A critical assessment of what influences and biases the financial decision-making behaviour of the millennial investor

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Abstract

The study explored the research question:

What are the key factors, drivers and biases that influence the confidence of financial decision-making behaviour of the millennial investor?

The research aim was to identify key factors that influence financial decision-making of millennials. Emerging research on human decision-making behaviour is revealing generational changes in influences, technology, and communication needs. The COVID-19 Pandemic and the 2020 US stock market collapse, with subsequent record highs in six months, have indicated that traditional economic models may be insufficient in understanding millennial investor behaviour.

The United States is set to see the largest intergenerational wealth transfer in history, $68 trillion, as baby boomers pass wealth to their millennial beneficiaries. This research found that millennial behavioural biases, key influences, an understanding of who and what they trust, and their financial education, is required for financial professionals to better communicate financial recommendations.

To achieve the research goal, literature was reviewed on economic decision-making theory and Behavioural Finance with cognitive and emotional biases, along with the millennial discussion. Interconnected patterns and ten key themes emerged around their traits and characteristics.

To establish a conceptual framework, a pragmatic paradigm was embraced. First, a Delphi study was performed with 27 leaders who provided views, and helped identify components of millennial decision-making. From those findings, a quantitative survey was developed using Likert statements, producing over 1,000 responses. Multivariant analyses were performed on the survey results testing the cogency of the conceptual framework.

This research contributes to academic literature by contributing a framework for understanding the attributes that contribute to the confidence a millennial has in financial decision-making along with a practical framework for financial professional use. The findings indicate, that by understanding what drives financial decision-making confidence and behaviour, differentiated communication happens through a demonstration of aligned values and a customized delivery of information. This lays the foundation for a financial professional to build trust to attract, or retain millennial investors.

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Introduction

The decision-making process, studied for centuries, permeates every aspect of one's life, but explaining human behaviour, with its multitude of complexities, is no simple task (Ajzen, 1991; Kan and Fabrigar, 2017). Of particular interest to the insurance and investment fields, is an understanding of the millennial generation's financial decision-making behaviour and process, especially around risk. At the very heart of decision-making, and pivotal to the way we lead our lives, is this relationship between uncertainty and risk (Kahneman and Tversky, 1979). Kaara (2020) suggests that one's risk tolerance stems from the desire to ultimately make better decisions while Belykh and Zinchenko (2018) suggests that different degrees of risk allow important trends in one's decision-making process to emerge.

Some research shows that decision-making is based on several factors: personal resources, influences, and technical factors (Chandra, 2008; Milner and Rosenstreich, 2013). However, other research shows that a person *makes* decisions, whilst another simply *reacts* to their environment (Buchanan and Connell, 2006). Either way, decisions have tremendous importance associated with them, and this study aimed to discover what influences the financial decision-making process and behaviour of the millennial investor, how risk is evaluated, whether their process is different from other generations, and how communication from financial professionals needs to evolve as a result.

Research Motivation

Professionally, this is the only industry I have ever worked in, so this research is highly personal and draws from my over twenty-five years working with financial professionals. Of real interest to me over the past several years, is the significant shift in what impacts a millennial's financial decision, which has led to my dedication in developing better

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communication for financial professionals with their millennial customers. In reflecting

on my professional journey, this experience, coupled with academic study, has in large

part, influenced my research topic and is the culmination of my life experiences.

Through every position I have held in the financial services profession, my focus has

always been people; I am captivated by what makes someone do what they do. Early in

my career, I spent eleven years as a Regional Vice President, working directly with

financial professionals, presenting solutions to Americans helping them prepare for, and

live in retirement. Finding success there, I was promoted to a Divisional Vice President at

a Fortune 100 insurance company and asked to lead a team of fourteen direct reports,

spending eleven years in that role. Through this experience, I could see the evolution

and change in how younger investors looked at financial solutions. Learning is a passion

of mine, and during that time, I became a student of the industry receiving degrees to

better understand complex financial solutions. I completed industry designations

Certified Financial Planner, CFP ®, Certified Life Underwriter, CLU ®, and Certified in Long

Term Care, CLTC, ™, and coaching designations Certified Business Coach, CBC ® and

Certified Master Business Coach, CMBC ®. I also completed my Master of Arts from

Middlesex University, London UK, in Professional Coaching.

Four years ago, I moved to be a Vice President and National Sales Manager at a Fortune

200 insurance and investment firm, with a more strategic role and voice in the long-term

vision of the company. These leadership roles have given me the opportunity for

technical learning and the ability to learn from leaders who think differently than myself.

As the baby boomer generation is widely regarded as history's wealthiest generation,

financial planning becomes even more important to this aging generation as they pass

wealth to their beneficiaries. Why is this important? According to the financial services

research firm Cerulli Associates (2018) over the next 25 years, there will be a shift in the demographics of wealth, 45 million U.S. households and approximately $68 trillion, slating the millennial generation to inherent the largest transfer of wealth the United States has ever seen (Dhar and Fetherston, 2014; Accenture, 2015; Sigalos, 2018). It is only natural that, with this large transfer of wealth, much attention will progressively focus on the millennial investor in order to understand their characteristics, biases, and influences. Millennials represent a unique demographic with significant implications for the insurance and investment industry (Nava, Karp, and Nash-Stacey 2014), and this understanding is important as millennials become the beneficiaries of financial planning being done today (Riekoff, 2017). This will shift the focus for the financial professional, and by looking at biases, relative experience levels, and influences of millennial investors, better holistic financial planning and communication can happen. Since the COVID-19 pandemic, there has been a shift in how communication is delivered, and it is my belief that a financial professional's understanding of how to best communicate with a millennial *and* understanding their decision-making behaviours will be critical for financial success. This amalgamation has led me to my research question:

In identifying key factors that influence millennial financial decision-making, how will communication from financial professionals need to evolve?

This research is concerned with the development of strategies that can lead to effective financial outcomes for millennials, through better communication from financial professionals. Through my experience in the financial services industry, many people leave wealth to their children as the primary, and grandchildren as the contingent beneficiary. The majority of Generation Z would not typically be the direct beneficiary of the Baby Boomer's accumulated wealth, the millennial would, therefore the focus of the research remains the millennial generation.

Aims & Objectives

Aims

Scientific research's mission is to discover the impetus of an observed event (Baddeley, 2015; Costa et al. 2017), and this research seeks to explore the influences of a millennial's financial decision-making behaviour. This research aims to provide an understanding of the millennial's financial decision-making process, what influences them, what biases are reflected in their behaviours, and how will communication from financial professionals need to evolve to meet their needs.

Previous literature on financial decision making has focused on general populations rather than the smaller subset of the millennial generation. As there is little literature to support the current understanding of how to communicate best with millennials around financial solutions, this research could prove valuable to both the insurance and investment field providing evidence to understand what key factors need to be integrated into conversations with millennials. This insight will enable financial professionals to:

- Take a fresh look at millennial influencers, digital engagement, work/life balance and financial literacy incorporating that into financial recommendations
- Provide additional insight on aligning to a millennials value for financial advice
- Understand how the thread of trust is woven into decision-making confidence

The goal, how we as an industry can become more of a partner resource geared towards the millennial's unique disposition. This diagram depicts a visual representation of my conceptualization, starting by understanding the millennial influences and decision-making behaviours with communication that resonates for them (Liersch, 2014):

Visual representation of researcher's conceptualization

Objectives

The objectives of this research are to add to existing knowledge through:

- Understanding economic decision-making theories identified through a comprehensive literature review
- Understanding the characteristics shaping a millennial; what pre-existing biases, drivers, risk tolerance and influences affect a millennial's financial decision-making behaviour and confidence
- Develop a conceptual framework of decision-making behaviours to experiment with leaders in the financial industry
- Through a Delphi Study, capture leaders' perspectives on millennial financial decision-making behaviour
- Through the Delphi learnings, update the conceptual framework encompassing key filters that impact confidence in financial decision-making
- Conduct quantitative research to gain a better understanding of millennial financial decision-making behaviours and confidence by understanding the differences by generation.

This will lead to providing a series of recommendations from research insights providing a critical foundation for financial professionals in understanding this generation of investor.

Scope of the research

This study was designed to identify key influences, drivers, risk, and bias that impact financial decision-making from the perspective of millennial investors. The very nature of millennial financial decision-making is imprecise and ambiguous, and for that reason, I am looking for more certain information. Without first establishing the state of previous research, it would be impossible to demonstrate how this research advances knowledge.

There is already much written about decision-making, but that general topic is beyond the scope of this study. My research was confined to economic decision-making, and although I carried out a broad literature review, I narrowed it down to comply with the research question. In the economic area, one major decision-making theory stood out, based on the 18th century mathematician Daniel Bernoulli's theory of Expected Utility (Moscati, 2016). This theory postulated that if one was objective in decision-making, one would decide correctly on which action produced the maximum expected utility (Trabelsi, 2019). Following this thought into the investment field, Expected Utility Theory (EUT) states that people are objective about equivalent investment losses and gains, (Neumann & Morgenstern, 1944; Singh, 2020). EUT focuses on making financial decisions between alternatives with uncertain outcomes, with an aim to attain a trade-off between risk and return (Chen and Scott, 2020). This theory views the stock market to be efficient, with investors acting rationally (Zahera and Rohit 2018). However, Liebermann (2020) suggests that good decisions are based on rational behaviours which include *both* judgement and experience, which is missing in EUT. This research then turns to Kahneman and Tversky who expanded on the rational decision-making of EUT developing Prospect Theory (PT) introducing biases into the discussion on risk and decision-making, catapulting them as the first researchers to delve into deviations from "rational" investment behaviour to decisions based on real life risk (Kahneman and Tversky, 1979).

In addition to these foundational economic decision-making theories, I also considered the views of leaders in the insurance and investment field seeking any links between what traditional financial decision-making behaviour has been, to that of the millennial generation. To better understand the insurance and investment field's current beliefs, I recruited leaders, key to help providing me details on those current beliefs. To date,

missing from current research are the views of two significant groups; *both* a financial leader's understanding of millennial bias and influencers *coupled* with millennials own insights around financial decision-making, therefore involving both stakeholder groups will be relevant for the investment industry. This will help set the stage for future insights that can be drawn around the millennial investor. I have sought to bring these aspects together through insights from a qualitative financial leaders surveys and a quantitative millennial survey.

An initial conceptual framework, a construction of integral components showing the relationships between themes, emerged from the review of literature. Although, from the leaders survey analysis, it was clear the initial framework was not sufficient based on their answers, and needed updating.

This research builds on existing work providing the foundation for the evolution of financial professional communication to the millennial investor. The thesis is organized to bring the reader through existing literature on economic decision-making, chosen methodology with overall findings, and new practice management for the financial industry.

Thesis Structure

Chapter 2 - Literature Review. The chapter first explores a timeline of impactful decisions followed by an in depth look at the foundation and evolution of financial decision-making theory. The chapter expands into Behavioural Finance and economics, and how the emergence of new decision-making theory is more relevant and applicable to the world of financial decision-making. This leads to an examination of major financial cognitive and emotional biases. The discussion then turns to the millennial generation

and understanding this unique generation. The chapter ends with a summary of how the literature review provides important links to the research question.

Chapter 3 – Conceptual Framework. Built from the literature review, an initial conceptual framework of interlinked concepts provides a comprehensive understanding of relationships. Key themes are identified which will be explored.

Chapter 4 – Methodology & Research Approach. This chapter discusses the rationale for the research approach, explains the aims and objectives of the research, and dives into the research methodology and approach taken to data collection and analysis. Sensitive and confidential data are collected in the study and the chapter concludes with the confidentiality and ethical steps taken.

Chapter 5 – Project Activity: Delphi study. This chapter describes the activities that constructed the Delphi study.

Chapter 6 – Project Findings & Discussion of Delphi study. This chapter discusses the findings and thematic analysis from the Delphi study, in conjunction with the literature review that led that led to a modification of the conceptual framework.

Chapter 7 – Project Activity: Quantitative study. This chapter describes the activities that constructed the quantitative survey.

Chapter 8 – Project Findings of the Quantitative Survey. This chapter discusses the findings of the quantitative study, in conjunction with the literature review.

C**hapter 9 – Conclusions & Recommendations.** This chapter presents the conclusions and recommendations as a result of the literature review, data collection and the analysis of findings, while presenting an answer to the research question, proposing future research.

Chapter 10 – Project Reflection. This chapter is a reflection of my doctoral journey, and the learnings amassed along the way, both personally and professionally.

Appendix –The appendix provides an overview of the qualitative analysis process with code creation, categorization, and data mapping, which was important to the structure of my qualitative analysis. Also included are expanded tables and the complete quantitative questionnaire.

Chapter 2: Review of Literature

For centuries, human decisions have been guided by not simply intentions, but biases, dreams, poetic wisdom, prophets, and seers who help look into the future (Buchanan and O'Connell, 2006), which leads back to Camus' poetic question, "Is life the sum of your decisions?" (Griem, 1993; Buchanan and O'Connell, 2006; Roberts, 2008; Desautels, 2018). Good decisions and intentions do not always lead to good outcomes, however historical advances in technology and understanding human behaviour have helped improve decisions. Biases change, evolve, and fade over time (Lumen Learning, 2021). To illustrate this, my own personal historical reading highlights a description of events and actions, that illustrate mankind's choices and biases; but what do these decisions tell us about our values and ourselves especially at critical junctures (Buchanan and O'Connell, 2006)? Prior to exploring decision-making theory, this timeline helps illustrate some poignant decisions that have impacted our society.

Major Historical Decisions Through the Centuries

6th Century BC – Athens, Greece. Male citizens vote.

5th Century BC – Aristotle looks at intention through the lens of deductive reasoning.

399 BC – Athens – 500 citizens decide to send Socrates to his death.

49 BC – Cesar crossed the Rubicon, establishing a metaphor for decision-making.

33 AD – Pontius Pilate, on the decision by the Jewish people, condemns Jesus of Nazareth to death.

5th Century - Socrates first introduces inductive reasoning to stimulate critical thinking.

11th Century – In the Islamic Golden Age of Africa and the Middle East, Avicenna is regarded as one of the most significant physicians, father of modern medicine and hypotheses testing.

11th Century - Al-Ghazali's landmark work, "Incoherence of Philosophers" advances the critique of Aristotelian science.

14th Century – "Occam's Razor", proposed by William of Ockham, states the simplest explanation in a decision process is preferred and usually the best (Van Den Berg, 2018).

17th Century – Hamlet proposes the dilemma, "To Be or Not to Be".

17th Century – Sir Francis Bacon discusses inductive reasoning.

17th Century – Pascal and de Fermat discuss calculating probabilities for events of chance.

18th Century – Bernoulli examines risk by how a person assigns desire or fear for a possible outcome.

18th Century – Voltaire's 'Essay on Customs' warns against political bias on the historian's part.

20th Century – Freud suggests that one's hidden unconsciousness will influence a decision.

1938 – Barnard distinguished between personal and organizational decision-making in understanding why one would act in a firm's best interest as opposed to their own.

1944 – von Neumann and Morgenstern – develop a mathematical basis for economic decision-making inferring that the decision maker is consistent and will act in a rational way. This becomes known as Expected Utility Theory and becomes the main model used in economic thought around decision-making behaviours.

1955 – Simon argues that costs associated with obtaining information will force individuals to settle for "good enough" decisions, thus arguing that rational decisions are not always made by individuals (Fonseca 2012).

1960's – SWOT analysis (strengths, weaknesses, opportunities, and threats) is developed by Albert Humphrey at the Stanford Research Institute.

1962 - Milton Friedman, one of the most influential economists of the 20th century, was the first to reject Keynesian theory in favour of monetary policy in decision-making, stating that decisions should be based on financial consideration.

1968 – Decision Analysis by Howard Raiffa introduces decision trees (Raiffa, 2002).

1979 – "Prospect Theory: An Analysis of Decision under Risk" is published by Kahneman and Tversky addressing the effect of stress and uncertainties on how one arrives at a decision. The notion of cognitive biases is born (Kahneman and Tversky, 1979).

1983 – Edward Freeman introduces the revolutionary 'stakeholder theory', identifying that decisions cannot always be about the money.

1991 – Ajzen's Theory of Planned Behavior introduces mathematical equations on intentions with perceived control for resulting behaviour.

1994 – South Africa elects Nelson Mandela, having served 26 years in prison for his refusal to compromise his political decisions on Apartheid, as the country's first black head of state in a fully representative democratic election.

1998 – The domain Google.com is registered and technology aided decision-making changes how information is accessed.

2004 – Facebook is formed by Mark Zuckerberg and introduces social media, changing the course on how people connect and what influences a decision.

2005 – Gladwell's Blink addresses spontaneous decisions asking if the results are better than those with detailed data analysis protocols.

2007 – Apple's decision to introduce the first iPhone revolutionizes the phone industry.

2008 – United States' election decision; Barack Obama is its first black president.

2010 – Instagram is introduced forever changing the "influencers" on the millennial generation.

2016 – Britain votes to leave the European Union in the Brexit Referendum.

2020 – Worldwide Coronavirus Pandemic "shuts" down nations on the decision by leaders to close borders to travellers and close down non-essential businesses.

History then, by deduction, equals the collective choices of all mankind (Buchanan and O'Connell, 2006; Desautels, 2018).

2.1 Introduction

The purpose of this research is to explore the millennial generation's financial decision-making; what specifically biases and influences their financial decision-making behaviours, and how communication must evolve from financial professionals to meet their needs. In reviewing literature on decision-making theory, there are theories that are beyond the scope of this literature review as my focus is centred on economic decision-making theory. In reviewing academic literature on millennials, there is a plethora of literature written on their influences, however this is little academic literature relating to millennial cognitive and emotional bias around financial decisions.

Within this context, the focus of the literature review is to:

- Gain insights on the history of economic decision literature making over time,
- Gain insights from current financial decision-making literature with an opportunity to uncover gaps leading to more meaningful research,
- Gain insights on characteristics shaping a millennial,
- Understand what key pre-existing biases, drivers, influences, and risk tolerance affect millennial financial decision-making and confidence.

As the millennial generation becomes a bigger and bigger component of the investment world, there may be a need for financial professional communication to evolve faster, creating more effective results.

To ensure that relevant information was reviewed and integrated, I started looking at economic decision-making systematically over the centuries, identifying major patterns and incorporating critical reviews. I first reviewed the University of Wales on-line library business database, deeming that appropriate. I then expanded the search parameters to peer reviewed journal articles and books on economic decision-making published from 2000 to 2021. On-line searches netted hundreds of research articles from ProQuest, Science Direct, Sage Journals Online, and Harvard Business Review. Additionally, relevant Trade & Industry Journals, academic dissertations, and professional body websites provided timely data on the current state of the financial services industry and the COVID-19 pandemic.

The following are the principle key words and terms applied to the search:

- Behavioural economics/finance
- Biases
- Cognitive bias
- COVID-19 pandemic
- Decision-making characteristics
- Decision-making theory
- Economic decision-making
- Emotional bias
- Financial decision-making
- Financial education/literacy
- History of decision-making
- Influences
- Intentions
- Millennials
- Technology/Digital
- Trust
- Values
- Work/Life Balance

The search was eventually expanded to include earlier years in order to gather detail on earlier economic decision-making theories, for example, Ajzen and Kahneman & Tversky, and to develop the timeline of impactful decisions throughout history. During the course of this thesis, several dictionary definitions have been used. Although there could be multiple academic definitions of the terms that are discipline dependent, the definitions that are most used by the financial services field provides justification for my work.

2.1.1 Overview of Literature

In traditional theories around finance, investment decisions are based on the assumption that investors are rational human beings that make rational investment decisions; yet individuals are ruled as much by emotion and intention, as by cold logic (Chandra, 2008). Therefore, the literature review will focus on several main elements:

- Intentions, and the role it plays in decision-making
    - The Theory of Reasoned Actions
    - The Theory of Planned Behavior
- Widely used economic decision-making theories, and the evolution throughout the decades from rational thought to that which is biased
    - Expected Utility Theory (the relationship between risk and uncertainty)
    - Prospect Theory (introduces behavioural biases in decision-making)
- Behavioural Finance, builds off Prospect theory and sets up the connection to cognitive and emotional bias
- The COVID-19 impact

Figure 2.1 may be helpful in providing a roadmap of the aspects looked at, stemming from the progression of learning:

Figure 2.1: Roadmap of Economic Decision-making Theory
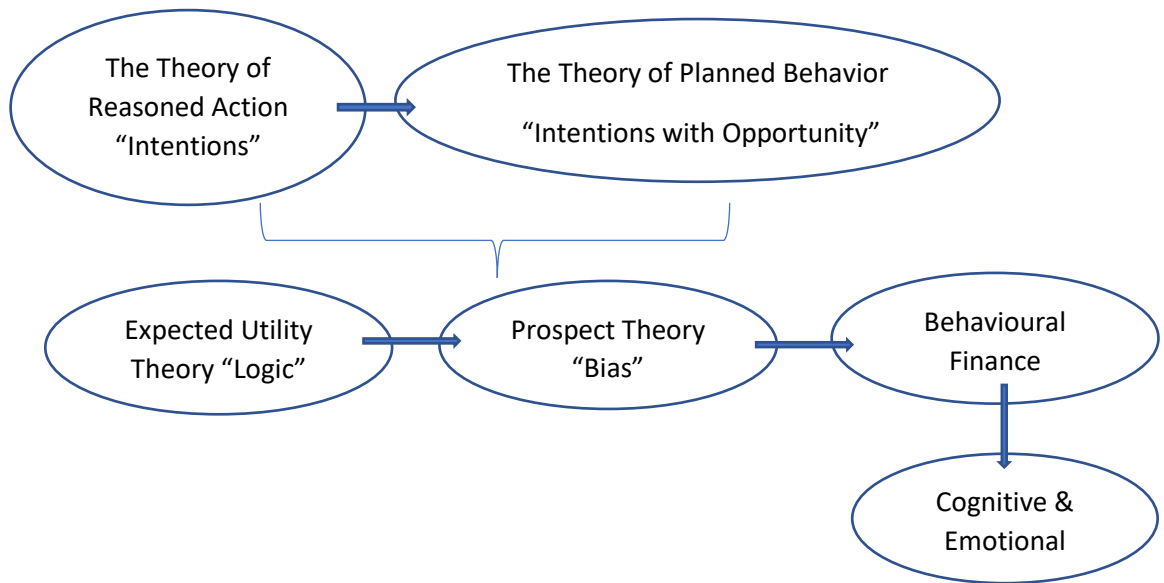
Once economic decision-making theories have been explained, with a critical review, I then turn my attention to a deeper dive of the millennial generation. Their traits, characteristics and influences lay the foundation for a better understanding of what drives their decision-making behaviour leading to better communication from financial professionals. This section will offer insights into why further research is important and builds the case for how the financial industry needs to adapt to their specific needs. Finally, the chapter ends with a brief discussion on the COVID-19 impact in which this research is taking place. To begin the literature review, understanding what role intention plays in decision-making, provides the starting point.

2.2 Intentions in Decision-making Theory

By identifying the determinates of intention, one can understand the integral role that "intention" plays in the millennial decision-making roadmap. Personality and social psychologists focus on the fully functioning individual, with the processing of information such as social intentions, playing an important role in the attempt to explain and predict

human behaviour (Azjen, 1991; Kan and Fabrigar, 2017). Actions are controlled by

intentions (Azjen, 1985); however, they are not always followed through to fit the

current environment.

The behavioural relationship with intentions is foundational and important in every

decision (Azjen, 1991; Kan and Fabrigar, 2017), with the importance of intentions noted

for centuries, stemming from the time of Aristotle (Aristotle & Bambrough, 1963;

Buchanan & O'Connell, 2006). Knowing one's intention is a means to predict what they

potentially may do next (Han and Pereira, 2013). The Merriam Dictionary (2021) defines

"intention" as what one intends to bring about, an aim or a plan. Vocabulary.com (2021)

expands on that definition and suggests an intention is not only an idea one plans to

carry out, but something one means to do regardless of whether it is completed or not.

Given the presence of intention in everyday day decision-making, one could expect that

there is a substantial amount of theory on intention (Han and Pereira, 2013). Indeed,

there are two closely associated theories around intention: Ajzen and Fishbein's (1980),

Theory of Reasoned Action, and Ajzen's (1991), Theory of Planned Behavior. Both

suggest that one's behaviour is predicated on their intention to perform that behaviour

(Rural Health Hub, 2021), and will be discussed next.

2.2.1 The Theory of Reasoned Action

In their pivotal work, Ajzen and Fishbein (1980), unveiled their Theory of Reasoned

Action (TRA), which focused on predicting and understanding human behaviour based on

the idea of rational choice. This looked to explain social behaviour with a finite set of

cognitive determinants (Rossman, 2020). In order to solve applied problems or make

decisions, it became necessary to speculate or predict people's behaviour. Attitudes

towards behaviours stemmed from an underlying belief concerning those behaviours,

which result from a combination of beliefs and evaluations about specific characteristics (Ajzen, 1985).

(TRA) argues that *intention* to engage in a specific behaviour is the greatest predictor of whether or not one actually engages or completes that behaviour (Ajzen and Fishbein, 1980; Ajzen, 1985; Knabe, 2012). Rossman (2020) agrees stating that behaviour is then predicated by behavioural intention. There are two components of intention; an individual's attitude regarding that behaviour and one's perceived pressure of subjective norms regarding the behaviours, which vary person to person (Knabe, 2012; LaCaille, 2013; Rossman, 2020; Rural Health Hub, 2021). Subjective norms result from social and environmental surroundings, and a person's perceived control over their behaviour (LaCaille, 2013; Rural Health Hub, 2021). With higher positive attitudes and subjective norms, comes greater perceived control and the likelihood of intentions changing one's behaviour (LaCaille, 2013; Rural Health Hub, 2021).

TRA attempted to predict intention to engage in a behaviour at a specific time and place, by explaining that one has the ability to use self-control. The key driver to this model is behavioural intention, which is influenced by one's attitude on the likelihood that their behaviour will have the expected outcome (LaMorte, 2019).

2.2.2 The Theory of Planned Behavior

TRA provides a foundation for the Theory of Planned Behavior (TPB), which traces the relationship from beliefs through attitudes and intentions, *to behaviour*. Intentions capture one's motivation and factors that influence behaviour; the stronger the intention, the more likely the behaviour (Ajzen, 1991: Kan and Fabrigar, 2017). The difference in the Theory of Planned Behavior centres around the addition of *perceived,* as well as *actual*, control over behaviour (Ajzen, 1985; Ajzen, 1991: LaMorte, 2019;

Rossman, 2020). Ajzen (1991) went on to explain that behavioural intention could not be the absolute determinant of behaviour when one's control over that behaviour could be construed as incomplete.

Ajzen's (1991) iconic 'Theory of Planned Behavior' provided ideas on behavioural dispositions; social attitudes and personality would have an effect on the attempt to explain or predict human behaviour as beliefs are linked to behaviour (Kan and Fabrigar, 2017). TPB provides a helpful framework for understanding the complexities of human social behaviour with the central factor being intention. However, a behavioural intention can only be engaged if the person, *at will*, can decide to act or not. Therefore, behaviour is the joint function of intentions *with* perceived behavioural control (Kan and Fabrigar, 2017). As a result, cognitive self-awareness plays a vital role in human behaviour (Ajzen, 1991). Behavioural attitudes, along with subjective norms and perceived control over that behaviour, are highly accurate ways to predict behavioural intentions (Ajzen, 1991; Kan and Fabrigar, 2017).

There are four components in both TRA and TPB with a fifth "perceived" addition to the TPB model (Knabe, 2012; LaCaille, 2013; LaMorte, 2019; Rossman, 2020; Rural Health Hub, 2021):

1. Attitudes - One's level of interest based on a favourable or unfavourable evaluation of behaviour. It considers the outcome of performing that behaviour.
2. Behavioural intention - Motivational factors influence the behaviour; the stronger the intention to perform the behaviour, the more likely the behaviour will be performed.
3. Subjective norms - The belief whether peers approve or disapprove of the behaviour.
4. Social norms - The customary codes of behaviour in a group setting. Social norms are considered normative, or standard, when in the group setting.
5. Added to TPB - Perceived behavioural control - The perceived presence of components that lead or impede the performance of a behaviour.

Both assume that behaviour is the result of a decision, but TPB considers volitional control where one has resources, *opportunity,* and necessary support to perform a

specific behaviour (Ajzen, 1991; Knabe, 2012). As a result of adding the perceived

control, TPB has advanced to one of the most dominant models in social psychology with

empirical evidence supporting the area of consumer consumption decisions as a way to

explain choice (Rossman, 2020). Figure 2.2 is a visual representation of TPB showing the

interconnection between perceived control and intention which results in the behaviour.

Figure 2.2: Ajzen's (1991) Theory of Planned Behavior
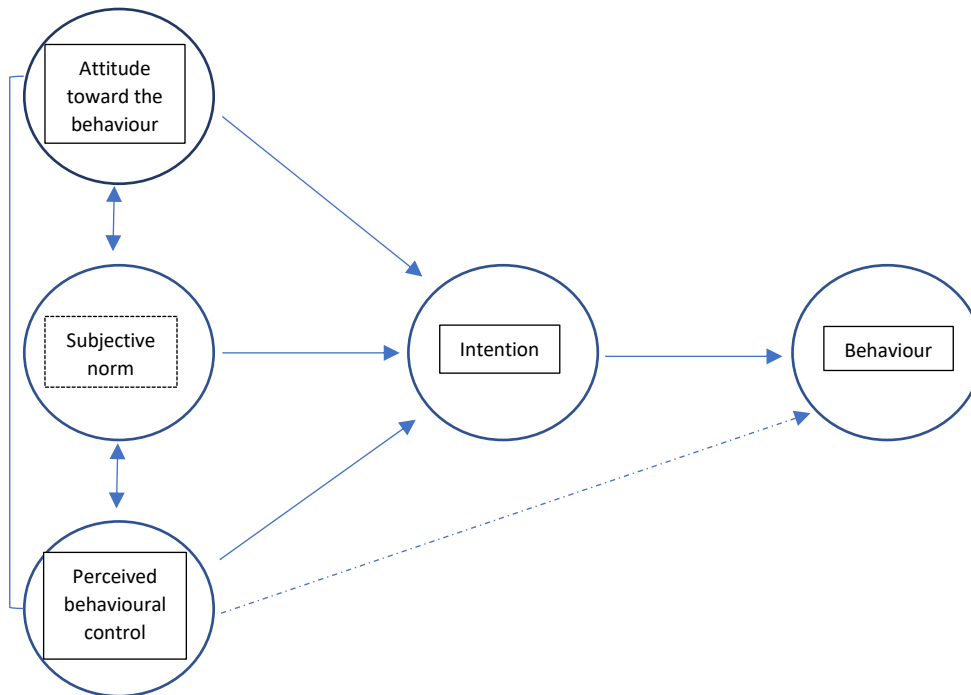
2.2.3 Critical Review

Markoč (2017) questioned if one should consider intention in the process of studying

whether to act or not. For example, if one intends to do harm with their action, but

otherwise acts against that intention, then one should drop that intention and only act.

Permission matters to intention and has the ability to affect it. For example, a famous

excerpt from Judith Jarvis Thompson's (1991, p. 293), discussion on ethics, deliberated

on the oddity of intention:

"Suppose a pilot comes to us with a request for advice. "See, we're at war with a villainous country called Bad, and superiors have ordered me to drop some bombs at Placetown in Bad. Now there's a children's hospital there too. Is it permissible for me to drop the bombs?" And suppose we make the following reply: "Well, it all depends on what your intentions would be in dropping the bombs. If you would be intending to destroy the munitions factory and thereby win the war, merely foreseeing, though not intending, the deaths of the children, then yes, you may drop the bombs. On the other hand, if you would be intending to destroy the children and thereby terrorize the Bads and thereby win the war, merely foreseeing, though not intending, the destruction of the munitions factory, then no, you may not drop the bombs." What a queer performance this would be! Can anyone really think that the pilot should decide whether he may drop the bombs by looking inward for the intention with which he would be dropping them if he dropped them?"

Thompson's remarks have been referred to as the Objection from Oddness (OFO) and is the most popular objection to the relevance of intentions in decision-making (Markoč, 2017). Why? There is a simple equation: If A=B, and B=C, then A=C:

1. If it is unordinary to advise others to consider something to decide, then it is odd to do it.

2. It is unordinary to advise others to consider their intentions to decide.

3. Therefore, it is odd to advise others to consider their intentions when deciding.

It is unordinary to consider morally irrelevant factors in decision-making with this fallacy; if one were to consider intentions when deciding, one would have to look inward and turn practical deliberation into a form of self-investigation, which in and of itself could appear odd (Markoč, 2017).

Additionally, there are several limitations of the TPB. It assumes one has the resources and opportunities to successfully perform the desired behaviour, regardless of the intention (LaMorte, 2019). It also does not account for other variables, such as fear, emotion, mood, or past experience, that factor into behavioural intention and motivation. Despite empirical data, the strongest critics refer to the rationality

assumption as opposed to spontaneous or behaviour based on habits; decisions have at least some emotional elements to them (Hall, 2017; LaMorte, 2019; Rossman, 2020).

TPB considers normative influences but does not consider environmental or economic factors which influence a person's intention to perform that behaviour (Hall, 2017; LaMorte, 2019; Rossman, 2020). And it assumes that behaviour results from a logical and linear decision-making process while not considering that it could change over time; behaviour and decision-making are not static, which TPB has been accused of (Hall, 2017; LaMorte, 2019; Rossman, 2020).

Finally, the model components are insufficient, along with a gap in understanding the intention-behaviour relationship. While the addition of perceived behavioural control was important to the theory, it does not address actual control over behaviour (LaMorte, 2019; Rossman, 2020).

This section explored the role of intentions in decision-making. Having researched this role, the next lens is at economic decision-making theory, starting with Expected Utility Theory (EUT), which involves the notion of common sense around absolute risk (Denuit and Eeckhoudt, 2010).

2.3 Expected Utility Theory

EUT's premise is simple; a rational decision-maker will naturally choose the outcome which gives maximum utility when risky and uncertain conditions exist (Levin, 2006; Pettinger, 2018; Singh, 2020). EUT has antecedents back to the 18th century and Swiss mathematician, Daniel Bernoulli (Hicks, 1931; Moscati, 2016) who showed that an individual's behaviour is characterized by their expected utility and not expected value (Trabelsi, 2019). It wasn't until the 19th century, that the theory was eventually adopted

by economists like Alfred Marshall as the mainstream model and key underlying postulate for risky decision-making in economics (Hicks, 1931; Moscati, 2016).

In EUT, a decision is a choice between all available known choices and all practical weighted portfolios, boiled down to a choice between different possible probabilities of returns (Johnstone and Lindley, 2013). EUT assumes that a decision maker will judge a prospective equal gain or loss to be good, weighting the gains and losses equally (Rossiter, 2018). Trabelsi (2019) simplifies EUT even further, with fundamental tenets:

- Consistency of preferences for alternatives,
- The function representing the preferences is linear and,
- Sebora and Cornwall (2012) added a third: judgment in reference to a fixed asset position.

Based on these fundamental assumptions, EUT predicts that the better alternative will always be chosen (Kahneman and Tversky, 1986). However, during the 1930's, EUT came under heavy criticism when economists argued that individuals would evaluate risky alternatives by using various criteria such as variance, mean, or other elements (Hicks, 1931). Yet, in 1944, von Neumann and Morgenstern's 'Theory of Games and Economic Behavior', presented different axioms surrounding an individual's personal and rational decision-making that contained EUT, raising awareness and providing validation of EUT (Leonard, 1995; Levin, 2006; Trabelsi, 2019). The von Neumann and Morgenstern theory of utility stated that when confronted with a set of action lines with random results, an individual would choose the one with the highest expected utility (Trabelsi, 2019).

There are three types of EUT preferences towards risk (Singh, 2020), with graphs to follow:

2.3.1 Risk Averter

The most common attitude towards risk is to minimize it (Johnstone and Lindley, 2013).

The marginal utility of money for this type of individual decreases as their income

increases. For example, from $10,000 to $20,000 of income, the utility increases by 20

units. However, from $20,000 to $30,000 in income, the utility only increases by 10

units. This demonstrates someone risk adverse meaning; they have positive, but

diminishing utility for income, thus the arc is increasing but concave. (Johnstone and

Lindley, 2013; Trabelsi, 2019). Figure 2.3 shows how a risk adverse individual feels

towards incremental risk:

Figure 2.3: Risk Averter (Source: Singh, 2020)
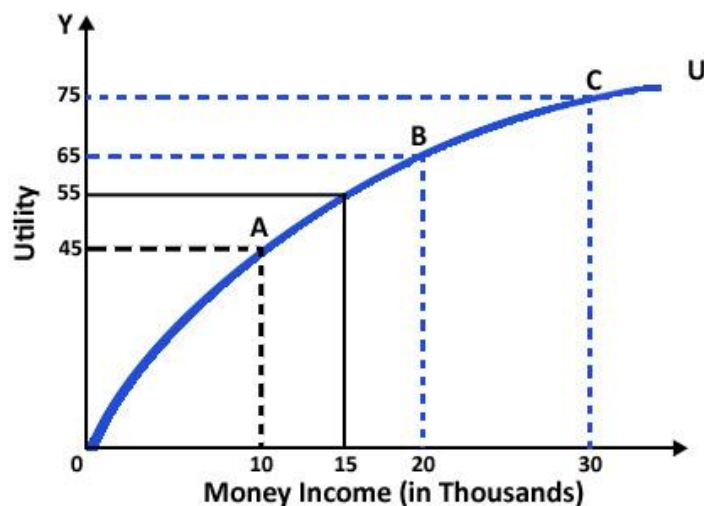
2.3.2 Risk Seeker

An individual that prefers risk is called a risk seeker. This example shows the expected

return from an existing $10,000 investment as 20, however, for a $30,000 deposit into a

new riskier investment, the utility is 83. This individual's expected utility from a new

risky investment can be calculated:

E(U) = 0.5 U(10,000) + 0.5 U(30,000)

E (U) = 0.5(30) + 0.5(83)

=10 + 41.5

=51.5

Had this individual stayed in the existing investment for $30,000, the expected utility

would have only been 43. A risk seeking individual is represented with a convex curve.

Figure 2.4 shows how a risk seeker feels towards incremental risk for income.

Figure 2.4: Risk Seeker (Source: Singh, 2020)
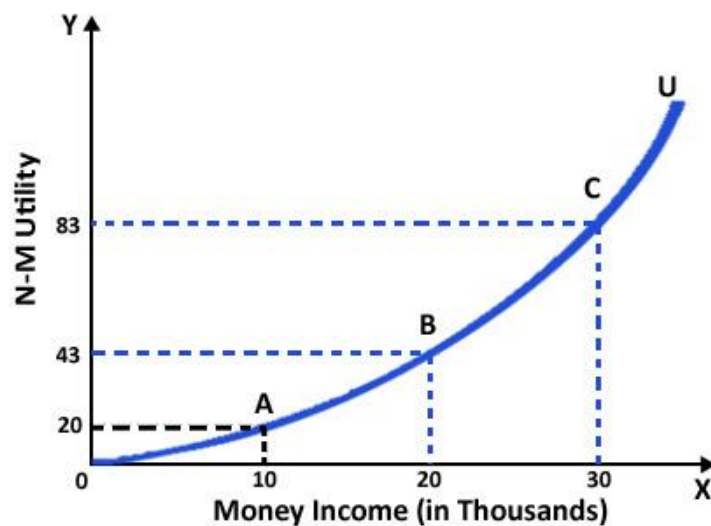
2.3.3 Risk Neutral

An individual that is indifferent toward risk is risk neutral. An individual remains neutral

if their marginal utility of income remains constant when there is an increase of income.

Thus, an individual who is indifferent towards current income vs. unexpected income,

has the same expected value. This individual's expected utility from potential new

income can be calculated:

E(U) = 0.5 U(10,000) = 0.5 U(30,000)

=0.5(40) = 0.5(120)

=20 + 60

=80

The utility function of a risk neutral individual is represented by a line that is linear and

demonstrates that the expected utility from uncertain income is constant with that from

expected income. Figure 2.5 shows how a risk neutral individual feels towards

incremental risk for income.

Figure 2.5: Risk Neutral (Source: Singh, 2020)
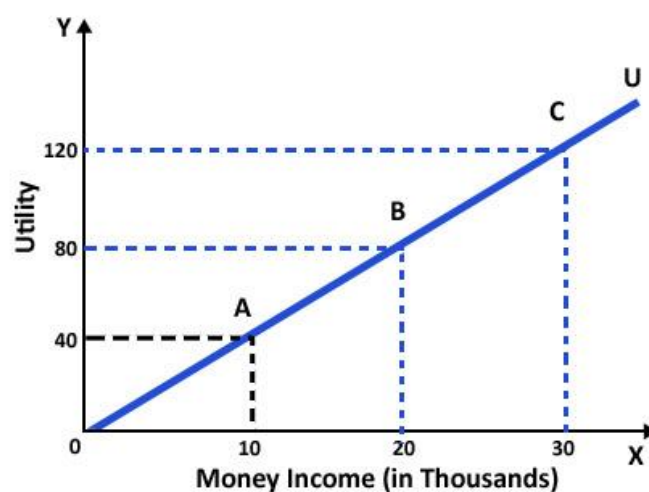
Evidenced by these graphs, EUT assumes an investor will make a decision between risky assets by comparing two distinct elements; their utility values weighted by the probability of occurrence, with utility dependent on their current wealth (Von Neumann and Morgenstern, 1944; Nawrocki and Viole, 2014; Singh, 2020). Thus, utility theory and decision-making meet when there is choice between competing numerical variables and utility (Fishburn, 1990; Cerreia-Vioglio et al. 2013).

In 1952, Paul Samuelson of MIT, an initial critic of EUT, through conversations with Milton Freidman, modified his thought process around EUT, expanding on it, and introduced the Independence Axiom (Samuelson, 1963; Fishburn, 1990; Ross, 1999; Moscati, 2016; Trabelsi, 2019). This independence axiom suggested that choices are coherently and consistently made by weighting outcomes (gains or losses) of actions by their probabilities, with payoffs assumed to be independent of probabilities (Sebora and Cornwall, 2012). Samuelson looked at two situations whereas, A and B were different. He then introduced a third variable, C, to both situations. If A=B, when adding C to both A and B, then, the probability of either combination was equal (Ross, 1999; Trabelsi, 2019). The Independence Axiom assumed that two independent lotteries, when blended with a third irrelevant one, would continue the same order of preference as when the two lotteries were presented independently of the third one (Leonard, 1995; Levin, 2006; Trabelsi, 2019).

Other supporters of the von Neumann and Morgenstern's hypothesis were Milton Freidman and American mathematician, Leonard Savage (Leonard, 1995). Freidman accepted EUT as it was empirically valid, with Savage advocating for EUT with its simplicity, normative plausibility, and empirical validity (Ellsberg, 1961; Moscati, 2016). This also led economist Alfred Marshall to reluctantly accept EUT as he too found the underlying axioms normatively appealing and viewed the Independence Axiom as a

requisite for preferences with rational behaviour (Backhouse, 2020). EUT provides the most detailed and richest body of applications so far and, with no clear alternative coming close to the adaptability and simplicity of EUT, it continues to be the primary model in areas where risky decisions exist (Princeton University, 2009; Trabelsi, 2019).

2.3.4 Critical Review

Although the importance of Expected Utility Theory in the evolution of decision-making cannot be discounted, EUT suffers from conceptual limitations (Milner and Rosenstreich, 2013). Expected Utility Theory does not represent prudent, rational behaviour and is not consistent with every conceivable type of behaviour, especially when real-world uncontrollables are introduced vs. scientifically controlled lab experiments (Kahneman and Tversky, 1979; Princeton University, 2009; Nawrocki and Viole, 2014; Trabelsi, 2019).

When looking at making decisions under risk, EUT surmised that someone would make an optimal decision based on the outcome with the highest perceived value (Princeton University, 2009; Pettinger, 2018). If all investors invested with uniformity, then traditional investment theory such Expected Utility Theory could hold true (Moscati, 2016). However, research suggests that investors do not always follow the EUT model as it is more complicated for smaller investment decisions; not considering the complexity of preferences (Leonard, 1995; Ross, 1999; Levin, 2006; Sebora and Cornwall, 2012; Nawrocki and Viole, 2014; Trabelsi, 2019). The seminal work by Simon (1955) notes that consumers act with bounded rationality and limited ability, and do not always search for all alternatives, preferring to simplify their choices cognitively whenever possible; as information may be difficult to understand or not readily available (Barros, 2010; Sebora and Cornwall, 2012; Milner and Rosenstreich, 2013).

The foundation of the utility maximizing paradigm is conveyed only as expected return and expected risk, however, psychologists have argued that one's perception and evaluation of risk may not be the same as it is affected by how risk is framed; EUT only sees risk calculated from the transformation of wealth (Kahneman and Tversky, 1979; Princeton University, 2009; Trabelsi, 2019). How far actual behaviour departs from rational theory is still unknown and more than likely to depend on the context in which the choice is being made (Princeton University, 2009; Decision Lab, 2021).

Of note, while components of learning and the decision process need to be combined with feedback when making that decision, an important shortfall of EUT is that it does not look to recognize feedback or emotion; and feedback is an important aspect for the millennial generation (Bernstein et al. 2012; Kuhl, 2014; Facty, 2019; Mehta, 2020; Greenbook, 2021; Keller Institute, 2021).

Expected Utility Theory is from a rational perspective, rather than a human perspective whose influences are only very broadly defined (Milner and Rosenstreich, 2013). As soon as an option is unknown or depends on the investors decision to take into account today's financial markets, EUT then becomes incapable of adequately representing the investors attitude toward risk (Trabelsi, 2019). This notion of risk, a basic element of economics when the outcome is uncertain, has been questioned catapulting the emergence of new decision-making models (Trabelsi, 2019).

Although Expected Utility Theory had dominated economic analysis through the 1990's, a robust discussion with accumulated evidence against the expected utility hypothesis now offered theorists a chance to review other alternative theories. For example, during the 1950's, a time dominated by rationalist thinkers like Piaget, Inhelder and Henle, there was a general consensus that people were logical reasoners (Evans, 2016). However, in

1960, economist Peter Wason strongly challenged this view with his work, proposing

that, in many ways, people were biased and irrational in their reasoning (Evans, 2016). In

my experience in the financial services industry, this laid the foundation for a complete

paradigm shift as we started to look at investors differently. Wason's work set in motion

the study of cognitive biases in thinking and reasoning (Evans, 2016), which is important

as financial markets can have irrational swings up and down.

More recent studies of human behaviour under uncertainty, reveal a significant breach of

EUT; EUT makes assumptions that individual perceptions are based on a deliberate

processing of information but fails to account for the role of cognitive biases in the

decision-making process (Princeton University, 2009; Ganegoda and Folger, 2015).

Research on financial decision-making has evolved from pure utility to where different

types of influences, motivations and biases are considered (Hauff and Nilsson, 2016).

Hence, Prospect Theory was developed by Kahneman and Tversky (1979) offering an

alternative to EUT's type of decision-making by explaining behaviours of an individual's

risk with bias, which led me to discussing it next.

2.4 Prospect Theory

Kahneman and Tversky's pivotal 'An Analysis of Decision Under Risk' (1979), challenged

the prescribed Expected Utility Theory on human decision-making surmising if every

person sought out an optimal solution, accessing current, accurate information, and

relying on rationality for their decision-making, only *then* would the traditional learning

in basic economics be a sufficient predictor of human decisions (Greenberg, 2012). Their

Prospect Theory (PT) showcased the flaws of EUT by suggesting it did not take into

account "behavioural biases" nor reality which plays a role in decision-making (Haselton

et al. 2005; Nawrocki and Viole, 2014). PT surmised that people will systematically

violate the predictions of EUT when making risky decisions, as decision-making is biased (Buchanan and O'Connell, 2006; Kaara, 2011; Greenberg, 2012; Barberis, 2013).

