saving?	Benefit of time horizon, lower investment risk, growth expectation
How knowledgeable do you feel about retirement saving at this point in your life?	Learning process, family influence, curiosity driven, employment experience
Looking forward into the future, how much do you think will change in your life between now and when you retire?	Expecting change, increasing expenses, cost of family formation
Email 4: Second Data Verification Email (after 20 interviews)	
<p>Hi everyone,</p> <p>Thank you again for participating in my study on retirement saving by young adults.</p> <p>I have now conducted 20 interviews, and I am writing to share results with you from my continuing research analysis.</p> <p>The purpose of sharing this information is to solicit feedback and additional input. These results offer a condensed analysis of themes I've heard repeated in multiple interviews. The goal is to select themes that have reached a level of "data saturation." If you have additional comments or thoughts that you would like to share on these early results, please send them to me.</p> <p>Sincerely, Chad Greenwood</p>	
Interview Question	Findings
How would you describe your current financial situation?	<ul style="list-style-type: none"> Most young adults who save for retirement have a sense of financial safety about their present circumstances.

	<ul style="list-style-type: none"> Financial safety is determined by a combination of income adequacy, employment confidence, and emergency protection
If you received a large and unexpected bonus tomorrow, how would you use the money?	<ul style="list-style-type: none"> Young adults saving for retirement balance short-term and long-term time preferences because of personal characteristics such as self-discipline and pessimism about the future.
How much do you think about retirement?	<ul style="list-style-type: none"> Retirement planning and retirement saving are viewed as separate activities. The decision to begin saving for retirement is not preceded by the need to plan for retirement. Retirement is too far away to make retirement planning a meaningful activity for young adults.
How do you decide how much to save for retirement?	<ul style="list-style-type: none"> Young adults minimize the affect of budget constraints on retirement saving through a low cost of living and frugal spending habits. Housing is a more important financial priority than retirement saving for young adults. As housing costs increase, greater strain is placed on the ability of young adults to save for retirement.
What type of investment growth do you expect for your retirement saving?	<ul style="list-style-type: none"> Young adults who are saving for retirement share a common belief that the time horizon offers them a unique advantage.
How knowledgeable do you feel about retirement saving at this point in your life?	<ul style="list-style-type: none"> Financial literacy among young adults is developed based on the number of influences they experience, such as family,

	education, career, media, and financial advisors.
Looking forward into the future, how much do you think will change in your life between now and when you retire?	<ul style="list-style-type: none"> • Young adults expect significant change to both their personal and professional lives. • Young adults expect increasing costs in the future, primarily related to family formation and home ownership.
Email 5: Final Data Verification Email (after 25 interviews)	
<p>Hi everyone,</p> <p>Thank you again for participating in my study on retirement saving by young adults.</p> <p>I am reaching the end of my research process, and I wanted to share my results. As a reminder, this is a qualitative stud, with qualitative findings. The results consist of themes and concepts that appeared frequently across many interviews and were expressed in different ways. My research analysis determined that these concepts reached a level of “data saturation.”</p> <p>The results take two forms:</p> <ol style="list-style-type: none"> 1. Eight written propositions based on concepts identified in the study. 2. An illustrative diagram that demonstrates relationships between concepts (see attached). <p>The purpose of sharing this information with you is to solicit any additional feedback you may wish to share. If you have new comments or thoughts that you would like to share on these results, I am interested in hearing your thoughts.</p> <p>I still plan to share a final version of my project after it is finalized. Thank you so much for your time and assistance.</p> <p>Sincerely, Chad Greenwood</p>	
Research Topics	Propositions
Life-stage Transition	Young adults who save for retirement believe they have achieved a level of financial safety in the present.

Time Preferences	Young adults who save for retirement balance short-term and long-term time preferences.
Incomplete Information	Saving for retirement does not necessarily imply planning for retirement.
Budget Constraints	A low cost of living minimizes budget constraints for young adults saving for retirement.
Budget Constraints	Housing costs are the primary determinant of cost of living for young adults.
Compound Investing	Young adults save for retirement because they know time horizon is important , although financial literacy determines how they explain why.
Financial Literacy	Financial literacy varied among young adults saving for retirement based on the number of influences they had experienced.
Future Expectations	Young adults expected future expenses to increase , possibly limiting their ability to save for retirement.