PT attracted attention as it offered an alternative to EUT's typical valuation function, looking at changes in wealth relative to a reference point (Princeton University, 2009; Pettinger, 2018; Rossiter, 2018). PT described people's behaviour when given choices involving probability purporting that, in the face of uncertainty, we tend to group risks together, developing a value process to understand them (Pettinger, 2018). This process is not linear partly due to our emotionality around loss aversion. An individual is more concerned about losing what is already earned rather than gaining something not yet earned; losses are steeper than gains carrying double the weight of gains (Kahneman and Tversky, 1979; Benartzi and Thaler, 1995; Pettinger, 2018; Rossiter, 2018; Zahera and Rohit, 2018; CFI, 2021). Figure 2.6 illustrates a "prospects" suggested trajectory:

Figure 2.6: Prospect Theory Graph (Source: Pettinger, 2018)
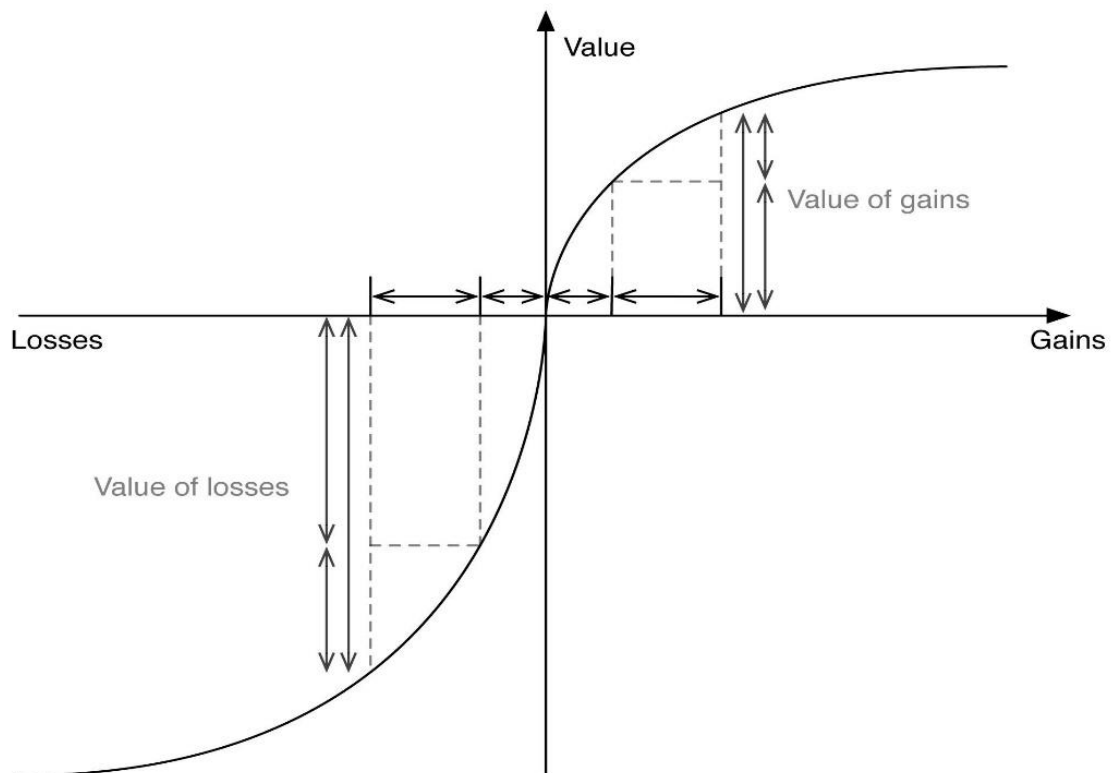
According to Prospect Theory, a decision is a two-phase process (Sebora and Cornwall, 2012; Pettinger, 2018; CFI, 2021):

> 1. Editing or framing phase – alternatives are edited with values attached to outcomes, and weights to probabilities. A person's choice is influenced by the wording, order, and method in which the options are presented, which may produce an ill-structured financial decision.

> 2. Evaluation phase - the edited alternatives are now evaluated. One will evaluate the expected utility based on the probability of certain outcomes, *then* choose the outcome with the maximum utility.

Additionally, PT suggests decision makers exhibit three consistent EUT violations in the two-phase process (Kahneman and Tversky, 1979; Sebora and Cornwall, 2012; Pettinger, 2018; CFI, 2021). First, they consider choices about their current wealth from a personal reference point tending to be risk averse toward choices seen as gains, and risk seeking toward choices seen as losses. Thus, PT explains why individuals exhibit both risk-seeking and risk averse behaviour. However, given a choice with equal probabilities, one will choose to preserve existing wealth rather than risk the chance to expand on wealth. Second, when assigning probabilities, one tends to attach too much weight to unlikely events while underweighting likely events, giving greater weight to probability over certainty (Kahneman and Tversky, 1979; Pettinger, 2018). Finally, the manner in which alternatives are presented or framed, can influence the choices made (Jullien, 2016). Kahneman and Tversky's work aimed at helping individuals improve their ability to identify and understand their own errors in judgement using choice, while ultimately providing a more robust language when discussing them (Greenberg, 2012). Kahneman went on to win a Nobel Prize in Economics for this integration of psychological research, into economic science, around human judgement in making decisions under stress (Greenberg, 2012).   He stressed a difficulty around communicating risk to an individual when it comes to decision-making, as it becomes very difficult to weight individual risk

properly. Each individual has a different process for valuing risk, losses, and gains, along

with a basic understanding of their own biases (Kahneman and Tversky, 1986).

2.4.1 Critical Review

A major limitation of PT is that it is always represented as a choice between two

alternatives. Paul Slovic, a colleague of Kahneman and Tversky, believed their account of

decision-making was simply far too narrow, in reality, there are usually more than two

alternatives, each alternative having multiple attributes (Rossiter, 2018). One "prospect"

is presented as certain, which cannot always be true as a prospect is a prediction, and by

definition, cannot be made with certainty (Rossiter, 2018; CFI, 2021). An additional

critique comes from the inadequacy of the framing theory as one can deceptively

"frame" a question as either negative or positive (Rossiter, 2018; CFI, 2021).

PT describes that people will decide between options that involve risk and return in

intervals of expected utility of returns, which is based on the potential value of losses or

gains, rather than ultimate outcomes (Greenberg, 2012; Wang, Huang, and Hsu, 2013).

For major decisions, one may need to employ a more logical and scientific approach,

perhaps Expected Utility Theory (Johnstone and Lindley, 2013) as PT does not take into

account the holistic approach where one chooses the preferred alternative without

considering analysis, which is another link to the importance of biases. This is typically

the simplest and most efficient method for decision-making, especially if a decision is

smaller (Harker, 1988). This approach will usually suffice as no numbers are needed to

arrive at expert decision-making; one simply chooses what they desire most. For the vast

majority of decisions, we will either approach the conundrum from a basic holistic point

of view, where we choose the best option, or we look to break down the decision into

smaller components which allows one to have a better understanding of the problem at hand, and communicate with another on the course of action (Harker, 1988).

PT has borrowed from psychology without acknowledgement and lacks psychological explanations for its process. This criticism comes from other psychologists who also note that human emotion is absent in the model (Rossiter, 2018; CFI, 2021). Prospect Theory describes how people make decisions when presented with risky alternatives, probability and uncertainty based on perceived losses or gains, however, the model of rational decision-making throughout most of economics continues to be Expected Utility Theory (Chandra, 2008; CFI, 2021). Although, this is less the case in finance and economics where investment decisions are commonly based on other factors such as cognitive and emotional biases (Johnstone and Lindley, 2013; Kunte, 2015).

2.5 Summary

This section explored several of the most important foundational economic decision-making theories, EUT and PT. Expected Utility Theory offered an explanation that one would act rationally on decisions with risk and uncertainly, and Prospect Theory offered an explanation of behaviours on risk are biased. While the majority of research around finance is grounded in rational economics, (von Neumann and Morgenstern, 1944), alternate explanations for irrational financial decision-making emerged in behavioural literature (Kahneman and Tversky, 1979; Thaler, 1980; Thaler, 1985; Baker et al. 2018).

Today, there is less empirical evidence to support the EUT model, with new research suggesting that the relationship of emotion and bias to decision-making is in fact, valid (Kahneman and Tversky, 1979; Thaler, 1980; Zahera and Rohit, 2018). The emergence of Behavioural Finance recognizes that the decision-making process is not always rational, with empirical studies revealing biases (Thaler, 1980; Zahera and Rohit, 2018). This

evolution of decision-making theory to include bias now lays the foundation for Behavioural Finance (Ross, 1999; Wang et. al, 2013). Based on this, this led me to explore the emerging area of Behavioural Finance/economics, which introduces cognitive and emotional biases into the financial decision-making landscape in the next section.

2.6 Introduction to Behavioural Finance; where traditional decision-making and finance meet

The cognitive model of traditional decision-making theory, built on Simon's (1955) Bounded Rationality, identified a three-step model:

- problem identification
- information gathering
- choice selection

By the late 1970's/early 1980's, researchers began to challenge the assumptions of traditional decision-making theory, leaning towards a belief that investors will deviate from optimal financial decision-making, in favour of their pre-existing biases (Thaler, 1980; Zahera and Rohit, 2018). Mowen (1988) identified an additional decision-making perspective that included experiential and *behavioural influence* (Harrison, Waite and White, 2006).

In 1980, Richard Thaler contributed a descriptive theory, where investors did not act in a cold, rational manner, rather, were influenced by behavioural biases (Thaler, 1980; Zahera and Rohit, 2018). Thaler's (1980) pivotal 'The End of Behavioral Finance' explains times when modern finance theories provide no answer, commencing the assumptions of the budding discipline, Behavioural Finance (BF). Behavioural Finance (or Economics) emerged looking at decision-making from a different perspective. BF incorporated insights from psychology and finance to study behaviours in varying market environments, while making contributions to finance by using rationality (Chandra, 2008;

Karaa, 2011; Guzman and Paswan, 2018; Zahera and Rohit, 2018). Distinct from both traditional Expected Utility Theory and Prospect Theory, Behavioural Finance, ushers in the start of combining psychological theory with that of financial theories, to discover a new way of evaluating investor behaviour. This visual intersection is depicted in Figure 2.7:

Figure 2.7: Traditional Finance and Economics Meet Psychology (Source: Gilbert, 2020)
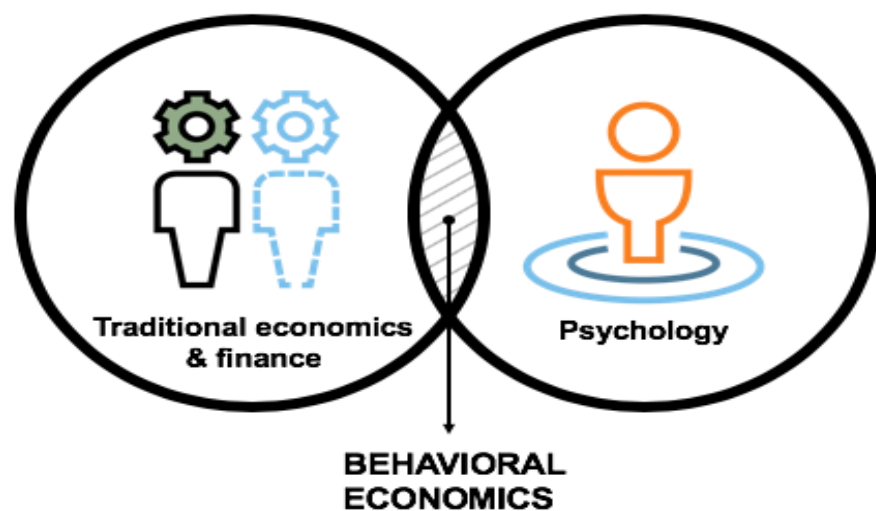
Kahneman and Tversky (1979) and Thaler (1980), pioneers of Behavioural Finance (Nawrocki and Viole, 2014), focused of how mental errors and emotions cause stocks to be over or undervalued, creating investment strategies that give a winning edge to one investor over another (Karaa, 2011). Thaler (2019), supported by the earlier work of Gärling et al. (2009), eventually went on to infer that human *behaviour* drives stock prices higher or lower (Chandra, 2008; Guzman and Paswan, 2018; Zahera and Rohit, 2018), with volatility in financial markets pointing out those differences between traditional and behavioural decision-making (Baker, 2018). With principles and theories backed by empirical evidence, Behavioural Finance uses actual investors providing theoretical support, while contributing to the ambiguous answer of why only a small subset of investors can accurately track stock movements.

Thaler, argued against the two foundational principles of finance; Expected Utility Theory *and* the unbiased sense of the future, with the belief that cognitive biases influence outcomes (Zahera and Rohit, 2018). An individual's point of view is an influencing factor in their decision-making process and collaborates with both their previous beliefs and their subjective evaluation of new information (Arnold et al. 2000).

Thaler (1980) looked at risk taking over time, seeking a connection of the previous established utility theory to cognitive and emotional biases. There is a difference between what we should do, and what we actually do, with biases making an investor more vulnerable nearing retirement; Behavioural Finance/economics recognizes that difference (Gilbert, 2020). Thaler (2019) stated that investors do not always act rationally and make mistakes when making investment decisions with Sadi et al. (2011) emphasizing important factors such as perceptual errors and biases that affect decisions when buying and selling stock.

And so, this research now turns its attention to understanding these biases, both cognitive and emotional, rooted within investment decisions. Table 2.1 starts off the section with a chart of five major cognitive and emotional financial biases, with a brief definition of the bias with ways to overcome it, followed by a deeper discussion on each.

Table 2.1: Overview of Major Cognitive and Emotional Biases

Overview of Cognitive Bias	Brief Snapshot of the Bias	Strategies to Overcome Bias
Ambiguity Aversion	Ambiguity Aversion is a proclivity to steer clear of uncertain information during the decision-making process (Trautmann, 2011; Kienzler, 2018).	-Adjust the environment to allow for a justification of ambiguous information. (Decision Lab, 2020).
Herding	Herding is a bias that suppresses one's personal views in support of the consensus judgement, "others are doing it, and so should I" (Zahera and Rohit, 2018).	-Slow down the decision-making process allowing for time to pass (Kunte, 2015; Decision Lab, 2020) -Create an environment where people are free to share differing opinions; mindfulness can reduce the herding bias (Kienzler, 2018).
Anchoring	Anchoring is a bias giving disproportionate weight to the first set of data the mind encounters; this cannot be avoided (Hammond and Keeney, 1998; Costa, 2017).	-Find differing perspectives or starting points when looking at a problem, rather than the initial first thoughts; keep an open mind (Girard, 2016; Decision Lab, 2020).
Confirmation	Confirmation bias happens when one reaches out to corroborate one's initial thinking while avoiding any contradictory information (Park et al. 2010)	-Start with a neutral fact base and seek the advice of those who will not say "yes" to help from a more objective body of information (Decision Lab, 2021).
Recency	Recency bias is based on recallability; will decisions on future events be predicated by events that happened in the recent past, distorting one's thinking (Baddeley and Hitch, 2015).	-Use deliberate, careful, and reflective decision-making; use statistics whenever possible (Mason, 2020). - Enlist the assistance of another to challenge the prevailing opinion.
Overview of Emotional Bias		
Loss Aversion	Loss Aversion incorporates a sense of overcautiousness and prudence when it comes to important decision-making. The frame a problem is presented in, is most often adopted rather than revaluated (Benartzi and Thaler, 1995).	-Frame with different reference points (Kahneman and Tversky, 1986). When a problem is framed with incremental losses, a conservative response is triggered, when a reference point is added, it adds perspective (Liu and Colman, 2009; Decision Lab, 2021).

Section 2.7 Cognitive Biases

Cognitive biases involve decision-making that is based on pre-existing ideas that may or may not be factual (Parker, 2019), and are systematic errors in thinking that occur when people are simplifying a process and then interpreting information (Cherry, 2020). Biases can be conscious or unconscious and are irrational assumptions or beliefs that warp the ability to make a decision based on facts and evidence (Kunte, 2015; Banerji, 2020).

Decision biases affect the way decision makers acquire, process, and evaluate information (Hogarth and Einhorn, 1992). By improving our ability to make good decisions, we move towards a more logical, rational process, rather than a process driven by biases (Bettinghaus, Goldberg and Lindquist, 2014). Fonda (2019) describes the five steps needed for logical, rational decision-making:

1. Clearly define objectives
2. Look for alternatives
3. Research data
4. Make a conclusion
5. Provide documentation for the rationale

Yet, psychologists have identified more than 100 types of biases, also referred to as "rigged decisions" and any or all of them can cloud the rational decision-making of an investor (Redman, 2017; Kenton, 2020). Redman (2017) describes four features that are common with every biased decision:

- Making decisions based on past experience and associating with other like-minded individuals
- Finding data to justify and support a decision while dismissing data that does not
- Announcing one's decision to someone who would support that decision
- Asking for critical feedback to have a more balanced approach to the decision

Following this line of thought, there are limits to the universally accepted assumption of logic when emotional behaviours or biases are introduced (Fonseca, 2012). Cherry (2020) discusses that the human brain is powerful but subject to limitations, suggesting

that cognitive bias is rooted in thought-processing-errors stemming from problems such as mental shortcuts, known as heuristics. Throughout the review of research on cognitive biases, heuristics appear as a large component (Kahneman and Tversky, 1979). Further discussion on cognitive bias would be incomplete then, without a brief discussion around heuristics and their impact in the decision-making process.

2.7.1 Using Heuristics as Quick Rules of Thumb

Heuristics are mental shortcuts that allow an individual to make a decision or solve a problem quickly with a minimum amount of mental effort, and limited subset of available information (American Psychological Association, 2017). Heuristics influence and affect our decision-making behaviour (Kunte, 2015). According to Merriam-Webster (2021), the simple Greek origin of the term heuristic means to discover by experimental methods.

Heuristics help provide a practical approach to solve problems, but affect choices, which can lead to mistakes (Banerjee, 1992; Gigerenzer, 2015; Kunte, 2015). Because they rely on less information, heuristics pave the way for faster decision-making (Astorino, 2015; American Psychological Association, 2017). Heuristics may play an even larger role in investor decisions, more so than inherent greed or fear; however one's investment portfolio requires more than a shortcut approach to building wealth (Astorino, 2015).

A simple task-specific decision is known as fast and frugal heuristics (Psychology Research and Reference, 2020). Fast and frugal heuristics limit the information search and are used for decisions with only two alternatives, making them easy to use and logically consistent (Luan and Reb, 2017; Psychology Research and Reference, 2020).

Although heuristics may not be optimal, they can be helpful in solving the problem at hand (Gigerenzer, 2015). Herbert Simon's analysis of rational decision-making is

insightful as it shows how heuristics are linked to socio-psychological influences affecting the beliefs of experts in various fields (Simon, 1979). Simon differentiates substantive rationality or decisions based on an objective basis, from procedural rationality; where decision-making is more intuitive and based on prior biases (Cristofaro, 2017).

2.7.2 Ambiguity Aversion Bias

Ambiguity aversion is the tendency for an individual to prefer known probabilities over unclear and unknown possibilities, regardless of their degree of risk aversion (Trautmann et al. 2011; Osmont et al. 2015; Frey, Herbst and Walker, 2017; Kellner and Riener, 2014; Kienzler, 2018). People avoid making decisions when information is ambiguous or have probabilities that cannot be gauged from empirical evidence (Liu and Colman, 2009).

Prospect Theory suggests that people's choices will be affected by their attitude towards ambiguity, relying on simple heuristics to avoid an ambiguous situation (Kahneman and Tversky, 1979). This was evidenced in the Ellsberg Paradox, represented in Figure 2.8, where two containers were filled with red and black balls; one was then asked to choose a colour and container to pull the ball hoping to win a prize, with both gambles having the same prize (Ellsberg, 1961; Princeton University, 2009; Osmont et al. 2015; Jia, 2020).

Figure 2.8: Visual representation of The Ellsberg Paradox

Container A: 50/50 mix of black and red balls

Container B: unknown random mix of black and red balls
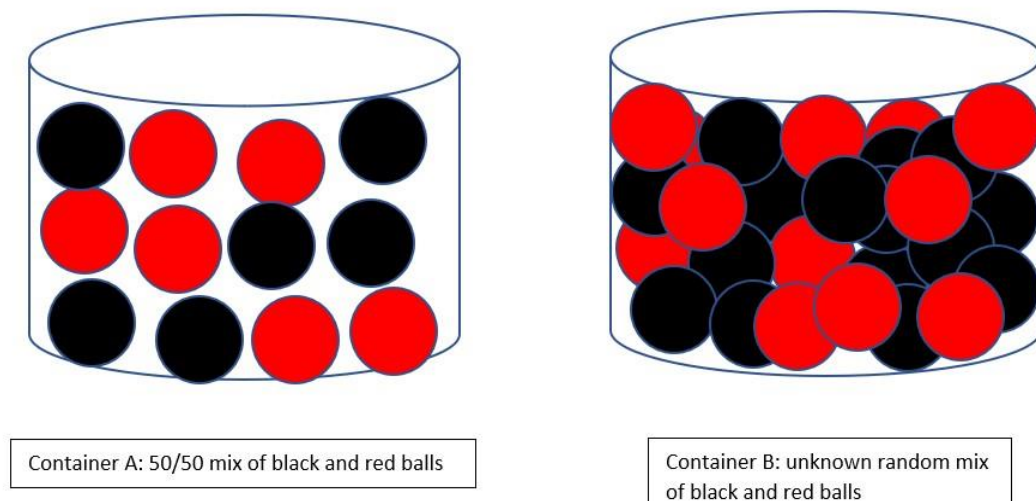
Decision makers chose container **A** 60-70% of the time, over the unknown and unclear

odds in container **B** as choices would always have the same ratio in container A.

The Ellsberg Paradox experimented convincingly around preferences of known

probabilities vs. those that are unknown and unclear (Princeton University, 2009; Osmont

et al. 2015; Trabelsi, 2019; Jia, 2020), implying that an ambiguity aversion will prevail.

2.7.3 Herding Bias

Herding behaviour happens when an individual intentionally disregards private

information in favour of observed behaviour of the majority (Bellando, 2010; Kunte,

2015; Kienzler, 2018; Zahera and Rohit, 2018) and is the most generally recognized

observation when it comes to markets (Fromlet, 2011). Take for example a group of

shoppers in a linen store looking at two sets of bedding on the same shelf.

Bedding #1: Is made of inexpensive cotton

Bedding #2: Is made of fine luxurious silk

Several shoppers pick up the cotton Bedding #1 as it is on discount. The last shopper has

read an excellent review on the luxurious silk Bedding #2, however seeing the behaviour

of the first shoppers, mistakenly bypasses it acting on the consensus of the group

(Baddeley, 2015). If subsequent shoppers see the behaviour of the first shoppers, and

choose the cotton bedding, then the superior quality of the silk bedding is lost (Kunte,

2015).

People making economic forecasts on "similar phenomenon" are occasionally fearful of

deviating from consensus opinion, providing like-minded forecasts, exhibiting herding

behaviour (Pons-Novell, 2003; Scharfstein and Stein, 1990; Benerjee, 1992; Zwibel, 1995;

Lowes, 2014). There could also be a proclivity of an investor to follow the decisions of

other investors, relying more heavily on collective information rather than on private

information (Zahera and Rohit, 2018). Herding behaviour could potentially lead to useful, private, novel information being discarded, and lost to future researchers (Bellando, 2010). Additionally, herding may have an impact on one's reputation. If one's status in society is important, conformity can help maintain that status, while a departure from that social norm could cause serious damage (Nigam et al. 2016). A herding bias may also be affected by one's social influence, and can be loosely categorized into two areas (Kendra, 2018):

- Informational influence – the opinions of others provide utility and is relied on. This can lead to rational herding and traced back to the Bayesian reasoning process; inductive reasoning leads to deductive reasoning (nLab, 2019).
- Normative influence – agreeing with others because of an emotional response.

2.7.4 Anchoring Bias

In uncertain situations, people tend to make judgements based on first impressions, relying on anchors, or address a new problem by incorporating decisions used on similar past problems (Kahneman & Tversky, 1979; Kaara, 2011). Simply stated, anchoring happens when we get an idea into our heads, and do not move off it (Kahneman and Tversky, 1979; Costa, 2017; Shin and Park, 2018; Zahera and Rohit, 2018; Pimco Decision Research Laboratories, 2020).

Anchoring is partly unconscious (Champonnois, 2018), with some anchors developing from one's personal expectations passed down from generation to generation (Astorino, 2015). Jakob Hohwy's (2013) "The Predictive Mind" explores the possibility that the brain is sophisticated, building models, and will continue to test hypotheses in order to minimize future, subsequent errors. If we apply this type of modelling to our ability to problem solve, we may never incorporate a rational process into the decision-making process. However, one way of triggering a creative answer to a problem, is to look at it

differently. Take for example, you are asked to get out of a locked car. There are options

available, unlock and open any door, roll down the electronic windows, or hit the

electronic sunroof button and crawl out. But what if the scenario changed, and your car

was immersed in a lake for the past 5 minutes? To survive, you need to think differently

(Girard, 2016) as typical conventional solutions would fail; the electronic locks for the

doors, windows and sunroof would not function submersed under water. On your

passenger seat, you see the side view mirror, that had been broken off for the past six

months. It now becomes a hammer you use to break the window and climb to safety.

You survive because you transformed the problem, thinking creatively.

2.7.5 Confirmation Bias

A confirmation bias happens when one's search for, and then utilizes supporting data

around a pre-existing belief or value while overlooking evidence that potentially

contradicts it (Kunte, 2015; Heshmat, 2015; Glick, 2017; Zahera and Rohit 2018; Research

Laboratories, 2020). People often hold strong beliefs and will search for evidence that

corroborates their existing position while ignoring evidence which is unsupportive of

their view; evidence that challenges our belief system is often hard to trust, resulting in

irrational decisions (Kunte, 2015; Zahera and Rohit 2018).

The term "confirmation bias" was first introduced in 1960 by an English Psychologist,

Peter Wason as he researched one's resistance to changing their first impressions. He

conducted his famous 2-4-6 experiment which asked participants to find a specific rule

for a three-number sequence (Evans, 2016; Klein, 2019). The participants were given

guidance until they came up with their own hypothesis. However, only a handful of the

participants were successful in discovering the correct rule as they only tested confirming

evidence to their initial hypothesis, while dismissing any numbers that went against that

initial impression. Wason coined the term "confirmation bias" as this group focused on one possibility while ignoring the non-confirming alternatives (Evans, 2016; Klein, 2019).

Inevitably, confirmation bias is difficult to manage as our learned behaviours shape our current behaviours (Schwind and Buder, 2012). For example, when training a puppy, you provide a treat when you ask her to sit down. When she succeeds in sitting, you reward her with the treat. With continued practice, her learned behaviour will have her sit without being asked, simply when she sees the treat in your hand.

Prior knowledge and confirmation bias can be a very high factor in helping one decide. Take for example a personalized information filtering tool, often known as a recommender system. This will capture detailed information, or cues about the user, such as web pages visited, helping provide future orientation. Consumers have now experienced super personalization with technology that reads a consumer and gives them what they want, often without even asking (Deloitte, 2021). For example, one can go to Amazon and search coffee, and a few days later receive an e-mail from Starbucks with a coupon to visit their store. This type of tool helps gather details about one's taste in order to make future recommendations on similar products that are consistent with one's personal preferences. However, an inconsistent recommendation may overcome the presence of a confirmation bias as it influences information selection (Schwind, 2012).

2.7.6 Recency Bias

"Those who cannot remember the past are destined to repeat it" (George Santayana, 1905).

A recency bias happens when people rely on the most recent information, even when this information is not as salient or relevant than information more difficult to remember

(Kappelman, 2001; Gandre, 2020; Pimco Decision Research Laboratories, 2020). An

example of a recency bias is one's subjective view on risk with regards to different types

of accidents. Evidence reveals that people will overestimate the probability of a plane

crash when they have recently seen something in the media. Objectively speaking, car

accidents are more likely, however are less likely to have substantial media coverage.

For investments, a simple phrase is located in every mutual fund prospectus, "Past

performance is no guarantee of future results" (Nigam, 2016; Dooyema, 2018).

However, investor tendency is to focus on past performance, believing that what

happened recently, will simply continue to happen (Russell Investments, 2020; Pimco

Decision Research Laboratories, 2020). The human brain is wired to pull out of

underperforming investments in favour of top performing investments (Iyer-Ahrestani,

2015), which is prevalent behaviour at the beginning of a new year, based on where

markets ended the previous year. Financial professionals know that this type of bias can

guide decisions that are counterproductive and not the wisest course of action.

Recency bias can lead to poor decisions or worse yet, an overreaction due to the

constant barrage of immediate information (Arnold et al. 2000; Goodman, 2015). And

thanks to technology and hourly headlines, even small things can be blown out of

proportion. Complexity also plays a role in recency bias. The more complex a decision is

or the more unfamiliar one is with the information, the more reliant one is on recent

information (Hogarth and Einhorn, 1992; Schwarber, 2005; Almilia 2018). Therefore,

increased familiarity and reduced complexity can help mitigate recency bias (Hogarth and

Einhorn, 1992).

Recent behavioural investment mistakes show up as buy high, sell low (Gilbert, 2020).

Investors do not always do what they are "supposed" to do based on something they

recently saw or heard (Pimco Decision Research Laboratories, 2020). Figure 2.9 shows a

comparison between an investor who chose to invest $100 systematically into the Russell

3000 from January 2000 to December 2019, vs. one who choose to stay in cash due to

recent market volatility; those staying in cash missed out on a cumulative 250% return.

Figure 2.9: Investor Recency Graph (Source: Gilbert, 2020)

Investors don't always do what they should.
Recent proof of a "buy high and sell low" mentality
U.S. open ended mutual fund and passive ETF flows vs market flows
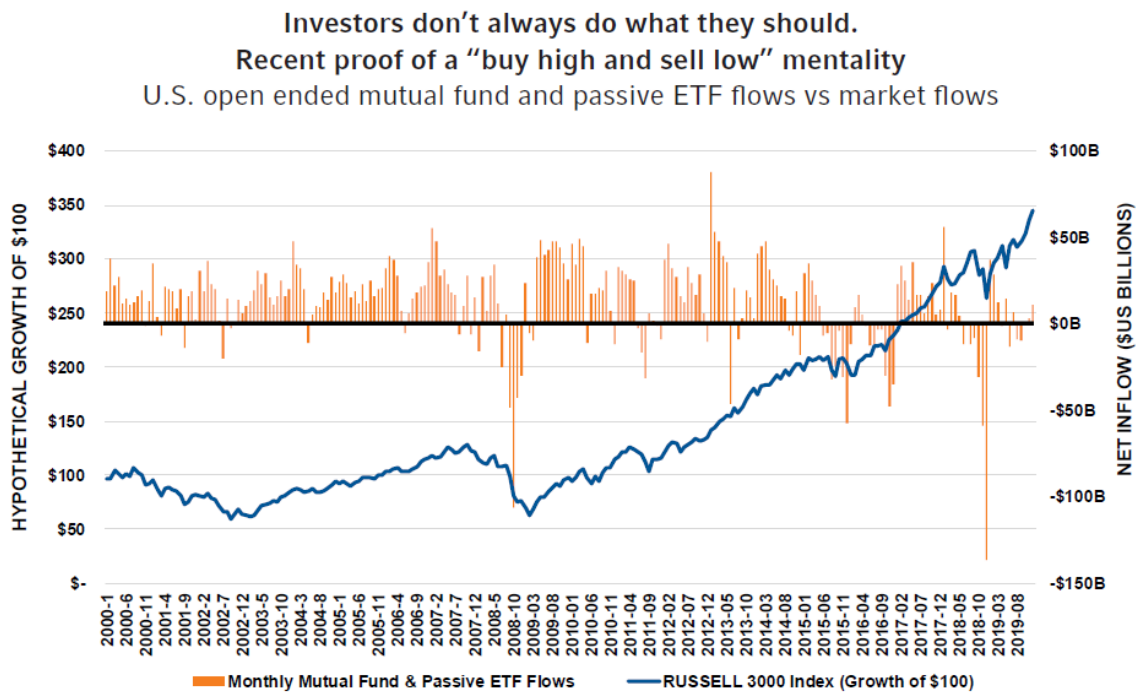
There is also one major emotional bias associated within finance, and this next section

helps provide some key insights into that area.

2.8 Emotional Bias

Emotional biases are driven by fear and impulses, unlike cognitive biases driven by

mental shortcuts or heuristics (Pimco Decision Research Laboratories, 2020) and typically

happen spontaneously, or in the blink of an eye (Gladwell, 2005), based on one's feelings

at the instant of the decision. They are pervasive, firmly rooted in one's personal

experiences, and can be entrenched in one's psyche, which can generally be harder to

overcome than a cognitive bias (Gärling et al. 2009; Ert, and Erev, 2013; Parker, 2019).

Milkman et al. (2009) found that there were two types of decisions: one that is based on reasoning; slow, logical, and effortful, with the second based on emotion or intuition; fast, automatic, and effortless. Emotional decision-making is typically faster and less logical than rational decision-making (Elliot, 1998; Duke, 2018), and where there is no logic, emotions will play a much bigger role (Koshkaki and Solhi 2016). Investing comes with inherent risk (Kejriwal, 2020), and while we enjoy making money, the thought of losing it can be devastating on our emotions (Benartzi and Thaler, 1995).

Schwarber (2005) suggests that logical decisions will typically be more successful when there is an established process, rather than simply letting the decision happen emotionally and quickly. However, Malcolm Gladwell suggested snap decisions made in haste, could have the same results as those made with deliberate, logical, caution; value can come from a decision made in the "blink" of an eye as from one made with careful rational analysis (Cronje, 2005; McCallum, 2010). Shiv and Fedorikhin (1999) suggested that, when time is limited, one relies more heavily on emotions and heuristics to make a "blink" decision. Gladwell's idea of snap decisions falls short around several key questions though. Is it possible for one in a situation with complex intricacies and unknown variables, to know instantly and reliably what is the correct decision; what do we do with important variables that are not measurable (McCallum, 2010)?

However, under the right conditions, is there an intrinsic value to our "gut or blink" decisions? Annie Duke, former professional poker player and World Series of Poker gold bracelet winner looks at decision-making not simply from the results of that decision, but also at the process (Duke, 2018). Duke (2018) states that a great decision does not stem from a great outcome; a great decision is the result of a good process. Needed to be included in that process, is an attempt to correctly depict our own state of knowledge (Nussbaum, 2020).

2.8.1 (Myopic) Loss Aversion Bias

Loss aversion is an emotional bias stemming from factors such as impulse or intuition which distort cognitive decision-making; it's the tendency to feel the pain of a loss twice as much as the joy of gains (Kahneman and Tversky, 1979; Benartzi and Thaler, 1995; Pimco Decision Research Laboratories, 2020). Loss aversion was a significant component of Benartzi and Thaler's (1995) discussion around risky investments looking less appealing to an investor (Benartzi and Thaler, 1995; Ert and Erev, 2013). In 1961, Paul Samuelson, an American economist, and the 1970 Nobel prize winner in economics, posed a gamble to a colleague; Samuelson offered a 50% opportunity to win $200, and a 50% chance of losing $100 (Samuelson, 1963). The colleague declined as he stated he would feel the loss of $100 more than the gain of $200, showing a greater sensitivity to losses over gains.

Research also found that investors with a loss aversion bias are more willing to accept risks when investments are evaluated less frequently (Langer and Weber, 2006; Hardin and Looney, 2012; Wang et al. 2013; Rutzler et al. 2013; Beshears et al. 2016; Lee and Veld-Merkoulova, 2016). Interestingly, individuals will evaluate data as often as it is presented; the more times data is presented, the less likely an investor will act with a loss aversion bias (Mayhew and Vitalis, 2014; Lee and Veld-Merkoulova, 2016). Adding the term "myopic" to loss aversion denotes an investor whose investments are longer term with short term gains or losses secondary. Myopic Loss Aversion (MLA) marries two distinct behavioural aspects, loss aversion with its greater sensitivity to losses rather than gains introduced by Kahneman and Tversky in 1979, and myopia designating a time frame to evaluate outcomes, introduced by Kahneman and Lovallo in 1993 (Zeisberger, 2012; Benartzi and Thaler, 1995; Thaler, 1997).

Several of the most well-known experiments on myopic loss aversion were designed to analyse an individual's willingness to invest in a risky gamble by manipulating their focus (Gneezy and Potter, 1997; Thaler et al. 1997; Haig and List, 2005). Gneezy and Potters' (1997) work suggested that individuals would put more dollars into a risky lottery ticket when looking at the odds of success over time, supported by Kahneman and Tversky's Prospect Theory (1979), which predicted that a loss aversion bias was based on an individual's derived utility from changes in wealth over time. An individual who did not bet on a risky investment received no utility from that investment, however, one who did bet on a risky investment did obtain utility if their loss aversion was relatively low (Blavatskyy and Pogrebna, 2009; Beshears et al. 2016; Julien, 2016). In Thaler's experiment, those investors who received more frequent data and information, took fewer risks earning less money. And when gains were increased high enough to eliminate a loss, investors were more willing to accept the higher risk.

These results were parallel to the definition of MLA, as participants in both studies were prone to invest more in the riskier lottery when their focus was manipulated to be less myopic (Haigh and List, 2005; Kaufman and Weber, 2013; Beshears et al. 2016).

2.8.2 Critical Review

Behavioural Finance may shed some light on investor predispositions and biases, but needs a clearer understanding of traditional economic theory, such as Expected Utility Theory. Traditional economic theory holds that an investor acts rationally making the best decisions under stress while remaining consistent with their choices (Persky, 1995). Thaler's (1980) research established that, the long-term success of a portfolio could be threatened by an investor's behavioural biases which can violate both traditional decision-making thinking and psychology (Germaine, 2020).

There are limitations to both cognitive and emotional biases, as biases infer errors in our thinking that occur while processing information. Not every investor exhibits the same emotions or is affected by the same biases as another investor (Banerji, Kundu, and Alam, 2020); and an investor's sentiment, prior knowledge or experience can alter a stock's trajectory positively or negatively. When making a decision, if someone needs to consider every possible outcome, one could become overwhelmed (Pimco Decision Research Laboratories, 2020). Humans are cognitively limited and maintaining large amounts of data could overload our senses (Tang, 2014). While reasoning with partial data is enormously more complicated with cognitive limitations, it does allow one to reduce an unmanageable amount of data by excluding possibilities from our rational thinking (Wedgewood, 2012).

Any attempt to measure uncertainty in decision-making is subject to measurement errors and assumptions on the effects of those very decisions made. In decision-making, knowing anything with absolute certainty is very rare, but the key to eliminating uncertainty is information (Hsu and Chun-Pin, 2012).

Critical thinking happens when one challenges their own pre-existing assumptions and biases incorporating new ways to solve a problem (Ho, 2020). However, emotional biases such as impulse or intuition challenge critical thinking, as the root cause stems from fear, rather than rational thought. Emotional biases undermine decision-making by introducing fundamentally flawed and different ways of looking at that decision.

Biases can also have an effect on the progression of knowledge, for example, where scientists are hesitant in accepting alternative explanations for their data observations (Bettinghaus, 2014).

2.9 Summary

Putting this all together, and when looking at what biases most affect investor behaviour, clearly, there are more than just one. CFA Institute (2015) conducted a survey, looking to understand the sentiment of investor behaviour in the stock markets and are listed in Figure 2.10. They asked readers globally to select the behavioural bias that most affects their investment decisions with 724 responses generated. In the eyes of the poll participants, the herding bias affected investment decision-making most heavily at 34%, followed by confirmation bias at 20%; with both biases accounting for over 50% of the overall results.

Figure 2.10: Behavioural Biases That Affect Investing Decisions (Derived from: Kunte, 2015)
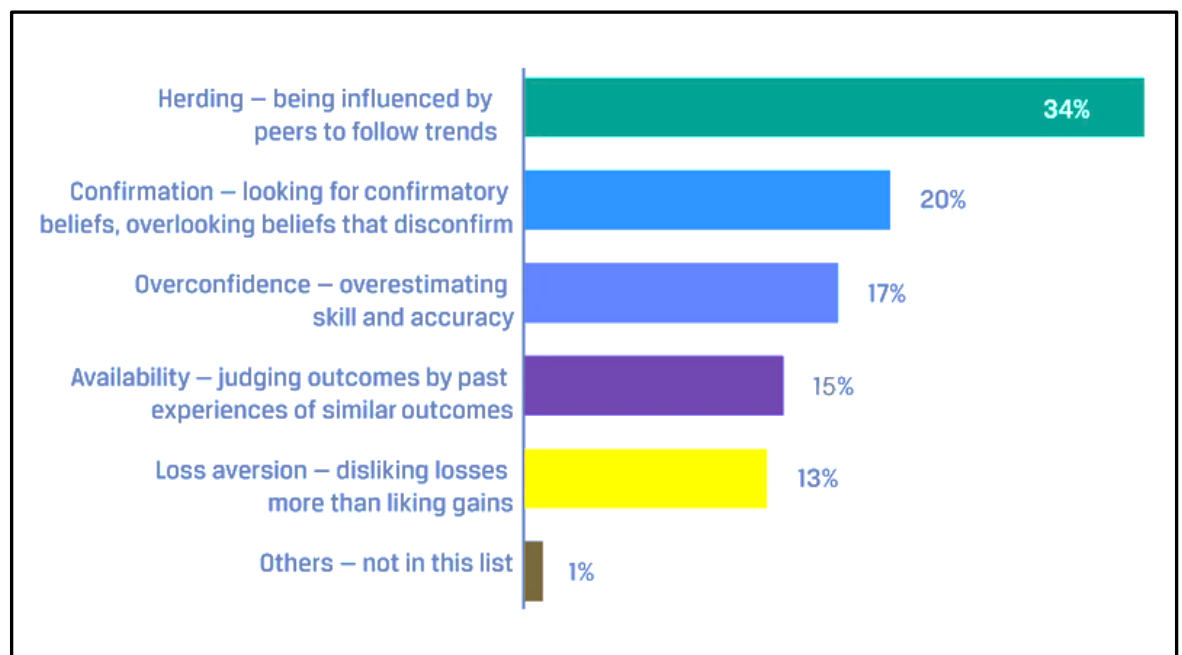
Behavioural Finance is well known for emotional investing with many of our emotions driven by biochemistry (Fonda, 2019). Recognizing that emotions can lead to decisions that might rationally by suboptimal, investors need to identify impulses or biases that play a critical role in success (Zahera and Rohit, 2018).

An introspective look at oneself can encourage an opportunity to acknowledge biases while seeing the broader view. Investors may be unaware of their biases which could negatively impact their financial position (Astorino, 2015). This could make this research very interesting as it is based in the United States, during a pandemic, and clearly the existence of bias can add additional risk factors for millennial investors.

Through the literature review on financial decision-making, there is a need to understand the next generation of investor, as biases contribute to a millennial's process of deciding. It is clear something different is happening with this generation when it comes to decision-making, with communication preference very different from prior generations. Based on this, I now begin a discussion on the millennial highlighting key attributes that may impact this research.

2.10 The Millennial Discussion

This section leads off the discussion on the millennial generation, starting with a generational profile, how intentions impact this generation, and then addresses larger peer influences that impact decision-making (Stankevich, 2017); the digital impact to include social media, the internet and online reviews, then expands into experiences, brand impact, the importance of social values, career aspirations, trust, and financial literacy. This understanding may help connect a millennial's influences to their choices around finances (Sadi et al. 2011).

2.10.1 Demographics

The generation referred to as Gen Y or millennial in the US, and the Snowflake Millennial in the UK, accounts for over 80 million people globally (Weber and Urick, 2017). Generational cut-offs are not a science, with discrepancies between models; therefore,

this research will use the generally accepted Pew Research age ranges represented in

Figure 2.11 (Pew, 2019; Inman, 2021).

Figure 2.11: Generational Cut-offs (Source: Pew Research Center, 2019)

The generations defined

Millennials
Born: 1981 to 1996
Age in 2019: 23 to 38
— 1996
— 1981

Generation X
Born: 1965 to 1980
Age in 2019: 39 to 54
— 1980
— 1965

Baby Boomers
Born: 1946 to 1964
Age in 2019: 55 to 73
— 1964
— 1946

Silent Generation
Born: 1928 to 1945
Age in 2019: 74 to 91
— 1945
— 1928

PEW RESEARCH CENTER
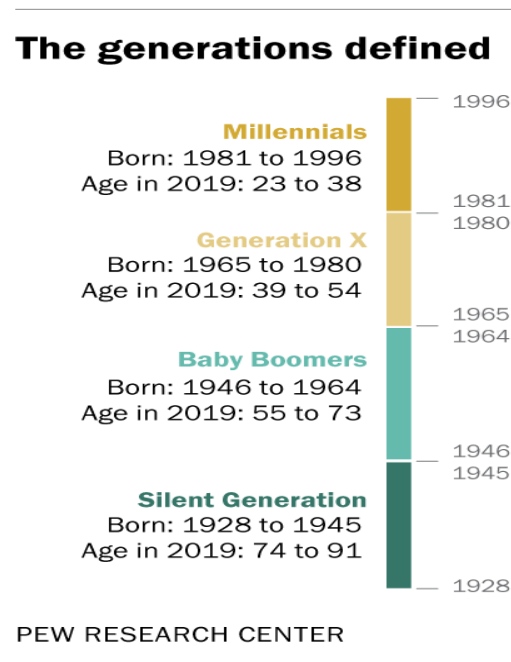
2.10.2 The Millennial Profile

Some research indicates that millennials are more entitled and narcissistic than earlier

generations; balancing the needs of others with their own self-interests, which could lead

to unethical decisions (Edwards, 2018). Elspeth Reeve (2013), classically wrote in the

Atlantic, "It's not that people born after 1980 are narcissists, it's that young people are

narcissists, and get over themselves as they get older". Interestingly, in the recent

Greenbook (2021) study, when asked about themselves, millennials describe themselves

not as narcissists, rather as friendly, intelligent, responsible, and open-minded. Figure

2.12 shows how they best describe themselves:

Figure 2.12: Top 10 milleial self descriptors (Source: Greenbook Directory, 2021)

Millennial: Self-selected Descriptors

(Bar chart showing values for each descriptor)

- Curious: ~59
- Creative: ~62
- Independent: ~63
- Fun-Loving: ~65
- Caring: ~71
- Thoughtful: ~73
- Responsible: ~73
- Intelligent: ~80
- Open-Minded: ~81
- Friendly: ~85

(x-axis: 0 to 90)
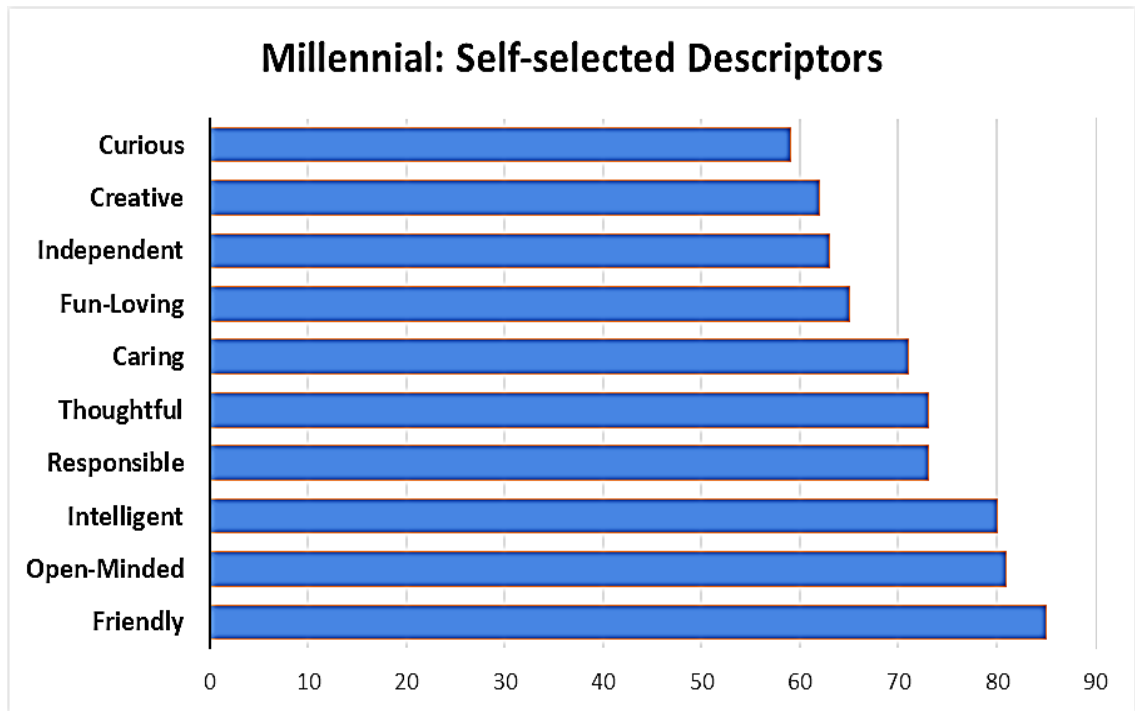
However, looking at this and other millennial research, there are patterns that continue to emerge around what influences their decision-making behaviours (Arian, 2019), especially financial decisions, above and beyond what their self-selected descriptors indicate. Decision-making is a complex process (Chandra, 2008), but for millennials, decision-making will be defined differently (Lee and Marlowe, 2003; Mehta, 2020). To test how millennials define decision-making, Rickwood and White (2009) conducted a study with eight focus groups in Australia, discovering several factors contributing to their decision to save. Their findings indicate that there were major internal factors, external factors, and risks that affect this decision which are listed in Figure 2.13:

Figure 2.13: Decision-making model for saving for retirement (Rickwood and White, 2009)

Major Internal Factors	Major External Factors	Major Risk
-involvement level -motivation -needs & wants	-family influence -social media/ influencer -brand options	-financial -educational -psychological
Minor Internal Factors	**Minor External Factors**	**-Minor Risk**
-past experiences -gender	-social context -word-of-mouth -culture	-temporal risk

Likelihood of saving for retirement
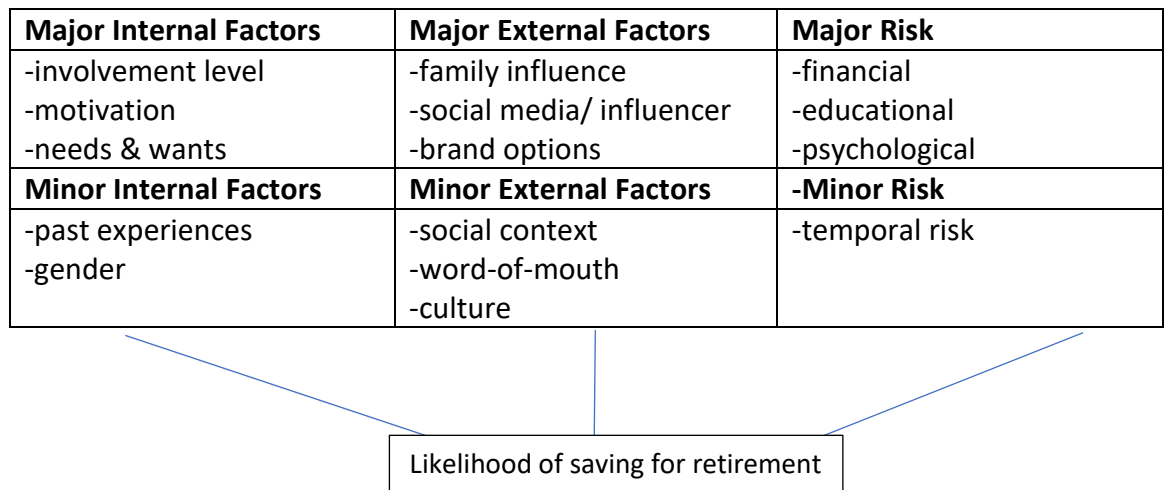
Throughout the literature, it was quite clear that four interconnected themes existed:

First: the impact of influencing factors and the effects of the internet and social media

(Mangold and Smith, 2011; Hwang and Griffiths, 2017; Deloitte, 2021). Second: the

decision to purchase a brand is tied to their social values (Hauff and Nilsson, 2016).

Third: career aspirations and trust (Pfau, 2016; Bell, 2020; Fuller et al. 2020), and finally:

understanding their level of financial savvy and confidence in making complex financial

decisions (Fernando, 2021). The concept map in Figure 2.14 helps provide the

interconnection visual:

Figure 2.14: Interconnected themes of the millennial mindset
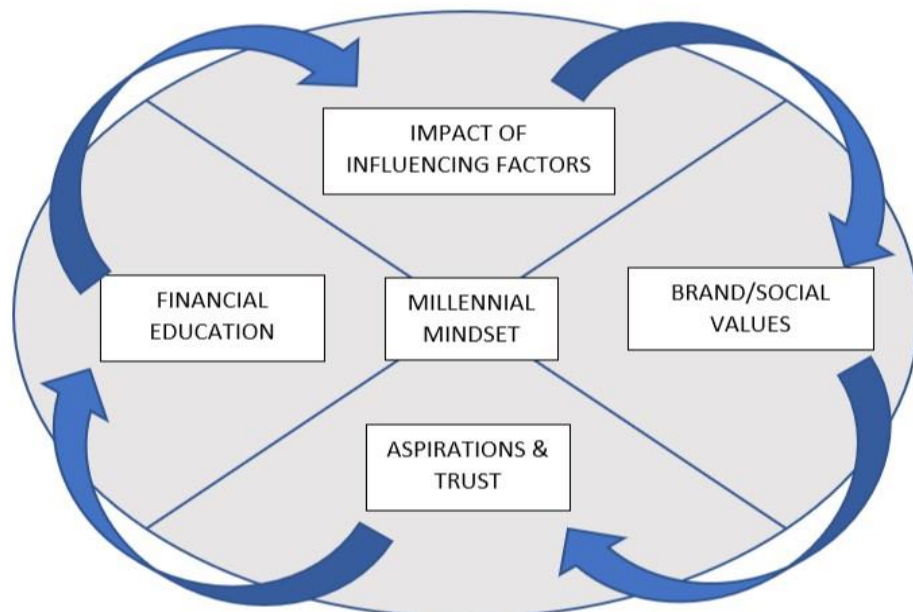
With this said, and similar to the literature review, a good place to start the millennial discussion is how intentions impact their decision process.

2.10.3 Intentions and the Millennial

The rapid growth of social media platforms is a permanent alteration to the way millennial consumers interact with each other and brands (Duffet, 2015). Millennials social media usage is of interest to brands as it provides a view into how consumers will behave in the future. This was evidenced by survey results from over 3,800 South African millennials, which confirmed that advertising on Facebook had a positive effect on behavioural attitudes and intention to purchase (Duffett, 2015). In an unrelated survey, 382 South Korean millennials were surveyed surrounding their intention to purchase a product in the sportwear industry. The results showed that millennials' perceptions of a brand influenced their motives which subsequently influenced their intention to purchase (Baek et al. 2017).

Klein and Sharma (2017) argue that buying intentions are very closely linked to buying behaviour, in the context of consumer decision-making. Millennials select brands that help them define whom they are, what is important to them, and what expresses their unique personalities. Millennials also look for value for their money; those that seek expensive brands at discounts, are likely to show a greater intention to buy at on-line sites that offer bigger discounts for larger purchases (Klein and Sharma, 2017).

2.10.4 Digital Engagement

Millennials have literally grown up with instant data-gratification at their fingertips (Gafni, 2015; Facty, 2019; Mathias, 2020; Keller Institute, 2021). As such, millennials are comfortable with the internet, are natural networkers, and readily share information on the web. Millennials embrace change, learn quickly and demand online solutions (Hwang

and Griffiths, 2017; Deloitte, 2021). In a 2019 Salesforce consumer behavioural survey, consumer goods firms planned to improve Business 2 Business (B2B) operations in several areas over the next few years. Interestingly, firms planned to increase digital customer support by 81% within the next five years with artificial intelligence a key transformer in shopping (Salesforce, 2019). Figure 2.15 highlights the biggest trends in consumer behaviour and how they connect with products:

Figure 2.15: Chart: Consumer Behaviour (Source: Salesforce, 2019)
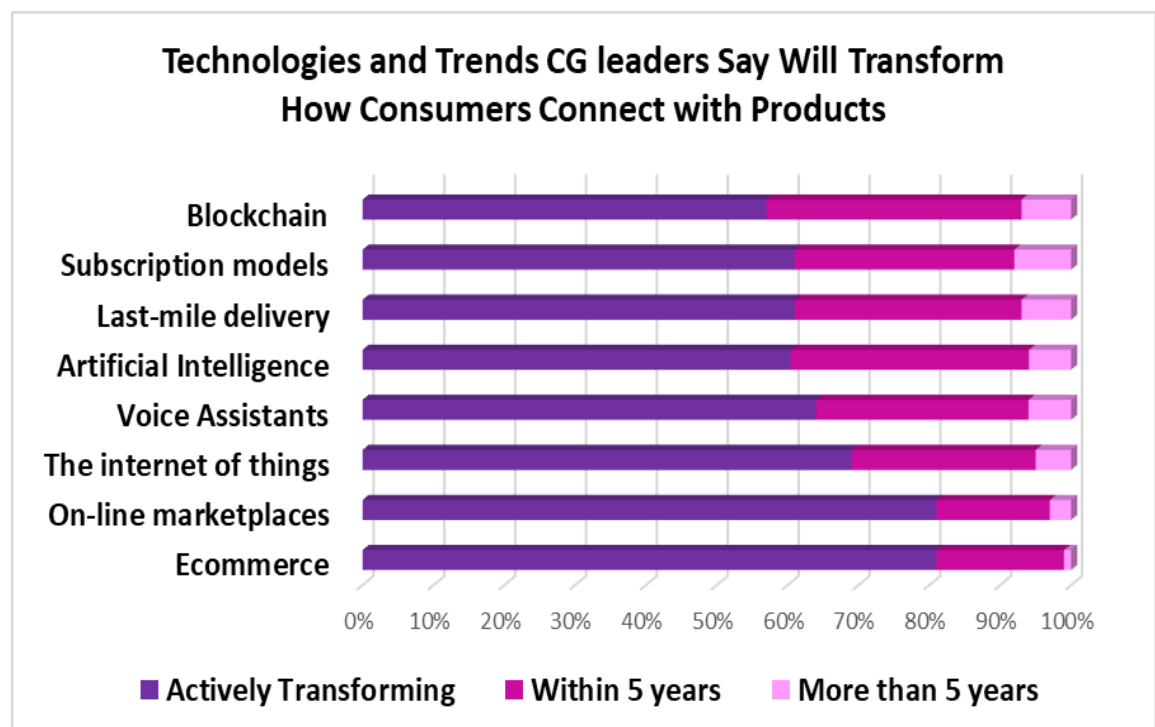
Indications suggest that there will be over 3 billion e-mail addresses in use by 2020 (Lead Forensics, 2019) with millennials far more inclined to use social media as compared to Gen Xers and Baby Boomers (Greenbook Directory, 2021). Thus, paying close attention to millennial decisions and buying habits using this medium, could help shape a financial professional's understanding on how their decisions on more complicated financial and retirement savings processes are made (Mathias, 2020).

Millennials are the largest target market for social media marketing and are inseparable from their smartphones (Gafni, 2015; Mathias, 2020; Keller Institute, 2021). YouTube,

Twitter, and Instagram are the biggest and best ways to market to them with Instagram alone reaching over one billion active users monthly (Animoto, 2020; Mehta, 2020). Millennials are engrossed in, and are very active on social media, frequently posting and tweeting. They are the "pioneers of the selfie" now part of their culture and vernacular (Nava, Karp, and Nash-Stacey 2014; Sashittal, Hodis, and Sriramachandramurthy, 2015; Facty, 2019; Mathias, 2020; Mehta, 2020). They have been unresponsive to established brands (Sashittal, Hodis, and Sriramachandramurthy, 2015), and while Twitter is intrusive, there is no doubt that established "brands" will lose the ability to communicate if they are unable to master the use of Twitter in 140 characters or less (Mathias, 2020). Technology and unprecedented economic risks are fuelling change and folding innovation into established brands as Facebook, Instagram, YouTube, and Twitter hold tremendous influence over this generation (Mullen, 2020).

2.10.5 The impact of Online Reviews

There is no doubt that millennials have heavily influenced and are a vital component of the evolution of social media (Mangold and Smith, 2011; Mathias, 2020). Growing up immersed in technology, more than 25% of the millennial generation spends over five hours daily on their smartphones with over 50% spending more than an hour a day on retail-oriented websites (Zoovu, 2016; Adglow infographic, 2021). Millennials are a digital first generation that relies on social media to share content with their peers, promoting brands that get closer to the things they love (Pew Research, 2015; Adglow infographic, 2021). They enjoy convenience, processes that save time, and information that is easy to locate, such as reviews, blogs, and peer to peer social interaction (Mathias, 2020), and increasingly base judgements on information gathered online (Kraljevic and Filipovic 2017). Mangold and Smith (2011) suggest that millennials are undeniably

influenced by on-line reviews, with Adglow infographic (2021) confirming a definitive

preference for online venues:

- 63% of millennials stay up to date on brands on social
- 44% are willing to promote a brand via their social network
- 50% say on-line reviews influence their purchasing decisions more than word of mouth

2.10.6 Experiences and Adventures

As experience seekers, millennials want to try new adventures, indulge on travel, and

have friends in different time zones (Kraljevic and Filipovic 2017; Facty, 2019; Mullen,

2020; Mehta, 2020). Mehta (2020) describes a simple example of being adventuresome

from the cosmetics company, Birchbox. Birchbox offers a monthly beauty box whose

contents are a mystery, and a subscription is a small way to be curious and

adventuresome. Delivering an experience that is fun, meaningful, and memorable will be

impactful (Zoovu, 2016; Arian, 2019). Take for example the ride-share company, Uber.

It's one of the fastest growing companies with a successful model among millennials. It

incorporates intuitive interfaces, simple/convenient ease of use, transparency, and

exquisite customer service (Zoovu, 2016).

However, millennials have been accused of being impatient multitaskers (Kraljevic and

Filipovic, 2017) wanting immediate gratification, which comes in the form of experiences

and goods immediately consumed (Deloitte, 2021). Noblett (2020) and Hartford Funds

(2020) suggest that millennials are financial fools as their choices include *experiences* like

expensive avocado toast and artisan coffee over home ownership and retirement

savings; and will splurge on things like dining out while cutting back on health and

wellness (Facty, 2019; Mullen (2020).

2.10.7 The Brand Impact

An adventuresome or meaningful experience though, is not enough for this generation as Generation Y is the most analysed, marketed to and most intriguing generation to date. They are self-motivated with high expectations for themselves, their friends, communities and especially, brands (Zoovu, 2016). There is an abundance of choice in products today, and millennials will make comparisons dropping a brand that doesn't feel right to them.

In 2006, Cone Inc., the strategic planning and consumer insights division of AMP, studied the cause related initiatives that corporations must use to influence millennials consumers, with over 1,800 respondents nationwide. The findings: when a cause is linked to a brand, authentically and relevant to today, it gains the respect and attention of this generation as they are ready to reward or punish a company depending on its commitment to social and environmental causes; "cause" marketing is now a factor in building strong loyalty (Greenbook, 2021).

2.10.8 The impact of Religion, Environmental, Social and Governance (ESG)

Many generational researchers have attempted to generalize traits unique to each generation, lending in part, to the misunderstanding of generational phenomena. Despite the generational category, it is likely that the "why" people decide to act the way they do, is influenced by their specific values (Weber and Urick, 2017). Although millennials have values, in general, they can be described as less religious and more liberal (Pew Research, 2015; Pew Research, 2015a; Cox and Thomson-Deaux, 2019). Pew Research (2015) conducted a study of young adults focusing on the changing religious makeup of the US public, represented in Table 2.2. The results indicated the continued

swelling of the religious "unafflicted" while describing a generational replacement of

religious "nones" (Pew Research, 2015).

Table 2.2: Millennials and Religion (Source: Pew Research Center, 2105a)

In Many Ways, Younger Americans are Less Religious than Older Americans *% of US adults who say….*					
	Silent Generation	**Baby Boomers**	**Generation X**	**Older Millennials**	**Younger Millennials**
Religious Behaviours					
They pray daily	67	61	56	46	39
They attend services at least weekly	51	38	34	27	28
Religious Beliefs					
They believe in God	92	92	89	84	80
With absolute certainty	71	69	64	54	50
They believe in heaven	75	74	72	67	58
They believe scripture is the Word of God	69	64	61	50	52
They believe in hell	57	59	59	55	56
Religion's Importance					
Religion is very important in their lives	67	59	53	44	38
Source 2014 Religious Landscape survey, conducted 4 June to 30 Sept, 2014 (Pew Research Center)					

Despite this, values continue to have importance, and millennials spending behaviours

are now shifting to companies and brands whose values mirror their own (Mangold and

Smith, 2011; Mullen, 2020). Consistently mentioned, millennials are willing to trade

gains for a greater environmental or social impact (Dhar and Fetherston, 2014). A recent

consumer culture report released by 5W Public Relations, surveyed 1,000 millennials,

suggesting that millennial consumers are impulsive and easily influenced; confirming

more than three quarters will purchase from a company if the company shares their

same values, or if their purchase will help a cause (Mehta, 2020; Mullen 2020).

More specifically, research now suggests that 80% of millennials said that a company's

environmental, social and governance (ESG) stance, affects their purchasing decisions

(Stankevich, 2017; Lead Forensics, 2019). They are engaged about global issues, being empathetic toward social and communal causes and their personal consumption is driven off knowing that the brands they purchase do so as well (Strategic Direction, 2015; Hwang and Griffiths, 2017; Stankevich, 2017).

2.10.9 Career Aspirations of the Working Millennial

Also, important to understanding the millennial; their career aspirations. Throughout the literature, several recurring themes emerged within their career aspirations: looking for more flexibility in their work structure, seeking consistent and current feedback on their progress, and incorporating more of a sharing environment into the traditional idea of work. Research is not conclusive around all millennials work habits, but research done by the Department of Defence and George Washington University discovered that there may only be small generational differences that exist in the workplace (Costanza et al. 2012). However, some of the oldest millennials graduated university and entered the workforce during the 2008 US stock market crash and ensuing recession; while Gen X'ers entered the workforce during the boom 1990's (Bell, 2020). And after weathering the great recession with its difficulties in entering the job market, some now consider millennials more stable with an increased interest in retirement planning (Miller, 2020c).

Millennials will be the largest segment of the workforce by 2025 making up almost 75% of the world's working population (Winograd and Hais, 2014; Dhar and Fetherston, 2014; Fuller et al. 2020; Fry, 2020; Mullen, 2020; Keller Institute, 2021). Therefore, making a commitment to understanding and communicating with them will be key. Figure 2.16 details the growth of the millennial in the labour market.

Figure 2.16: Millennials in the Workforce (Source: U.S. Bureau of Labor Statistics, 2019)

Chart. Numeric change in the civilian labor force by age group, projected 2019–29

Age group	Numeric change
16- to 24-year-olds	(approximately -1,600,000)
25- to 34-year-olds	(approximately -400,000)
35- to 44-year-olds	(approximately 4,400,000)
45- to 54-year-olds	(approximately 500,000)
55- to 64-year-olds	(approximately -900,000)
65- to 74-year-olds	(approximately 4,000,000)
75-year-olds and older	(approximately 1,800,000)

Axis: -2,000,000   -1,000,000   0   1,000,000   2,000,000   3,000,000   4,000,000   5,000,000

Flexibility: Millennials know what they want; work life balance and control, and are more likely to prioritize family over work (Pfau, 2016; Bell, 2020; Fuller et al. 2020). For millennials, it is not the "all work and no personal life" version of their parents (Kuhl, 2014). The stereotype that this generation is a group of slackers needs debunking as smart devices and wireless have extended the traditional workday beyond a physical presence in the office. They don't mind longer hours, so long as they can choose which hours and will trade high paying jobs for a flexible schedule (Fuller et al. 2020). Companies are now learning to treat time as a commodity through remote work options, 'hoteling' at satellite offices, and flexible start and stop times (Hewlett, 2011); millennials now have more control. Additionally, Kuhl (2014) suggests that almost half of millennials want shorter meetings with instant electronic communication, as opposed to face-to-face meetings. As a result, they are willing to accept making less money in a job they love vs. earning more in a job they feel is boring (Bell, 2020), *and* may prefer to work for themselves wanting more autonomy and control over their job security (Fuller et al. 2020). Some research indicates that millennials view retirement in much the same way

as baby boomers and Gen X, anticipating reaching a point when they choose how much they want to work, or have become financially secure (Insured Retirement Institute, 2020).

Additionally, in response to COVID-19, firms like Unilever will now pilot changes to the work week. After COVID eases, they will pilot a 4-day work week in their New Zealand offices, understanding that the snowflake millennial does not want the traditional work week any longer (Inman, 2021) and that sticking to their existing model, could be a recipe for disaster.

Feedback: As Gen Y is a large cohort in the workplace (Winograd and Hais, 2014; Dhar and Fetherston, 2014; Fuller et al. 2020; Fry, 2020; Mullen, 2020), they leave leaders no alternative than to work with them differently (Tanner, 2021). And there seems to be consensus around one aspect of the workplace that is consistent, they want feedback. Millennials are goal oriented with high expectations that their employers will recognize that. They crave that their achievements are recognized at work. With praise, they will perform better (Facty, 2019). Positively, they ask for constant feedback and search for purpose (Pfau, 2016; Greenbook, 2021); and may feel that the lack of real time feedback, as opposed to a traditional annual review, means they are not appreciated (Kuhl, 2014; Facty, 2019; Mehta, 2020; Greenbook, 2021; Keller Institute, 2021). They demand customization, as evidenced by the rise in media focus, and see coaching as a positive to help guide them (Facty, 2019; Miller, 2020c; Tanner, 2021).

Sharing: Millennial employees with valuable knowledge and ideas, do differ from other employees as they do not manufacture products or provide a service (Martin, 2013). However, they do produce work that can be categorized as a production of decisions around what to sell, to whom and at what price. This has sparked a collaborative

consumption, or a "sharing economy" which has become appealing to this generation (Hwang and Griffiths, 2017; Deloitte, 2021). Millennials are now the key force of the sharing economy preferring to rent rather than own (Deloitte, 2021).

Understanding the millennial profile and values, leads into the next section around personal connections and trust. Throughout millennial influence lies is a thread of trust, with personal connections, influencers and trust becoming more entwined.

2.10.10 Personal Connections and Trust

Personal sources of recommendations have been found to be an important aspect of the decision-making process (Rickwood and White, 2009). The 2015 Morning Consult survey showed that millennials trust recommendations from friends more so than any other influencer and talk about money more openly with friends and co-workers rather than the Baby Boomer's (Strategic Direction, 2015). About one third of millennials share financial information with their friends compared to just 9% of boomers, and about half of millennials talk to their parents about finances; while only 24% of boomers talk to their kids about finances (Hoffower, 2019; IRI, 2020). Debra Aho Williamson, principal at eMarketer, stated that marketers need to remember that many factors go into making a purchase decision, with influencers only being one part of the equation and trust being the other (Droesch, 2020). Figure 2.17 reflects those survey results:

Figure 2.17: Trusted Millennial Influencers (Source: Droesch, 2020)

Sources US Gen Z and Millennial Internet Users Trust When Deciding to Purchase a Product/Service, Sep 2019
% of respondents in each group

Friends and family
82%
84%

Product reviews on Amazon or similar sites
69%
80%

Reviews from websites/news
65%
78%

Influencers you follow on social media
52%
50%

Favorite celebrities/athletes
44%
38%

■ **Gen Z (13-22)**   ■ **Millennials (23-38)**

Note: trust some/a lot
Source: Morning Consult, "The Influencer Report: Engaging Gen Z and Millennials," Nov 5, 2019
250739   www.**eMarketer**.com

Findings from Marketing Charts' US Purchase Influencers Report (2019), in partnership with YouGov, also revealed that 24% of millennial participants ranked family and friends as the top influencer that inspired trust for a recent purchase. With additional findings from the 5W Public Relations survey of 1,000 millennials, also suggesting that conversations with family and friends still hold the largest influence on buying behaviour, followed by on-line influencers (Mullen, 2020c).

Trust now becomes a significant factor in the millennial decision-making process worthy of discussion. Commonly, trust is the confident reliance on another person when in a vulnerable position, and with today's pace of change, it is not surprising for trust to be compromised; the greater the decision, the less likely there is to be trust (Hurley, 2006; Frei and Morriss, 2020). Building trust requires thinking from a new perspective and this new narrative needs to be about empowering this generation to act. Frei and Morriss's (2020) simple diagram encompasses components of trust; authenticity, logic, and empathy, represented in Figure 2.18.

Figure 2.18: The Trust Triangle (Source: Frei and Morriss, 2020)

However, millennials may be the least trusting and most conservative generation since the Great Depression with regard to savings habits (UBS, 2014). They have a high level of mistrust of traditional financial institutions with a significant reliance on the internet, social media, and personal connections for financial advice (Accenture, 2015). Figure 2.19 depicts the less trustful nature of the millennial:

Figure 2.19: Millennial Trust (Source: Pew Research Center, 2014)
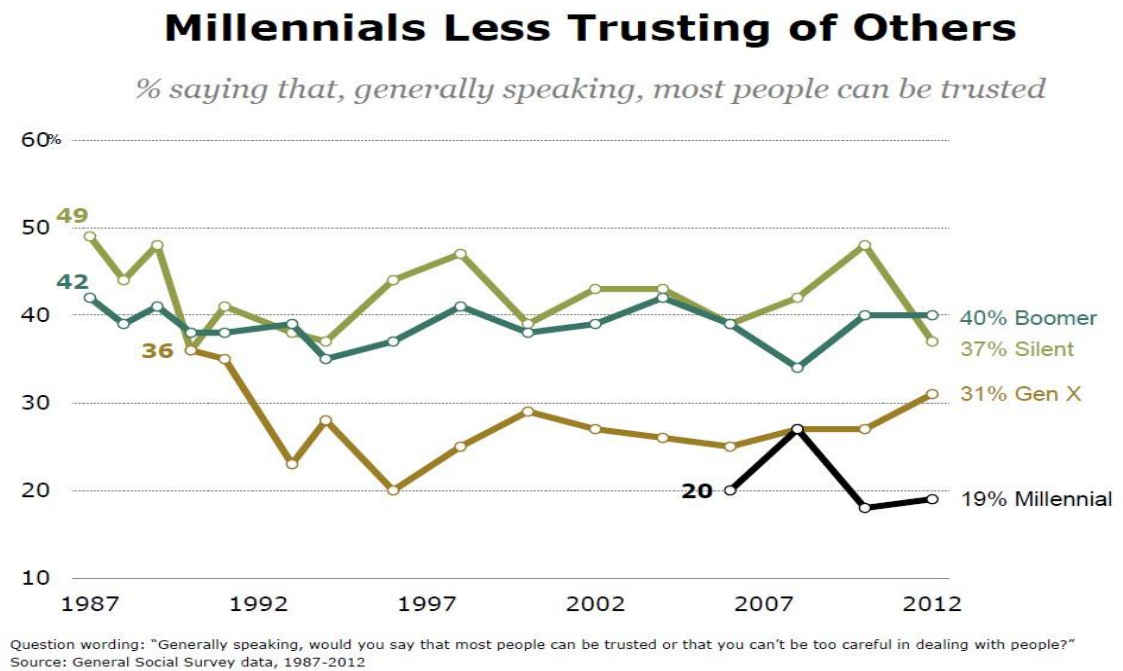
The Insured Retirement Institute (2020) conducted a recent 2020 online survey of 802 millennial participants ages 24 – 41 supporting the UBS (2014) survey. When asked

about "Trusted Sources When Looking for a Financial Advisor" about one third said their parents were their top source of advice about financial advisors. Roughly one-quarter of the millennials would talk to their friends, and roughly one-quarter would look at online ratings (Insured Retirement Institute, 2020).

There are clearly a mix of factors, technological, situational, economic, and behavioural, that have shaped the minds of millennials and their trust model. Nevertheless, millennials are not unlike generations before them as they are shaped by the times in which they live (Weidmer, 2015; Tanner, 2021; Facty, 2019; Greenbook, 2021; Tanner, 2021). This is a generation heavily affected by tragic world events:

> The 1995 domestic US terrorist bombing in Oklahoma City
> The 1999 dot com burst
> The 1999 Columbine Colorado High School Massacre
> The US based terrorist attacks of September 11th, 2001
> Hurricane Katrina in 2005
> The Great Recession of 2008
> The 2012 Sandy Hook elementary school shooting
> Desert Storm and sociological impact of a 20 year 'war' with Afghanistan and Iraq

Understanding how a millennial trusts is critical, but almost equally as critical is understanding the impact that financial literacy, education, and financial product complexity will have on retirement decisions.

2.10.11 Financial Literacy, Education and Risk Management

It is understood that consumers undertake a complex process in making a decision around financial solutions (Milner and Rosenstreich, 2013) with key elements of the decision-making process attributed to complexity of the investment landscape and a level of financial literacy. Financial literacy may be defined as one's personal ability to use knowledge and financial skills to effectively manage financial resources (Fernando, 2021). Millennials are the largest and best educated generation (Nava, Karp, and Nash-Stacey 2014; Kraljevic and Filipovic 2017), however, the financial decisions made by

lower-income millennials may have a greater effect on their financial well-being and their future (West, 2016). Financial literacy has an effect on important financial decisions, with low financial literacy associated with mistaken beliefs and a reluctance to accept financial advice (Lee, Yun, and Haley, 2017; Fernando, 2021). And research indicates, millennials may be ill-equipped to deal with a complex financial landscape (Afiqah and Sabri, 2016; Hauff and Nilsson, 2016). This segment of the generation is at risk of acquiring too much debt and may be unprepared for a financial emergency with limited resources. Combining financial education with financial inclusion by incorporating even a simple savings account into education, may correlate with healthier financial behaviours. The National Financial Capability Study in 2012 sought to examine the correlation between the financial behaviours of lower-income millennials with financial capabilities (West, 2016). This study concluded that those who had financial capabilities vs. those who did not, were 171% more likely to afford the unexpected expense, and were 34% less likely to have a substantial amount of debt. The study went on to conclude that educational intervention fosters capability and promotes healthier, long-run financial decisions.

There is a common conception that millennials are financially imprudent (Noblett, 2020), however, millennials themselves feel that they are doing better than expected with about half already saving for retirement (Barney, 2020). Sardon (2020) suggests that half of the millennial generation finds investing difficult to understand, not knowing where to begin. With that said, their "retirement plan" of choice is a simple personal savings account over investments, potentially not seeing the importance of investing for the long run yet (Loudenback, 2019). Savings accounts are safe and easy to set up, while investments in the stock market are more complicated with risk. Widely recognized is the need to make decisions for retirement, and contributions to a pension plan can be a

critical first step, however, some millennials do not believe that they even need a savings

account in the near term (Pew Research, 2014). Additionally, many millennials expect

their 401k plan (employer sponsored retirement plan) to be their primary source of

retirement income (Advisor Magazine, 2020; Barney, 2020). In a joint research report,

from the University of Penn Law School and George Washington University, "Defined

Contribution Plans and the Challenge of Financial Literacy" (Fisch et al. 2019), 50% of

people's only exposure to investment decisions is through their participation in their

401k or qualified plan, and thus poorly equipped to make thoughtful investment

decisions. According to the United Sates IRS (2020), a 401(k) plan is:

- A savings plan that meets the criteria established in the United States Internal Revenue Code (IRC) for tax-preferential treatment,
- When an employee elects to contribute an elective portion of their salary to this plan on a pre-tax basis, through payroll deductions,
- Not subject to Federal Income Tax withholding at the time of deferral and serves as a convenient way to save for retirement.

Millennials are in a period of their lives fraught with financial behaviours that will heavily

influence their lifetime financial wellbeing (Kim, Anderson, and Seay, 2018). A brief

discussion on millennial attitudes toward risk could shed light on this generation's risk

tolerance and their more conservative nature in making financial decisions (UBS, 2014).

2.10.12 Attitudes towards Risk

The Oxford dictionary (2021) defines risk as the possibility of something bad happening

at some time in the future. One's ability to understand the full scope of risks in terms of

one's assets is crucial (Investopedia Editorial Team, 2020). However, in order to

understand this scope, and engage in risk management, one must quantify and

understand the liabilities (Hajmohammad and Vachon, 2016). Paramount is the ability to

evaluate risk, as it can be a difficult aspect of one's risk management plan.

Indeed, there are multiple risk management strategies all with an aim to control the damages and financial consequences of threatening events (Hajmohammad and Vachon, 2016; Long, 2016). Spacey (2017) details a three-step process for risk management: the process of identifying risk, analysing risk, and treating risk; this can be done through risk reduction, risk minimization, risk mitigation, risk avoidance and risk acceptance.

Risk reduction deals with reducing the likelihood and severity of a possible loss; an example would be to diversify a portfolio to include multiple asset categories (Silver, 2019). For example, a millennial invests in a stock heavily focused in the nuclear energy sector, after already owing a stock in several other energy companies. The millennial can reduce their risk by diversifying the portfolio to include bonds or less aggressive industries that move in the opposite direction of the energy sector (Hajmohammad and Vachon, 2016; Long, 2016).

Spacey (2017a) describes *risk minimization* as the process by where one does everything possible to reduce the probability or impact of risk to zero. Typically, this is reserved for risks perceived to be unacceptable and is common for an investor to minimize risk they fear (Spacey, 2017).

Risk mitigation refers to the process of planning and developing methods and options to reduce threats. It also includes the actions put into place to deal with issues and the effects of those issues (Indeed Editorial Team, 2019). Risk mitigation considers each risk in a cost effective and practical way driving risk towards zero, then plans for the risk by implementing strategies to help lesson it (Spacey, 2017; Indeed Editorial Team, 2019).

Risk avoidance involves the elimination of risk by withdrawing from the risky situation altogether which drives the risk probability to zero (Hajmohammad and Vachon, 2016; Long, 2016).

Risk acceptance is a reactive strategy that a millennial may use to simply retain risk by taking no further actions and budgeting for damage control. Simply put, it is a collaboration to identify the possible risks with whether the consequences of those identified risks are acceptable (Long, 2016; Indeed, 2020).

2.11 Generational and Gender Differences

2.11.1 Generational

Previous research around consumer behaviour and financial services revealed that lifecycle stages of age are relevant factors when understanding needs and wants of customers (AMP agency, 2021), and are referenced in Table 2.3:

Table 2.3: Generational Differences (Derived from: Greenbook Directory, 2021)

	Baby Boomers (1946-1964)	Gen Xers (1965-1980)	Millennials (1981-1996)
Characteristics	The "Me" generation - Intellectual Renaissance - Judgmental Baby Boomers came of age at the height of an American intellectual reawakening. As youths, Boomers rebelled against the Establishment.	Disillusioned cynics - Cautious and Skeptical - Alternative Gen Xers are a product of an individualistic society. Thought of as a generation of slackers with little drive and no direction. Gen Xers are anti rules and anti-groups.	Confident achievers - Well educated and competitive - Entitled Millennials are self-assured with social awareness. Millennials believe community extends beyond their backyard and feel empowered to make the world a better place.

Defining Experience	- Civil Rights - Vietnam War - Sexual Revolution Social changes and political pushbacks mark this era. Boomers fought against race and gender inequality, participated in anti-war protests, and supported sexual freedom.	- Aids - Recession - Soaring Divorce Rates Gen Xers faced advancements in medicine and technology, the war on drugs, and unknown and deadly disease, times of recession, and the splintering of the American family.	- Digital age - Terrorism and Natural Disasters - Global economy Millennials have grown up where technology provides immediate gratification. News and information travel freely across continents, with recent acts of terrorism and natural disasters touching more than the people directly involved.

One of the biggest generational differences between Gen X and Gen Y is the parenting they have experienced (Tanner, 2021). Some millennials are the offspring of the uncritical and overprotective Baby Boomer, "Me" generation, and as such, millennials have become known as the "Me, Me, Me" generation (Pew Research, 2010; Tanner, 2021; Stein, 2013). This screen generation lacks interpersonal human skills that can influence and transform the behaviour of others. The Keller Institute (2021) suggests clearing out their "participation trophies" by showing what they could be rewarded for; in essence, re-parent when needed.

2.11.2 Gender

In addition to age and educational levels, gender has also been identified with differences between male and female savings patterns. History has shown that women are more risk adverse when it comes to financial decision-making (Embrey & Fox, 1997; Schubert, 1999; Glenzer et al. 2014), potentially having been shown more conservative, less aggressive investments, with lower expected returns (Embrey & Fox, 1997). Women are also financially less prepared for retirement; potentially from a broken employment

history (Rickwood and White, 2009). Females do prefer content which is rich both verbally and visually; while males prefer a limited number of attributes (Strategic Direction, 2015). Pulford and Gill (2014) found that women tend to have a larger aversion to ambiguity than men, looking at absolute results, whereas men look at relative results.

Figure 2.20 addresses an interesting phenomenon when it comes to gender. According to US Life expectancy statistics, the overall average life expectancy in the United States is approximately 79; broken out for males, 76, and females, 81. This has grown by over 10 years since 1950 with the next 30 years seeing the overall average life expectancy increase to almost 85 (Macrotrends, 2020).

Figure 2.20: The Increasing Life Expectancy of Americans (Source: Macrotrends, 2020)
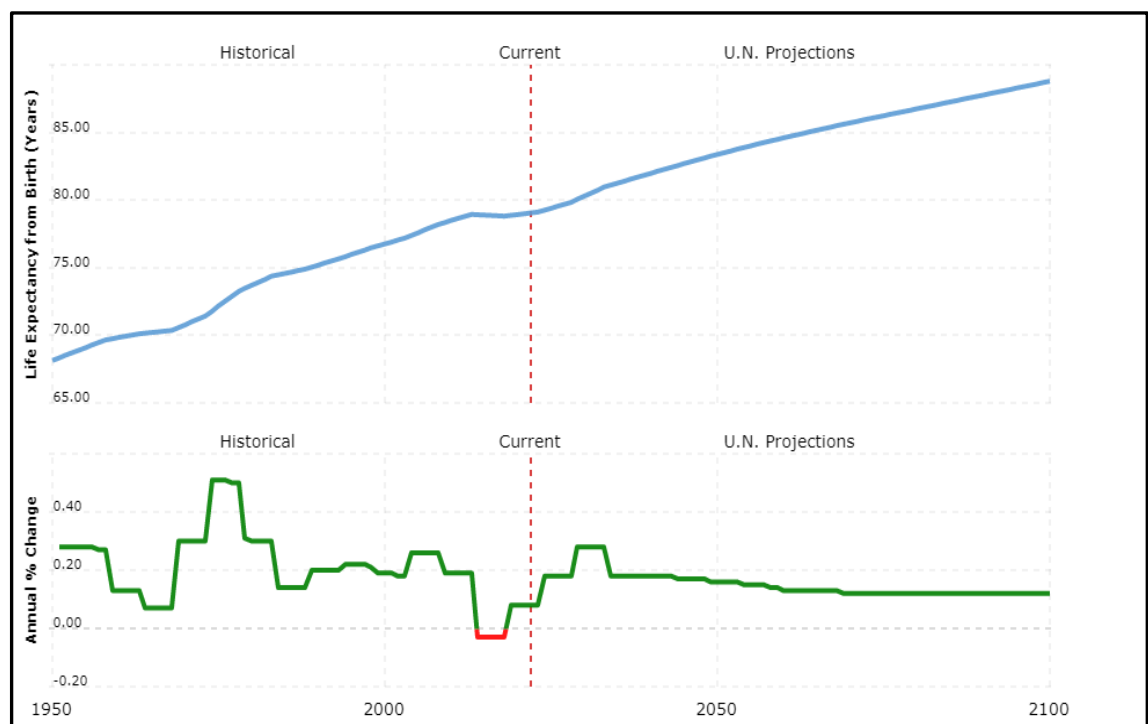
2.12 Coronavirus effects?

As this research is taking place in 2020, I am painfully aware that the worldwide COVID-19 pandemic has changed how we communicate and would be remiss not to address it.

In November 2020, Phoenix Marketing International and Cerulli Associates published their 2nd quarter 2020 report, asking investors about the future of advice and how they thought the long-term need for financial advice would change, due to the COVID-19 pandemic (Limra, 2020). Interestingly, the report showed that investors under 40, underserved by traditional advisors until they had accumulated wealth, expressed elevated interest in the future use of automated online services, robo-advise or budgeting apps. And as Scott Smith, director of advice relationships at Cerulli, indicates, the pandemic "served as a catalyst to get more people willing to do more things remotely." While having an in-person advisor was "a differentiator" in previous years, the push to remote work has made investors more comfortable with accessing services online (Germaine, 2020). These results illustrate the importance of building digital relationships with investors early in their investing lives and are represented in Figure 2.21:

Figure 2.21: The Future of On-Line Financial Advice (Source: Cerulli Associates, Limra, 2020)
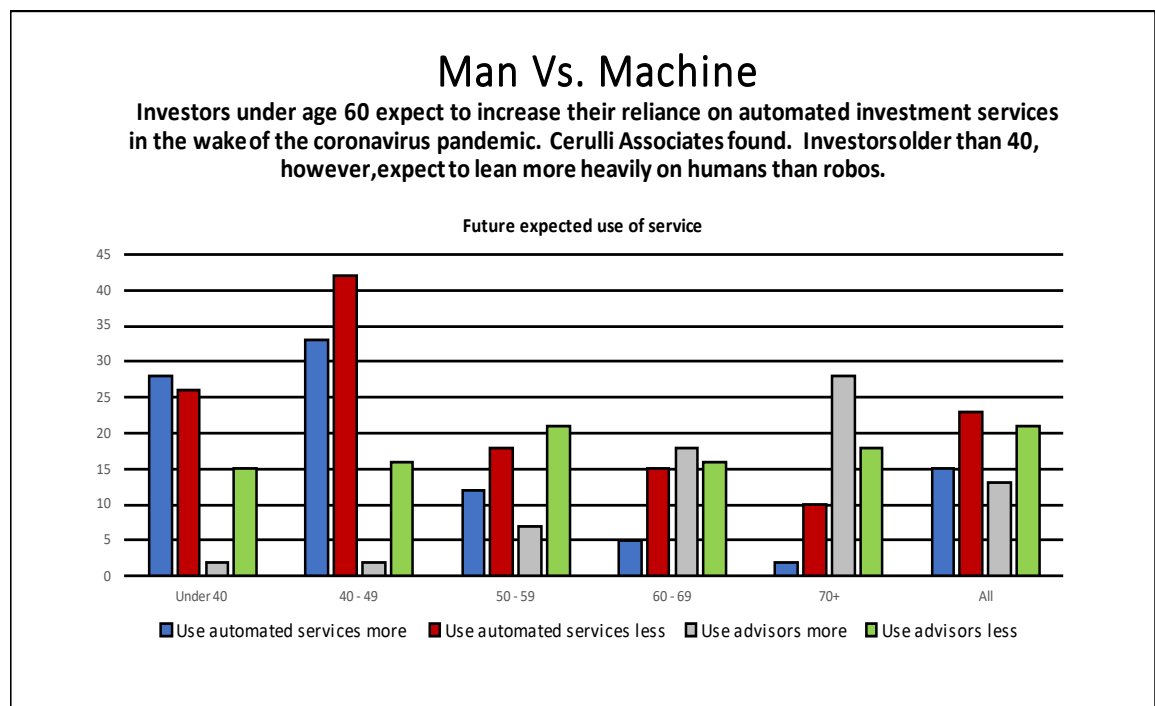
Some research indicates that the average millennial has only $1,000 in savings (Friedline and Song, 2016). The Insured Retirement Institute (2020) revisited that savings number, and despite eight in ten millennials saying they have money saved for retirement, 46% have saved less than $10,000. Interestingly, early research does also seem to indicate, that even with the turmoil COVID-19 is causing, individuals still continue to invest but may be shifting towards lower-risk investments with three out of four concerned about the economy as a result of the pandemic (Bell, 2020; Insured Retirement Institute, 2020).

However, since the start of COVID-19, investors are talking more about finances with their families and their financial advisor, represented in Figure 2.22.

Figure 2.22: Talking About Finances (Source: Insured Retirement Institute, 2020)
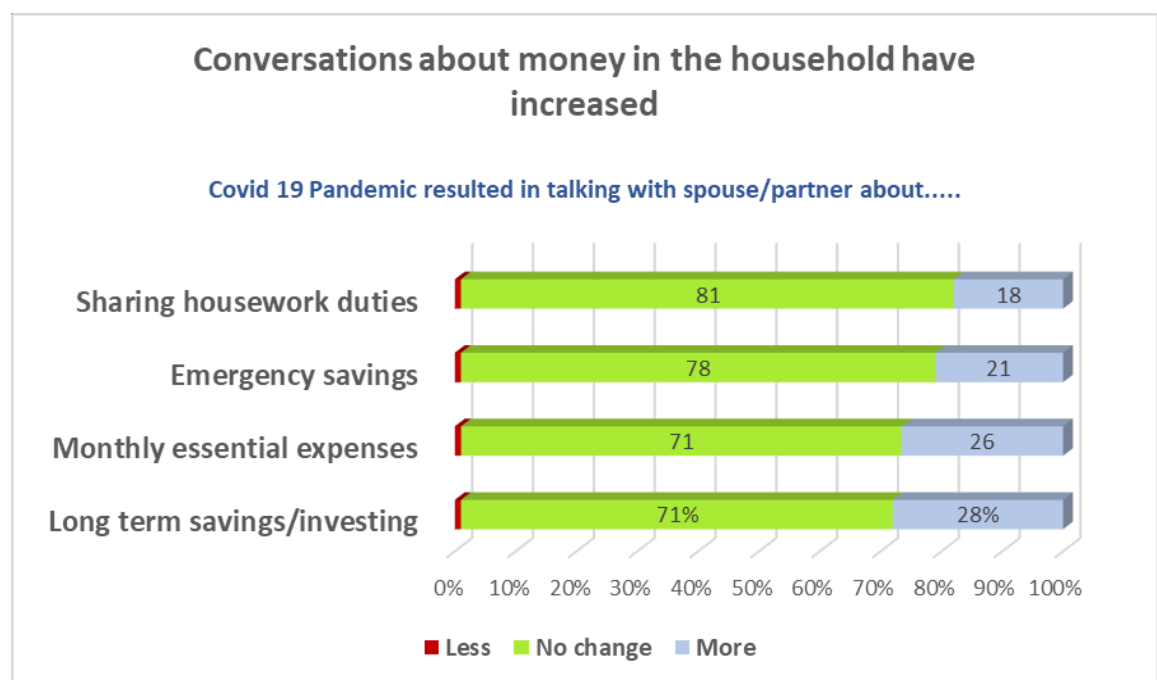
A note can also be made around life insurance conversations as part of financial solutions as well. In an interview with University of Kentucky's professor in Economics, Aaron Yelowitz stated that COVID-19 wasn't a game changer for the life insurance market *yet*, as behavioural changes, such as social distancing and face masks, helped keep the

pandemic from reaching the initial alarming predictions (Miller, 2020). It may be interesting to see if that does have an effect in later years.

Some early research suggests that the COVID-19 pandemic has bestowed an opportunity to crack the millennial market (Miller, 2020c). Millennials want deeper discussions with financial professionals that are more holistic in nature; while helping them access information on broader topics, according to Kevin Hogan, CEO of AIG's life and retirement business (Miller, 2020c).

2.13 Summary of Chapter 2

Much is written in academia around decision-making. The polished structure of von Neumann and Morgenstern's 1944 EUT is known to traditional economists, yet not well known to financial professionals (Johnstone and Lindley, 2013). The traditional decision-making approach had been to rely on normative models commonly employed in EUT (Sebora and Cornwall, 2012).

Clearly, decision-making behaviour is a rich conversation, however, mixing the millennial investor's decision-making behaviours into that conversation is limited. A millennial may not seek out all possible outcomes, assign the accurate probabilities to outcomes, or consistently select the highest payoff from options (Sebora and Cornwall, 2012). Having observed this, Kahneman sought to understand how one perceives their environment and themselves, with findings leading to a growing investigation to better describe economic models with its influence from biases (Chandra, 2008). Thus, the research by Kahneman and Tversky helps provide a foundation for why Prospect Theory is important in decision-making.

The literature review then expands into Behavioural Finance; the intersection of traditional decision-making theory and that of Behavioural Finance is interesting and

naturally led the researcher to address this, especially within the millennial generation. I do recognize that other BF biases effect the decision-making process but focused on making contributions to major biases found in the financial landscape, which emerged over the past half century, by incorporating highlights of well-known empirical studies regarding investor's psychological biases and their impact on decision-making. There were two notable areas of bias: cognitive and emotional. Cognitive biases are systematic errors in thinking (Cherry, 2020), while emotional biases are driven by fear (Pimco Research Decision Laboratories, 2020). Both of these areas contribute to the "human factor' with behavioural insights that may help expand our knowledge and enhance a financial professional's ability to deliver that best possible outcome for millennial investors (Pimco Research Decision Laboratories, 2020). The importance of behavioural biases on the decisions of millennials cannot be ignored, and further study into the area around millennial investor biases, could make it possible to understand this generation in ways not studied before.

Finally, the last section of the chapter covered a deeper view of millennial characteristics. Essentially, five notable areas emerged: the impact of influencing factors and social media, values, career aspirations, trusted personal connections and financial savviness. All areas factor into the 'millennial mindset' with insights that may help enhance a financial professional's ability to successfully communicate with millennials.

The next section looks to amalgamate the literature review into an initial framework as there is a noticeable absence of a conceptual framework on the millennial investor's influences/biases and how those impact financial decisions. This is clearly a topic of importance to the financial professional and the insurance and investment fields.

Chapter 3: Conceptual Framework of Decision-making

With the largest intergenerational transfer of wealth in United States history happening, there is now an opportunity to understand how a millennial's preferences, biases and influences are connected. A conceptual framework (CF) is a matrix of the interlinked concepts that, in tandem, provides a comprehensive understanding of these connections (Maxwell, 2005; Jabareen, 2009; Dickson, Hussein, and Adu-Agyem, 2018). It is the construction of integral components, showing the relationships between them, while informing the reader on design (Maxwell, 2005). This can differ from quantitative or theoretical explanations as it helps provide an understanding to social reality and an interpretation of intentions (Jabareen, 2009).

This is not merely a collection of concepts, rather, it's my visual roadmap of the integral role that each concept plays; laying out the key factors and the presumed relationships that best explain the natural progression of the research reviewed (Maxwell, 2005; Jabareen, 2009; Dickson, Hussein, and Adu-Agyem, 2018). A CF is typically the simplest way to assess and refine goals, develop robust and relevant research questions, select appropriate methods, and present postulated solutions to the problem (Maxwell, 2005; Dickson, Hussein, and Adu-Agyem, 2018).

For this research the conceptual framework, the system of concepts, beliefs, and assumptions, will help inform and support the research question:

In identifying key factors that influence millennial financial decision-making, how will communication from financial professionals need to evolve?

This section will review the themes that emerged from the literature review as the foundation for the conceptual framework.

3.1 Bias

Cognitive biases are induced by heuristics or mental shortcuts, whereas emotional biases are motivated by impulses and fear (Pimco Decision Research Laboratories, 2020). Millennial investors may not be cognizant of pre-existing biases which could negatively impact their decision-making around financial solutions (Astorino, 2015).

3.2 Understanding Consumer Concerns and Fears

Many of the decisions we make are smaller in stature, however, long-term decisions around financial solutions can be enormous. And, making big, impactful decisions can open one up to criticism and regret, in many cases, maintaining the status quo is the safer course to take, putting one at less psychological risk (Hammond, 1998). Knowledge of buying behaviours sheds light on the psychology of how consumers think, and when it comes to millennials, they exhibit more negative and conservative financial behaviour than previous generations (Liersch, 2014; Lin, Bumcrot, and Ulicny, 2019).

3.3 Financial Literacy

The path to real wealth is through innovation, yet fear of making large financial mistakes is exacerbated by a lack of knowledge or execution (Liersch, 2014; Lin, Bumcrot, and Ulicny, 2019). Millennials need both the financial knowledge to acknowledge financial trade-offs and the capability to apply that knowledge to their own circumstances. Evidence suggests that the millennial's level of financial knowledge is significantly lower than previous generations (Kim, Anderson, and Seay, 2018). However, generally speaking, higher financial knowledge has been linked to positive financial behaviours, and households with lower financial literacy less likely to plan for retirement (Kim, Anderson, and Seay, 2018). A base in financial literacy will be helpful as millennials entered the workforce in the post-recession economy, to an increasing amount of

complex financial instruments (Kim, Anderson, and Seay, 2018), and may be ill-prepared for complex financial solutions (Afiqah and Sabri, 2016; Hauff and Nilsson, 2016).

3.4 Trust

Millennials are less trustful than generations before them (Nava, Karp, and Nash-Stacey 2014; UBS, 2014; Accenture, 2015), with scepticism appearing be in their DNA (Liersch, 2014). When it comes to the stewardship of their inherited wealth, the stakes seem very high with a very low level of trust in financial services firms, questioning whether paying for financial advice is worth it (UBS, 2014; Accenture, 2015).

3.5 Career Aspirations

Research has shown that millennial workers do want to work for a company that has a strong career development program and for firms that have embraced technology (Kuhl, 2014; Miller, 2020b). These companies become even more attractive to younger employees who grew up with social media and the ability to leverage technology (Miller, 2020b). They love to multi-task and are willing to take more risks to start a business in their 20's, a decade sooner than previous generations (Facty, 2019).

3.6 Social Media

Millennials are hyper connected, digital technology natives who have never experienced a world without social media and smartphones (Liersch, 2014; Nava, Karp, and Nash-Stacey 2014). Liersch (2014) states they are hooked on social media, distracted, and spoiled, and the generation that made the word "selfie" the most famous word in 2013 (Oxford Dictionary, 2013; Nava, Karp, and Nash-Stacey 2014).

More than 80% of the millennial generation have a smartphone which is critical for brands as the wisdom of the group is highly valued and positive feedback on Twitter, Facebook, and you Tube can turn viral in moments, influencing the behaviour of new and existing consumers (Liersch, 2014; Nava, Karp, and Nash-Stacey 2014).

3.7 Reducing Risk/Uncertainty

The expansive United States financial services landscape has operated for hundreds of years weathering disruptive change from financial and economic crises, global wars, and innovative technology (Tapestry Networks, 2016), with investors who choose more risky financial products, more likely to be affected by those financial and economic crises (Gärling et al. 2009). The US financial markets have seen significant structural changes which have brought about a higher level of competition in the marketplace. And as a result of fundamental deregulation, the financial services industry today is faced with intense competition. This brings about a critical importance of understanding ones decision-making around risk management (Lee and Marlowe, 2003).

Millennial consumers display a wide range of emotions and actions when facing risk, and it is interesting to see the interaction between perceived risk and the millennial consumer's behaviour (Hajmohammad and Vachon, 2016). Some accept risk but turn a blind eye to the implications of it while others avoid risk altogether.

3.8 Engaging On-Line

The ability to bridge conversations tailored to a millennial investor will be an important skill every financial professional will need to develop over the coming years. Boomers are inclined to have strong relationships with their financial professionals and are secure with advisor led conversations and recommendations, however digital forms the millennial's habits and preferences regarding communication (Zoovu, 2016). Millennials expect transparency with more control looking at different means of information delivery such as interactive websites, podcasts, and secure portals to discuss investing advice (Accenture, 2015). Gafni (2015) describes engaging millennials differently from other generations in three distinctive areas:

- More Pragmatic – willing to work within the existing structure to drive change
- Empowered – on-line tools promote instant conversations to drive change
- Integrated – every aspect of life integrated with their passion for social causes

3.9 Debt and Traditional Banking

Student loans are crippling millennials limiting the demand for other debt, like home mortgages; banks will, thus having to navigate this hyper connected generation differently as millennials scepticism about politics and religion extends to banks (Navga, Karp, and Nash-Stacey, 2014). BBVA research shows that the way millennials access their money and pay for goods and services will be completely different than previous generations, with only one third believing they need a physical bank (Viacom Media Networks, 2014). Banks will need to understand the specific preferences of the millennial generation and be sensitive building an empathetic relationship (Nava, Karp, and Nash-Stacey, 2014).

3.10 Aligned Company Values

Millennials are the most racially diverse generation in history with 43% as non-white. The Federal Reserve expects that by 2050, non-whites will account for 59% of young adults indicating that future generations will be even more diverse than millennials (Nava, Karp, and Nash-Stacey 2014). This most diverse and educated generation in American history, demands that companies embrace transparency, simplicity, and a commitment to social and environmental causes, paying more attention to values-based investing and impact philanthropy (Liersch, 2014; Nava, Karp, and Nash-Stacey 2014). Millennials reward a firm that gives back and are willing to pay more for a product showing a stronger tendency towards ethical consumption, compared to older generations (Baek et al. 2017). Millennials have a strong sense of responsibility to family and community (Liersch, 2014) thus brands should look for ways to encourage engagement and positive conversations on social media (Zoovu, 2016; Mehta, 2020).

3.11 Intention

A person's intention, in conjunction with perceived behavioural control, will predict behaviour with greater accuracy than previous decision-making models (Ajzen, 1991; Knabe, 2012). Today, there is a growing body of evidence that suggests a firm's cause-related marketing improves the purchase intention of a millennial by building synergy between business and philanthropic acts over social and ecological issues. This emphasis, known as cause related marketing (CRM) can increase the intention of a millennial to purchase (Nava, Karp, and Nash-Stacey, 2014).

3.12 Covid-19

Today, in the midst of a world-wide pandemic with tremendous uncertainty, personal and professional decisions are based on what potentially could happen and gauging the most likely outcome is more difficult, as we lack practical experience. Good judgement is key in this situation and needed to plot a course successfully through uncertain times, despite the absence of guiding reference points along the way. One may also look to Knight's Theory of Profit (Knight, 1921). Knight, an economist, spoke to the argument that uncertainty can be best understood when you contrast it with risk, and in the past, when risk exists, we had the ability to calculate possibilities of a particular outcome, as we had seen similar past situations (Scoblic, 2020). However, this time in history is novel, as we lack modern-time precedents around decision-making in a pandemic.

3.13 Effective Communication

This research could also touch on what type of communication would best resonate for the unique decision-making behaviours of the millennial, providing guidance around how they want it delivered and ultimately, building their wealth. This will be relevant to the

financial services profession as we start to see this generation need advice differently from how we provided it in the past.

When considering these interconnected themes, I can now articulate an initial conceptual framework, represented in Figure 3.1. This framework offers insights into how each theme influences decision-making behaviour, with continued focus throughout this research.

Figure 3.1: Millennial Decision-making Conceptual Framework

Millennial Decision-Making Conceptual Framework
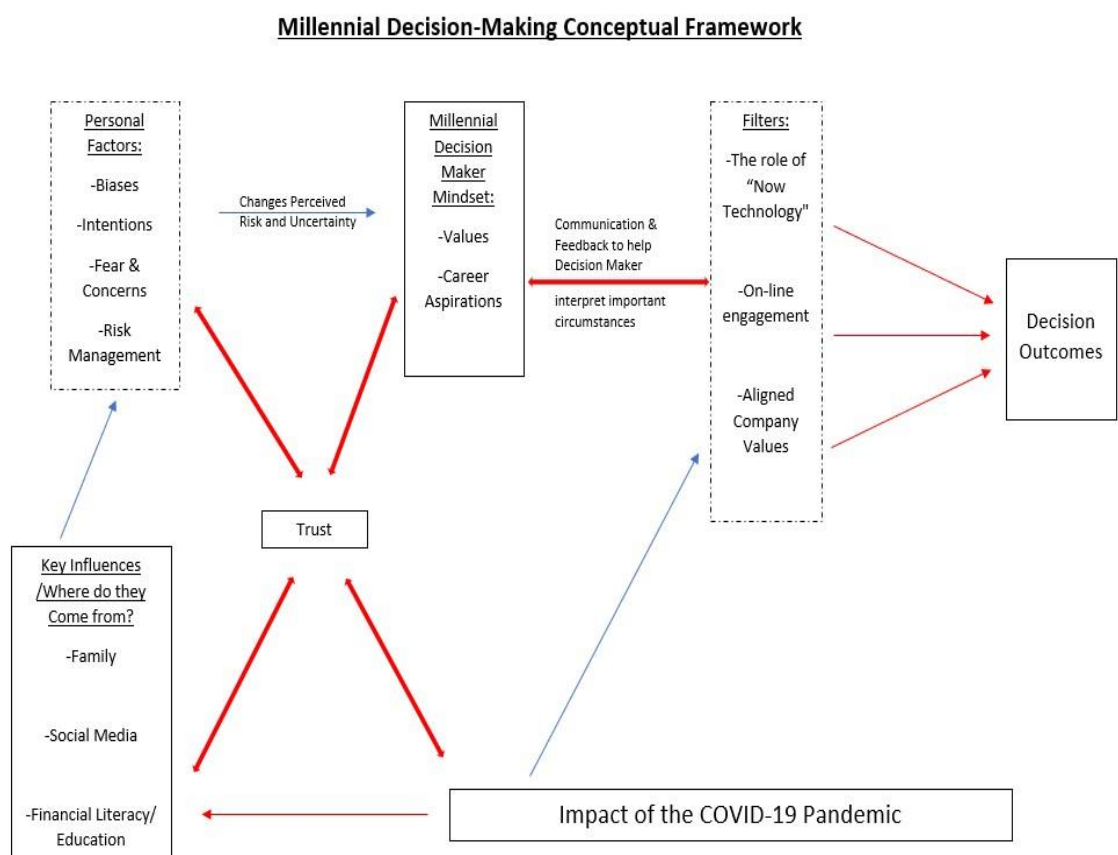
In order to assess this initial conceptual framework with an appropriate methodology, an understanding of the elements of research and methodologies is needed. The next chapter begins with an overview of the elements of research; ontology, epistemology, paradigms and axiology, expands to address the ethical considerations of the project, and concludes with the researcher's selected choice of methodology and methods.

Chapter 4: Methodology

4.1 Introduction

Crotty (1998) identifies that the credibility of the research process lies within the accounting of it, with King and Horrocks (2010) stating that ontology, epistemology, methodology and methods are all connected and cannot be viewed separately. In this chapter, I aim to achieve that credibility while identifying that interconnectedness. This will be accomplished by an examination of the research elements of my paradigm, through epistemology, ontology, theoretical perspective, axiology, methodology and methods. All paradigms present fundamental questions (Guba, 1990) and it is important I have an understanding of these elements as they comprise the basic beliefs and values of my paradigm. As a researcher and learner, I will present the consideration of different paradigms leading to my chosen approach and how I linked my chosen methodology to the research methods implemented.

I will provide the reader detail into the selection and implementation of a pragmatic research paradigm leading into mixed methods utilizing the Delphi methodology and incorporating a quantitative survey. This chapter will detail the process used to carry out the Delphi study, including the account of participant selection, questionnaire design and the method of data analysis. I then go on to explain my choice of research methods relating it back to the outcomes generated. Following this, there will be an exploration of the ethical framework adopted related to this study. Chapter 7 will detail the process for the quantitative survey, with findings discussed in Chapter 8.

4.2 Research Question

As our society ages, and the millennial generation becomes a bigger contingent of the investment world, there is a need for further discovery on their decision-making

behaviours creating more effective communication from the financial professionals who work with them. As I identified in the previous section, the research question is:

In identifying key factors that influence millennial financial decision-making, how will communication from financial professionals need to evolve?

Guba and Lincoln (1994) ask if different inquiry paradigms imply different inquiry methodologies (Scotland, 2012; Kivunja and Kuyini, 2017). And the answer is yes, with this research question driving the methodology and the methods used. This next section will describe the elements of research; ontology, epistemology, research paradigms and axiology (Guba, 1990; Scotland, 2012; Kivunja and Kuyini, 2017). Through this process, the identified paradigm will help lead to my methodology and methods.

4.3 Elements of Research

4.3.1 Ontology

Ontology has been defined as the study of "being" with assumptions concerned with what constitutes reality, or "what is" (Scotland, 2012). These assumptions that one makes in order to believe something makes sense or is real, is core to the nature of social phenomena investigated (Scoland, 2012: Kivunja and Kuyini, 2017). Ontology is essential to my paradigm selection because it helps provide an understanding of things that constitute the world as it is known (Kivunja and Kuyini, 2017), thus assisting my perceptions of how things really are and work (Scotland, 2012). For this research, I considered the following ontologies:

- *Realism*–objects exist independent of the knower
- *Relativism*–subjective and differs from person to person
- *Historical Realism*–influenced by social, political, economic, and gender values.
- *Non-Singular Reality*–each individual has a unique interpretation of reality

Ontologically speaking, both interpretivism and pragmatism are meaningful action, influenced by social construct (Guba, 1990; Goldkuhl, 2012). However, this research lends itself very well to a **non-singular reality ontology** as I believe that each individual can and will provide unique insights into what the decision-making behaviours of the millennial are. Ontology and epistemology are intertwined because "meanings" are so essential in the constitution of the world (Goldkuhl, 2012), which leads to the selection of an epistemology.

4.3.2 Epistemology

The word epistemology originates from the Greek words *episteme,* which means knowledge, and *logos*; giving a rational explanation of how we come to know something (Kivunja and Kuyini, 2017; Vaughan, 2021). Epistemological assumptions lie within the scope of knowledge and ask several questions (Scotland, 2012: Kivunja and Kuyini, 2017; Vaughan, 2021):

- what is knowledge and what is the difference between knowledge and opinion?
- how is knowledge formed?
- can humans have knowledge/are humans capable of knowing anything?
- how is knowledge acquired?
- how is knowledge communicated to others?

Epistemology asks the question "Is knowledge acquired or is it personally experienced" (Kivunja and Kuyini, 2017)? Thus, to truly understand the epistemological element of this research, I need to ask the question of how one knows what one knows. Guba (1990) builds on that idea and adds in the relationship between the would-be knower, in this case me, and what is already known.

Epistemology is also important as it helps establish the belief that is put into the collected data (Kivunja and Kuyini, 2017). Since knowledge is composed of beliefs, it is important to determine the source of the beliefs, and how they are transformed into

knowledge; the three essential knowledge elements are (Scotland, 2012: Vaughan, 2021):

- Dogmatism - one *can* have knowledge with some people knowing some things
- Scepticism – one *can't* have knowledge, and no one *actually* knows anything
- Relativism - it's *all* knowledge and *truth is relative to* the family, culture, group, historical period, etc., in which one lives

This research will use a **relativism (relational) epistemology** that seeks the development of insights by people in relation to one another and with all that exists in the world today (Kivunja and Kuyini, 2017). The goal is to understand millennial financial behaviours, with the hope that communication from financial professionals will adapt to their unique characteristics.

Goldkuhl (2012) helps highlight the research framework of epistemological orientation connecting it to paradigms (this is important as the epistemological approach supports my methodology and methods chosen):

- Seek explanation and prediction – located within positivism
- Seek interpretation and understanding – located within interpretivism
- Seek intervention and change – located within pragmatism

I can now turn my attention to the paradigm most appropriate for this research.

4.3.3 Choice of Paradigms

In 1962, American philosopher, Thomas Kuhn first used the word paradigm (derivation from the Greek word 'patterns') to mean a philosophical way of thinking (Kivunja and Kuyini, 2017). Guba (1990) identified research paradigms as the foundation for one's beliefs that guide purposeful action and investigation, creating knowledge for a controlled change of reality (Goldkuhl, 2012; Mohajan, 2021). Kivunja and Kuyini (2017) state that perspective informs the interpretation of the research while describing abstract beliefs and principles that shape how a researcher acts within the world.

Paradigms can be grouped into three main categories; positivism, interpretivism and critical theory (Goldkuhl, 2012; Kivunja and Kuyini, 2017). Several additional paradigms, post-positivism and pragmatism have been introduced in recent years helping answer research questions for which earlier paradigms were inadequate (Goldkuhl, 2012). A brief look at paradigms provides the justification for my choice along with those rejected.

4.3.3.1 Positivism

Positivism seeks to identify, measure, and evaluate any phenomena, providing a rational explanation and seeking links between different variables, then relating them to a particular theory (Scotland, 2012; Kivunja and Kuyini, 2017; Mohajan, 2021). The Positivist paradigm defines a worldview, guided by natural laws, grounded in what is known in research (Guba, 1990). It is chosen to interpret observations which influence outcomes in terms of facts or measurable entities, aiming to formulate explanations and make predictions (Scotland, 2012: Kivunja and Kuyini, 2017). Positivism includes an objectivist epistemology, a realistic ontology, experimental methodology and beneficence for its axiology (Kivunja and Kuyini, 2017). One criticism of positivism is its very essence of objective verification, however, Onwuegbuzie and Leech, (2005) argue that decisions made throughout the process can be subjective in nature. Had this research only included a quantitative survey, the more appropriate paradigm would have been positivism. By adding in the qualitative study, a positivistic paradigm is excluded.

4.3.3.2 Post-Positivism

Similar to positivism, post-positivism seeks to understand causal relationships with experimentation and correlational studies (Scotland, 2012; Mohajan, 2021). It is more than just data collection as participants' perspectives are often sought out (Scotland, 2012). Furthermore, as knowledge is constantly learned, hypotheses are not proved; simply not rejected (Scotland, 2012). Post positivism has a modified objectivism

epistemology and experimentation methodology allowing for an objective balance

(Guba, 1990). Post positivists argue that theories, hypotheses, background knowledge,

and the researcher's values influence observational data (Mohajan, 2021).

4.3.3.3 Interpretivism

The Interpretivism paradigm is the lens that most frequently influences qualitative

methods with the dominant aim to (Goldkuhl, 2012; Kivunja and Kuyini, 2017):

- understand the subjective world of human experience and meaning in society
- acknowledge their existence
- reconstruct them without distortion when using them in theory building blocks

This approach emphasizes a 'get into the head of the subjects being studied' approach

through interviews, open ended questions and focus groups (Guba, 1990; Scotland, 2012;

Kivunja and Kuyini, 2017). The key tenet of the Interpretivist paradigm is that reality is

socially constructed (Goldkuhl, 2012; Kivunja and Kuyini, 2017), with the main type of

investigation and data generation conducted by interpretation (Kivunja and Kuyini,

2017). The ontological position of interpretivism is relativism, subjectivism epistemology,

naturalists methodology with a balanced axiology (Scotland, 2012; Kivunja and Kuyini,

2017).   Reality is constructed through the interaction between language and aspects of

an independent world, differing from person to person (Guba 1990; Scotland, 2012).

Every effort is made to understand the viewpoint of the subject being observed,

however, this research paradigm comes under criticism as the viewpoint of the observer

may be difficult to overlook (Kivunja and Kuyini, 2017). Additionally, interpretivists may

claim that *both* contradictory and valid accounts of the same phenomenon exists, thus

adopting an "anything goes" relativist attitude (Onwuegbuzie, and Leech, 2005). Had this

research included a Delphi methodology only, an interpretivist paradigm would have

been selected.

4.3.3.4 Critical Theory

The Critical Theory paradigm establishes its research in social justice issues and works to address the political and economic issues that lead to social oppression, conflict, and power struggles (Kivunja and Kuyini, 2017). This paradigm uncovers how political ideology is inextricably interwoven with knowledge, and supposes a transactional epistemology, where the researcher interacts with participants; an ontology of historical realism, especially when the view of reality has been shaped by social, political, ethnic, economic and gender values; a methodology that is dialogic, and an axiology that regards cultural norms (Guba, 1990; Scotland, 2012; Kivunja and Kuyini, 2017).

4.3.3.5 Pragmatic

This paradigm arose among philosophers, out of the polarization of Positivist and Interpretivist, who argued that it was not possible to access the 'truth' about the real world solely by the Positivist' s scientific method, nor was it possible to determine social reality under the Interpretivist paradigm (Onwuegbuzie, and Leech, 2005; Kivunja and Kuyini, 2017). Pragmatism is a broad research paradigm covering knowledge, language and ethics with its foundation in the meaning and practical consequence of an idea (Goldkuhl, 2012). Widely associated with the interaction of 'action and change' and 'action and knowledge', pragmatism is appropriate for research that exists in the world, and not merely observes it (Onwuegbuzie, and Leech, 2005; Goldkuhl, 2012). The pragmatic paradigm has an interest in not only what is, but what one might be seeking as a purposeful difference in practice (Goldkuhl, 2012). The active role of the researcher is pivotal through personal actions or close observations of others, emphasizing constructive knowledge (Onwuegbuzie, and Leech, 2005; Goldkuhl, 2012). Pragmatic

research tends to be more cognizant of available research techniques selecting methods with value to the underlying research question (Onwuegbuzie, and Leech, 2005).

As pragmatists advocate the integration of both quantitative and qualitative methods into the research utilizing the strengths of both to better understand the phenomena (Onwuegbuzie, and Leech, 2005), and in line with my research aims and objectives, I selected the **pragmatic paradigm** as most appropriate.

4.3.4 Axiology

Axiology studies judgements about value and is engaged with ethical issues that need considering (Dudovskiy, 2016). In simple terms, axiology focuses on defining, evaluating and understanding concepts of right and wrong behaviour (Kivunja and Kuyini, 2017). The importance becomes clearer because my values affect how I will conduct this research and ultimately what I value in my findings (Dudovskiy, 2016; Kivunja and Kuyini, 2017).

For easier comprehension, I broke down axiology with corresponding research methods. Table 4.1 illustrates the axiology of research philosophies highlighting data collection methods used in each.

Table 4.1: Research Philosophies (Source: Dudovskiy, 2016)

	Axiology	Data collection techniques
Positivism	The researcher is independent from the data and maintains an objective stance	Large samples, measurement can be quantitative and qualitative
Realism	Research is value laden; the researcher is biased by world views, cultural experiences and upbringings	Methods chosen must fit the subject matter, quantitative or qualitative
Interpretivism	Research is value bound; the researcher is part of what is being researched and cannot be separated	Small sample, in depth investigations, qualitative
Pragmatism	Values play a large role in interpretation; the researcher adopts both objective and subjective points of view	Mixed or multiple methods designs, quantitative and qualitative

Now that this research is located in the pragmatic paradigm, the discussion on methodology and methods used in the course of this research can commence.

4.4 Methodology

Methodology, which underpins the choice and use of particular methods and tools, is concerned with the why, what, from where, when, and how data is collected and analysed (Scotland, 2012; Mohajan, 2021). My methodology needs to be interpreted through the conceptual lens of my chosen paradigm, which in turn determines how the data will be analysed (Guba, 1990: Scotland, 2012; Kivunja and Kuyini, 2017).

The relationship between paradigm and methodology is important as the methodological implications of paradigm choice permeates the entire research project: the research question, participant selection, data collection instruments and data analysis (Scotland,

2012; Kivunja and Kuyini, 2017).   And as indicated in axiology, my methodology will be guided by my initial values.

Having done research on various methodologies, and having determined that I have a relational epistemology which feeds into a pragmatic paradigm, I know I want something far more related to actionable knowledge (Scotland, 2012). To understand a millennial's current financial behaviours, it was critical to gather relevant information to complete a picture with a broad perspective. That led to the identification of the Delphi methodology as it is designed for industry experts to help share feedback and insights (Okoli and Pawlowski, 2004; Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016; Rand Corporation, 2021). It was important to ascertain a leader's lived experiences of working with the millennial investor.

But as a pragmatist, this research is also looking for action *and* change. As such, I needed to look at different methods to achieve this. In an effort to enhance the trustworthiness of the data, the process I chose was a Delphi study of leader opinions on what is important to millennial investors (subjective), and went beyond it by incorporating a quantitative survey (objective) to provide additional insights from outcomes learned, conducted with a larger sampling. A look at the Delphi methodology selected will lay the foundation for the method used.

4.4.1 Delphi Methodology Defined

The Delphi methodology was originally developed in the United States by the RAND Corporation in the 1950's as a way of forecasting future trends using expert opinions in specific areas (Okoli and Pawlowski, 2004; Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016; Rand Corporation, 2021). Although there are variations on how Delphi is

used, it does have distinct characteristics. A panel of experts is selected and presented

with a list of questions to answer. From their answers, analysis is done, and then

presented to them again seeking consensus (Iqbal and Pipon-Young, 2009; Avella, 2016,

Laick, 2012; Rand Corporation, 2021). This technique can be particularly useful in areas

of limited prior research, as it is well suited to explore areas where debate or lack of

clarity exists (Iqbal and Pipon-Young, 2009; Avella, 2016). This methodology is consistent

with my relativism epistemology and non-singular reality ontology, and is well suited for

my research, as it helps determine the range of expert opinions and seeks a consensus on

debated topics (Okoli and Pawlowski, 2004; Iqbal and Pipon-Young, 2009; Avella, 2016).

4.4.2 Delphi Design Overview

Delphi uses a group of knowledgeable participants or panellists, without concern for

geography, specially selected for their particular expertise, for this research, financial

expertise. The initial focus for panel membership is to choose appropriate experts, which

cannot be overstressed (Laick, 2012; Avella, 2016). There may be a limited number of

experts with knowledge about the research questions, however, the Delphi panel size

requirements are modest, anywhere from eight – twenty panellists ideal (Laick, 2012).

These panellists are the lynchpin of Delphi, and inclusion criteria should be applied as a

means of evaluating the results and establishing the relevance to other settings (Iqbal

and Pipon-Young, 2009). Both Laick (2012) and Avella (2016) go on to list the pre-

conditions that are required to be considered an expert:

- experience and knowledge in the field being researched
- a willingness and capacity to participate
- sufficient time in which to participate
- clear and effective communication skills

4.4.2.1 Designing the structure

The next step in construction is designing the (Iqbal and Pipon-Young, 2009; Avella,

2016):

- consent forms and procedures
- questionnaire
- letters to participants
- number of rounds
- timeframe to complete the questionnaire

4.4.2.2 The Questionnaire

The researcher amasses an initial list of qualitative questions, based on the review of

relevant literature, and disseminates it to the expert panel (Avella, 2016). Ideally, the

more open-ended the round one questionnaire is, the better, as it invites panellists to

brainstorm (Laick, 2012). This allows for an 'idea generation' stage, in which panellists

are asked to identify the gamut of notable issues and focus on opportunities (Iqbal and

Pipon-Young, 2009). In general, if the research seeks consensus, two "rounds" of

questionnaires are preferred; ideally retaining the same panel throughout to determine

the impact of the feedback (Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016).

4.4.2.3 Deploying the Questionnaire

The survey is deployed with the panellists replying to research questions, and asked to

spend thirty minutes completing the questionnaire; this is considered a reasonable

amount of time and essential to determine the relevance of the questions (Iqbal and

Pipon-Young, 2009; Rand Corporation, 2021).

4.4.2.4 Collating ideas and themes

The themes generated from the initial survey in round one will help construct the survey

distributed in subsequent rounds (Iqbal and Pipon-Young, 2009). This step is interested

in the formation or exploration of consensus, where panellists agree with each other on the questionnaire items (Iqbal and Pipon-Young, 2009; Avella, 2016).

4.4.2.5 Refinement of Findings and Number of Iterations

Delphi is an iterative process, with the subsequent questionnaire constructed from feedback gathered from the previous questionnaire (Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016). Using the process identified by Moser and Korstjens (2018), the construction of the round two questionnaire is often time-consuming for the researcher; however, it may be less time consuming for the panellists to complete. After each round, participants receive the group feedback listed in order of most often mentioned to least often (Avella, 2016). The process stops when consensus is reached, theoretical saturation is achieved, or when enough data have been exchanged (Laick, 2012).

4.4.2.6 Evaluation, Analysis and Dissemination of Results

After multiple rounds have been deployed, panellists are provided with the panel's responses and asked to re-evaluate their original responses to arrive at expert consensus (Laick, 2012; Avella, 2016; Rand Corporation, 2021). The purpose: invite panellists to consider their scores in light of the group response and decide whether they want to change any of their responses (Iqbal and Pipon-Young, 2009). While this may eliminate the risk of researcher interpretation, panel members would still be encouraged to add any additional alternatives based on their own experiences (Avella, 2016). Figure 4.1 provides a visual of the Delphi design.

Figure 4.1: Delphi methodology design (Source: Rivière, 2018)
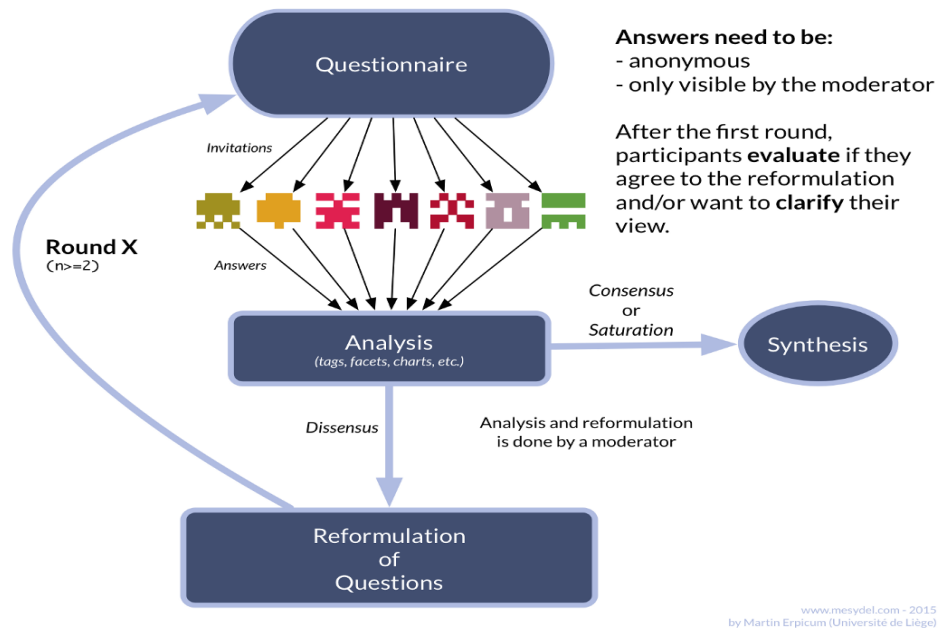
4.5 Advantages of Delphi

The main benefit of the Delphi methodology comes in achieving consensus in areas of uncertainty (Laick, 2012; Avella, 2016). Delphi is flexible and straightforward in its design, and easily lends to follow-up. It allows for the collection of richer data leading to a deeper understanding of the fundamental research phenomena (Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016). Additionally, data is available in a digital format avoiding transcription errors (Laick, 2012). According to Okoli and Pawlowski (2004) Delphi is valuable as it is an investigation that supports the usage of technology in a field which requires knowledge from people who understand the issues. Thus, leaders can answer questions more appropriately.

4.6 Limitations of Delphi

Like most research designs, Delphi is not without limitations. Flaws may appear from either the researcher's or the panellists shortcomings or biases stemming from the literature review, and not from the design itself (Avella, 2016). Defining what is considered to be an expert has also generated some debate (Laick, 2012).

Another major limitation is that a panellist may not be genuinely convinced of other participant responses and may change their input merely to conform to the group, bringing the process to an end sooner (Laick, 2012). Anonymity could tempt the participants to be less than fully motivated and less rigorous in their contributions. Also problematic is the possibility that a panel member may drop out at any point for any reason, especially as participants are busy and may have difficulty participating in multiple rounds (Avella, 2016).

From the Delphi completion, a quantitative questionnaire was constructed allowing this research to go to a broader sample; this led into becoming a mixed methods approach.

4.7 Mixed Methods Approach

Howe's (1988) Incompatibility Thesis contends that quantitative and qualitative research should not be mixed. However, in considering my methodological approach, I paid attention to the initial aims and objectives for this research and did not want to be constrained to one; so a mixed methods was chosen. By using both, I develop into a pragmatic researcher (Onwuegbuzie and Leech, 2005) and build a more complete understanding of the complexity of decision-making and its implications (Mack et al. 2005). Neither quantitative nor qualitative research is independent with my research driven by both the desire to calibrate, and a desire to capture the participant's voice. The Delphi study was implemented which allows me to become flexible in my investigative technique, interpret and ultimately better understand my research question (Onwuegbuzie and Leech, 2005). By adapting it to include a larger quantitative survey, in conjunction with the literature review, developing trends over time may emerge.

4.8 Summary of Research Design

Figure 4.2 summarizes the research paradigm, theoretical perspective, axiology, methodology and methods for the research design. I am following the pragmatic tradition. **This pragmatic paradigm has a relational epistemology where the relationships in research are best determined by what the researcher associates as appropriate to the study, an ontology that identifies a non-singular reality where all individuals have their own unique interpretations of reality, a Delphi methodology that adopted mixed methods to open up a rich understanding of the data, and a value-laden axiology which conducts research benefiting people (Kivunja and Kuyini, 2017).**

Figure 4.2: Summary of Research Design
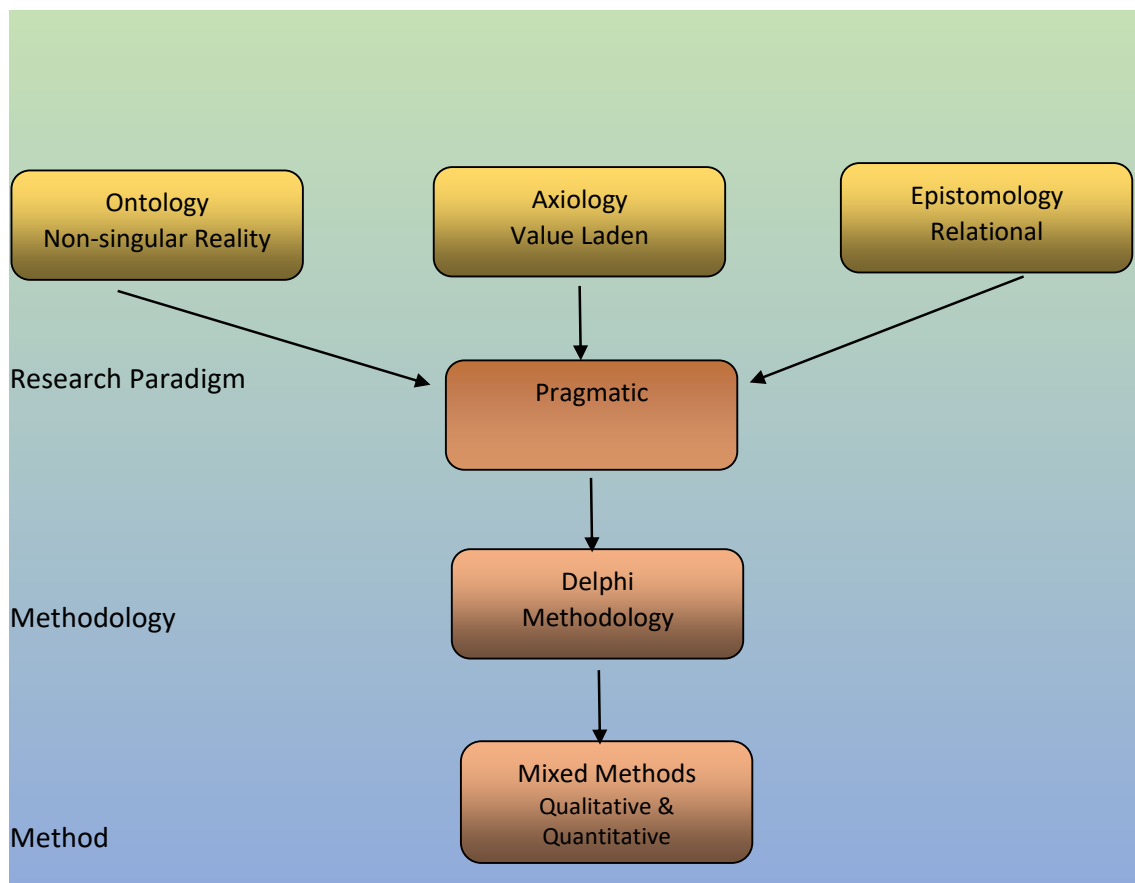
4.9 Ethical Considerations

Conducting this research project incorporated the collection of both sensitive and confidential data. I am under an obligation to act with methodological and ethical

credibility, and it was necessary to follow a moral map built on respect and trust for each

participant (Kaiser, 2019). At the core, ethical principles stress the need to do

good (beneficence) and do no harm (non-malfeasance) (Laerd, 2021a). In education, the

American Psychological Association (APA) has played an integral role with principles

enacted as pillars within its Ethics Code (Kaiser, 2019). These principles, corroborated by

Laerd (2021a) are:

> **Principle One: Honesty** – I am avoiding any kind of deceptive practices; being
>
> honest means being trustworthy, fair, and credible. I am clearly stating the
>
> research purpose ensuring each participant has an option to decline participation.
>
> **Principle Two: Requirements for informed consent** – Prior to commencing, I
>
> provided all participants a detailed description of the survey purpose, advised
>
> they were taking part in research, and what the research required of them. A
>
> personal phone call was made to each participant on possible research outcomes
>
> and that their participation was voluntary.
>
> **Principle Three: Anonymization, confidentiality, and storage of data** – Protection
>
> of privacy and anonymity is key to protecting integrity. I am protecting the
>
> anonymity of the participants by removing identifiers, adding passwords, and
>
> encrypting access to data. The detailed response information is kept on a
>
> password protected laptop, securely stored. The data analysis has no personal
>
> identifiers, e.g. name, as a means to safeguard the confidentiality of participants.
>
> **Principle Four: The right of access to participant data** – I have allowed the
>
> participants to see the completed survey data and analysis as they were given the
>
> option to provide their email address to see the final results.

Principle Five: Providing the right to withdraw – I allowed the participant to

withdraw at any time, not start, nor finish the survey. Surveys not completed did

not get factored into data analysis, fulfilling the participants desire to withdraw.

Additionally, the University policies and ethical standards were carefully reviewed for

alignment. Although the survey and demographic information is retained for inquiry and

analysis, the questionnaire does not include any questions that would harm the

participants psychologically or present damage to the University's reputation.

I also hold multiple financial industry degrees including the Certified Financial Planner

designation (CFP®). The ethical standards set forth by the 2022 CFP ® board on how I

conduct myself as a financial professional are incorporated into how I conduct myself as

a practitioner researcher:

> 'CFP Board's *Code of Ethics and Standards of Conduct* reflects the commitment that
> all CFP® professionals make to high standards of competency and ethics. CFP
> Board's *Code and Standards* benefits and protects the public, provides standards for
> delivering financial planning, and advances financial planning as a distinct and
> valuable profession. Compliance with the *Code and Standards* is a requirement of
> CFP® certification that is critical to the integrity of the CFP® marks. Violations of
> the *Code and Standards* may subject a CFP® professional to discipline."

> A CFP® professional must:

> - act with honesty, integrity, competence, and diligence
> - act in the client's best interests
> - exercise due care
> - avoid or disclose and manage conflicts of interest
> - maintain the confidentiality and protect the privacy of client information
> - act in a manner that reflects positively on the financial planning profession
>   and the CFP ® certification

The extensive literature review has provided understanding and insights allowing the

researcher to develop the project activity discussed in the next section. The researcher's

focus for the Delphi methodology is additive; to develop more robust knowledge and

understanding.

Chapter 5: Project Activity: Delphi

5.1 Introduction

Through the Delphi design, this chapter provides the reader with details on the project activity. Panellist selection, survey design and structure, and questionnaire deployment will be discussed. I will then go on to detail data collection and refinement which resulted in a dissemination of results to the leaders. The chapter concludes with how confidence in the study was achieved. Also explained throughout the chapter are any variations from the initial intent.

5.2 Selecting Panellists

This research included a pool of leaders from the financial services industry. Over the past twenty-five years, I have developed relationships with senior leaders within varied firms, giving me an opportunity to identify appropriate and diverse candidates. Specifically, over the past 18 months, I have had multiple conversations with industry leaders around this research and how it will enrich our perceptions on millennial decision-making, from both a theoretical and practical standpoint. There was anticipation in the air for the research to begin! With this extensive network, I had planned on doing in person interviews, however, as this research was taking place during the COVID-19 pandemic, face to face interviews had not been possible, thus an open-ended questionnaire was utilized.

To establish someone as an expert in the field, selection criteria were implemented. I looked at leaders with a minimum of at least 10 years leadership experience in financial services with sufficient roles, responsibilities, and appropriate seniority, to actually develop strategy in this area. Hence, CEO, Presidents of Business Lines and Heads of Sales were selected, with the demographic breakdown listed below.

Demographics of the 34 leaders were:

Gender:
Females = 12 (35%)
Males = 22 (65%)

Ethnicity:
Diverse Participants = 6 (18%)
Caucasian Participants = 28 (82%)

Financial Services Industry:
- 14 Insurance Company Leaders from 8 Different Firms (this group on average, had 15 years of leadership experience)
- 5 Leaders in Broker Dealers from 3 Different Firms (this group on average, had 15 years of leadership experience)
- 10 Leaders of Internal Sales & Support from 5 Different Firms (this group on average, had 10 years of leadership experience)
- 5 CEO's and Small Business Owners (this group was the most seasoned, and on average, had 20 years of leadership experience)

5.3 Choosing the survey tool

The researcher reviewed several online surveying tools, seeking to select an easy and appropriate tool for data collection. For this initial qualitative survey, SurveyMonkey was chosen for its ease of use and familiarity among the respondents.

5.4 Designing the questionnaire

An initial list of qualitative questions was amassed, based on the review of relevant literature (Avella, 2016). Initially, the biggest hurdle was identifying themes, and then reducing over one hundred survey questions down to a manageable number; in order to gain unique insights yet not overwhelming a participant in the process. Ideally, the more open-ended the round one questionnaire was, the better, as it invited panellists to generate ideas (Iqbal and Pipon-Young, 2009). Over a period of several months, I:

- had multiple conversations with my supervisor to review the questions
- developed multiple iterations of the questionnaire and reduced the overall number of questions to 23, including optional name and email for findings
- worked with three industry experts, unrelated to this research, but aware of the demographics. These experts knew the scope of the project which allowed for evolution of ideas and rigorous sequence and wording

- worked on suitability of each question to determine if the flow was amenable for the participants

The goal, have each question build on the previous question, while eliminating ambiguity throughout the survey.

5.5 Delphi questionnaire

Below is the final survey deployed to the industry leaders:

This survey is anonymous; if you would like to have results, please include your:

Name: _____

Email: _____

1. What do you believe are essential characteristics of effective decision-making?
2. What defines an effective decision-making process when investing?
3. What are the key factors that influence your decision to purchase a product?
4. How do intentions impact decision-making?
5. In what ways do millennials differ in decision-making compared to other generations?
6. What outside forces play a key role in millennial financial decisions?
7. In your opinion, how do prior investment experiences affect millennial financial decision-making?
8. In your opinion, what role does fear play on a financial decision made by millennials?
9. What role does trust play in financial decisions by millennials?
10. How are financial professionals reducing the perceived risk in financial investment decisions?
11. In what ways are millennials using social media in their financial decision-making?
12. In what ways will financial professionals need to engage the millennial investor on-line to be more effective?
13. How can products and brands reflect millennial values?
14. How can brands encourage engagement and positive conversations on social media?
15. What influences and specific social values persuades a millennial to invest the way they do?
16. How does a financial professional demonstrate that their brand is tied to specific millennial values?
17. How is technology helping financial professionals become more aware of millennial needs?
18. In what way do millennials prioritize current life pressures such as family or work/life balance?
19. What do you believe are the future aspirations of millennial investors?
20. How has financial decision-making around investments and savings changed in light of COVID?
21. What impact has the COVID-19 pandemic had on the way financial professionals operate?

5.6 Deploying the questionnaire

Once the survey was ready to deploy, each leader received a personal note confirming their agreement to participate and asked for their preferred e-mail address. After careful reflection, the survey was disseminated to the expert panel (Iqbal and Pipon-Young, 2009; Rand Corporation, 2021). Generally, the panellists were asked to spend thirty minutes (considered a reasonable amount of time) completing the twenty-three-question survey (Iqbal and Pipon-Young, 2009). The email they received included:

- a brief review of the purpose of the survey
- the survey link
- information on approximate survey completion time and date
- a genuine thank you for their time

The initial notes to participants occurred on a Friday with the survey link sent Saturday. A follow-up email and link were sent the subsequent Saturday with a reminder of the survey completion date.

5.7 Collating ideas and themes

After receiving the data from the round one survey, the next step was to collate the themes generated. This step was interested in the formation of consensus, with panellists' agreement, which would help construct the survey distributed in the subsequent round (Iqbal and Pipon-Young, 2009; Avella, 2016).

5.8 Refinement of Findings, Analysis and Dissemination of Results

Delphi is an iterative process, with subsequent questionnaires constructed from feedback gathered from the previous questionnaire (Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016). This research sought consensus with two "rounds" of questionnaires, and by using the process identified by Moser and Korstjens (2018), participants received the round one responses in order of most often mentioned to least often mentioned (Avella, 2016), and were asked to re-evaluate their original responses to arrive at expert

consensus (Laick, 2012; Avella, 2016; Rand Corporation, 2021). The purpose: invite

panellists to consider their responses through the lens of the group responses, and

decide whether they wanted to make any changes (Iqbal and Pipon-Young, 2009). While

this may eliminate the risk of researcher interpretation, panel members were still

encouraged to add any additional alternatives based on their own experiences (Avella,

2016). Constructing the round two questionnaire was time-consuming; however, it took

less time for the panellists, as a result, I was able to retain the same panel throughout for

consistent feedback (Iqbal and Pipon-Young, 2009; Laick, 2012; Avella, 2016).

Figure 5.1: Process Flowchart of survey design

Selected pool of industry leaders having multiple conversations on research importance over 18 months

Personal note asking them to spend 30 minutes to provide insights on millennials

Round One: Emailed survey link, a brief summary of research, and approximate time for survey completion

Resent survey link one week prior to survey closure for those not yet responding

Round Two: Gathered survey findings, refined a new iteration, and sent to leaders seeking consensus

Personal thank you sent. As promised, sent survey findings to those who provided email addresses

5.9 Survey Successes

Within the first 24 hours of survey deployment, 20% of the participants had completed

the survey with the first participant indicating that the survey questions were very

thought provoking. The more senior a leader was, the more likely they were to complete

the survey, with more than 80% of senior leaders responding to the survey results. The

researcher accomplished an overall 80% completion rate with 27 out of 34 targeted

participants completing the survey. This high success rate came from a foundation of

multiple conversations with the participants held over 18 months on the value of this

research, along with personal notes and my willingness to share the research insights.

5.10 Survey Challenges

The researcher did face several challenges:

- time constraints to complete the survey from those individuals who were running business lines
- several firms had compliance issues which prevented several participants from participating in the survey
- one of the participants, although a leader of millennials, was not directly in the financial services industry, however, had significant knowledge of millennial behaviours, and his feedback proved to be insightful providing a reference for what consumers who do not have any investment experience might think

Some additional insights, although all participants are leaders, some participants noted

that they did not know if they had enough personal data to answer questions on the

millennial investor and only 55% of the respondents asked to see the survey results

afterwards.

5.11 Achieving Confidence in this Study's Qualitative Analysis

There is an emphasis on trustworthiness to enhance the acceptability of collected data,

and a set of criteria is needed Lincoln and Guba, 1994; Akinyode, 2018). The bedrock of

high-quality qualitative research rests in the trustworthiness of the results (Birt, et. al,

2016), which may not follow any consistent systematic guidelines, but does incorporate an audit trail. This study's trustworthiness was assessed incorporating transferability, dependability, confirmability, reflexivity, and credibility ensuring the analysis was credible and unbiased (Lincoln and Guba, 1994; Shenton, 2004).

5.11.1 Transferability

The researcher furnished the question description to participants providing insight on data collection. Findings analysis allows the reader to determine relevance. The development of research themes provides the reader an ability to evaluate the transferability of knowledge.

5.11.2 Dependability

Through the anonymous qualitative survey, insights from participants were captured. This ensured no bias or intervention from the researcher. Data was categorized and coded for thematic analysis allowing the findings to be derived free from researcher bias.

5.11.3 Confirmability

The data and findings have been maintained by the researcher empowering future researchers the ability to replicate the findings. Future researchers could replicate the research through confirmation of the original data, or new surveys with similar participants.

5.11.4 Reflexivity

Through reflection on the existing relationships with participants, it was determined to keep the survey anonymous and remove any personal identifiers. This removes bias ensuring that the researcher's time is spent on identifying themes and disclosing what the data reveals.

5.11.5 Credibility

Over the past 25 years in the financial services industry, the researcher has built a vast and diversified network of leaders facilitating the high response rate. Through an open-ended, thirty-minute survey, extensive participant insight was provided with all participants given an ability to provide feedback on my data analysis.

5.12 Summary

In summary, this chapter provided a detailed account of my initial Delphi project activity. There was a purposeful sample of 34 diverse leaders. I examined this data against the literature review to see what themes emerged, and conducted this research ethically, with due concern for the anonymity, confidentiality, and overall safety of participants. My intention is that this research will help the insurance and investment field when it comes to understanding millennial financial decision-making.

As a learner practitioner with a pragmatic paradigm, I am someone who puts an emphasis on understanding people. Including both subjective data and objective data can lend clarity to that understanding. From an ontological perspective, leaders will have their own unique interpretation of reality (non-singular), and from an epistemological perspective, these relationships are best determined by what I think is appropriate to the study (relational). In this case, I believe both would be additive. The next chapter will explore the project findings and analysis of the qualitative leader survey before leading into the quantitative survey and findings in Chapters 7 and 8.

Chapter 6: Project Findings: Delphi

The famous 19th century German philosopher, Fredrich Nietzsche's quote: *You have your way. I have my way. As for the right way, the correct way, and the only way, it does not exist* which speaks to the very heart of qualitative analysis (Medrut, 2018). I begin this chapter with a presentation of the qualitative Delphi survey. McLeod (2019) indicates that qualitative data is interpretive. As such, I will follow the in depth, five-step process for analysing qualitative data which can be found in Appendix 1 (Akinyode, 2018; Connors, 2018; O'Leary, 2020; Bhattacherjee, 2021). By following their work, I went beyond the common analysis that normally happens, with the hope to provide real clarity from this qualitative analysis. I seek to have a better interpretation with beneficial implementation. I am fully aware that this process is not standard, and that not everyone analyses qualitative data like this. My use of this qualitative technique is dependent on the research objectives to gain a rich, intense, and holistic overview of what is being studied (Gray, 2014; Akinyode, 2018). This is qualitative analysis with a quantitative bend. However, this research is grounded. Data collection, data logging and searching for themes will be explored within each section, providing a summary of actions taken in that particular step.

Next, consistent with my ontology and epistemology, I choose to lay the data out by each question, providing identified codes and frequency of responses. A matrix will provide a visual to the most common responses for each question, and each question will be richly illustrated with quotes from the industry leaders. I will provide an explanation of the thematic analysis which culminates in a concept map of the interconnectedness of data. This will lead into the quantitative survey presented in chapter 7.

6.1 Data Collecting – Organize and Prepare

I organized participant responses for logging by gathering notes and:

- downloaded from Survey Monkey
- placed onto an excel spreadsheet
- broke out into individual question tabs

This provided an easy way to sort data with a visualization of links between data and themes. This process provided efficiency when I needed to reach back out to the participants to gain alignment through either email or phone calls.

6.2 Data Documentation/Logging – review and explore

I then explored the responses multiple times seeking to identify common phrases, themes, and interconnections to other questions. Foundationally, this step helped me create codes based on the data review, and helped reduce researcher bias (O'Leary, 2020). The excel worksheet allowed me to identify codes with colour, such as brand values and risk tolerance, and sort each question by common participant responses.

6.3 Review and Search for Themes; Create data classifications and codes

Qualitative data utilizes meanings which are reflected through language and behaviour (Dey, 1993; Namey et. al, 2013). As such, I then sought to identify parallels, or commonalities, not identical but same way thinking, of identified codes by building both categories and subcategories and observed if they were associated with other questions. This step was critical and time consuming. Starting with the large data set, I funnelled it into relevant categories for thematic analysis listing each question by:

- identified codes of participant responses e.g., thoughtful, evaluate, impact
- frequency of identified codes
- insights derived from industry expert responses (in an effort to establish confidence in the accuracy of the interpretation and fit of the subcategories)

To provide additional insight, a direct quote from each respondent has been used as there is a richness to their perspective. In an effort to have broad representation, no more than two quotes per respondent were used. The top identified codes are listed below, with the full list available in Appendix 2. In an attempt to embrace the common experience, similar codes were identified, with frequency referring to the number of participant comments included in that code.

Question #2 - What do you believe are essential characteristics of effective decision-making?

Identified Codes	Frequency	%
Evaluate options of the decision	9	33%
Long term impact of the decision	8	30%
Using adequate time to reflect on decision outcomes	7	26%
Making thoughtful decisions	7	26%
Seeking help from others and detailed information	5	19%

Evaluation:

The participants identify that characteristics of decision-making consist of multiple factors, including evaluating the long-term impact of the decision:

- "Effective decision-making focuses on what is important and considers the impact of the decision in the short term and its strategic or longer-term impact" (Respondent #11).

Thoughtful reflection:

Thoughtful reflection was identified by a number of participants as a way to ensure one's process around financial solutions, is well thought through. Thinking about the overall impact of the investment on one's portfolio, with how it aligns to one's risk tolerance and overall goals:

- "Having a goal or end game in mind. Working through a defined process to make the best decision. Thoughtfully analysing the alternatives both pros and cons. Understanding the impact of the decision on the decision maker and also those connected to the decision maker" (Respondent #12).

Question #3 - What defines an effective decision-making process when investing?

Identified Codes	Frequency	%
Understand risk tolerance	16	59%
Has the decision led to the established goals and objectives	15	56%
Ongoing monitoring and research	9	33%
Understand time horizon of decision (long-term vs. short term)	7	26%
Education, Knowledge & Awareness	7	26%

Understand risk:

The participants identified that an effective decision-making process incorporates risks

and end goals from that decision. In understanding one's objective and timeline, one can

gather information or ask questions to have a better understanding of their risk

tolerance:

- "Know your objective, know your timeline, gather information, ask questions, pose objections, work with a professional, get differing opinions, know your risk tolerance" (Respondent #5).

Establish goals:

Understanding one's established goals provides a foundation for awareness of risk vs.

reward, and allows one to see not just short term, but long term as well:

- "Focus on long term goals but have awareness of current events and market impacts" (Respondent #20).

Question #4 - What are the key factors that influence your decision to purchase a product?

Identified Codes	Frequency	%
Costs/Fees/Price	15	56%
The need it fulfills and the value it provides	13	48%
Quality of the company that backs the product	11	41%
The risks involved with making the decision	10	37%
Trust of the recommendation	8	30%

Cost:

The participants indicate that multiple factors influence a decision to purchase a product,

with quality and cost big priorities:

- The key factors that influence my decision to purchase a product begins with how the product aligns to my needs. I am happy to pay more for quality as long as the product achieves my needs" (Respondent #17).

Value:

The value that a brand brings to a consumer is a common theme for millennials, speaking

to their alignment of values and perceived needs relative to other options:

- "Brand, quality, cost, ratings, performance, risk, recommendation from someone I trust" (Respondent #7).

Question #5 – How do intentions impact decision-making?

Identified Codes	Frequency	%
The **initial step** of the decision-making process	6	22%
Helps make a difference in the research one needs to do prior to a decision	5	19%
Not sure if they do impact the decision at all	5	19%
Intentions can be **emotional** which interferes with objectivity	5	19%
It is relative and can range from impulsive to planned	3	11%

First step:

The participants indicate that intentions are used as the first step in making a decision to

purchase a product or service. They can range from impulsive to planned and are,

initially, a driving force in decision-making more than facts:

- "In a process, "intentions" are typically where it starts. What do you "intend to do, intend to achieve, intend to build, etc". This includes what you "don't intend to do, achieve, or build... a negative outcome. I see it as having intentions at the beginning part of a decision-making process" (Respondent #17).

Emotional:

Emotion was identified by a number of participants across multiple themes, and indicates

that emotions can impact purchases, or may interfere with objectivity:

- "I think intentions are critical for decision-making; thoughtful consideration of intentions can remove emotional pulls that may distract from core values or guidelines (i.e. a budget, or investment fundamentals)" (Respondent #8).

Question #6 – In what ways do millennials differ in decision-making compared to other generations?

Identified Codes	Frequency	%
They suffer from present bias from easily accessible, immediate information	10	37%
Rely on social media, ratings and reviews to learn about others experiences	10	37%
Prefer on-line searches as a source for recommendations	5	19%
Seeks advice from peers	5	19%
Think about things with a greater purpose in mind	4	15%

Immediate Information:

Generational differences may be seen in how decisions are made, and millennials have

been heavily swayed by easily accessible immediate information from social media:

- "Millennials were born in a time when everything is at their fingertips, decisions can be made at any time of the day, on their phone. Yet they haven't had the live experiences that other generations have had" (Respondent #6).

Reliance:

The participants indicate that millennials make decisions, based on things they read, see,

or watch from purported experts found on the internet and on-line searches:

- "They rely heavily on the opinion of social and digital media. They are more comfortable buying on-line and prefer to use technology as a source for recommendations — e.g. Yelp ratings" (Respondent #4).

Question #7 - What outside forces play a key role in millennial decision-making?

Identified Codes	Frequency	%
Social Media and on-line ratings	19	70%
Peer pressure	8	30%
Risk adverse worrying that they may not be able to meet their financial goals	6	22%
Environment/climate change is a lens for investment decisions (ESG)	4	15%
College debt levels and high cost of housing reduce ability to save	4	15%

Social media influence:

The participants indicate that this generation is heavily influenced by outside factors

based on social media, which was identified across other themes:

- "Social media, immediate gratification, peer pressure" (Respondent #15).

Peer pressure:

Millennials may be swayed from friends and influencers succumbing to peer pressure.

Respondent quote:

- "Peer pressure. The need to have things. Social ladders" (Respondent #23).

Question #8 - In your opinion, how do prior experiences affect millennial financial decision-making?

Identified Codes	Frequency	%
Financial crisis/**past experiences** shape future risk tolerance	9	33%
With less experience, they are less apprehensive and more **risk tolerant**	9	33%
More **risk adverse** and cautious	7	26%
More likely to emphasize an investment philosophy that enriches both themselves and the world around them	3	11%
More self-reliant, more skeptical, less trusting	3	11%

Risk tolerance:

Those millennials that were impacted by the financial crisis are more conservative in their

investment decisions. However, some millennials have been involved in Bitcoin and

Reddit and are making short term decisions to capture returns while taking outsized risk:

- "Exposure to risk, either directly or indirectly, has made them generally more risk averse" (Respondent #15).

Prior experiences:

Millennials have been influenced by the times in which they have grown up, which has

shaped their risk tolerance. The participants indicate that prior investment experience is

impacting millennial decisions.

- "To a great extent, prior experiences are an important indicator of future possibilities. But there is a flip side here as millennials are open to change and they do seek out new opportunities" (Respondent #20).

Question #9 - In your opinion, what role does fear play on a financial decision made by millennials?

Identified Codes	Frequency	%
Fear and greed are drivers for all generations	13	48%
Makes one more risk adverse	9	33%
Market volatility causes uncertainty	6	22%
More risk tolerant	5	19%
Job security fears	4	15%
Present living / Fear of missing out (FOMO)	4	15%

Generational:

The participants indicated that fear is not generational and is a strong driver for all age

cohorts. Fear affects all generations when making risky decisions:

- "I think like other generations, fear plays a large role in decisions" (Respondent #9).

Risk:

The participants indicated that millennials are more risk adverse. Financial crisis of

2009/2010 has impacted their willingness to take risk. They are less willing to endure

extreme volatility for potential higher gains:

- "Fear plays a role in financial decisions for millennials and other generations as well. Millennials have seen their parents downsized at work, seen company loyalty decline and have also seen market corrections impact retirement savings for other generations. This creates fear and impacts their financial decisions" (Respondent #12).

Question #10 - What role does trust play in financial decisions made by millennials?

Identified Codes	Frequency	%
More self-reliant with verifiable digital research	15	56%
Highly regarded, vital foundation	10	37%
Trust is important for every generation, not only for millennials	10	37%
Seeks advice from influencers or those with experience	7	26%
A need to "feel" trust in an advisor	4	15%

Digital:

Millennials are looking for trusted relationships to help them through their financial

decisions. However, this is not different from other generations. What differs is where

they place their trust, and digital means something to them:

- "I think trust plays the same role for most investors. For millennials they simply trust digital mediums to a greater degree" (Respondent #1).

Verified:

The participants indicated that millennials like to make decisions based on their research;

they are mostly thinking about trusting themselves and not others:

- "HUGE! I believe Millennials will look for much data before investing - checking and backchecking to be sure everything aligns. They certainly have much more and different data at their fingertips than other generations!" (Respondent #10).

Question #11 - How are financial professionals reducing the perceived risk in financial investment decisions?

Identified Codes	Frequency	%
By educating millennials on risk/reward trade-offs	12	44%
Diversifying a portfolio through asset allocation	9	33%
Aligning risk to future goals and objectives	7	26%
Through the use of financial products like annuities	3	11%
Overcoming fears and reducing emotion	3	11%

Education:

Perceived investment risk may be reduced by educating a millennial on the attributes of

their portfolio. If a financial professional has the ability to provide education on

investment diversification, then this may lessen the perceived risk:

- "By educating clients on all the different risk and ways to mitigate some of the risk" (Respondent #1).

Diversification:

Goals based planning is becoming the preferred approach versus maximizing returns based on risk appetite. A diversified portfolio can help accomplish this:

- "I think that there are many diverse views that exist about the meaning of risk and its relationship to an investment return. I think this comes down to knowledge. The less you know, the more you are afraid of something. If financial professionals can get them to listen long enough to become educated, I think this will lessen the perceived risk (Respondent #24).

Question #12 – In what ways are millennials using social media in their financial decision-making?

Identified Codes	Frequency	%
Allows them to **confirm** what others/influencers are doing	14	56%
Starting point for their research and education	13	48%
Has a **heavy influence** in gathering data	5	19%
Provides a **platform to share**	5	19%
New financial websites now allow for the implementation of their research	3	11%

Starting Point:

The participants indicate that from research to implementation, millennials use social media as their first place to make their decisions. It has become a big influencer from both an educational perspective as well as information sharing perspective:

- "First and last stop for information (Respondent #13).

Confirmation:

The participants indicate that millennials use social media to get feedback and confirmation from others before making a financial decision while also considering the impact of the investment on a broader level:

- "They follow investment advice groups on forums like Reddit, TikTok and YouTube. They ask questions on those forums to other users and gain confirmation on their situation" (Respondent #7).

Question #13 - In what ways will financial professionals need to engage the millennial investor on-line to be more effective?

Identified Codes	Frequency	%
Engage them on their preferred sites (YouTube, Redit, Instagram)	12	44
Use simple, short language	9	33%
Have an engaging/interactive web presence	7	26%
Makes it easy to communicate via mobile devices	5	19%
On-line engagement will be essential for success	4	15%

Engagement:

Effective on-line engagement will be vital for the financial professional's success with the

millennial investor. The ability to connect on their virtual platforms to build a

relationship will be critical for effective communication:

- "Financial professionals will need to be able to engage millennials in the mode they prefer" (Respondent #11).

Short messages:

The participants indicate that attention spans are short:

- "Attention spans are short, so messages need to be succinct, simple, and captivating. Interactive, dynamic, and digital presentations will be required" (Respondent #4).

Question #14 - How can products and brands reflect millennial values?

Identified Codes	Frequency	%
Include an environmental focus with impact investing (ESG focus)	10	37%
Be transparent with a truthful message	9	33%
Have a positive impact for society/world (greater good)	9	33%
Focus on diversity and inclusion	7	26%
Cater to the millennial asking what matters to them in a brand	3	11%

ESG:

Investment products that embrace socially conscious investment philosophies and show

the millennial the benefit of the product, can create a genuine foundation for the

millennial investor:

- "Build trust by being transparent. Share on social media. Highlight how the investment is having a positive impact on society and the environment" (Respondent #2).

Connection:

The participants indicate that socially conscious and positive community impact

continues to emerge with this generation. Understanding that connection will assist the

financial professional to relate to this generation differently:

- "I believe that millennials desire brands and company values that cater to them, how they communicate and that they can relate to" (Respondent #8).

Question #15 - How can brands encourage engagement and positive conversations on social media?

Identified Codes	Frequency	%
Align reliable message to what they are passionate about	10	37%
Share how the company/brand improves their lives and community	9	33%
Have an open forum to ask for their feedback/ideas	9	33%
Have a transparent/clear message	5	19%
Offer investment game scenarios (gamification ideas)	4	15%
Use influencers they respect to help reflect the brand	4	15%

Alignment:

By aligning the brand with ideas that resonate positively with their target market, brands

can engage through influencers on social media. Brands that invest in causes important

to their target audience may gain trust:

- "Make it relatable and messages that resonate with everyone" (Respondent #26).

Improving lives:

There was a common thread throughout many themes with this. Through topics like

protecting the environment, social justice, and equality, and what that brand is doing to

reflect their values, financial professionals relate to the millennial investor:

- "Shareable examples of how a company or investment is improving the lives of others. Support simple and easily accessed events and programs to help the community. An example of this is a walk or information sharing activity with little cost to join and participate" (Respondent #2).

Question #16 - What influences and specific social values persuade a millennial to invest the way they do?

Identified Codes	Frequency	%
Improving the things they care about - environmental, social, governance (ESG) investing	16	59%
Influencers/peer pressure/herd mentality (FOMO)	6	22%
Alignment with companies doing good	5	19%
Companies that focus on Diversity and inclusion	4	15%
Companies that provide unique experiences	3	11%
Does it have future growth potential	3	11%
Use social media	3	11%

ESG Investing:

Millennials values drive their behaviour, and these same values impact their investing

decisions, a common thread throughout. They choose to work for companies that are

more diverse and give back to their communities:

- "They are very in tune with environment and social justice" (Respondent #14).

Peer pressure/Herd mentality:

The findings indicate that millennials are influenced by their peers and by what others

say and do; if everyone is investing this way, then it must be good:

- "If a peer says that they got in on the trend, then they don't want to be left out of that excitement/discussion" (Respondent #27).

Question #17 - How does a financial professional demonstrate that their brand is tied to specific millennial values?

Identified Codes	Frequency	%
Build trust by showing your support their social causes	10	37%
Ask about their likes and what is important	7	26%
Does the advisor have a positive impact through community support	7	26%
Provide proof and post/advertise that your brand is tied to their values	7	26%
Show that investment products align to their values	6	22%

Support their values:

The participants revealed that financial professionals need to show millennials they

clearly understand and can demonstrate they are engaged with those same social values

through the investments they provide:

- "Explain how investing with them is in line with their values and how they want to do business" (Respondent #9).

Transparency:

The participants indicate that by being transparent and asking a millennial about what is

important to them when making decisions, builds trust:

- "By being transparent about the products positives and negatives, understanding the millennials goals and clearly discussing how the advisor is getting paid" (Respondent #25).

Question #18 - How is technology helping financial advisors become more aware of millennials needs?

Identified Codes	Frequency	%
Fa's need to do research on millennial behaviors and their specific needs	11	41%
Research on generational needs leads to custom communication	10	37%
Can see their trends with influencers	6	22%
By leveraging technology, fa's can attract millennials	3	11%
Provides a better understanding and view into their preferences	2	8%

Research:

Technology is important for financial professionals as there is easy access to information

on generational values/needs.   Financial professionals need to research individual

prospects and clients to learn about specific needs:

- "Millennials show you what they are thinking based on their likes, posts and who they are connected with on social media" (Respondent #7).

Communication:

Communication is a common thread across all aspects of decision-making. In researching

the millennial needs, the financial professional better communicates:

- "Technology allows the financial professional to see or visualize what is going on with millennials, even though they are not experiencing the same thing. Use technology to look at the things they look at, and to be part of the daily world that they live in. Once you understand this, you know how to communicate with them better" (Respondent #24).

Question #19 - In what ways do millennials prioritize current life pressures such as family or work/life balance?

Identified Codes	Frequency	%
It's a guiding principle/ prioritize life balance over work	7	26%
Family first before work	7	26%
They value a flexible schedule and will work from anywhere	5	19%
Self-enrichment before work	5	19%
The value experiences and enjoy life	5	19%

Flexibility:

The participants indicate that millennials work when it fits within their schedule and

spend their free time enjoying life. Financial professionals need to adapt and show

flexibility to connect with the millennial generation:

- "They prioritize life balance over work... the ability to work from anywhere and to be efficient when working completely turns the idea of 9 to 5 on its head" (Respondent #3).

Balance:

Consistent across multiple themes, millennials prioritize family and friends over work,

seeking careers and jobs that give them that balance:

- "Millennials seem to place a higher value on work/life balance than previous generations. They are willing to sacrifice advancement or compensation at work to achieve other life goals" (Respondent #21).

Question #20 - What do you believe are the future aspirations of millennial investors?

Identified Codes	Frequency	%
Make a lot of money while improving the world	10	37%
Get reasonable returns on investments that share their values (ESG investing)	6	22%
They want to impact/influence social issues positively	5	19%
Be more self-reliant investing their way	4	15%
Have freedom from debt with financial security	4	15%
Retire early	4	15%

Wealth:

The participants indicate that with most millennials it is about life experience and

accumulating wealth; it's about maintaining a lifestyle they like:

- "My lifestyle; to achieve a reasonable return with minimal risk focusing on ESG companies and technological innovation" (Respondent #3).

Shared Values:

Millennials want to influence social issues in a positive way:

- "Millennials seem to put a huge emphasis on people and purpose. I think that they believe our generation is way too focused on profit and personal reward. Again, think social and environmental good. This is what they will be mobilizing their money for" (Respondent #24).

Question #21 - How has financial decision-making around investments and savings changed in light of COVID-19?

Identified Codes	Frequency	%
Increased awareness of short-term emergency funds	7	26%
Higher savings rates with fewer things to spend on	7	26%
Higher digital engagement rather than in person	5	19%
More people self-service investing	4	15%
More risk adverse/fearful/conservative	4	15%

Increased awareness:

Covid did not change the long-term formula for success however the participants seem

to indicate an increased awareness around the importance of short-term savings, the

regality of job security, and an increased awareness of the impact of risk on investing:

- "It has increased the risk averse nature of millennials. A glaring example of just how much things can go wrong" (Respondent #21)

Digital

The participants indicate that technology is now king and working in a remote world has

opened up more possibilities to do personal research on investments:

- "COVID created an environment of self-research since people had more time than ever on their hands. Also, since they couldn't spend their money on anything else their savings probably increased" (Respondent #26).

Question #22 - What impact has the COVID-19 pandemic had on the way financial professionals operate?

Identified Codes	Frequency	%
Adapted/increased reliance on virtual interactions	11	41%
Will continue with a future mix of both virtual and in person meetings	7	26%
Has made meetings more efficient, less expensive, and more convenient	6	22%
It is an agile way to meet clients virtually the way they want to be met	6	22%
Increased on-line prospecting	5	19%
Integrated technology into practice and are now more tech savvy	5	19%

Virtual:

COVID-19 has forced the financial professional to become more reliant on digitalized

forms of communication, more open to online dialogue, and social media:

- "Virtual client engagement" (Respondent #19).

Agility:

The participants indicate that financial professionals are now more agile in the way they

engage clients due to the COVID-19 pandemic and will have a different mix of

engagement with clients going forward:

- "Many FP's that have stayed present in the minds of their clients will continue to succeed. That is a model that has and will continue to exist and succeed for FPs. I do believe the office setting will change, but only for the near term and will eventually get back to more face-to-face interactions over the next year or 2 years. The perceived "permanence" of a zoom only relationship with clients can drive efficiency, but over the long term it will be a specific combination of BOTH in person and virtual client discussions that will take place" (Respondent #18).

6.4 Build and verify codes using Open, Axial and Selective data coding

Qualitative analysis has different procedures that can be implemented but dismissed as

"too subjective" according to established standards (Gray; 2014; Akinyode, 2018).

Hence, a proper articulation of the steps taken in qualitative data analysis cannot be

over-emphasized (Akinyode, 2018). The next steps taken in the process will be through

open, axial, and selective coding to identify and interpret the possible relationships that

exist (Jabareen, 2009; Gray, 2014). Coding is used as a blueprint to help explore

relationships and identify commonalities but does not imply generalities, between data

(Maxwell, 2005).

6.4.1 Open Coding

I created codes seeking commonalities within the data, and linked these to the themes.

This process offers a visualization of links between data and themes. Each question was:

- organized with links to other questions
- noted with frequency of theme
- correlated theme to identified code

This open coding represents the first level of my qualitative analysis. This process of creating codes is the foundation for the next step, in-depth axial coding, which will eventually give rise to the larger themes.

6.4.2 Axial Coding

Reviewing the data multiple times, I sought relevant codes that could be placed into categories to refine the themes (Akinyode, 2018). Taking the identified codes from each question, I analysed the relevance of the research question and talked about the strength of the relationship. I am not presuming this gives it higher ranking in terms of meaning, but it is interesting to look at how the frequency plays out with how people speak, and whether it is part of the research question. Table 6.1 is a sample from question two, which asks about characteristics of the decision-making process and where these identified codes are found in other questions:

Table 6.1: Identified Codes with Links to Other Questions

Identified Codes	Frequency	Links to other Questions
Evaluate/Monitor	9	3,4
Seeks help	8	3,6,7,10
Time	3	3,4,5
Thoughtfulness	7	3,4
Impact	8	3,21,22
Recommend/Implement	5	3,11
Research	21	3,6,8
Educate	7	3,4,11,12,15

Following this, I then arranged the codes from different questions into themes to analyse strength between themes. By strengths, I do not presume this has a higher validity, but there is a higher prevalence. This step involved identification of the strength of the

relationship based on a low, medium, or high frequency and connectivity between themes. As I am following the author, Mason (2017), she uses the word "keywords" to mean codes. Mason (2017) describes a growing importance of confidence in qualitative themes when there is a high degree of linkage between the themes resulting from reoccurring categories. This is especially so when those same categories are cited three or more times in each theme. Following Mason's (2017) grounded approach to qualitative analysis, the strength of link between themes was considered:

- low with one to three common keywords (codes)
- medium with four to six common keywords
- high with seven or more common keywords

These code groups were then extrapolated into themes. For example, codes of social impact, greater good, environment/social/governance ESG, were associated with the larger theme of greater purpose. Data that can be counted, can be analysed. Table 6.2 is an example of the data analysing process of linking codes with strengths. The full table is in Appendix 2.

Table 6.2: Data Analyzing Process of Linking Key Words with Strengths

Theme 1	Theme 2	Codes	Strength
Aligning Company values	Key Influences	Future growth potential	Low
Aligning Company values	Key Influences	Diversity & Inclusion	Medium
Aligning Company values	Greater Purpose/ESG	Greater Purpose/ESG	High
Aligning Company values	Trust	Transparent message	Low
Building brand confidence	Greater Purpose/ESG	Greater Purpose/ESG	High
Building brand confidence	No differences	No differences	Low
Building brand confidence	Consumer Concerns	Cost	High
Building brand confidence	Trust	Transparent/simple language	High
Building brand confidence	Work life balance	Focus on work/life balance	Low
Building brand confidence	Key Influences	Diversity & Inclusion	High
Building trust	Characteristics	Seeks help from expert	High
Building trust	Covid-19	More self-reliant	High
Building trust	Trust	Skeptical	Low
Building trust	Not generational	Not generational	High
Building trust	Trust	Foundation	Medium

6.4.3 Selective Coding

Through this large initial categorization, I began to funnel the themes and short phrases into eight relevant subcategories as they shared familiar characteristics. This process of splitting categories into subcategories allowed me to focus on important emerging themes. The goal; put the fragments of like data into themes with the intention of comparison. After the assignment of sub-categories, I conducted a secondary, selective data analysis to shift the attention from the original data to the reorganized themes and codes. This step related data from the open and axial coding together in order to reveal connections to a discrete, number of themes related to decision-making. This step developed even higher-level codes in order to provide common meaning.

Nine core themes emerged from this coding: Brand Values, Building Trust, Consumer Fears, COVID-19 Impact, Effective Communication on all Platforms, Key Influencers, On-Line Resources, Technology, and Work/Life Balance. This step involved splicing the data together, linking or merging it in essence, into fewer, more powerful categories.

I reflected, seeking to build, verify or revise the findings. Going back to the Delphi panel, they were again queried on these findings, and based on their additional feedback, two new themes of "intentions" and decision-making characteristics were added, and technology and on-line resources were combined into one theme of digital engagement; the core list morphed into: Aligned Values, Communication, Consumer Concerns, COVID-19 Impact, Decision-making Characteristics, Digital Engagement, Intentions, Key Influences, Trust, and Work/Life Flexibility. Theme alignment was achieved and then shared with the Delphi panel.

Of note, during this secondary data analysis, the strict confidentiality safeguards were adhered to honouring the researcher's original ethical commitments.

6.5 Define Themes

Through the extensive coding process, theme characteristics have been extrapolated from *leader responses* as the foundation for the next step, mapping:

6.5.1 Leader Responses & Characteristics

1. Aligned Values - There needs to be a common language of aligned values and clarity about how a financial professional's personal values, mission and goals align with the millennial values.

2. Communication - Effective communication from financial professionals, sharing and exchanging new ideas with millennials the way they want to be communicated with, will be pivotal as the United States will see the largest inter-generational transfer of wealth over the next decade. Successful advisors have to engage with clients and prospects with increased communication to build their business.

3. Consumer Concerns - Stems from anxiety, worry, fear and potentially greed, and are strong drivers for all age cohorts. However, the fear of missing out seems to have a larger impact on millennials.

4. COVID-19 Impact - COVID has created a new market for many advisors. Once geographically limited to prospects, many advisors have embraced technology and are now gaining clients across the country without meeting them in person. Clients and prospects have embraced Zoom and other virtual platforms. From the comfort of their home, financial professionals are able to be more effective at client reviews and delivering financial plans through screen sharing.

5. Decision-making Characteristics – It is clear that a millennial needs to make thoughtful decisions, have a foundation in financial literacy, understand the investment purpose, and consider the long-term impact of their decision.

6. Digital Engagement - Digital engagement builds relationship with millennials by allowing the financial professional to engage the millennial using technology to be a part of the daily world they live in. In understanding this, a financial professional can relate to them better.

7. Key Influences - the capacity to have an effect on the character, development, or behaviour of someone or something, or the effect itself. The key factors that influence a millennial's decision to purchase a product begins with how the product aligns to their needs.

8. Intentions - Intention is a mental state that represents a commitment to carrying out an action in the future. Intention involves planning and forethought; however, intentions can range from impulsive to planned. Potentially, emotions are a driving force in decision-making more than facts. Environments create emotions which drive intentions that impacts how we make decisions.

9. Trust – is foundational to be able to believe in the reliability, truth, and strength of the relationship. Millennials are looking for trusted relationships to help guide them through their financial decisions.

10. Work/Life Flexibility – Millennials have a willingness to compromise, as it is more about life experiences rather than accumulating wealth. It's about maintaining a lifestyle they like with a more balanced view: own less/experience more.

6.6 Concept Map

The use of mapping allows conclusions to be drawn on significance, linking it back to my project aim and main questions, in a cohesive and credible manner. The concept map uses data facets to answer the question on how themes are inter-linked and are listed in Figure 6.1:

Figure 6.1: Delphi Themes
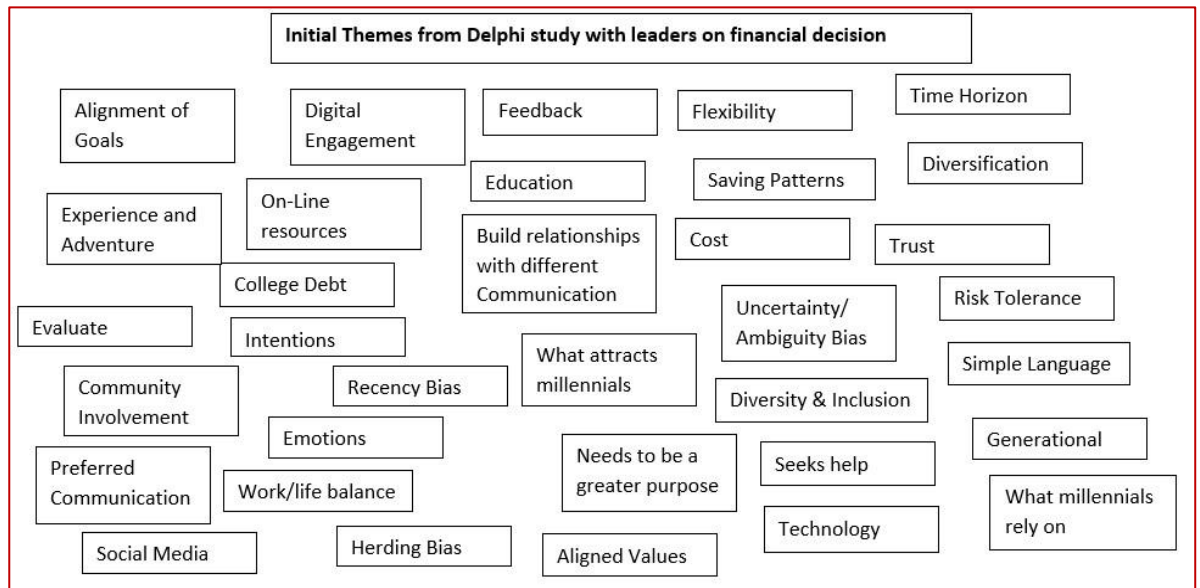
These data facets were then placed into a concept map, Figure 6.2, giving the reader an

opportunity to compare the strength of each theme and sub theme using the following

rubric:

- Themes represented by green ovals
- Keywords represented by medium black boxes
- Frequency of codes identified by:
  - Arrows representing relevance
  - Proximity to theme representing strength of connection

Figure 6.2: Concept Map of Delphi Study
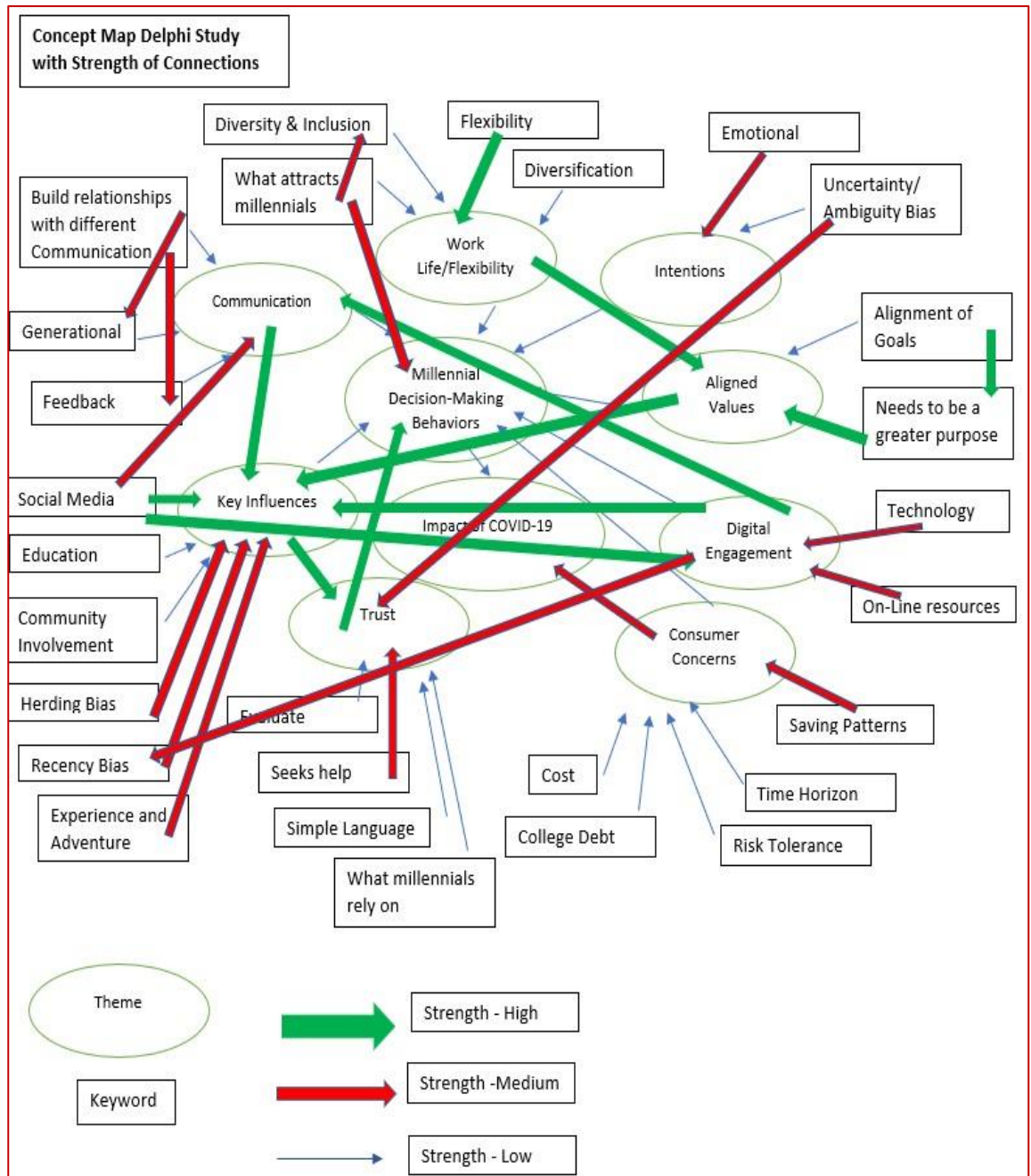
6.7 Qualitative Analysis and a New Conceptual Model

Through this iterative process, an interpretation of the Delphi findings, built off the

conceptual framework and literature review, emerged. A new holistic framework can be

drawn from the biases and main factors influencing millennial financial decision-making

and combined into a thematic network seeking new perspectives. When the data was

analysed, ten themes emerged that can be meaningful in how financial professionals

communicate financial solutions to the millennial investor today. This Delphi study was by no means exhaustive but aimed to inform the reader on key themes from industry leaders. And so, future research and a deeper dive into the causation of the key influences of the millennial around financial solutions would be additive and foundational for the strength of communication from financial professionals. The significant implications of this research can lead to practice management curriculum for financial professionals in the insurance and investment industries around understanding the decision-making behaviours of the millennial investor.

There are some strong connections between themes, and I now offer an interpretation of these results highlighting their implications, which will lay the foundation for the quantitative survey.

6.7.1 Theme #1: Aligned Values

Aligned values was mentioned by all participants with links to multiple themes. Socially based investing, or impact investing is a theme that leaders agreed resonates with the millennial generation with 37% believing that supporting a millennial's social causes is a way to build trust. Research suggests that 75% of millennials say it is important that a company gives back to charity/society as opposed to making a profit and will pay more for that product (Mullen, 2020; Adglow infographic, 2021). Millennials are confident and highly motivated for a better tomorrow (Mehta, 2020). Extrapolating from this, the success of a financial professional ultimately rests on the trust and loyalty of a millennial to their aligned values. In the investment decision-making backdrop, brands traditionally have not been the focus, however, because of an increased digitalization of the utilization of financial services, the importance of a strong brand becomes magnified (Hauff and Nilsson, 2016). An on-line investor connects with an abundance of brands

though different channels that are not typically associated with traditional investing, which may influence a decision. Products and brands do not simply have utility any longer but are now reflections of millennial values (Hwang and Griffiths, 2017).

As the self-identified Christian silent generation and baby boomers pass away, they are being replaced by a generation who displays far lower attachments to organized religion with only about 50% of millennials saying they believe in God with absolute certainty (Pew Research, 2015; Cox and Thomson-Deaux, 2019). However, millennial buyers do know what they want and have increased trust and loyalty to those companies that support solutions tied not to religion, but to specific social issues (Winograd and Hais, 2014; Gafni, 2015: Lead Forensics, 2019). The Delphi respondents displayed a similar response across multiple themes, with over 60% indicating that aligning to their social issues is critical for this generation. Financial professionals need to align with environmental and social causes in the hopes of appealing to this younger generation (Stankevich, 2017). Research continues to highlight the importance of brands to the investment behaviour of consumers accordingly.

Due to the complexity of investment decisions that include anxiety around risk, trust in the investment brand can instil an important component of loyalty. Thus, building a strong financial brand which indicates competence and knowledge, can instil a level of trust among investors (Hauff and Nilsson, 2016), with over one third of the Delphi respondents indicating a similar connection.

6.7.2 Theme #2: Communication

The driving force of communication is the millennials familiarity with, and usage of digital media (Mangold and Smith, 2011; Forensics, 2019). As a result, communication has been irrevocably altered with consumers shifting the way they select, share, and appraise

information (Duffett, 2015; Adglow infographic, 2021). Almost half of the Delphi respondents indicated that embracing this communication shift with millennials, and using their preferred sites, like Reddit and Instagram, is key.

It is also necessary to understand that previous generations prefer in-person conversations, and millennials prefer more digital interactions (Zoovu, 2016; Riekoff, 2017; Limra, 2020). The Delphi participants showed a consistency in how to communicate with millennial investors with 50% suggesting the use of financial apps/technology that means something to millennials, for example Reddit or gamification ideas, that could be incorporated into a financial professionals mix of solutions. The Delphi study also indicated similar results around decision-making behaviours and linked it back to communication:

> "Doing research on decision-making behaviours leads to custom communication"
> (Respondent #4)

6.7.3 Theme #3: Consumer Concerns

Throughout the Delphi study, loss aversion was a prominent theme that emerged as a consumer concern. More than half of the Delphi respondents indicated that this generation is more loss sensitive than previous generations. A loss-adverse decision maker will be motivated to avoid both absolute and relative losses in the hunt for more rewarding gains (Costa, 2018). And when faced with large losses, a loss adverse decision maker will err on the safe side (Liu and Colman, 2009) as losses are felt double the weight of gains (Kahneman and Tversky, 1979; Benartzi and Thaler, 1995; Pettinger, 2018; Rossiter, 2018; Zahera and Rohit, 2018; CFI, 2021). 56% of the Delphi respondents indicated better education on risk/reward could help reduce fear in investing. Loss aversion may also lead to anchoring as investors may make investment mistakes with their desire to minimize losses (Gupta and Ahmed, 2016). Interesting, both loss aversion

and anchoring are more prevalent in experienced investors as investors may align more closely to their original thought on a stock even when new information becomes available (Gupta and Ahmed, 2016; Pimco Decision Research Laboratories, 2020).

Additionally, an ambiguity aversion emerged as a concern, as it looks at the difference in a decision when there is risk with unknown probabilities vs. risk with known probabilities (Ellsberg, 1961). Over 38% of the Delphi respondents indicated that uncertainties impact decision-making with a risk vs. return aspect.

A recency bias also revealed itself as investors tend to believe that whatever performed well last year, will do the same thing again this year, abandoning useful past information (Zahera and Rohit, 2018; Gandre, 2020). Advisors must steer investors away from giving undue weight to a recent event, whether negative or positive, as the consequences could distort sound financial decisions. This was evidenced in the Delphi study as more than one third of the respondents, across multiple themes, indicated that significant events impact decision-making.

Additionally, from a gender perspective, women can anticipate living as many as five years longer than their male counterparts, with those years coming during their retirement years. Financially, women are less prepared for retirement; potentially from a staggered employment history (Rickwood and White, 2009). This implies that their retirement needs can and will be different, and the means in which a successful portfolio is achieved may not be similar.

6.7.4 Theme #4: COVID-19 Impact

63% of the leaders responded that the impact of COVID-19 has forced financial professionals to adapt to an increased reliance on technology and virtual meetings, while 44% believe that this is now a cost effective and agile way to engage clients the way they

want to be met. However, in the digital age with robo-advisors and investing apps, it is

potentially easy to lose track of the benefit of the human connection (Zoovu, 2016;

Riekoff, 2017; Limra, 2020). In my 25+ years of experience, investment firms have

provided digital tools to younger, less wealthy investors with relative success, however,

those lack a personal understanding and empathetic approach. As a caveat,

robo/automated advice may work until the market sees declines, then financial

professionals may field an inflow of calls, as the human touch cannot be replaced (Limra,

2020).

The results did indicate an interesting association between the COVID-19 pandemic and

fear/consumer concerns. Due to the pandemic, Americans are shifting towards lower-

risk investments (Insured Retirement Institute, 2020), and over two thirds of the Delphi

respondents indicated that the millennial generation is more risk adverse than other

generations. The results show that consumer concerns and fear have always been

present in decision-making, but the pandemic acerbated it:

> "EVERYTHING changed because of COVID! The world became less secure, more
> politicized, less fair/equitable, fewer options upon which to pivot. I believe
> millennials (all of us!) want to be sure we are never caught flat-footed again…"
> (Respondent #1)
>
> "I think like other generations, fear plays a large role in decisions" (Respondent
> #2)

6.7.5 Theme# 5: Decision-making Characteristics

A more accurate description of the decision-making process can facilitate better

prescriptions for improving behaviour (Sebora and Cornwall, 2012) which the Delphi

study supported. Over one third of leaders agreed that "evaluation of the process" was

key for the decision-making process.

Within the literature review, we saw that people with different levels of financial literacy behave differently and may make inefficient investment decisions, based on biases and judgmental heuristics (Lee, Yun, and Haley, 2017). Likierman (2020) suggests that judgements are often clouded by a number of cognitive biases, emotional biases, and heuristics, all influenced by several factors: complexity, time pressure, education and experience, socioeconomic status, and demographics. When people have limited knowledge, it leads one to leaning more heavily on simplifications that ease the decision-making process (Barros, 2010). A lack of education, coupled with a loss aversion, could lead to no action taken, which at times, could seem like the safer choice, however, in the long run, taking no action could be riskier (Hardin and Looney, 2012). This lack of investment education and proper investment tools can also exacerbate risk, especially during times of huge market fluctuations, as experienced in the US stock market in March of 2020. Over 45% of the Delphi respondents indicated that education is foundational with important insights gained as financial professionals become the trusted partner assisting millennial's investment decisions. Over half of the Delphi participants stressed the need for financial education, which corroborated the literature review; with continued education, an investor can begin to understand the role of each asset class along with portfolio diversification (Iyer-Ahrestani, 2015).

Heuristics often work as rules of thumb that help make one's life more practical, reaching decisions with relative speed (Astorino, 2015). However, this needs to be included as a risk factor when making investment decisions (Chandra, 2008). Why? While heuristics can reduce stress associated with decision-making, freeing up limited cognitive resources, they can also be costly if they lead one to miss critical information (Psychology Today, 2020). The Delphi participants didn't see these shortcuts as impactful with this

generation, and more than half indicated reflection and thoughtfulness were keys to making good decisions.

6.7.6 Theme #6: Digital Engagement

This theme captures the very essence of millennials; they are more tech savvy than previous generations, and both value and rely on smart devices to stay connected (Fuller et al. 2020). The Delphi survey indicated agreement with more than 50% of the respondents stating that digital engagement is critical:

> "Tech is now king and working in a remote world has opened up more possibilities in work and investing" (Respondent #5)

Technology is fuelling change and folding innovation into established firms. Facebook, Instagram, YouTube, and Twitter hold tremendous influence over this generation (Mullen, 2020), and are now reshaping the way financial professionals connect, creating the need for new capabilities (Limra, 2020). Over 60% of the Delphi respondents indicated that they integrated more technology into their practice with a higher reliance on virtual meetings. Understanding and having a higher level of technical acumen will be required to communicate effectively with millennials as texting and social networking is expected to rise (Limra, 2020). The Delphi respondents presented a similar thought with over 25% suggesting that using social media allows them to see millennial trends, and 41% indicating that technology now gives a financial professional the ability to do research on a millennial's specific needs. According to Adglow infographic (2021), 51% of millennials say that social media customer reviews influence their purchase decisions and over 70% of the Delphi respondents agreed that social media and ratings are big outside forces.

6.7.7 Theme #7: Key Influences

Millennials live surrounded by influencers; family, friends, and social media, all who influence their decisions (Guzman and Paswan, 2018). Throughout the survey responses, there were references to herding behaviour of millennials; this is important as herding applies prominently to this research. Millennial investors may unknowingly resort to a herding type of behaviour as all types of information are readily and immediately available, sparking inter-dependent trading behaviour (Nigam et al. 2016). Additionally, millennials are socially curious (Gino, 2018), listening, talking, and persuading others to their way of thinking and doing. Of note as well, social media has become extremely important to the "evaluate" stage of decision-making, with millennials who are on the path to making a purchase (Hall, 2017). More than 70% of the Delphi participants indicated that what others are doing on social media influences a millennial investor.

6.7.8 Theme #8: Intentions

This theme captures the relationship between intention and behaviour, and the importance of how goals and plans guide intentional behaviour. Intentions reflect both motivation and elements that influence behaviour; stronger intentions result in more likely behaviours (Ajzen, 1991; Kan and Fabrigar, 2017). Most human behaviour is intention-directed following the path of a well-constructed plan (Ajzen, 1985). For example, if having a surprise party, the invitation list, location, food etc. are all planned well in advance of the surprise. However, certain behaviour becomes routine and performed unconsciously, like driving to work; highly routine and developed skills no longer require conscious action (Ajzen, 1985). Nevertheless, people are typically well aware of the actions needed to perform a certain intention, with an explicit or implicit plan required to guide their behaviour (Ajzen, 1985).

The Theory of Planned Behavior uses attitudes and perceived behavioural control to help anticipate intention (Ajzen, 1991), however, in the Delphi study, this terminology around "intention to decide" saw mixed results: 57% of leaders provided feedback on this theme in three distinct areas:

- 19% said they did not know how intentions affected decision-making behaviour
- 19% said it is emotional and attitudinal
- 19% said it is foundational and clearly makes a difference

Additionally, intentions can change over time depending on the time interval, the longer the time interval, the greater likelihood that unforeseen events will affect ones initial intention (Ajzen, 1985). The leaders agreed, with 48% indicating intention has an impact on decisions; one is distracted, or taken down a different path, and the action never happens.

> "I may have an intent, but something could happen, and I don't act" (Respondent #3)

The end result may be different from the initial intention, especially with the added distraction of smart phones and other devices, and so, this may make millennials intentions, to some extent, different from older consumers (Klein and Sharma, 2017).

6.7.9 Theme #9: Trust

Trust showed up throughout many of the themes as a way to engage with millennials. Trust is the firm belief in the reliability, truth, ability, or strength of someone or something (Hurley, 2006; Frei and Morriss, 2020). Millennials are widely thought to be less trusting than the generations before them, perhaps due in part, to world events and the tumultuous times they were raised in (Weidmer, 2015; Tanner, 2021; Facty, 2019; Greenbook, 2021). Over one third of the Delphi respondents indicated that trust is more

important for this generation, but an equal % responded that trust is not generational, it is foundational throughout every generation when it comes to investing.

The impact of influence was mentioned heavily in this theme as well, and it comes in many shapes and sizes; as long as people trust you, you influence their decision (Mangold and Smith, 2011). Foundations for trusted relationships will be built on this influence coupled with the values and beliefs of millennials, with successful relationships coming as a result of those who dedicate their future to bettering the world (Pew Research, 2014). Over 40% of the Delphi respondents indicated that showing you support their social causes, builds trust. Millennials are more self-reliant on technology for development and information, forming their own conclusions without seeking the advice of others, with readily available information contributing to a lack of trust (Riekoff, 2017). The Delphi respondents agreed with over 56% indicating millennials are self-reliant on verified digital research, playing a role in trust. An understanding of generational differences on trust will provide financial professionals valuable insight into how they think and behave (Deloitte, 2021).

6.7.10 Theme # 10 Work/Life Flexibility

Over 89% of the Delphi respondents indicated that the millennial generation prioritized family, experiences, and work/life balance life, supported throughout literature (Hwang and Griffiths, 2017; Deloitte, 2021). Millennials have goals, with high expectations of recognizing their achievements at work; they seek feedback and perform better with praise (Facty, 2019). Over a third of the Delphi respondents indicated that millennials want to make money, but are willing to accept making less money in a job they love vs. earning more in a job they feel is boring (Bell, 2020). Kuhl (2014) suggests that at work, almost half of millennials want flexible, shorter meetings with instant electronic

communication, as opposed to face-to-face meetings and the Delphi respondents indicated similar findings.

> "Attention spans are short, so messages need to be succinct, simple, and captivating.   Interactive, dynamic, and digital presentations will be required" (Respondent #4)

Logically, it is vital for a financial professional to integrate flexibility, with shorter digital experiences for the millennial investor (Zoovu, 2016).

6.8 Revised Conceptual Framework

The factors that the leaders felt important now provide deeper insight which leads to a more meaningful understanding of the millennial investor. Clearly, influencers, pre-existing biases and financial education contribute to a millennial's financial decision-making process, and their confidence in that decision. This is also a generation that is much more self-reliant than previous generations, which leads to a more robust research question:

In identifying key factors*, drivers and biases* that influence millennial financial decision-making *confidence*, how will communication from financial professionals evolve?

Although the leaders identified some differences in focus areas, their responses and themes derived from the literature review, are directly related to my research question. Based on these qualitative insights along with the literature review, a revision of the Figure 3.1 Conceptual Framework, can now be suggested in Figure 6.3. By adding leader insights, it now provides the foundation to help build out the larger quantitative survey.

Figure 6.3: Revised Conceptual Framework

Millennial Decision-Making Conceptual Framework
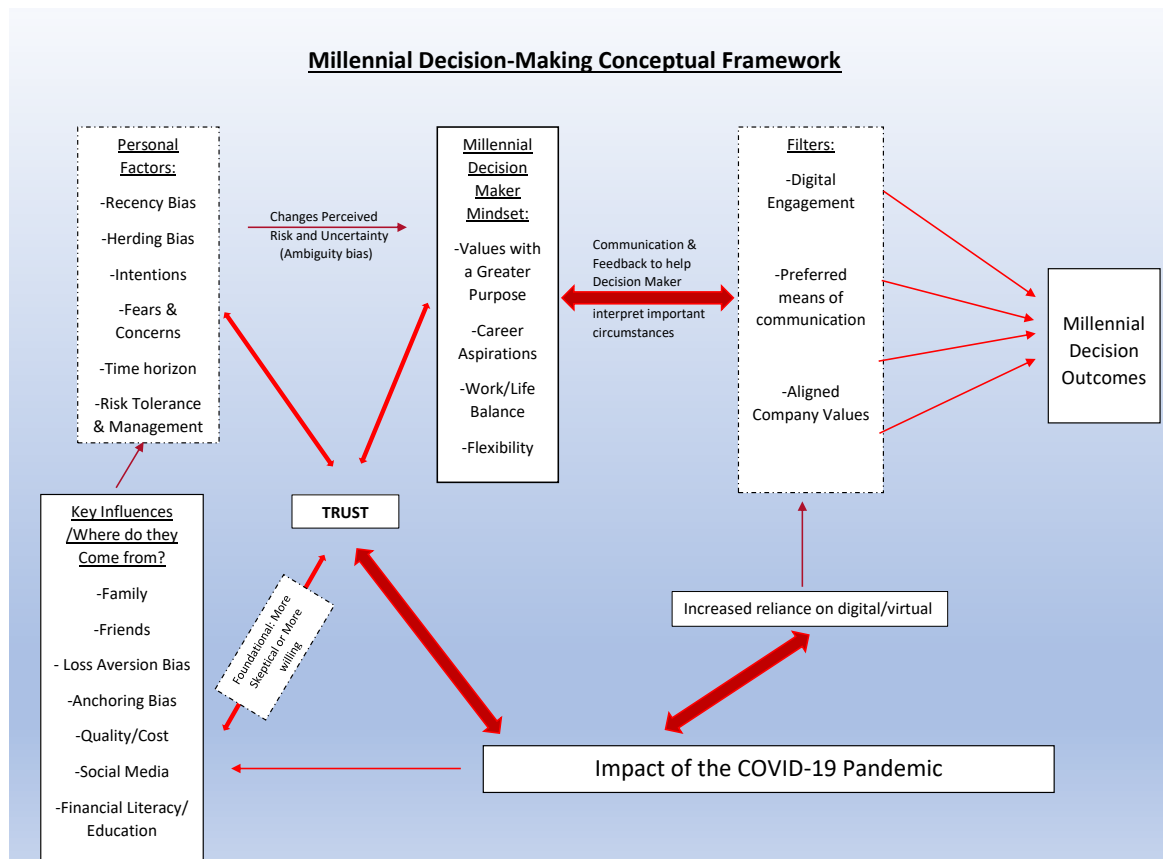
6.9 Summary

In this chapter, I leveraged the Delphi study and:

- collected and organized question responses onto an excel spreadsheet,
- reviewed responses and explored patterns, themes and interconnections,
- created a coding classification by building both categories and subcategories with an expectation that there could be expansion as the findings progress,
- worked with the researcher's supervisor, and themes were built and combined into a thematic network,
- conclusions were drawn on the most significant themes, linking back to the literature and aims/objectives of the research, to create a new conceptual framework.

The questions in the Delphi study, rooted in the literature review and my personal industry knowledge and experience, allowed industry experts to offer perspective on factors that contribute to millennial decision-making behaviour. The next step will be to combine the Delphi results with a quantitative questionnaire to a larger group. This next chapter will be dedicated to an examination of the quantitative project activity.

Chapter 7: Project Activity: Quantitative Survey

7.1 Introduction

By implementing the qualitative tool of the Delphi Approach, ten identified themes

emerged to be utilized in a quantitative survey, and now seeks a larger audience to add

valuable insights. The aim of this part of the research is to explain the quantitative steps

taken towards illuminating the insights summarized in Figure 6.3. In other words, the

chapter documents the actions taken in seeking quantitative answers to the more robust

research question below:

In identifying key factors*, drivers* and *biases* that influence millennial financial decision-making *confidence*, how will communication from financial professionals evolve?

This chapter begins with a general overview of the quantitative process, the target

participant pool, choosing the survey tool and software, designing the survey,

administering the survey and survey successes/challenges.

7.2 Quantitative Survey Overview

By utilizing a questionnaire, numerical data is produced aimed at establishing a cause-

and-effect relationship between variables (McLeod, 2019). Psychologist Anthony

Greenwald states, that by collecting data, a lot is achieved in documenting disparities

that occur as a result of bias (Mason, 2020). Closed ended questions can easily be

analysed using statistical methods like correlation or factor analysis, increasing external

credibility (Surbi, 2018; Kaiser, 2019; McLeod, 2019; Smith et al. 2020).

My presence was not required for questionnaire completion, beneficial for research

studying a large population. Through the questionnaire, I administered identical

questions in the same order. Typical with quantitative methods, analytical objectives are

fairly inflexible in order to provide an unbiased and objective analysis (Mack et al. 2005). This allows this research to be replicated in the future by other researchers, who can test for both consistency and cogency (McLeod, 2019).

7.3 Choosing the Quantitative Survey Tool

This targeted sample size was over 1,000 participants, therefore, Qualtrics was selected as a more effective online survey platform for large participant data collection.

7.4 Target Participant Pool

The Baby Boomer generation will transfer their wealth to their primary beneficiary, the millennial. Studies suggest that there are age related differences in decision-making competencies (Missier, et al. 2020). Older millennials may be more aligned to financial planning than younger millennials, and for this reason, I am looking to survey an equal number of older and younger millennials in the quantitative survey. Already, I have personally seen Gen X making complex financial decisions, with financial professionals successfully working and communicating with them. As such, it might be interesting to distinguish differences and commonalities from Gen x to the millennial generation, learning any connections or similar attributes that permeate both generations. This connection could lead to more successful millennial financial conversations.

I work in the financial services industry and targeting industry members to take the survey could have produced unintended bias. However, I work for a large firm, with an extensive consumer insights team, and utilized their services to target participates not related to this industry. A Qualtrics survey was delivered to paid participants, with no one part of a formal organization. A breakdown of the targeted cohorts is listed:

Target: US Adults:

Millennial & Generation X Consumers (Gender 50/50 Split)

- 700 = Millennials
  - 350 ages 25-32 (Birth years 1989 – 1996)
  - 350, ages 33-40 (Birth years 1981 – 1988)
- 350 = Generation X
  - 350 = ages (41-56) (Birth years 1965 – 1980)
  Total: 1,050

7.5 Designing the Quantitative Survey

Initially, several hundred quantitative questions were drawn up based on the ten Delphi themes. Refining and reducing the sheer number of questions down to a manageable number was time consuming, taking over five months to complete. Another big hurdle was identifying and wordsmithing questions that would be distributed to this larger population. The goal; identify robust questions in each theme with a survey completion time under ten minutes. During this time, I:

- continually refined the questions,
- produced multiple iterations finally settling on a manageable questionnaire including demographic questions,
- worked on wordsmithing; time consuming, but one of the most important aspects of the questionnaire,
- prior to distribution, sent the questionnaire back to the leaders participating in the Delphi survey seeking additional feedback. Several leader responses are listed below:

"Yes! This survey seems to reflect well-thought out, easily understood questions. It's an excellent instrument. Can't wait to see your results." LM

"Great job overall on the questionnaire. I know you will generate some terrific insights on decision-making." KM

"Overall looks great, clear, concise questions. I feel this can be a great tool for you and Lincoln." MB

The full list of survey questions is listed in Appendix 3.

7.6 Administering the Survey

A process for respondent participation was incorporated as the importance of question

flow was critical. This led to revisions on questionnaire logic, prompting multiple

iterations and the addition of screener questions.

7.7 Survey Completion Success & Challenges

The survey was deployed to over 38,000 targeted participants. Participant responses of

1,033 was achieved within two weeks with all cohorts well represented in the data mix.

Overall, Generation X represented 35% of total participants, with millennials at 65%;

broken out 28% younger millennials and 37% older millennials. This overall success

resulted from working with the experts from the Qualtrics team daily over a two-week

period to ensure data accuracy and purity.

The following details the survey mechanics:

- Approximately 38,000 survey invitations sent
    - Survey invites sent daily, based on response rate monitoring and quota tracking
    - Invites sent to targeted research panel participants: US Adults, ages (25-56), male/female (50/50 split), income (>$50,000 – addition criteria added mid-data collection)
- Survey Disposition:
    - Total Sample ~38,000
    - Total Completes = 1,033
    - Total Terminated = 2,125
    - Response Rate = (Completes + Terminated)/Sample = 3158/38000=8.3%
    - Incidence Rate = 68% (based on completes, termination rate, and ability to target sample)
- Sample sourced from two research panels:
    - Fulcrum (Lucid Marketplace) - https://luc.id/marketplace/
    - Cint - https://www.cint.com/
- Data collected and delivered by:
    - Qualtrics – XM Services – https://www.qualtrics.com/support/
- Data clean – data was cleaned at two points based on sample quotas being met
    - Scrub 1: 77 respondents were removed for poor quality responses
    - Scrub 2: An additional oversample of 110 Gen X respondents were removed due to sampling error

However, the deployment of the survey did have several challenges:

1. With larger unknown demographics of this sample size, there was a high percentage of "bad responses" which included incomplete responses, one's with a much shorter typical completion time, or had patterns. Analysis was done to cull bad responses during the collection process which were not included in the final data metrics (Brick and Kalton, 1996).

2. As such, the survey took longer than anticipated to collect data.

3. Although the overall target number of responses was met, based on the qualifier metrics, finding qualified younger millennials with investable assets or household income to take the survey proved difficult. Figure 7.1 details the steps followed:

Figure 7.1: Process Flowchart of the Quantitative survey

Worked on flow and logic of the questionnaire

↓

Asked several leaders who took the initial survey, to take a test run of the survey for quality control

↓

Incorporated leader feedback on wording and flow into the survey design

↓

Soft launched the survey to approximately 50 participants

↓

Reviewed the text data string and numeric data string for accuracy

↓

Launched the survey to the larger target population

↓

Cleaned up and removed data responses from those who answered too quickly, in patterns or were incomplete surveys

7.8 Participant Demographics

Qualifier questions were asked around household income (HHI) and investable assets (IA) seeking to deem the participant as either "qualified" or "not qualified" with less than the minimum requirements. This aligns with the research in understating the financial behaviours of the millennial generation. Participant data is listed below and in Table 7.1:

- Qualified participants:
  - Generation X with Investable Assets > $100,000
  - Older Millennial with Investable Assets > $100,000
  - Younger Millennials with (Household Income > $50,000 or Investable Asset > $25,000)

- Not Qualified participants:
  - did not meet asset requirements, but met all other requirements

Table 7.1: Survey Participant demographics

Quotas	Target	Qualified Definition	Qualified	Not Qualified	Total Responses	Male	Female
Millennials	**700**		**529**	**128**	**657 (64%)**	**360**	**297**
Younger, Ages 25-32	350	HHI>$50,000 OR IA > $25,000	289	0	289 (27%)	144	145
Older Ages 33-40	350	IA>$100,000	240	128	368 (36%)	216	152
Gen X	**300**	IA>$100,000	**270**	**106**	**376 (36%)**	**163**	**213**
Gender							
Male	500		421	102	523 (51%)		
Female	500		378	132	510 (49%)		

Chapter 8: Project Analysis of the Quantitative Survey

8.1 Introduction

Attention can now turn to addressing insights learned from the quantitative survey around what factors impact millennial decision-making confidence and behaviour, and is organized as such. The chapter starts with an understanding of the demographics of the survey participants through a Cross-tabulation (crosstab) analysis of the survey screener questions, presenting descriptive and summary data of each.

The chapter moves to in-depth theme analysis using multivariant tests. The first look is to see how the data is distributed through Cross-tabulation analysis. Crosstabs allow for demographic segmentation of the data (Pollfish, 2021; DeFranzo, 2022; Qualtrics, 2022). Key findings from each theme are presented with statistically significant findings highlighted and linked back to the literature review. In order to ensure data reliability, the descriptive statistics of mean, standard deviation and Cronbach's alpha were run (UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). In order to ensure data validity and to evaluate the linear relationship, Principal Component Analysis was run (Alexopoulos, 2010; Jolliffe and Cadima, 2016; Encyclopedia Britannica, 2021). Inter-item correlation was run and will determine the relationships on key variables that are influencing and driving financial decision-making confidence, along with obtaining strength of relationship of each construct (Laerd, 2020; Frost, 2021; Glen, 2021). Finally, in order to gauge the association between variables, Principal Component Regression (PCR) was run which will help model the importance of strength of relationship between a target variable and predictor variables (Leung, 2022). PCR builds off the data and will be presented in a summary table of the relationship to a millennial's decision-making behaviour, with confidence as the proxy for an accurate prediction of the strength of

relationship. These findings will be linked to Figure 6.5 that emerged from the qualitative study, and will lay the groundwork for the research's final chapter.

8.2 Choosing the Quantitative Analysis Software

In determining the software used for the multivariant analysis, SPSS and Q were reviewed. Both SPSS and Q are powerful and used for reporting quantitative data, but Q is now a faster version of SPSS designed to help the researcher quickly find the story in the data (Research Software, 2021). Q was ultimately selected as appropriate software for this project.

8.3 Demographic Distribution of the Quantitative Survey

The first step is to show how the data is distributed, with the descriptive statistics offering insights as to how participants are answering the questions. This section will focus on demographics of the screener questions, using the lens of Cross-Tabulation analysis (crosstab). Before correlation analysis is run, a cross-tabulation matrix is used to provide a demographic backdrop which indicates a broader view of relationships between variables, by comparing the conditional relationship with the results of another into a more digestible format (Momeni et al. 2017; Teknomo, 2017; Pollfish, 2021; DeFranzo, 2022; Qualtrics, 2022). Qualtrics (2022) estimates that 90% of all research analysis is crosstab as it is commonly used to analyse relationships between categorical or nominal data, as this research does. The benefits of using crosstab analysis include (Block; 2012; Momeni et al. 2017; Teknomo, 2017; Aprameya, 2019; Kucko, 2019; Pollfish, 2021; DeFranzo, 2022):

- Eliminates data interpretation confusion by offering a more manageable method of grouping variables for clearer results
- More insights by looking at relationships between one or more categorical variables uncovering more granular insights which might go unnoticed if presented in a different format

- Actionable information by making it easier to interpret data sets allowing for quick comparisons on relationships

Crosstabs add clarification of patterns and how attributes influence financial decisions, such as working with a financial professional *along* with age and gender. For this research, the power of crosstab analysis layers data to show trends by visually showing statistical significance in different cohorts. This could be invaluable in uncovering hidden relationships which can improve insights for financial professionals by presenting a clearer interpretation of the millennial investor. Therefore, crosstab data will be folded into the analysis to add additional depth.

8.3.1 Survey Screener Question Demographics

In a very real sense, Question 1 "Male or Female", drove the data collection. Although the survey is balanced from a gender perspective, the data resulted in a larger population of males who had greater income or assets and were therefore more likely to be qualified. Qualified males represented 53% of the population, and females represented 57% of the non-qualified population (did not meet asset requirement, but otherwise met requirements). Figure 8.1 breaks out the gender demographics of the participants.

Figure 8.1: Question #1 (Gender)

Q1 Are you:
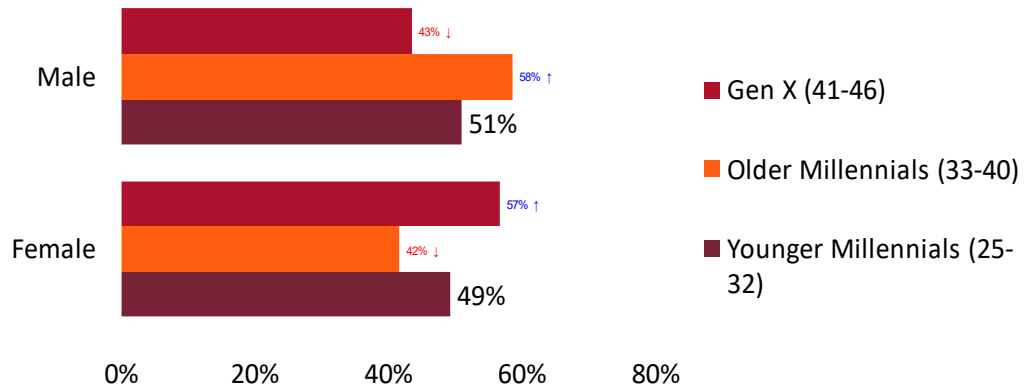
Total sample; Unweighted; base n = 1033
Multiple comparison correction: False Discovery Rate (FDR) (p = 0.05)

Table 8.1 shows the generational breakdown by marriage. Those married represented 70% of the qualified respondents, but only 50% of the non-qualified respondents.

Table 8.1 Question #1 (Marriage)

Column %	Qualified	Not qualified
Married	70% ↑	50% ↓
Not Married	30% ↓	50% ↑
Prefer not to say	0%	0%
Column n	799	234

Total sample; Unweighted; base n = 1033

Table 8.2 is interesting. Those in their 30's and 40's represented over two thirds of the qualified respondents, indicating that 'stage of life' could be a factor with accumulated assets: one could expect that with age, people would save more, becoming qualified.

Table 8.2 Question #2 (Age)

Column %	Qualified	Not qualified
20s	18% ↑	0% ↓
30s	44%	45%
40s	21% ↓	40% ↑
50s	17%	15%
Column n	799	234

Total sample; Unweighted; base n = 1033

To be included in the survey, each respondent was either the primary decision maker or

shared in the financial decision-making in the household, represented in Figure 8.2.

Figure 8.2: Question #4 (Role in Household Financial Decisions)

Q4 Which of the following best describes your role in the selection and purchase
of financial and investment products for yourself or your household?

Total sample; Unweighted; base n = 1033
Multiple comparison correction: False Discovery Rate (FDR) (p = 0.05)

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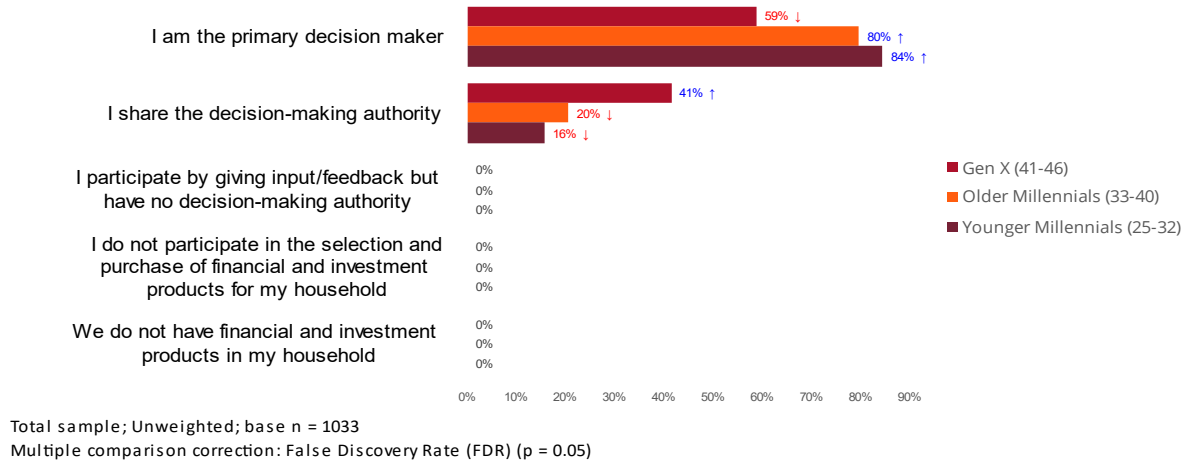
Survey question 5 determined if a participant was qualified or non-qualified based on

household assets, represented in Figure 8.3. This is important as each repondent needed

to have sufficient assets, with an opportunity to make investment decisions.

Figure 8.3: Question #5 (Household Assets)

Q5 Which of the following categories represents your household's total investable assetsthings
such as stocks, bonds, cash, money market funds, 401(k) plans, IRAs, insurance and other
financial investments, but not including your home or other properties/real estate?


Total sample; Unweighted; base n = 992; total n = 1033; 41 missing
Multiple comparison correction: False Discovery Rate (FDR) (p = 0.05)

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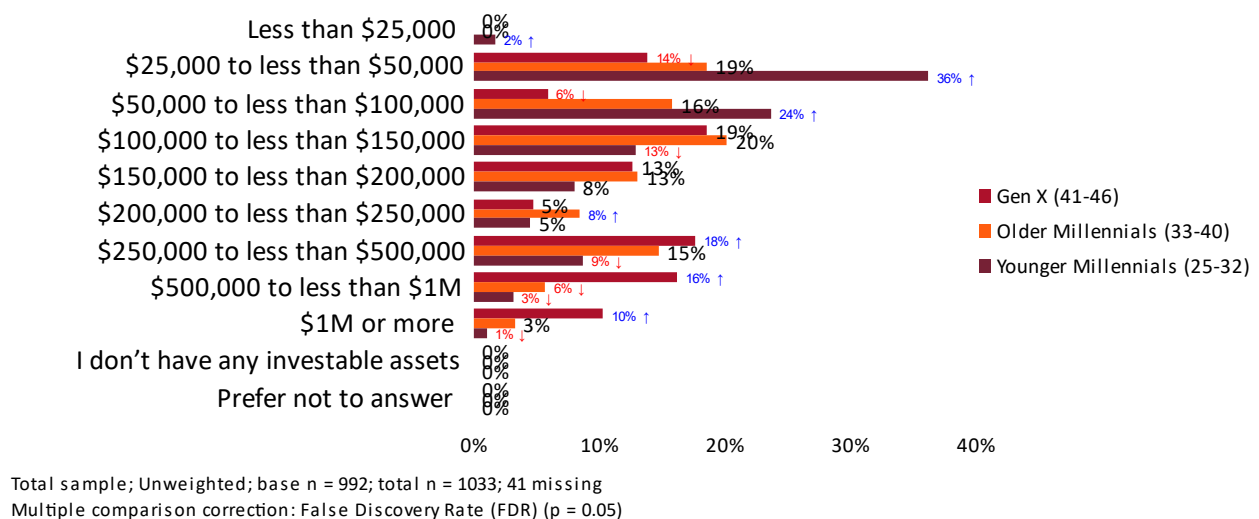
Table 8.3 indicates those not qualified have less than $100,000 in total investable assets, while almost half of those qualified have less than $150,000.

Table 8.3: Crosstab (Investable Assets)

Column %	Qualified	Not qualified
Less than $25,000	1% ↑	0% ↓
$25,000 to less than $50,000	13% ↓	60% ↑
$50,000 to less than $100,000	9% ↓	40% ↑
$100,000 to less than $150,000	22% ↑	0% ↓
$150,000 to less than $200,000	14% ↑	0% ↓
$200,000 to less than $250,000	8% ↑	0% ↓
$250,000 to less than $500,000	17% ↑	0% ↓
$500,000 to less than $1M	11% ↑	0% ↓
$1M or more	6% ↑	0% ↓
I don't have any investable assets	0%	0%
Prefer not to answer	0%	0%
Column n	799	193

Figure 8.4 highlights total household income and determined if a participant was qualified or non-qualified based on household income.

Figure 8.4: Question #24 (Household Income)

Q24 Which of the following categories best represents your total household income from last year?
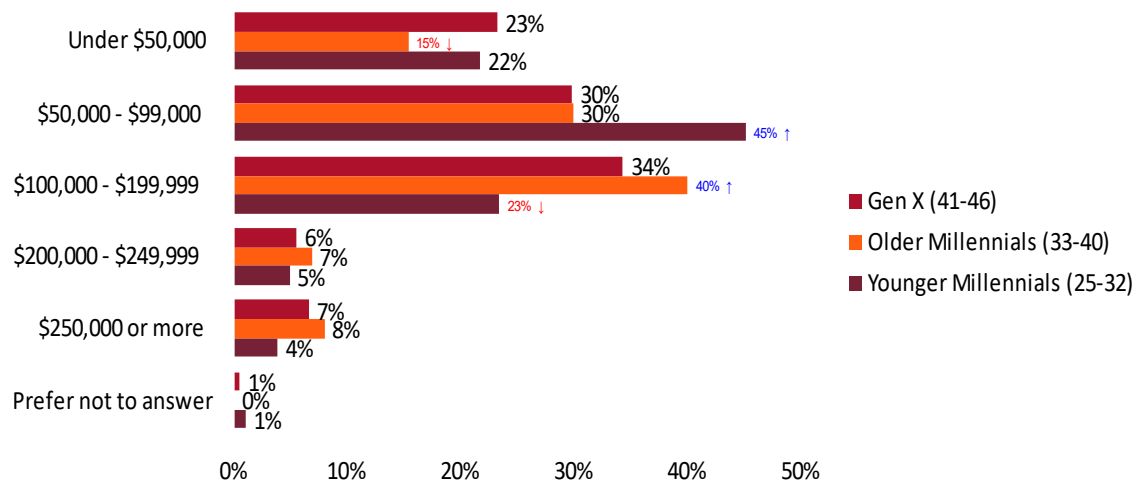
Total sample; Unweighted; base n = 1030; total n = 1033; 3 missing
Multiple comparison correction: False Discovery Rate (FDR) (p = 0.05)

Table 8.4 identifies that 92% of those not qualified earn under $99,000.

Table 8.4: Crosstab (Income)

Column %	Qualified	Not qualified
Under $50,000	11% ↓	51% ↑
$50,000 - $99,000	32% ↓	41% ↑
$100,000 - $199,999	41% ↑	6% ↓
$200,000 - $249,999	7% ↑	1% ↓
$250,000 or more	8% ↑	0% ↓
Prefer not to answer	0% ↓	1% ↑
Column n	796	234

Figure 8.5 represents the breakdown of those who work with a financial professional

(FP).

Figure 8.5: Question #6 (Works with a FP)

Q6 Do you currently work with a financial professional?
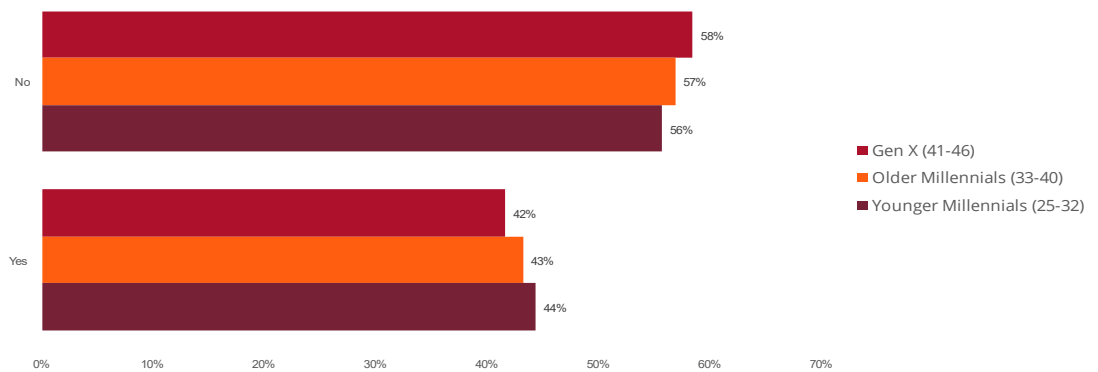
Total sample; Unweighted; base n = 987; total n = 1033; 46 missing
Multiple comparison correction: False Discovery Rate (FDR) (p = 0.05)

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Table 8.5 goes deeper and reveals 46% of qualified respondents use a financial

professional, while 68% of non-qualified respondents do not use financial professionals.

This may shed some light into future engagement in attracting millennial prospects.

Table 8.5: Crosstab (Works with Financial Professional)

Column %	Qualified	Not qualified
No	54% ↓	68% ↑
Yes	46% ↑	32% ↓
Column n	794	193

Before the in-depth theme analysis provides a deeper view into the drivers of behaviour using multivariant analysis, I sought out which question to use as the dependent variable for the correlation analysis. A correlation analysis was run through the lens of the Q17, Q18 and Q19, looking for any collinearity.

8.4 Correlation Analysis Overview

Correlation analysis checks inter-item associations to identify the links or relationships between dependent and independent variables (Laerd, 2020; Frost, 2021; Glen, 2021; Encyclopaedia Britannica, 2021). A correlation coefficient puts a value to the relationship and can be interpreted as (Laerd, 2020; Frost, 2021; Glen, 2021):

- always between -1 and +1
- a value of "0" indicates no linear relationship exists between the variables.
- a value less than "0" indicates a negative relationship; as the value of one variable increases, the value of the other variable decreases.
- a value greater than "0" indicates a positive relationship; as the value of one variable increases, so does the value of the other variable

The stronger the relationship between two variables, the closer the coefficient will be to either -1 or +1; with high correlation comes a deep relationship (Frost, 2018; Laerd, 2020). Generally accepted guidelines to interpreting the strength of coefficients are (Frost, 2018; Laerd, 2020):

	Coefficient, r	
Strength of Association	Positive	Negative
Weak	.1 to .39	-0.1 to -0.39
Moderate	.4 to .59	-0.4 to -0.59
Strong	.6 to 1.0	-0.6 to -1.0

8.4.1 Choosing the Correlation Coefficient

The most common correlation coefficient is the Pearson Correlation Coefficient used to measure the strength of linear relationships between data on either an interval or ratio

scale (Pearson, 1895; Momeni et al. 2017; Laerd, 2020; Encyclopaedia Britannica, 2021; Frost, 2021; Glen, 2021). Spearman's rank-order correlation is used for studying data that takes on a rank order resulting in ordinal data and must satisfy these requirements for validity (Frost, 2018; Frost, 2021; Williams et al. 2020; Laerd, 2021a):

- pairs of continuous variables with relationships that do not follow a straight line or are curvilinear,
- pairs of ordinal data, like Likert scale data
- monotonic relationships, rather than strength or direction of the linear relationship between two variables.

This research is using Likert scales with ordinal data; therefore, the Spearman Rank Order correlation coefficient was determined more appropriate.

8.4.2 Determining the Research's Dependent Variable for Correlation Analysis

Seeking to ascertain the closeness between the constructs, Q17 Financial Decision-making Confidence, Q18 Major Financial Decision Likelihood and Q19 Ease of Accessibility, correlation was performed using each theme's "overall" question as the independent variable. Full correlation table is available in Appendix 4.

8.4.3 Reliability Statistics

Before starting correlation analysis, consistency of how closely related the set of items were as a group was reviewed incorporating Cronbach's Alpha to measure reliability. A Cronbach's alpha over .70 indicates good reliability of data, .80 and above is strong and .90 and above is very strong (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). Cronbach's alpha was .74 reflecting good reliability, represented in Table 8.6.

Table 8.6 Cronbach's Alpha

Cronbach's Alpha	N of Items
.74	12

Looking at Q17, Financial Decision-Making Confidence (FDMC), Q18, Major Financial

Decision Likelihood (MFDL) and Q19, Ease of Accessibility (EoA), it is clear that all three of

these constructs are highly positively related, as evidenced by the dark shading in Table

8.7. The darker the shading, the higher the relationship (Kucko, 2019). This data shows

that confidence, accessibility, and likelihood are not independent of each other and

move strongly together, but what specifically makes them relate? Experience suggests

that it is not a single variable or driver that has impact as these are complicated

decisions. These complex concepts are made up of more than one aspect, which is why

an array of questions was used trying to capture the range. As a result, one doesn't need

to look at all of them, therefore, the question for modelling that the researcher chose

was "Decision-making Confidence".

Table 8.7: Q17, Q18 and Q19

| Financial Decision-making Confidence			Major Financial Decision Likelihood			Financial Product Ease of Accessibility		
Question Theme	Question Number	Q17_1	Question Theme	Question Number	Q18_1	Question Theme	Question Number	Q19_1
Major Financial Decision Likelihood	Q18_1	0.56	Financial Decision-making Confidence	Q17_1	0.56	Financial Decision-making Confidence	Q17_1	0.56
Financial Product Ease of Accessibility	Q19_1	0.56	Financial Product Ease of Accessibility	Q19_1	0.52	Major Financial Decision Likelihood	Q18_1	0.52
Decision-Making Characteristics	Q7_6	0.53	Digital Engagement	Q10b_1	0.42	Decision-Making Characteristics	Q7_6	0.40
Work/Life Flexibility	Q15b_1	0.47	Intentions	Q8_7	0.41	Digital Engagement	Q10b_1	0.40
Aligned Values	Q11b_1	0.40	Decision-Making Characteristics	Q7_6	0.39	Consumer Concerns	Q13b_1	0.40
Intentions	Q8_7	0.38	Aligned Values	Q11b_1	0.37	Intentions	Q8_7	0.38
Digital Engagement	Q10b_1	0.37	Work/Life Flexibility	Q15b_1	0.35	Work/Life Flexibility	Q15b_1	0.37
Consumer Concerns	Q13b_1	0.36	Consumer Concerns	Q13b_1	0.35	Aligned Values	Q11b_1	0.34
Communication	Q14b_1	0.31	Communication	Q14b_1	0.32	Key Influences	Q9b_1	0.29
Trust	Q12b_1	0.30	Key Influences	Q9b_1	0.31	Communication	Q14b_1	0.28
Key Influences	Q9b_1	0.30	Trust	Q12b_1	0.28	Trust	Q12b_1	0.26
COVID-19 Impact	Q16b_1	0.19	COVID-19 Impact	Q16b_1	0.26	COVID-19 Impact	Q16b_1	0.16

The section turns more granular with an in-depth look at each theme. By using crosstabs, I will look to the top 3 attributes for older vs. younger millennials comparing where there is a difference. This data is the starting point for understanding key drivers between attributes and financial confidence.

8.5 Theme 1 Analysis – Decision-Making Characteristics

There is an art and science to making decisions which include highly personal characteristics that shape one's decision-making process (Harker, 1989). Camus adds to the discussion on decision-making asking if it is also affected by moral/societal obligations or expectations (Desautels, 2018). In a review of the literature and the in-depth Delphi study, five indicators emerged that help shape these decisions. These characteristics included: setting clear goals, considering long term impact, logical decisions, financial knowledge, and shortcuts used. Theme 1 consisted of questions 7a through 7f and are reflected in Figure 8.6.

Figure 8.6: Survey Question 7a through 7f

Q7 To what extent do you agree or disagree with the following Decision-Making qualities?

	Gen X (41-46)	Older Millennials (33-40)	Younger Millennials (25-3)
I set clear financial goals for myself	76%	84% ↑	79%
I consider the long-term impact of my financial decisions (5 – 10 years)	82%	81%	77%
I tend to make thoughtful, logical decisions	86%	87%	86%
I have the knowledge and confidence to make decisions/ suggestions on how my finances should be invested	74%	81%	76%
I have developed several shortcut methods to help me make decisions quickly	44% ↓	70% ↑	70% ↑
Overall, I am good at making decisions	85%	86%	85%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

8.5.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone already uses a financial professional to identify attitudinal differences between

the respondents. In each theme, statistically significant differences will be presented.

When breaking the data down by generation, Table 8.8 represents the first crosstab

worthy of note, around creating shortcuts.

Table 8.8: Crosstab of Shortcuts

		Gender		Generational Segment		
Column %		Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I have developed several shortcut methods to help me make decisions quickly - Agree (Top 3)		66% ↑	55% ↓	44% ↓	70% ↑	70% ↑

This data suggests that both older and younger millennials use heuristics or shortcuts,

when making quick decisions, as opposed to the older Generation X. This could be

attributed to the fact that Generation X has had more years and experience making

financial decisions, while the millennial has had less experience with it. Data and

experience suggest that millennials may use information and heuristics when making

decisions (Chandra, 2008); millennials can simplify decisions using heuristics as mental

shortcuts allowing problem solving practically through self-discovery (Kahneman and

Tversky, 1979; Banerjee, 1992; Gigerenzer, 2015; Kunte, 2015). As such, it is not

surprising that more millennials use shortcuts as opposed to Generation X. Shortcuts

may not be optimal though, as they lead to rational decisions being hampered by

cognitive biases (Chandra, 2008; Andrade and Ariely, 2009).

Also interesting, from a gender analysis, 66% of males but only 55% of females

responded that they have developed shortcuts to help decide quickly indicating that

females are more thoughtful taking more time to make a decision. And 68% of those

who work a financial professional already use shortcuts, while only 57% of those who do not work with a financial professional already, use shortcuts.

8.5.2 Data Reliability through Descriptive Statistics

Descriptive data lays the foundation for analysing consistency of views through mean and standard deviation, and reliability of data through Cronbach's alpha. Table 16 represents the first look at the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall portrait of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .87, which reflects a high degree of reliability within the group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the target group responses (Tavokal, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are six questions that make up this theme, with 1,031 participant responses, reflected in Table 8.9.

Table 8.9: Reliability Results Theme 1: Decision-making Characteristics

	Number of Items	Sample Mean	Standard Deviation	Cronbach's Alpha
Q7 Decision-making Characteristics	**6**			**.87**
Q7c) I tend to make thoughtful, logical decisions	1031	5.66	1.26	
Q7f) Overall, I am good at making decisions	1031	5.62	1.27	
Q7b) I consider the long-term impact of my financial decisions (5 – 10 years)	1031	5.50	1.40	
Q7a) I set clear financial goals for myself	1031	5.44	1.40	
Q7d) I have the knowledge and confidence to make decisions/ suggestions on how my finances should be invested	1031	5.28	1.39	
Q7e) I have developed several shortcut methods to help me make decisions quickly	1031	4.76	1.55	

The hierarchical order of the indicators within the decision-making characteristics is presented in this table. Question 7c, discussing thoughtful logical decisions, appears to be most important, while question 7e using shortcuts, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, reliability of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract from the raw information an accurate estimation of a statistical relationship indicating how and to what extent variables are associated with each other (Alexopoulos, 2010; Encyclopaedia Britannica, 2021). This will be performed through inter-item correlation analysis and Principal Component Analysis with factor loading.

8.5.3 Inter-item Correlation Analysis and Factor Loadings

This step seeks what correlation looks like amongst inter-item attributes. The story may not change from the output of the Delphi survey, but provides the researcher an opportunity to layer in additional correlation matrixes. Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 1. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, reflected in Table 8.10

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Table 8.10: Summary of Correlation and Principal Component Analysis of Decision-making Characteristics

Decision-making Characteristics	Q7_1	Q7_2	Q7_3	Q7_4	Q7_5	Q7 Overall	Factor Loading
I set clear financial goals for myself	1.00	0.63	0.59	0.61	0.46	0.56	.76
I consider the long-term impact of my financial decisions (5 – 10 years)	0.63	1.00	0.58	0.52	0.38	0.52	.75
I tend to make thoughtful, logical decisions	0.59	0.58	1.00	0.54	0.42	0.60	.75
I have the knowledge and confidence to make decisions/ suggestions on how my finances should be invested	0.61	0.52	0.54	1.00	0.54	0.57	.74
I have developed several shortcut methods to help me make decisions quickly	0.46	0.38	0.42	0.54	1.00	0.48	.57
Overall, I am good at making decisions	0.56	0.52	0.60	0.57	0.48	1.00	.77

Explained Variance of DMC: 27.41%
Eigenvalue of DMC: 21.93

In focusing on the top questions with the highest correlation, the results reveal the strongest correlation is "I tend to make thoughtful/logical decisions" at .60 which is very strong, and supports Expected Utility Theory, which involves thoughtful logical decisions (Denuit and Eeckhoudt, 2010).

The second highest correlation is "I have the knowledge and confidence to make decisions/suggestions on how my finances should be invested" at .57 and is strong. Although millennials are highly educated, the research does indicate that millennials have only basic financial knowledge, lacking investment education (Eriksen and Kvaløy, 2009).

The third highest correlation is "I set clear financial goals for myself" at .56 also strong.

This sectional correlation matrix shows a profile of the type of person who makes thoughtful decisions and is highly confident when setting financial goals.

This correlation tells us that decision-making characteristics are highly correlated with one's confidence in financial decision-making and are indeed components of a millennials' decision-making confidence. For financial professionals, understanding how someone perceives their financial decisions as confident through their thoughtful/ logical process may provide a foundation for how to raise the confidence on making sound financial decisions for other millennials.

8.5.4 Principal Component Analysis

Principal Component Analysis (PCA) was undertaken to begin to understand how people group with extensive attitudinal batteries (Jolliffe and Cadima, 2016). PCA does this by reducing the large number of factors into smaller factors, compressing the data, and will be adopted in all themes. (PCA) is widely used to reduce dimensionality, or attributes, of a dataset, while preserving as much 'variability' (i.e., statistical information) as possible

1) Principal Component Analysis (PCA) evaluates the linear relationship between variables (similar to correlation, but different method) – and groups them together into components.
2) Components are the first level of ranking the relationships. Attributes that group into Component 1 have the strongest linear relationship to confidence. As you go down the list, Component 10 has the weakest linear relationship.

Factor loading seeks insights that correlation didn't capture with a more granular view across variables. The factor loading represents the correlation coefficient between the variable and the component with which it most closely identifies, determined by the maximum factor loading for that variable (Jolliffe and Cadima, 2016). A factor load over .40 is considered statistically significant (Jolliffe and Cadima, 2016), and throughout the

analysis, there are only three variables that have a statistically low factor loading less than 0.4 – all at 0.39.

Additionally, the criteria for PCA are that the sum of the weighted variables explains more than 50% of the variance. This data was compiled into the top ten components which explain 56.03% of the variance in the data, further indicating the robustness of this model. Any additional components beyond these 10 components account for less variability, and have an Eigenvalue of less than 1, thereby defeating the purpose of PCA (Jolliffe and Cadima, 2016). So, while there are technically 80 components in total that explain 100% of the variance (equal to the number of variables that I'm trying to reduce), I assigned each of the original 80 variables to one of the 10 components, which account for the largest share of the variance, in this case, 56.03%. Table 8.11 reflects the summary data of the Component's % of Variance, Cumulative % and Eigenvalue but each theme will show the Eigenvalue and % of variance individually reflected.

Table 8.11: Summary Data of Variance and Eigenvalue

Component	% of Variance	Cumulative %	Eigenvalue
Component 1	27.41%	27.41%	21.93
Component 2	7.55%	34.97%	6.04
Component 3	4.94%	39.91%	3.95
Component 4	3.74%	43.65%	2.99
Component 5	2.93%	46.58%	2.34
Component 6	2.45%	49.02%	1.96
Component 7	2.02%	51.05%	1.62
Component 8	1.98%	53.03%	1.59
Component 9	1.59%	54.61%	1.27
Component 10	1.41%	56.03%	1.13

Figure 8.7 provides a visual representation of the percentage of Variance Explained.

Figure 8.7: Summary Data of Variance Explained
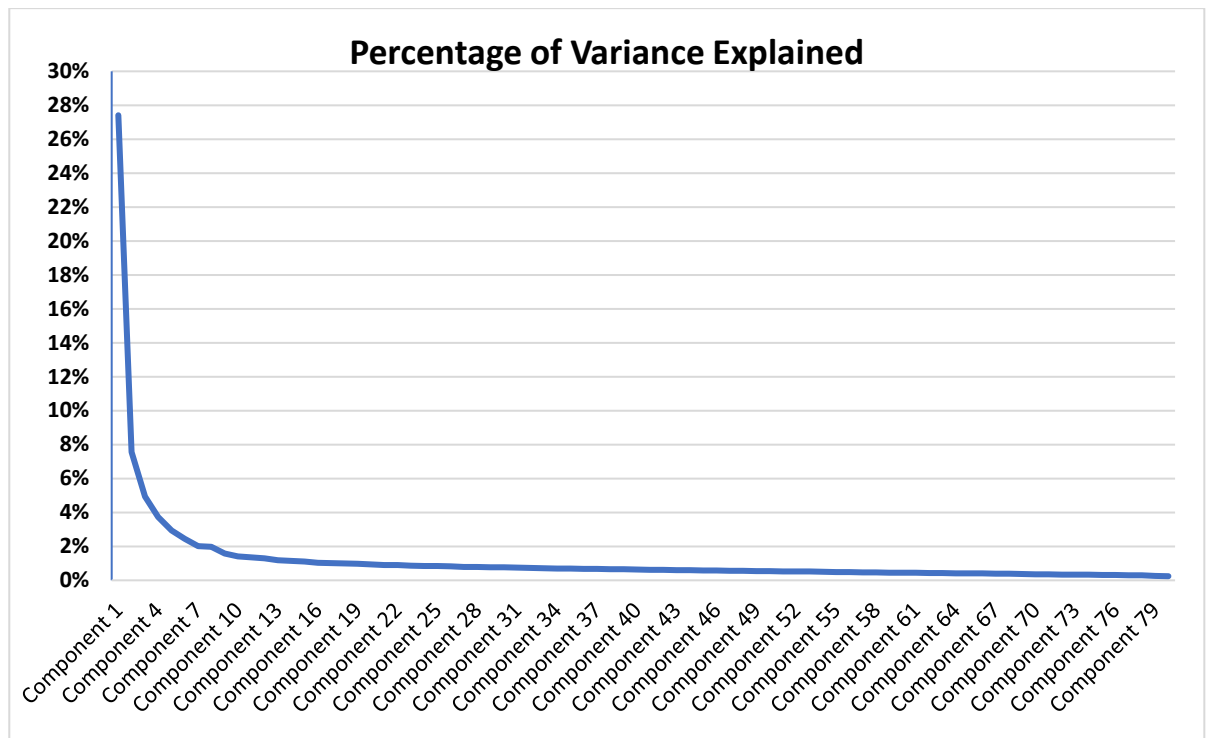
Based on the factor loadings, the order of importance for decision-making characteristics is:

1. Question 7f - Overall, I am good at making decisions.
2. Question 7a - I set clear financial goals for myself.
3. Question 7c - I tend to make thoughtful logical decisions.

PCA revealed that all of the decision-making characteristics questions are statistically significant. Each contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 1, which has the strongest linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Decision-making characteristics" are indeed decision-making characteristics, and that construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA becomes another important benchmark to identify which variables are most important to the millennial, reflected in Table 8.12.

Table 8.12: Top 3 Variables Theme 1: Decision-making Characteristics

Mean	Correlation	PCA
Thoughtful decisions	Thoughtful decisions	Good at making decisions
Good at making decisions	Knowledge and confidence	Sets goals
Consider long-term impact	Sets goals	Thoughtful decisions

Thoughtful behaviours around decisions are revealed in each of the analyses as being important and is supported by Neumann & Morgenstern (1944), Singh (2020), Nava, Karp, and Nash-Stacey (2014) and Kraljevic and Filipovic (2017). Sebora and Cornwall (2012) indicate that people tend to behave thoughtfully and rationally, making a decision based on potential outcomes with highest utility, following Expected Utility Theory more closely. When referring back to the literature, it is also clear that one's financial knowledge has an important effect on financial decision-making confidence (Lee, Yun, and Haley, 2017; Fernando, 2021). Not surprising, all six of the decision-making characteristics were among the strongest correlation values, and one could almost infer, that decision-making characteristics are another way of saying financial decision-making confidence.

8.6 Theme 2 Analysis: Intentions

Intention to engage in a specific behaviour is the greatest predictor of whether or not one actually engages or completes a behaviour (Han and Pereira, 2013). In a review of the literature and the Delphi study, five indicators emerged around intentions. These characteristics included: commitment, emotional state, timing, having the appropriate resources and opportunity to perform an action. Theme 2 consisted of questions 8a through 8g represented in Figure 8.8.

Figure 8.8: Survey Questions 8a through 8g

Q8 To what extent do you agree with the following statements about your intentions?
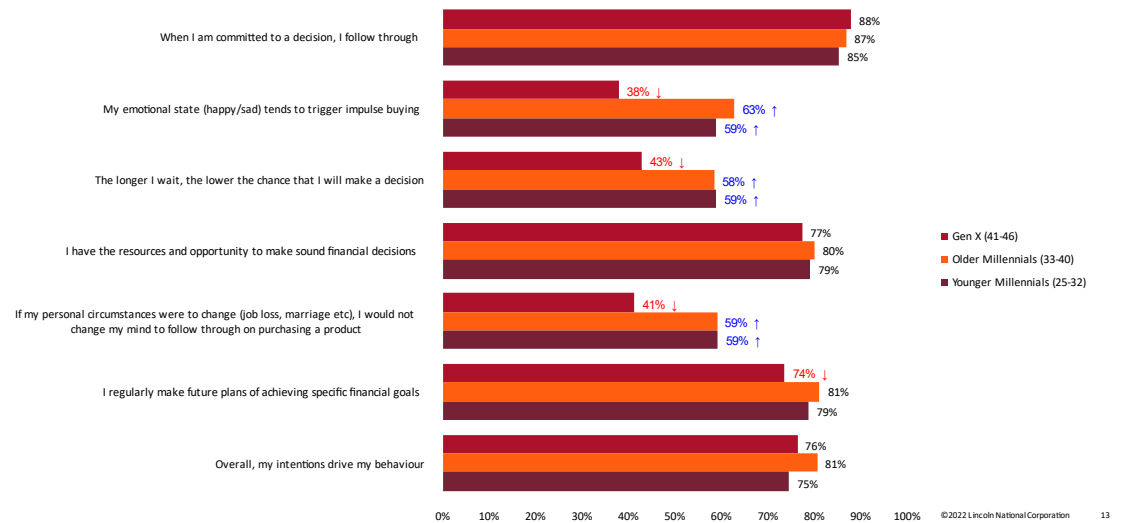
8.6.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether someone uses a financial professional, to identify attitudinal differences between respondents. For the "Intentions" theme, these statistically significant differences are worthy of note.

Table 8.13 represents the first crosstab of interest around one's emotional state triggering impulse buying. The data suggests that both older (63%) and younger (59%) millennials impulse buy based on their emotional state, which is supported in Behavioural Finance. Cronje (2005) states that a fast, rapid, or emotional decision is the opposite of an evidence-based decision-making process. For investment decisions, millennials are emotional, and their investment decisions get affected by these emotions (Sadi et al. 2011). Only 38% of Generation X indicated that their emotional state triggers impulse buying.

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Table 8.13: Crosstab (Emotional State)

| | Gender | | Generational Segment | | |
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
My emotional state (happy/sad) tends to trigger impulse buying - Agree (Top 3)	56% ↑	49% ↓	38% ↓	63% ↑	59% ↑

Next, Table 8.14 shows both older and younger millennials (59%) agreeing that their intentions to purchase would not be altered by a personal life change indicating they may prefer to be entrepreneurial and work for themselves seeking control over their job security (Fuller et al. 2020). Only 41% of Generation X indicated the same.

Table 8.14: Crosstab (Impulse buying)

| | Gender | | Generational Segment | | |
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
If my personal circumstances were to change (job loss, marriage etc), I would not change my mind to follow through on purchasing a product - Agree (Top 3)	59% ↑	46% ↓	41% ↓	59% ↑	59% ↑

And finally, Table 8.15 generationally found that both older (58%) and younger (59%) millennials and males (60%) agree that a longer time to make a decision, might result in the decision not being made. However, females and Generation X reacted similarly and did not feel as strongly, which might tie back to decision-making characteristics on making thoughtful decisions.

Table 8.15: Crosstab (Longer wait)

| | Gender | | Generational Segment | | |
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
The longer I wait, the lower the chance that I will make a decision - Agree (Top 3)	60% ↑	45% ↓	43% ↓	58% ↑	59% ↑

8.6.2 Data Reliability through Descriptive Statistics

Descriptive data lays the foundation for analysing consistency of views through mean and standard deviation, and reliability of data through Cronbach's alpha.

Table 8.16 represents the first look at the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .77, which reflects a good degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are seven questions that make up this theme, with 1,033 participant responses.

Table 8.16: Reliability Results Theme 2: Intentions

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q8 Intentions	**7**			**.77**
Q8a) When I am committed to a decision, I follow through	1033	5.69	1.16	
Q8g) Overall, my intentions drive my behaviour	1033	5.37	1.21	
Q8d) I have the resources and opportunity to make sound financial decisions	1033	5.35	1.37	
Q8f) I regularly make future plans of achieving specific financial goals	1033	5.34	1.35	
Q8c) The longer I wait, the lower the chance that I will make a decision	1033	4.52	1.67	
Q8e) If my personal circumstances were to change (job loss, marriage etc), I would not change my mind to follow through on purchasing a product	1033	4.50	1.70	
Q8b) My emotional state (happy/sad) tends to trigger impulse buying	1033	4.31	1.84	

The hierarchical order of the indicators within the Intentions theme is presented in this table. Question 8a, discussing one's commitment to making a decision, appears to be most important, while question 8b emotional state, appears to be least important from a

descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract from the raw information an accurate estimation of a statistical relationship. This is performed through Principal Component analysis with factor loadings and inter-item correlation analysis.

8.6.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 2. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, reflected in Table 8.17.

Table 8.17: Summary of Correlation and Principal Component Analysis of Intentions

Intentions	Q8_1	Q8_2	Q8_3	Q8_4	Q8_5	Q8_6	Q8 Overall	Factor Loading
When I am committed to a decision, I follow through	1.00	0.12	0.20	0.56	0.29	0.53	0.45	.70
My emotional state (happy/sad) tends to trigger impulse buying	0.12	1.00	0.51	0.13	0.43	0.16	0.36	.72
The longer I wait, the lower the chance that I will make a decision	0.20	0.51	1.00	0.22	0.40	0.22	0.37	.65
I have the resources and opportunity to make sound financial decisions	0.56	0.13	0.22	1.00	0.38	0.61	0.46	.72
If my personal circumstances were to change (job loss, marriage etc), I would not change my mind to follow through on purchasing a product	0.29	0.43	0.40	0.38	1.00	0.36	0.39	.56
I regularly make future plans of achieving specific financial goals	0.53	0.16	0.22	0.61	0.36	1.00	0.47	.71
Overall, my intentions drive my behaviour	0.45	0.36	0.37	0.46	0.39	0.47	1.00	.47

Explained Variance of Intentions: 7.55%
Eigenvalue of Intentions: 6.04

Through this inter-item correlation, the researcher pulls out the attributes that matter most within the section, being mindful on co-linearity, or if attributes are moving closely together. In focusing on the top questions with the highest correlation, the results reveal the strongest inter-item correlation is "I regularly make future plans of achieving specific financial goals" at .47 which is moderate.

The second highest correlation is "I have the resources and opportunity to make sound financial decisions" at .46, also moderate. This is supported through the literature review in the Theory of Planned Behavior and a person's perceived control over their behaviour (LaCaille, 2013; Rural Health Hub, 2021).

The third highest correlation is "When I am committed to a decision, I follow through" at .45 which too is moderate. The respondent may intend to do something, but there is a chance of doing something different.   Intentions have a big role in behaviour, which is supported in the literature review; one's attitude towards their behaviour is predicated on having the expected outcome (LaMorte, 2019).

This sectional correlation matrix shows a profile of the type of person who may be guided by emotions, which impacts their intention to make a decision. This correlation tells us that intentions are moderately correlated with one's confidence in financial decision-making, and are components of a millennials' decision-making confidence.

8.6.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Intentions" and reduce the large number of factors

into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor loading, the order of importance for intentions are:

1. Question 8d - I have the resources and opportunity to make sound financial decisions
2. Question 8b - My emotional state (happy/sad) tends to trigger impulse buying
3. Question 8f - I regularly make future plans of achieving specific financial goals

Each question contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 2, which has the strongest linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Intentions" are indeed intentions, and that construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA becomes another important benchmark to identify which variables are most important to the millennial, reflected in Table 8.18.

Table 8.18: Top 3 Variables Theme 2: Intentions

Mean	Correlation	PCA
Follow-through	Makes future plans	Have resources
Drives behaviour	Have resources	Emotional trigger
Have resources	Follow-through	Makes future plans

When referring back to the literature review, it is clear that intention with opportunity is important to the millennial, supporting Ajzen's (1991) Theory of Planned Behavior.

"I have the resources and opportunity to make sound financial decisions" was consistent throughout all of the analysis as something that is important to the millennial and can be linked back to the literature review. Gutter & Copur (2011) indicate that the lack of education around financial preparedness, can increase the use of riskier alternative products or riskier financial decisions.

8.7 Theme #3 Analysis - Key Influences

Insights into millennial key influences will lead to a better understanding of their

decision-making behaviour's with Pettinger (2018) suggesting that individuals may

choose a decision which does not maximize their utility because they place a heavier

weight on outside influences. In a review of the literature and the Delphi study, four

indicators emerged that help shape these decisions. These characteristics included:

seeking advice, previous experiences, research, on-line reviews, and herding behaviours.

Questions 9a through 9h made up Theme 3, represented in Figure 8.9.

Figure 8.9: Survey Questions 9a through 9g

Q9 To what extent are you affected by the following influencers?

Survey Statement	Gen X (41-46)	Older Millennials (33-40)	Younger Millennials (25-32)
When making a major investment, I seek the advice of parents/family members	51% ↓	73% ↑	66%
I often purchase an item that my friends/colleagues have purchased	38% ↓	63% ↑	60% ↑
I look for positive credible online reviews before purchasing a high-priced product	82%	82%	81%
My previous experience in making wrong purchases can unduly influence my decision to purchase a product	49% ↓	67% ↑	63%
I thoroughly research an item before making a purchase	84%	85%	86%
I have some experience and knowledge on how to make sound financial decisions	81%	82%	80%
I rely on financial professionals for financial guidance	52% ↓	65% ↑	55%

8.7.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone uses a financial professional, to identify attitudinal differences between

respondents. For the "Key Influences" theme, these statistically significant differences

are worthy of note.

First, represented in Table 8.19, the data revealed that both the millennial generation

and males, will purchase an item that friends have purchased, whereas only 46% of

females, and an even smaller demographic, 38% of Generation X will. This supports the

herding bias in Behavioural Finance, where one favours the behaviour of the majority

(Bellando, 2010; Kunte, 2015; Kienzler, 2018; Zahera and Rohit, 2018). An interesting

aspect of the data revealed that when looking at those who currently work with a

financial professional, about two thirds responded that they too purchase an item that

friends have purchased whereas less than half who do not currently work with a financial

professional do.

Table 8.19: Crosstab (Friends purchase)

	Gender		Generational Segment		
				Older	Younger
			Gen X (41-	Millennials	Millennials
Column %	Male	Female	56)	(33-40)	(25-32)
I often purchase an item that my friends/colleagues have purchased - Agree (Top 3)	59% ↑	46% ↓	38% ↓	63% ↑	60% ↑

In Table 8.20, the data also showed older (73%) and younger (66%) millennials looking to

family for advice, while only half of Generation X does. That seems logical as millennials

are younger with less purchasing experience.

Table 8.20: Crosstab (Seek advice)

	Gender		Generational Segment		
				Older	Younger
			Gen X (41-	Millennials	Millennials
Column %	Male	Female	56)	(33-40)	(25-32)
When making a major investment, I seek the advice of parents/family members - Agree (Top 3)	64% ↑	61% ↓	51% ↓	73% ↑	66% ↑

While the results were mixed for older and younger millennials, and Generation X, nearly

eight out of ten of those who do work with a financial professional already, indicated that

they rely on them for advice, represented in Table 8.21.

Table 8.21: Crosstab (Reliance on FP)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I rely on financial professionals for financial guidance - Agree (Top 3)	63% ↑	52% ↓	52% ↓	65% ↑	55%

Table 8.22 shows that, while two thirds of both older and younger millennials did not find that past experiences influenced a decision, half of Generation X did, indicating an anchoring bias. Anchoring is partly unconscious and ties back to the literature review; we see that personal bias, or a sense of it, can lead to an 'I think it, therefore it must be true' mindset where one may assume that their own pre-existing beliefs and self-analysis are valid (Uhlmann and Cohen, 2007). This may also be stage of life, as Generation X have had more time, and opportunities to make decisions, and may be influenced by a previous bad experience.

Not surprising, within the theme of key influences, millennials have a strong alignment around these issues. Millennials experience classic Behavioural Finance biases, which are also revealed in other themes. Another interesting item revealed in the data was around knowledge. Across the generations, gender and those who do and do not currently work with a financial professional, alignment was consistent with approximately 75% feeling like they have the knowledge to make sound financial decisions. This may speak to the fact that millennials are generally, well educated. However, Friedline and Song (2016) suggest that a financial education minus any hands-on experience or operational knowledge, may be insufficient to promote healthy long term financial behaviours.

Table 8.22: Crosstab (Previous decisions)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
My previous experience in making wrong purchases can unduly influence my decision to purchase a product - Agree (Top 3)	63% ↑	56% ↓	49% ↓	67% ↑	63% ↑

8.7.2 Data Reliability through Descriptive Statistics

Table 8.23 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .80, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are eight questions that make up this theme, with 1,033 participant responses.

Table 8.23: Reliability Results Theme 3: Key Influences

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q9 Key Influences	**8**			**.80**
Q9e) I thoroughly research an item before making a purchase	1033	5.60	1.20	
Q9c) I look for positive credible online reviews before purchasing a high-priced product	1033	5.57	1.31	
Q9f) I have some experience and knowledge on how to make sound financial decisions	1033	5.43	1.25	
Q9d) My previous experience in making wrong purchases can unduly influence my decision to purchase a product	1033	4.78	1.56	
Q9h) Overall, I consider the views of others before making an investment	1033	4.76	1.54	
Q9a) When making a major investment, I seek the advice of parents/family members	1033	4.72	1.68	
Q9g) I rely on financial professionals for financial guidance	1033	4.63	1.76	
Q9b) I often purchase an item that my friends/colleagues have purchased	1033	4.55	1.68	

The hierarchical order of the indicators within the key influences theme is presented in this table. Question 9e, thoroughly research a product, appears to be most important, while question 9g relying on financial professionals for guidance, appears to be least

important from a descriptive statistics standpoint. Through these high descriptive

statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to

extract an accurate estimation of the statistical relationship. This is performed through

Principal Component analysis with factor loadings and correlation analysis.

8.7.3 Inter-item Correlation Analysis and Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter

most within the section, being mindful on collinearity, or if attributes are moving closely

together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between

questions in Theme 3. Also, the more detailed Principal Component Analysis was

preformed revealing factor loadings, represented in Table 8.24.

Table 8.24: Summary of Correlation and Principal Component Analysis of Key Influences

Key Influences	Q9_1	Q9_2	Q9_3	Q9_4	Q9_5	Q9_6	Q9_7	Q9 Overall	Factor Loading
When making a major investment, I seek the advice of parents/family members	1.00	0.49	0.30	0.43	0.26	0.21	0.33	0.48	.56
I often purchase an item that my friends/colleagues have purchased	0.49	1.00	0.25	0.46	0.22	0.26	0.37	0.47	.64
I look for positive credible online reviews before purchasing a high-priced product	0.30	0.25	1.00	0.30	0.54	0.41	0.23	0.33	.58
My previous experience in making wrong purchases can unduly influence my decision to purchase a product	0.43	0.46	0.30	1.00	0.25	0.24	0.35	0.44	.59
I thoroughly research an item before making a purchase	0.26	0.22	0.54	0.25	1.00	0.47	0.28	0.35	.50
I have some experience and knowledge on how to make sound financial decisions	0.21	0.26	0.41	0.24	0.47	1.00	0.31	0.28	.67
I rely on financial professionals for financial guidance	0.33	0.37	0.23	0.35	0.28	0.31	1.00	0.40	.45
Overall, I consider the views of others before making an investment	0.48	0.47	0.33	0.44	0.35	0.28	0.40	1.00	.48

Explained Variance of KI: 1.98%

Eigenvalue of KI: 1.59

Through this inter-item correlation, the researcher pulls out the attributes that matter

most within the section, being mindful on collinearity, or if attributes are moving closely

together (Frost, 2018; Frost, 2021; Glen, 2021). In focusing on the top questions with the

highest correlation, the results reveal the strongest inter-theme correlation is "When

making a major investment, I seek the advice of parents/family" at .48. This is echoed in the literature review with about half of millennials talking to their parents about finances (Hoffower, 2019; IRI, 2020).

It is interesting within this theme, that "I seek the views of parents/family before making an investment" pops with millennials. This could be life stage as the oldest cohort is entering their 40's. A financial professional might expect that there would be a shift in that, to other professional sources of information. This data indicates also that millennials still rely on the social network for validation. It's not that financial professionals aren't important; we can see that. But as a millennial continues to grow, they enter the later life stages where financial planning may be important. They were late to hit home ownership and children, and even late to work with financial professionals. And so, it makes sense the stacking order of the Q9 overall – the relationship of these influences to their overall perspective on how they consider the views of others. It is relatively important, perhaps not driving decisions, but part of the story that all of these attitudes independently matter more to this cohort then they had to previous cohorts.

The second highest correlation is "I often purchase an item that my friends/colleagues have purchased" at .47. This is supported throughout many themes as the herding bias, favouring the observed behaviour of the group, and is very prevalent in the millennial generation (Bellando, 2010; Kunte, 2015; Kienzler, 2018; Zahera and Rohit, 2018).

The third highest correlation is "My previous experience in making wrong purchases can unduly influence my decision to purchase a product" at .44, which supports an anchoring bias where one addresses a new problem by using decisions based on similar past experiences (Kaara, 2011). This sectional correlation matrix does show a profile of the type of person who is influenced by key outside factors, but the data indicates that the

theme "key influences" is not that strongly correlated to financial decision-making confidence.

8.7.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Key Influences" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor loading, the order of importance for key influences are:

1. Question 9f - I have some experience and knowledge on how to make sound financial decisions.
2. Question 9b - I often purchase an item that my friends/colleagues have purchased.
3. Question 9d - My previous experience in making wrong purchases can unduly influence my decision to purchase a product.

Each question contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 8, which has the weakest linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Key Influences" are indeed key influences, and that construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA becomes another important benchmark to identify which variables are most important to the millennial, reflected in Table 8.25.

Table 8.25: Top 3 variables Theme 3: Key Influences

Mean	Correlation	PCA
Thoroughly research	Seek advice of parents	Has experience/knowledge
Seek Positive-Online review	Purchase what others have	Purchase what others have
Has experience/knowledge	Wrong purchase influence	Wrong purchase influence

Although there was not a question common in the top three of each analysis, cognitive

bias was found throughout. When referring back to the literature, it is clear that these

indicators are supported in Behavioural Finance through an anchoring and herding bias.

Kunte (2015) suggests that bias is an illogical preference, uniquely a human quality,

which affects the decision process.

8.8 Theme 4 Analysis – Digital Engagement

The millennial generation has changed as a result of digital engagement (Mehta, 2020).

In a review of the literature and the Delphi study, three indicators emerged that help

shape digital engagement. These characteristics included: reliance on social media, on-

line presence, and greater confidence with well-known endorsements. Questions 10a

through 10g made up Theme 4 represented in Figure 8.10.

Figure 8.10: Survey questions 10a through 10g

Q10a To what extent do you agree with the following assessment of online resources?
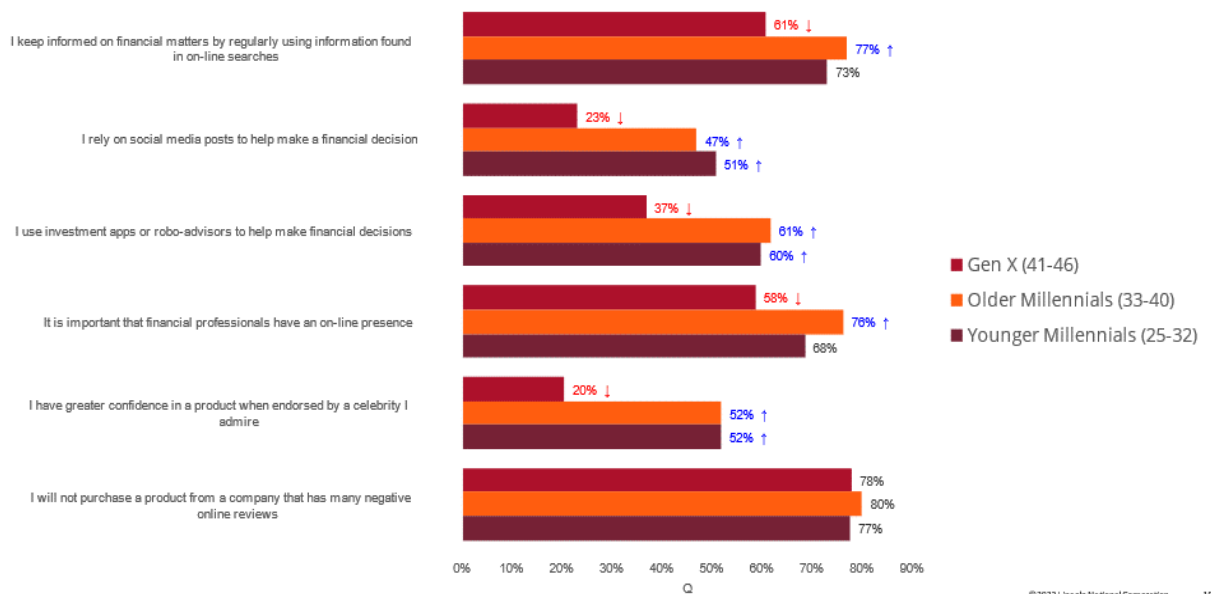
8.8.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone uses a financial professional, to identify attitudinal differences between

respondents. For the "Digital Engagement" theme, these statistically significant

differences are worthy of note.

Table 8.26 indicates the findings that the millennial generation and males have greater

confidence in a product endorsed by an admired celebrity. Only one in five of

Generation X and one in four females indicated the same. When referring back to the

literature review, millennials do place greater confidence in information delivered by a

"trusted" celebrity (Kraljevic and Filipovic 2017).

Table 8.26: Crosstab (Celebrity endorsement)

	Gender		Generational Segment		
Column %	**Male**	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I have greater confidence in a product when endorsed by a celebrity I admire - Agree (Top 3)	51% ↑	28% ↓	20% ↓	52% ↑	52% ↑

Table 8.27 indicates that millennials are highly active on social media and are a huge,

enormous buying power (Mullen, 2020), reflective of their self-reliance on digital

research.

Table 8.27: Crosstab (Informed on)

	Gender		Generational Segment		
Column %	**Male**	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I keep informed on financial matters by regularly using information found in on-line searches	78% ↑	61% ↓	61% ↓	77% ↑	73% ↑

Table 8.28 is interesting, across both older and younger millennials, three out of four

stress the importance of an online presence for a financial professional, yet only half of

Generation X feel the same. However, 72% of those who do work with a financial

professional currently stress that same need.

Table 8.28: Crosstab (FP presence)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
It is important that financial professionals have an on-line presence - Agree (Top 3)	73% ↑	62% ↓	58% ↓	76% ↑	68%

Table 8.29: Throughout literature and pop culture, it is supported that millennials are

technology dependent and adept at using social media for research to help guide a

decision (Nava, Karp, and Nash-Stacey 2014; Sashittal, Hodis, and Sriramachandramurthy,

2015; Facty, 2019; Mathias, 2020; Mehta, 2020). Millennials are highly active on social

media and are a huge, enormous buying power (Mullen, 2020), and a financial

professional who leverages social media, may be able to better connect with this

generation.

Table 8.29: Crosstab (Reliance on Social Media)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I rely on social media posts to help make a financial decision - Agree (Top 3)	50% ↑	28% ↓	23% ↓	47% ↑	51% ↑

Table 8.30 highlights that millennials are undeniably influenced by on-line reviews

(Adglow infographic, 2021), but across generations and gender, these results indicate

that, in general, over 80% of the respondents are influenced by positive on-line reviews.

This reliance on on-line reviews, could translate into a practical component of a financial

professional's presence.

Table 8.30: Crosstab (On-line reviews)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I look for positive credible online reviews before purchasing a high-priced product - Agree (Top 3)	82%	82%	82%	82%	81%

8.8.2 Data Reliability through Descriptive Statistics

Table 8.31 represents the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .84, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are seven questions that make up this theme, with 1,033 participant responses.

Table 8.31: Reliability Results Theme 4: Digital Engagement

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q10 Digital Engagement	**7**			**.84**
Q10f) I will not purchase a product from a company that has many negative online reviews	1033	5.40	1.38	
Q10g) Overall, online resources are important tools for me to make a financial decision	1033	5.20	1.41	
Q10a) I keep informed on financial matters by regularly using information found in online searches	1033	5.05	1.46	
Q10d) It is important that financial professionals have an online presence	1033	5.04	1.52	
Q10c) I use investment apps or robo-advisors to help make financial decisions	1033	4.31	1.85	
Q10e) I have greater confidence in a product when endorsed by a celebrity I admire	1033	3.80	2.00	
Q10b) I rely on social media posts to help make a financial decision	1033	3.65	2.02	

The hierarchical order of the indicators within digital engagement is presented in this table. Question 10f, not purchasing from a company with negative on-line reviews, appears to be most important, while question 10b relying on social media posts to make a financial decision, appears to be least important from a descriptive statistics

standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract an accurate estimation of the statistical relationship. This is performed through Principal Component analysis with factor loading and inter-item correlation analysis. correlation.

8.8.3 Inter-item Correlation Analysis and Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 4. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, reflected in Table 8.32.

Table 8.32: Summary of Correlation and Principal Component Analysis of Digital Engagement

Digital Engagement	Q10_1	Q10_2	Q10_3	Q10_4	Q10_5	Q10_6	Q10_Overall	Factor Loading
I keep informed on financial matters by regularly using information found in online searches	1.00	0.47	0.55	0.51	0.45	0.31	0.60	.53
I rely on social media posts to help make a financial decision	0.47	1.00	0.64	0.41	0.75	0.15	0.36	.69
I use investment apps or robo-advisors to help make financial decisions	0.55	0.64	1.00	0.48	0.62	0.21	0.50	.50
It is important that financial professionals have an online presence	0.51	0.41	0.48	1.00	0.44	0.32	0.53	**.39**
I have greater confidence in a product when endorsed by a celebrity I admire	0.45	0.75	0.62	0.44	1.00	0.17	0.32	.70
I will not purchase a product from a company that has many negative online reviews	0.31	0.15	0.21	0.32	0.17	1.00	0.35	.55
Overall, online resources are important tools for me to make a financial decision	0.60	0.36	0.50	0.53	0.32	0.35	1.00	.42

Explained Variance of DE: 1.41%
Eigenvalue of DE: 1.13

In focusing on the top questions with the highest correlation, the results reveal the

strongest inter-theme correlation is "I keep informed on financial matters by regularly

using information found in online searches" at .60 which is very strong and supported

within the literature review. Mehta (2020) suggests that a millennial's reliance on digital, is part of one's daily life.

The second highest correlation is "It is important that financial professionals have an online presence" at .53, which is strong. As millennials are common users of social media, they are most likely to buy online (Mullen, 2020). A financial professional who recognizes this will increase their media presence to attract millennial investors.

The third highest correlation is "I use investment apps or robo-advisors to help make financial decisions" at .50 is also strong. Limra (2020) suggests that millennials may use investment apps until the market sees declines, but may find themselves turning to a financial professional during times of uncertainty.

The research reveals that digital engagement has a stronger relationship than aligned values, which is interesting. This is in terms of the "heat mapping", which is strictly the results of the correlation to the overall metric. For Q10, these individual attributes are highly correlated to the statement that online resources are important tools for me to make a decision. This makes sense that there is a strong sectional correlation because these are sub attributes underneath the overall attribute, and when we see very high correlation, it means we are measuring around the same issue.

8.8.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Digital Engagement" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor loading, the order of importance for digital engagement are:

1. Question 10e - I have greater confidence in a product when endorsed by a celebrity I admire.
2. Question 10b - I rely on social media posts to help make a financial decision.

3. Question 10f - I will not purchase a product from a company that has many negative online reviews.

One question, "It is important that financial professionals have an on-line presence" has a factor loading less than .40, has an Eigenvalue lower than one, can be grouped together into Component 10, which has the weakest linear relationship to one's confidence in making decisions, and does not contribute to the 56.03% variance in a meaningful way, therefore it could be discarded from the analysis. All other constructs have a factor load greater than .40, and PCA confirms that all other factors called "Digital Engagement" are indeed digital engagement, and the construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA becomes another important benchmark to identify which variables are most important to the millennial, reflected in Table 8.33.

Table 8.33: Top three variables Theme 4: Digital Engagement

Mean	Correlation	PCA
Sensitive to negative on-line reviews	Informed by on-line	Confidence in celebrity endorsement
On-line resource important tool	FP on-line presence	Reliance on social posts
Informed by on-line	Uses investment apps	Sensitive to negative on-line reviews

These results indicate that the importance of a financial professional's on-line presence has a very weak linear relationship to decision-making confidence, as did online tools as a function of making a decision and keeping informed of financial matters via online tools. However, the implication from this data is that a financial professional does need to have positive on-line reviews, potentially endorsed by someone that a millennial follows on social media and trusts.

8.9 Theme 5 Analysis – Aligned Values

Financial success ultimately rests on the trust and loyalty of a millennial to their aligned

values (Mehta, 2020). In a review of the literature and the Delphi study, two indicators

emerged as impactful. These characteristics included: fair treatment and how values

influence my purchasing behaviour. Questions 11a through 11h made up Theme 5.

Figure 8.11 highlights across the millennial generation and males, the aligned value

theme resonated.

Figure 8.11: Survey Questions 11a through 11h

Q11a Please review the following statements and indicate the degree to which each
statement reflects a value that is important to you.
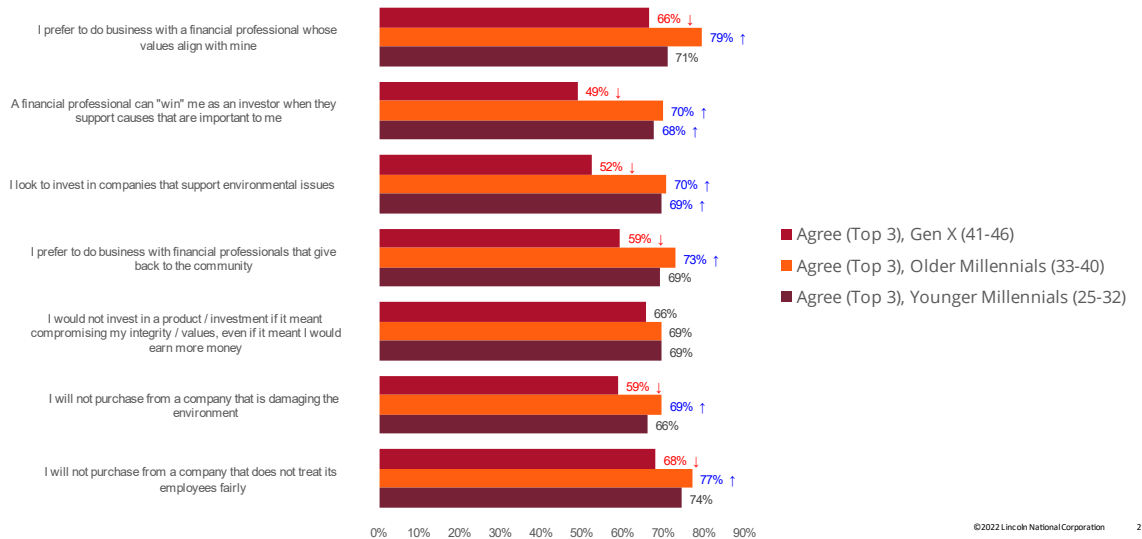
8.9.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone uses a financial professional, to identify attitudinal differences between

respondents. For the "Aligned Values" theme, these statistically significant differences

are worthy of note.

Supported throughout the literature review, Mullen (2020) and Adglow infographic (2021) suggest that it is important to a millennial that a company gives back to charity/society. The analysis shows over two thirds of millennials are in agreement. However, the data reveals something entirely different for Generation X and females, with only about half in agreement, represented in Table 8.34.

Table 8.34: Crosstab (Socially Responsible)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I only wish to invest in socially responsible companies or companies that stand up for social injustice - Agree (Top 3)	64% ↑	57% ↓	46% ↓	71% ↑	66% ↑

Table 8.35 speaks to the alignment of values, with approximately eight out of ten older millennials, and seven out of ten younger millennials wanting to work with like-minded financial professionals. Consistent with both genders as well. Generation X overall, did not feel as strongly about a financial professional's aligned values with theirs, perhaps as a result of seeing financial success without having it.

Table 8.35: Crosstab (FP aligned values)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I prefer to do business with a financial professional whose values align with mine - Agree (Top 3)	74% ↑	70% ↓	66% ↓	79% ↑	71%

Across their generation, millennials are motivated for a better tomorrow (Mehta, 2020). Extrapolating from this, the success of a financial professional ultimately rests on supporting causes that are important to them, represented in Table 8.36.

Table 8.36: Crosstab (Win Me)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
A financial professional can "win" me as an investor when they support causes that are important to me - Agree (Top 3)	66% ↑	56% ↓	49% ↓	70% ↑	68% ↑

In looking to the literature review, when a cause is linked to a brand, authentically and relevant to today, it gains the respect and attention of this generation (Greenook, 2021). It is interesting within this, that 70% of the millennials had a stronger alignment to supporting environmental issues as opposed to only half of Generation X, represented in Table 8.37.

Table 8.37: Crosstab (Supports Environment)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I look to invest in companies that support environmental issues - Agree (Top 3)	65% ↑	61% ↓	52% ↓	70% ↑	69% ↑

Generationally, millennials are looking for financial professionals who make a positive impact on society with seven out of ten agreeing, while generation X saw approximately half in agreement, represented in Table 8.38

Table 8.38: Crosstab (Do Business With)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I prefer to do business with financial professionals that give back to the community - Agree (Top 3)	69% ↑	64% ↓	59% ↓	73% ↑	69%

Older millennials and males mirrored the sentiment that an organization's vales influence their purchasing decision, more so than females or Gen X, which is supported throughout the literature; millennials are influenced by different touch points (Hall, 2017), represented in Table 8.39

Table 8.39: Crosstab (Organization's Values)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Overall, an organization's values influences my decision to purchase their product	70% ↑	60% ↓	58% ↓	73% ↑	66%

8.9.2 Data Reliability through Descriptive Statistics

Table 8.40 represents the descriptive lens of mean (shows the ranking) and standard

deviation (measures the variability), which helps provide an overall profile of the data

(Narkhede, 2018). The mean shows insights on where there are high levels of agreement

among the respondents. The next look is through Cronbach's alpha at .91, which reflects

a very strong degree of reliability within the target group responses, providing

confidence in the adopted scales within the questionnaire. This high level of reliability is

a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical

Consulting Group, 2021; Statistics Solutions, 2022). There are eight questions in this

theme with 1,033 participant responses.

Table 8.40: Reliability Results Theme 5: Aligned Values

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q11 Aligned Values	**8**			**.91**
Q11f) I will not purchase form a company that does not treat its employees fairly	1033	5.21	1.48	
Q11a) I prefer to do business with a financial professional whose values align with mine	1033	5.17	1.40	
Q11e) I would not invest in a product / investment if it meant compromising my integrity / values, even if it meant I would earn more money	1033	5.11	1.56	
Q11d) I prefer to do business with financial professionals that give back to the community	1033	5.00	1.47	
Q11f) I will not purchase from a company that is damaging the environment	1033	4.96	1.57	
Q11h) Overall, an organizations values influences my decision to purchase their product	1033	4.94	1.49	
Q11c) I look to invest in companies that support environmental issues	1033	4.88	1.63	
Q11b) A financial professional can "win" me as an investor when they support causes that are important to me	1033	4.77	1.57	

The hierarchical order of the indicators within the aligned values theme is presented in

this table. Question 11f, discussing fair treatment of employees, appears to be most

important, while question 11b, a financial professional winning me as an investor, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract an accurate estimation of the statistical relationship. This is performed through Principal Component analysis and inter-item correlation.

8.9.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 5. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, represented in Table 8.41.

Table 8.41: Summary of Correlation and Principal Component Analysis of Aligned Values

Aligned Values	Q11_1	Q11_2	Q11_3	Q11_4	Q11_5	Q11_6	Q11_7	Q11 Overall	Factor Loading
I prefer to do business with a financial professional whose values align with mine	1.00	0.55	0.58	0.63	0.50	0.51	0.50	0.60	.62
A financial professional can "win" me as an investor when they support causes that are important to me	0.55	1.00	0.61	0.64	0.42	0.52	0.47	0.61	.65
I look to invest in companies that support environmental issues	0.58	0.61	1.00	0.66	0.48	0.67	0.54	0.62	.76
I prefer to do business with financial professionals that give back to the community	0.63	0.64	0.66	1.00	0.50	0.57	0.53	0.62	.71
I would not invest in a product / investment if it meant compromising my integrity / values, even if it meant I would earn more money	0.50	0.42	0.48	0.50	1.00	0.50	0.57	0.50	.67
I will not purchase from a company that is damaging the environment	0.51	0.52	0.67	0.57	0.50	1.00	0.61	0.56	.78
I will not purchase form a company that does not treat its employees fairly	0.50	0.47	0.54	0.53	0.57	0.61	1.00	0.55	.72
Overall, an organizations values influences my decision to purchase their product	0.60	0.61	0.62	0.62	0.50	0.56	0.55	1.00	.65

Explained Variance of AV: 4.94%

Eigenvalue of AV: 3.95

In focusing on the top questions with the highest correlation, the results reveal the strongest inter-theme correlation is "I prefer to do business with financial professionals that give back to the community" at .62 which is very strong.

The second highest correlation is "I look to invest in companies that support environmental issues" at .62 which is strong. This aligns to the research from Stankevich (2017) and Lead Forensics (2019) suggesting that for 80% of millennials, a company's environmental, social and governance (ESG) stance, affects their purchasing decisions. Of interest, this sentiment of values is seen across other themes, whereas the environment and giving back to the community rose to the surface.

The third highest correlation is "A financial professional can "win" me as an investor when they support causes that are important to me" at .61, also very strong, supported throughout literature that millennials will not compromise their values (Zoovu, 2016).

This correlation tells us that aligned values are highly correlated with one's confidence in financial decision-making and are indeed components of a millennials' decision-making confidence. For financial professionals, this understanding will be critical in attracting and retaining the millennial investor.

8.9.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Aligned Values" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor loading, the order of importance for aligned values are:

1. Question 11e - I have greater confidence in a product when endorsed by a celebrity I admire.
2. Question 11b - I rely on social media posts to help make a financial decision.
3. Question 11f - I will not purchase a product from a company that has many negative online reviews.

PCA revealed that all of the aligned values contributed to the explained variance, have an Eigenvalue greater than 1, have a factor load greater than .40, and can be grouped together into Component 3 which has a strong linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Aligned Values" are indeed aligned values, and that construct is what I initially conceptualized. In addition to correlation and the statistical value of mean, PCA becomes another important benchmark to identify which variables are most important to the millennial, represented in Table 8.42.

Table 8.42: Top 3 Variables Theme 5: Aligned Values

Mean	Correlation	PCA
Fair treatment	Damaging Environment	Damaging environment
Aligned values of the FP	Will not compromise	Supports the environment
Will not compromise	Supports the environment	Fair treatment

Throughout the analysis, the importance to millennials of values that align to their values, especially supporting the environment is clear. Existing research on a millennials' values, speaks to the importance that aligned values could have, especially for financial professionals. Greenbook (2021) suggest that marketing values that align to a millennial, is now a factor in building strong loyalty.

8.10 Theme 6 Analysis – Trust

Millennials are looking for trusting relationships to help guide them through their major financial decisions; however, with bigger decisions, the less likely there is to be trust (Hurley, 2006; Frei and Morriss, 2020). In a review of the literature and the Delphi study, five indicators emerged that help shape how a millennial trusts. These included:

sincerity, reputation, education, importance, and clear messaging.   Questions 12a

through 12i made up Theme 6 represented in Figure 8.12.

Figure 8.12: Survey Questions 12a through 12i

Q12a To what extent do you agree with the following aspects of trust?

■	Gen X (41-46)
■	Older Millennials (33-40)
■	Younger Millennials (25-32)

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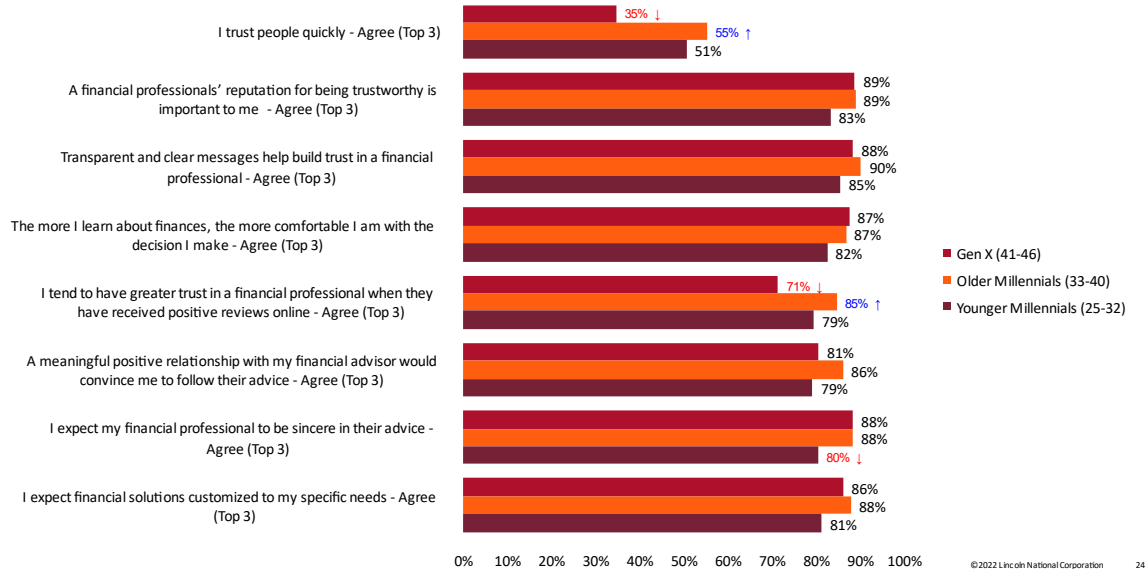
8.10.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender.

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone uses a financial professional, to identify attitudinal differences between

respondents. For the "Trust" theme, these statistically significant differences are worthy

of note.

Table 8.43: In reviewing the literature, millennials are skeptical and less trustful than

generations before them (Liersch, 2014; Nava, Karp, and Nash-Stacey 2014; UBS, 2014;

Accenture, 2015). However, this data suggests that Generation X and women may be

less trusting with only one third of the respondents agreeing. Generationally, about half

of the millennials and males responded that they do trust too quickly.

Table 8.43: Crosstab (Quickly Trust)

		Gender		Generational Segment		
Column %		Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I trust people quickly - Agree (Top 3)		53% ↑	40% ↓	35% ↓	55% ↑	51% ↑

The findings in Table 8.44 are reflective of the literature review supporting the notion that trust is high for all generations (Liersch, 2014). One way to build trust for a financial professional would be to have positive on-line reviews.

Table 8.44: Crosstab (Trust in FP)

		Gender		Generational Segment		
Column %		Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I tend to have greater trust in a financial professional when they have received positive reviews online - Agree (Top 3)		79%	78%	71% ↓	85% ↑	79%

Trust is driven by transparency; we expect someone to be sincere and that is important across all generations, represented in Table 8.45.

Table 8.45: Crosstab (Transparent Messages)

		Gender		Generational Segment		
Column %		Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Transparent and clear messages help build trust in a financial professional - Agree (Top 3)		89% ↑	87% ↓	88%	90% ↑	85% ↓

8.10.2 Data Reliability through Descriptive Statistics

Table 8.47 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on high levels of agreement among the respondents. The next look is through Cronbach's alpha at .84, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting

Group, 2021; Statistics Solutions, 2022). There are nine questions in this theme with 954

participant responses.

Table 8.46: Reliability Results Theme 6: Trust

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q12 Trust	**9**			**.84**
Q12b) A financial professionals' reputation for being trustworthy is important to me	954	5.79	1.46	
Q12i) Overall, trust is important in my decision to make a financial purchase	954	5.75	1.18	
Q12g) I expect my financial professional to be sincere in their advice	954	5.70	1.65	
Q12c) Transparent and clear messages help build trust in a financial professional	954	5.70	1.52	
Q12d) The more I learn about finances, the more comfortable I am with the decision I make	954	5.69	1.29	
Q12h) I expect financial solutions customized to my specific needs	954	5.60	1.46	
Q12f) A meaningful positive relationship with my financial advisor would convince me to follow their advice	954	5.43	1.60	
Q12e) I tend to have greater trust in a financial professional when they have received positive reviews online	954	5.23	1.68	
Q12a) I trust people quickly	954	4.17	1.89	

The hierarchical order of the indicators within the trust theme is presented in this table.

Question 12b, discussing a financial professional's reputation, appears to be most

important, while question 12a trusting too quickly, appears to be least important from a

descriptive statistics standpoint. Through these high descriptive statistics values, validity

of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to

extract an accurate estimation of the statistical relationship. This is performed through

Principal Component analysis and correlation. Prior to performing the more detailed

PCA, it is necessary to understand if any collinearity exists within each correlation.

8.10.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 6. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, represented in Table 8.47.

Table 8.47: Summary of Correlation and Principal Component Analysis of Trust

Trust	Q12_1	Q12_2	Q12_3	Q12_4	Q12_5	Q12_6	Q12_7	Q12_8	Q12 Overall	Factor Loading
I trust people quickly	1.00	0.02	0.08	0.15	0.26	0.23	0.08	0.17	0.00	.55
A financial professionals' reputation for being trustworthy is important to me	0.02	1.00	0.56	0.48	0.40	0.50	0.58	0.51	0.48	.77
Transparent and clear messages help build trust in a financial professional	0.08	0.56	1.00	0.51	0.45	0.51	0.58	0.51	0.49	.77
The more I learn about finances, the more comfortable I am with the decision I make	0.15	0.48	0.51	1.00	0.45	0.50	0.50	0.53	0.45	.58
I tend to have greater trust in a financial professional when they have received positive reviews online	0.26	0.40	0.45	0.45	1.00	0.50	0.38	0.44	0.35	.62
A meaningful positive relationship with my financial advisor would convince me to follow their advice	0.23	0.50	0.51	0.50	0.50	1.00	0.53	0.51	0.42	.68
I expect my financial professional to be sincere in their advice	0.08	0.58	0.58	0.50	0.38	0.53	1.00	0.55	0.46	.81
I expect financial solutions customized to my specific needs	0.17	0.51	0.51	0.53	0.44	0.51	0.55	1.00	0.43	.67
Overall, trust is important in my decision to make a financial purchase	0.00	0.48	0.49	0.45	0.35	0.42	0.46	0.43	1.00	.45

Explained Variance of Trust: 3.74%   Eigenvalue of trust: 3.74

In focusing on the top questions with the highest correlation, the results reveal the strongest inter-theme correlation is "Transparent and clear messages help build trust in a financial professional" at .49 which is strong. Accenture (2015) supports this as millennials expect transparency when discussing investment advice. This is also seen in the ambiguity bias in Behavioural Finance. Bustamante (2019) suggests that a millennial with an ambiguity aversion or if there are unclear messages, choices are influenced. The second highest correlation is "A financial professional's reputation for being trustworthy is important to me" at .48 which is strong. The third highest correlation is "I expect my financial professional to be sincere in their advice" at .46 which is also strong. This correlation tells us that trust is strongly correlated with one's confidence in financial decision-making, and are components of a millennials' decision-making confidence.

8.10.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Trust" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the factor loadings, the order of importance for the trust is:

1. Question 12g - I expect my financial professional to be sincere in their advice.
2. Question 12c - Transparent and clear messages help build trust in a financial professional.
3. Question 12b - A financial professionals' reputation for being trustworthy is important to me.

All questions contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 4, which has a moderate linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Trust" are indeed trust, and that construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA

becomes another important benchmark to identify which variables are most important

to the millennial, reflected in Table 8.48.

Table 8.48: Top 3 Variables Theme 6: Trust

Mean	Correlation	PCA
Financial professional reputation	Transparent & clear message	Sincere financial professional
Overall importance of trust	Financial professional reputation	Transparent & clear message
Sincere financial professional	Sincere financial professional	Financial professional reputation

Throughout all three analyses, the sincerity of the financial professional resonated to

help build trust. When referring back to the literature, Accenture (2015) suggests that

millennials have a high level of mistrust of traditional financial institutions prompting a

significant reliance on social media and personal connections for financial advice. This

will be important for financial professionals as the communicate and connect with

millennial investors. Another aspect that was seen throughout all three analysis is that

the reputation of the financial professional is foundational to help build trust. This will

be a critical step for the financial professional to attract new millennial investors as

clients.

8.11 Theme 7 Analysis - Consumer Concerns

Consumer behaviour is influenced by biases and emotion (Kahneman and Tversky, 1979)

In a review of the literature and the Delphi study, four indicators impacted consumer

concerns. These included: avoiding risk, safer investments, recent headlines, and impact

investing.   Questions 13a through 13l made up Theme 7 reflected in Figure 8.13.

Figure 8.13: Survey Questions 13a through 13l

Q13a To what extent do you agree with the following statements about risks and rewards.
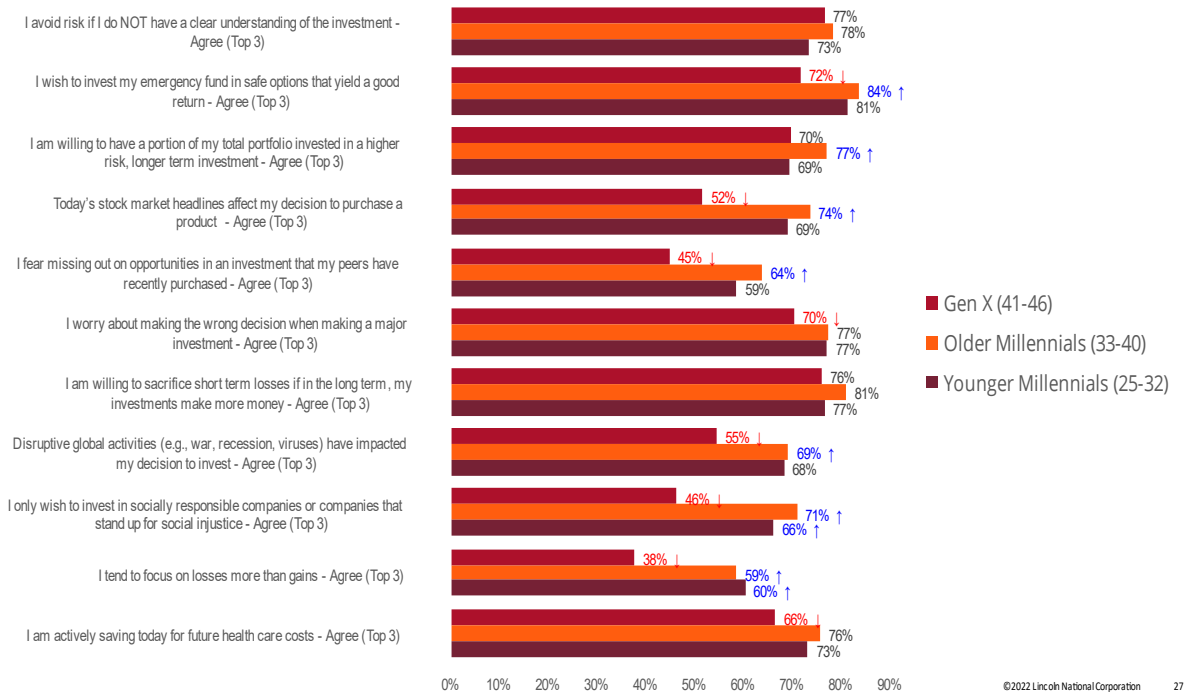
8.11.2 Differences in Key Demographic Data

Through the crosstab analysis, data is broken down by gender, age cohort and whether someone uses a financial professional, to identify attitudinal differences between respondents. For the "Consumer Concerns" theme, these statistically significant differences are worthy of note.

Table 8.49 represents a millennial's tendency to be risk adverse towards profits while risk taking toward loses; willing to gamble less with their gains then with potential losses. This demonstrates a proclivity to a loss aversion bias (Greenberg 2012; Wang, Huang, and Hsu, 2013). These findings saw six out of ten millennials focus more on gains verses approximately one third of Generation X, which was supported by the literature review.

Additionally, how the question is "framed", losses first or gains first, determines

perspective but might distort one's decision (Rossiter, 2018).

Table 8.49: Crosstab (Focus)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I tend to focus on losses more than gains - Agree (Top 3)	57% ↑	45% ↓	38% ↓	59% ↑	60% ↑

This data suggests, supported by the literature review through Hajmohammad and

Vachon (2016) that a millennial would avoid risk entirely, especially money that is set

aside for emergencies, represented in Table 8.50.

Table 8.50: Crosstab (Emergency Fund)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I wish to invest my emergency fund in safe options that yield a good return - Agree (Top 3)	81% ↑	77% ↓	72% ↓	84% ↑	81% ↑

Table 8.51 suggests that almost three out of four older millennials and males may suffer

from a recency bias, where recent headlines will dictate current behaviour. This was

supported in the literature review by Zahera and Rohit (2018) and Gandre (2020), while

only half of both Generation X and females felt the same way.

Table 8.51: Crosstab (Stock Market Headlines)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Today's stock market headlines affect my decision to purchase a product - Agree (Top 3)	70% ↑	58% ↓	52% ↓	74% ↑	69% ↑

Table 8.52 indicates that two out of three older millennials, and males fear missing out

on an investment that a peer has purchased, while less than half of Gen X and females

feel the same way. This herding behaviour shows up in multiple themes as a common

behaviour among millennials and is the most generally recognized observation when it comes to markets (Fromlet, 2011).

Table 8.52: Crosstab (FOMO)

Column %	Gender		Generational Segment		
	Male	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I fear missing out on opportunities in an investment that my peers have recently purchased -	64% ↑	47% ↓	45% ↓	64% ↑	59% ↑

Table 8.53 indicates that the data reveals a recency bias in millennials and males with over two thirds indicating that recent global events impact a decision to invest. A recency bias is a reliance on recent information, assuming that future events will be predicated on recent past events, which could distort one's thinking (Kappelman, 2001; Baddeley and Hitch, 2015; Gandre, 2020; Pimco Decision Research Laboratories, 2020).

Table 8.53: Crosstab (Global Activities)

Column %	Gender		Generational Segment		
	Male	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest	68% ↑	59% ↓	55% ↓	69% ↑	68% ↑

"I am activly saving today for future health care costs", and across the millennial generation and males, this seems to resonate. Additionally, 80% of those who currently work with a financial professional responded affirmatively that they too are saving. However, only about two thirds of both Generation X and females responded that they are. This coud be a specific target market for financial professionals, represented in Table 8.54.

Table 8.54: Crosstab (Health Care Costs)

		Gender		Generational Segment		
Column %		Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I am actively saving today for future health care costs		75% ↑	68% ↓	66% ↓	76% ↑	73%

8.11.2 Data Reliability through Descriptive Statistics

Table 8.55 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .84, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are twelve questions in this theme with 926 participant responses.

Table 8.55: Reliability Results Theme 7: Consumer Concerns

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Consumer Concerns	**12**			**.84**
Q 13g) I am willing to sacrifice short term losses if in the long term, my investments make more money	926	5.34	1.55	
Q 13a) I avoid risk if I do NOT have a clear understanding of the investment	926	5.30	1.64	
Q 13b) I wish to invest my emergency fund in safe options that yield a good return	926	5.27	1.64	
Q13f) I worry about making the wrong decision when making a major investment	926	5.22	1.59	
Q13g) Overall, my decision to invest is impacted by my expectation of risk versus reward	926	5.19	1.17	
Q 13k) I am actively saving today for future health care costs	926	5.14	1.73	
Q 13c) I am willing to have a portion of my total portfolio invested in a higher risk, longer term investment	926	5.00	1.68	
Q13h) Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest	926	4.80	1.74	
Q 13d) Today's stock market headlines affect my decision to purchase a product	926	4.78	1.73	
Q 13i) I only wish to invest in socially responsible companies or companies that stand up for social injustice	926	4.68	1.81	
Q 13e) I fear missing out on opportunities in an investment that my peers have recently purchased	926	4.50	1.83	
Q 13j) I tend to focus on losses more than gains	926	4.38	1.86	

The hierarchical order of the indicators within the consumer concerns theme is presented in this table. Question 13g, sacrificing short term losses for long term gains, appears to be most important, while question 13j, focusing on losses over gains, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract the accurate estimation of a statistical relationship. This is performed through Principal Component analysis and correlation. Prior to performing the more detailed PCA, it is necessary to understand if any collinearity exists within each correlation.

8.11.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 7. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, represented in Table 8.56.

Table 8.56: Summary of Correlation and Principal Component Analysis of Consumer Concerns

Consumer Concerns	Q13 1	Q13 2	Q13 3	Q13 4	Q13 5	Q13 6	Q13 7	Q13 8	Q13 9	Q13 10	Q13 11	Q13 Overall	Factor Loading
I avoid risk if I do NOT have a clear understanding of the investment	1.00	0.28	0.15	0.26	0.19	0.34	0.28	0.28	0.28	0.17	0.26	0.33	.52
I wish to invest my emergency fund in safe options that yield a good return	0.28	1.00	0.34	0.36	0.32	0.32	0.38	0.39	0.35	0.22	0.36	0.36	.47
I am willing to have a portion of my total portfolio invested in a higher risk, longer term investment	0.15	0.34	1.00	0.31	0.35	0.21	0.45	0.29	0.23	0.21	0.38	0.37	.47
Today's stock market headlines affect my decision to purchase a product	0.26	0.36	0.31	1.00	0.49	0.32	0.28	0.52	0.49	0.44	0.42	0.31	.45
I fear missing out on opportunities in an investment that my peers have recently purchased	0.19	0.32	0.35	0.49	1.00	0.40	0.31	0.44	0.45	0.46	0.33	0.29	.48
I worry about making the wrong decision when making a major investment	0.34	0.32	0.21	0.32	0.40	1.00	0.28	0.35	0.27	0.38	0.23	0.30	.42
I am willing to sacrifice short term losses if in the long term, my investments make more money	0.28	0.38	0.45	0.28	0.31	0.28	1.00	0.30	0.29	0.18	0.35	0.41	.47
Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest	0.28	0.39	0.29	0.52	0.44	0.35	0.30	1.00	0.46	0.41	0.34	0.30	.51
I only wish to invest in socially responsible companies or	0.28	0.35	0.23	0.49	0.45	0.27	0.29	0.46	1.00	0.37	0.39	0.29	

companies that stand up for social injustice													.47
I tend to focus on losses more than gains	0.17	0.22	0.21	0.44	0.46	0.38	0.18	0.41	0.37	1.00	0.24	0.20	.43
I am actively saving today for future health care costs	0.26	0.36	0.38	0.42	0.33	0.23	0.35	0.34	0.39	0.24	1.00	0.33	.50
Overall, my decision to invest is impacted by my expectation of risk versus reward	0.33	0.36	0.37	0.31	0.29	0.30	0.41	0.30	0.29	0.20	0.33	1.00	.44

Explained Variance of CC: 2.01%
Eigenvalue of CC: 1.62

In focusing on the top questions with the highest correlation, the results reveal the strongest inter-theme correlation is "I am willing to sacrifice short term losses if in the long term, my investments make money" at .41 which is moderately correlated. This is supported in the literature review by a myopic loss aversion bias. Millennials will evaluate data as often as it is presented; the more times presented, the lower the likelihood to act with a loss aversion bias (Mayhew and Vitalis, 2014; Lee and Veld-Merkoulova, 2016).

The second highest correlation is "I am willing to have a portion of my portfolio invested in a higher risk, longer term portfolio" at .37 which is weakly correlated.

The third highest correlation is "I wish to invest my emergency fund in safe options that have a good return" at .36 which is also weakly correlated. Throughout the literature review, this generation has been referred to as a conservative generation regarding risk vs. reward. Liersch (2014) suggests that an investor who avoids risk altogether forfeits any chance of gain, whereas the investor who reduces risk, still has the potential for upside gains. A financial professional will need to understand the level of risk a millennial investor is willing to take for both short and long term.

This correlation tells us that these consumer concerns are moderately to weakly correlated with one's confidence in financial decision-making, and may not be an accurate representation of a millennials' decision-making confidence.

8.11.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Consumer Concerns" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the factor loading, the order of importance for consumer concerns are:

1. Question 13h - Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest
2. Question 13k - I am actively saving today for future health care costs
3. Question 13e - I fear missing out on opportunities in an investment that my peers have recently purchased

All questions contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 7, which has a moderate linear relationship to one's confidence in making decisions. PCA confirms that the factors called "Consumer Concerns" are indeed consumer concerns, and that construct is what I initially conceptualized. In addition to the statistical values of mean and correlation, PCA becomes another important benchmark to identify which variables are most important to the millennial, reflected in Table 8.57.

Table 8.57: Top 3 Variables Theme 7: Consumer Concerns

Mean	Correlation	PCA
Sacrifice for the long-term	Sacrifice for the long-term	Disruptions globally
Avoid if unclear	Higher risk for long-term	Saving for health care
Conservative emergency fund	Conservative emergency fund	Fear of missing out

Throughout this analysis, both conservative short-term investing, and riskier longer-term investing is revealed. Millennials are generally considered more risk adverse than previous generations as supported by the literature review. However, a millennial's low risk tolerance could negate opportunities, causing additional risks (Spacey, 2017).

This data revealed that for longer term investments, millennials may be willing to accept more risk. Silver (2019) indicated that assessing the risk associated with the decision could allow one to take a stake in it (Silver, 2019).

8.12 Theme 8 Analysis – Communication

Understanding the target audience leads to better communication, especially when financial professionals deliver financial recommendations (Heshmat, 2015). In a review of the literature and the Delphi study, two indicators emerged that help shape millennial communication. These included: short frequent communication and engaging on-line.

Questions 14a through 14f made up Theme 8 reflected in Figure 8.14.

Figure 8.14: Survey questions 14athrough 14f

Q14a To what extent do you agree with the following approach to communication?
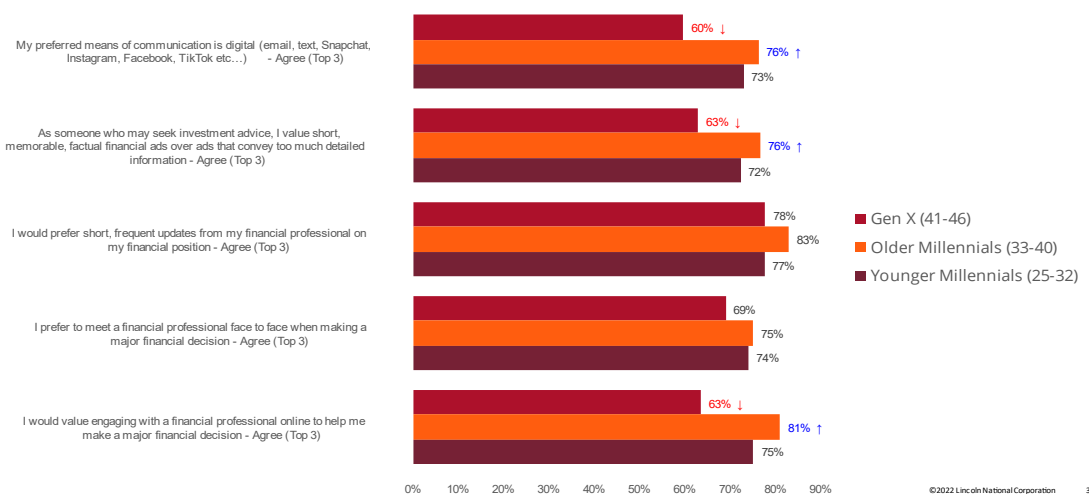
8.11.1 Differences in Key Demographic Data

The crosstab analysis will provide more explanatory detail on demographics and gender. Through the crosstab analysis, data is broken down by gender, age cohort and whether someone uses a financial professional, to identify attitudinal differences between respondents. For the "Communication" theme, these statistically significant differences are worthy of note.

Table 8.58 shows some agreement across the millennial generation and males around preferred means of communication. This data supports a millennial as a digital native, with the implications of how financial professionals can communicate with millennials; digitally. When referring back to the literature we see this indicator supported by Accenture (2015), Gafni (2015) and Zoovu (2016). It is interesting that this data revealed that both Generation X and females are not as supportive of the digital medium as their preferred means of communication.

Table 8.58: Crosstab (Preferred Communication)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc…) - Agree (Top 3)	74% ↑	64% ↓	60% ↓	76% ↑	73% ↑

Animoto (2020) released new survey data of 1,000 millennials detailing consumer purchasing behaviour by generation; the results showed that 70% of millennials were visual and trust brands with dynamic, short videos. This data is supportive in that generationally, three out of four millennials and males value short memorable ads, while only six out of ten Generation X and females did, represented in Table 8.59.

Table 8.59: Crosstab (Short Ads)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
As someone who may seek investment advice, I value short, memorable, factual financial ads over ads that convey too much detailed information - Agree (Top 3)	74% ↑	67% ↓	63% ↓	76% ↑	72%

This generation is tech savvy. Zoovu (2016), Fuller et al. (2020), and Limra (2020) suggest that a millennials' preference to communicate is through e-mail and text rather than face to face. The data reveals that generationally, millennials and males prefer to work with financial professionals online, while Gen X and females were less inclined, reflected in Table 8.60.

Table 8.60: Crosstab (Engaging FP online)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I would value engaging with a financial professional online to help me make a major financial decision - Agree (Top 3)	78% ↑	67% ↓	63% ↓	81% ↑	75%

Table 8.61 is very interesting and speaks to trust. Trust is a significant factor in the millennial decision-making process, and with the today's pace of change, it is not surprising for trust to be compromised, thereby relying on your own research (Hurley, 2006; Frei and Morriss, 2020). Over six out of ten millennials and males responded that they are more self-reliant with investment apps, while only about a third of Generation X and females responded similarly. What was also interesting was that approximately 50% of the respondents who both do and do not use a financial professional currently responded in a similar fashion.

Table 8.61: Crosstab (Investment apps)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I use investment apps or robo-advisors to help make financial decisions - Agree (Top 3)	62% ↑	42% ↓	37% ↓	61% ↑	60% ↑

8.12.2 Data Reliability through Descriptive Statistics

Descriptive data lays the foundation for analysing consistency of views through mean and standard deviation, and reliability of data through Cronbach's alpha. Table 73 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .74, which reflects a good degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022). There are six questions in this theme with 1,044 participant responses, reflected in Table 8.62.

Table 8.62: Reliability Results Theme 8: Communication

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q14 Communication	**6**			**.74**
Q14e) I would prefer short, frequent updates from a financial professional on my financial position	1044	5.27	1.58	
Q14f) Overall, it is important to be able to communicate with a financial professional digitally	1044	5.19	1.30	
Q14d) I prefer to meet a financial professional face to face when making a major financial decision	1044	5.16	1.75	
Q14c) I would value engaging with a financial professional online to help me make a major financial decision	1044	5.11	1.69	
Q14a) My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc…)	1044	5.05	1.75	
Q14b) As someone who may seek investment advice, I value short, memorable, factual financial ads over ads that convey too much detailed information	1044	5.03	1.69	

The hierarchical order of the indicators within the communication theme is presented in this table. Question 14e, short memorable discussions, appears to be most important,

while question 14b short memorable ads, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract an accurate estimation of the statistical relationship. This is performed through Principal Component analysis and correlation. Prior to performing the more detailed PCA, it is necessary to understand if any collinearity exists within each correlation.

8.12.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 8. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, reflected in Table 8.63.

Table 8.63: Summary of Correlation and Principal Component Analysis of Communication

Communication	Q14_1	Q14_2	Q14_3	Q14_4	Q14_5	Q14 Overall	Factor Loading
My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc…)	1.00	0.37	0.34	0.13	0.42	0.35	.57
As someone who may seek investment advice, I value short, memorable, factual financial ads over ads that convey too much detailed information	0.37	1.00	0.46	0.36	0.44	0.36	**.39**
I would value engaging with a financial professional online to help me make a major financial decision	0.34	0.46	1.00	0.38	0.49	0.37	**.39**
I prefer to meet a financial professional face to face when making a major financial decision	0.13	0.36	0.38	1.00	0.27	0.20	.61
I would prefer short, frequent updates from a financial professional on my financial position	0.42	0.44	0.49	0.27	1.00	0.45	.54
Overall, it is important to be able to communicate with a financial professional digitally	0.35	0.36	0.37	0.20	0.45	1.00	.54

Explained Variance of Communication: 1.59%
Eigenvalue of Communication: 1.27

In focusing on the top questions with the highest correlation, these results reveal the strongest inter-theme correlation is "I would prefer short frequent updates from my financial professional on my financial position" at .45 which is moderately correlated. As supported in the literature review, millennials want customization, and value more frequent feedback which could extend to their financial portfolio (Greenbook, 2021). For financial professionals, it could be difficult to look at past clues to decision-making behaviours, running up against experiential limits; uncertainty of the future makes identifying effective communication more difficult particularly during a pandemic. This is interesting as effective communication shows up in the Trust theme as millennials see trust through communication.

The second highest correlation is "I would value engaging a financial professional online to help me make a major financial decision" at .37 which is weakly correlated. What has worked for previous generations, for example, in person contact, may frustrate today's millennial investor, especially around investments. Millennials want discussions that are more holistic, with financial professionals helping them dive into information around broader topics (Miller, 2020c).

The third highest correlation is "As someone who may seek investment advice, I value short, memorable, factual financial ads over ads that convey too much detailed information" at .36 which is also weakly correlated.

This correlation tells us that the attributes in effective communication are moderately correlated with one's confidence in financial decision-making, and may not reflect a millennials' decision-making confidence. As a financial professional, there is a need to understand the importance of communication with how it is delivered, as insights into the key influences and biases of the millennial investor will lead to new knowledge for financial professionals that can be implemented for better communication.

8.12.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Communication" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016).

Based on the factor loadings, the order of importance for the decision-making characteristics are:

1. Question 14d - I prefer to meet a financial professional face to face when making a major financial decision
2. Question 14a - My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc...)

3. Question 14f - Overall, it is important to be able to communicate with a financial professional digitally

PCA revealed that all of the communication questions can be grouped together into Component 9 and have the weakest linear relationship to one's confidence in making decisions. Although two of the questions have a factor loading under .40, Eigenvalue under 1, and effectively do not add to the variance, PCA did confirm that the other factors called "Communication" are indeed communication, and that construct is what I initially conceptualized. In addition to correlation and the statistical value of mean, PCA becomes another important benchmark to identify which variables are most important to the millennial, represented in Table 8.64.

Table 8.64: Top 3 Variables Theme 8: Communication

Mean	Correlation	PCA
Short, frequent communication	Short, frequent communication	Meet face to face
Digital communication is important	Engage on-line	Prefer to communicate digitally
Meet face to face	Wants short ads	Digital communication is important

The implications of focusing on understanding how digital communication is supported throughout the literature, as existing research has shown that this understanding may help connect a millennial's influences to their communication choices around finances (Sadi et al. 2011).

8.13 Theme 9 Analysis – Work Life Flexibility

Millennials know what they want; work life balance and control (Pfau, 2016; Bell, 2020; Fuller et al. 2020). In a review of the literature and the Delphi study, five indicators emerged that engulf the work/life flexibility theme. These included: balance, personal

development, career aspirations, flexibility, and unique experiences.   Questions 15a

through 15h made up Theme 9 reflected in Figure 8.15.

Figure 8.15: Survey Questions 15a through 15h

Q15a To what extent do you agree with the following statements about an ideal work/life flexibility?
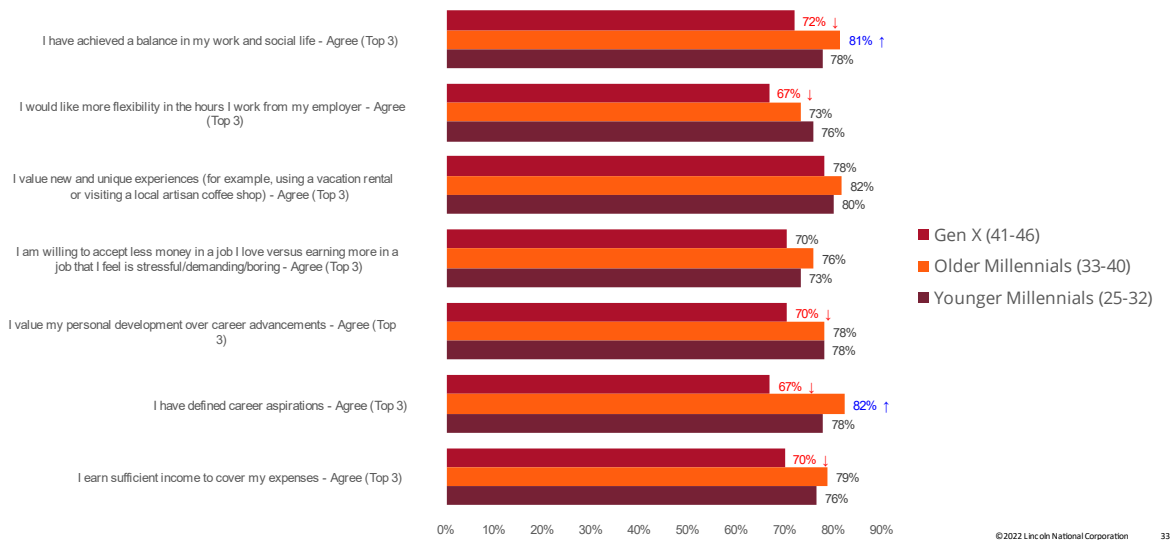
8.13.1 Differences in Key Demographic Data

Through the crosstab analysis, data is broken down by gender, age cohort and whether

someone uses a financial professional, to identify attitudinal differences between

respondents. For the "Work/Life Flexibility" theme, these statistically significant

differences are worthy of note.

Table 8.65 data reveals the millennial generation feels like they have balance.

Approximately 80% of both older and younger millennials responded that they have

achieved balance, with approximately 70% of Generation X feeling the same. As gender

analysis reveals, this data shows that more males are apt to feel balance than females.

These may be relevant factors of lifecycle stages of both age and gender (AMP agency,

2021).

Table 8.65: Crosstab (Achieved Balance)

Column %	Gender		Generational Segment		
	Male	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I have achieved a balance in my work and social life - Agree (Top 3)	82% ↑	72% ↓	72% ↓	81% ↑	78%

Although Noblett (2020) and Hartford Funds (2020) refer to millennials as financial fools with choices like expensive artisan coffee over home ownership and retirement savings, this research indicated that across all generations, the vast majority of respondents valued unique experiences, reflected in Table 8.66.

Table 8.66: Crosstab (Unique Experiences)

Column %	Gender		Generational Segment		
	Male	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I value new and unique experiences (for example, using a vacation rental or visiting a local artisan coffee shop) - Agree (Top 3)	79%	81%	78% ↓	82% ↑	80%

Reflected in table 8.67: It is interesting that within the theme of Work/Life Flexibility, millennials have a stronger alignment to defined career aspirations. More millennials and males felt career aspirations were defined vs. their Generation X and female counterparts. This is interesting as an older Generation X, who has been in the work environment longer, might be expected to have defined career aspirations.

Table 8.67: Crosstab (Career Aspirations)

Column %	Gender		Generational Segment		
	Male	**Female**	**Gen X (41-56)**	**Older Millennials (33-40)**	**Younger Millennials (25-32)**
I have defined career aspirations - Agree (Top 3)	80% ↑	70% ↓	67% ↓	82% ↑	78% ↑

8.13.2 Data Reliability through Descriptive Statistics

Table 8.68 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of

agreement among the respondents. The next look is through Cronbach's alpha at .80, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022).   There are eight questions in this theme with 959 participant responses.

Table 8.68: Reliability Results Theme 9: Work Life/Flexibility

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q15 Work/Life Flexibility	**8**			**.80**
Q15c) I value new and unique experiences (for example, using a vacation rental or visiting a local artisan coffee shop)	959	5.47	1.43	
Q15e) I value my personal development over career advancements	959	5.23	1.61	
Q15g) I earn sufficient income to cover my expenses	959	5.21	1.76	
Q15h) Overall, I have achieved a good work/life balance	959	5.19	1.32	
Q15a) I have achieved a balance in my work and social life	959	5.18	1.70	
Q15f) I have defined career aspirations	959	5.12	1.80	
Q15d) I am willing to accept less money in a job I love versus earning more in a job that I feel is stressful/demanding/boring	959	5.08	1.75	
Q15b) I would like more flexibility in the hours I work from my employer	959	4.93	1.97	

The hierarchical order of the indicators within the work/life flexibility theme are presented in this table. Question 15c, valuing unique experiences, appears to be most important, while question 15b more flexibility for working hours, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract an accurate estimation of the statistical relationship. This is performed through

Principal Component analysis and correlation. Prior to performing the more detailed

PCA, it is necessary to understand if any collinearity exists within each correlation.

8.13.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter

most within the section, being mindful on collinearity, or if attributes are moving closely

together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between

questions in Theme 9. Also, the more detailed Principal Component Analysis was

preformed revealing factor loadings, reflected in Table 8.69.

Table 8.69: Summary of Principal Component and Correlation Analysis for Work/Life Flexibility

Work/Life Flexibility	Q15_1	Q15_2	Q15_3	Q15_4	Q15_5	Q15_6	Q15_7	Q15 Over All	Factor Loading
I have achieved a balance in my work and social life	1.00	0.23	0.32	0.33	0.37	0.47	0.52	0.59	.56
I would like more flexibility in the hours I work from my employer	0.23	1.00	0.38	0.38	0.38	0.37	0.24	0.15	.52
I value new and unique experiences (for example, using a vacation rental or visiting a local artisan coffee shop)	0.32	0.38	1.00	0.39	0.42	0.40	0.31	0.28	.46
I am willing to accept less money in a job I love versus earning more in a job that I feel is stressful/demanding/boring	0.33	0.38	0.39	1.00	0.46	0.30	0.29	0.25	.61
I value my personal development over career advancements	0.37	0.38	0.42	0.46	1.00	0.39	0.33	0.27	.67
I have defined career aspirations	0.47	0.37	0.40	0.30	0.39	1.00	0.46	0.39	.59
I earn sufficient income to cover my expenses	0.52	0.24	0.31	0.29	0.33	0.46	1.00	0.47	.50
Overall, I have achieved a good work/life balance	0.59	0.15	0.28	0.25	0.27	0.39	0.47	1.00	.72

Explained Variance of WLF: 2.45%
Eigenvalue of WLF: 1.96

In focusing on the top questions with the highest correlation, the results reveal the strongest inter-theme correlation is "I have achieved a balance in my work and social life" at .59, which is very strongly correlated. When it comes to work life balance, millennials are people who feel like they have already gotten it; there is an independence aspect. The literature supports this as Kuhl (2014) points out, for millennials, they are not "all work and no personal life" like their parents, so it is of no surprise that they feel like they have a good source of income, which goes hand in hand with, I have done well for myself and therefore I make good decisions so that I can continue to be financially secure and know my financial future.

The second highest correlation is "I earn sufficient income to cover my expenses" at .47, which is moderately correlated.

The third highest correlation is "I have defined career aspirations" at .39 which is weakly correlated. Fuller et al (2020) supports the weaker correlation stating that millennials may prefer to be entrepreneurial and work for themselves, eventually seeking control over their job security.

This correlation tells us that a millennial's work/life balance is highly correlated with one's confidence in financial decision-making, however, many of the other attributes do not reflect a millennials' decision-making confidence. Through this correlation matrix, there appears to be a strong mix between life stage with wealth accumulation, and financial security. Millennials have been disadvantaged as they began to accumulate wealth when the financial crisis of 2008 occurred; data suggests that the financial crisis of 2008 only confirmed the doubts young people had in Wall Street (Liersch, 2014). Now, at mid-career there's a bifurcated wealth profile. There are millennials doing well financially, and then there are those who have been hit especially hard over the past two

years. Age may play into how financially well off a millennial feels; do they feel secure with their employment, or do they feel they have work life balance.

8.13.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Work/Life Flexibility" and reduce the large number of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor loading, the order of importance for work/life flexibility is:

1. Question 15h - Overall, I have achieved a good work / life balance work/life.
2. Question 15e - I value my personal development over career advancements
3. Question 15d - I am willing to accept less money in a job I love versus earning more in a job that I feel is stressful/demanding/boring.

All questions contributed to the explained variance, have an Eigenvalue greater than one, have a factor load greater than .40, and can be grouped together into Component 6, which has a moderate linear relationship to one's confidence in making decisions. PCA did confirm that the factors called "Work/Life Flexibility" are indeed work/life flexibility, and that construct is what I initially conceptualized. In addition to correlation and the statistical value of mean, PCA becomes another important benchmark to identify which variables are most important to the millennial represented in Table 8.70.

Table 8.70: Top 3 Variables Theme 9: Work/Life Flexibility

Mean	Correlation	PCA
Achieve work/life balance	Achieve work/life balance	Values experiences
Vales personal development	Earns sufficient income	Vales personal development
Earn less for a loved job	Defined career aspirations	Earns sufficient income

Within current research, there is support that balance is an important aspect for millennials; they know what they want; work life balance and control (Pfau, 2016; Bell, 2020; Fuller et al. 2020).

8.14 Theme 10 Analysis – COVID-19

Even in the time of COVID, millennials are saving for retirement (Insured Retirement Institute, 2020). In a review of the literature and the Delphi study, five indicators emerged that help shape the times we are living in. These included: increased concerns around debt, self-reliance on investing, risk management, increased reflection and less trust in financial markets. Questions 16a through 16i made up Theme 10 reflected in Figure 8.16.

Figure 8.16: Survey Questions 16a through 16i.

Q16a How strongly do you agree with the following statements about the impact of the COVID-19 pandemic on your financial decision making?
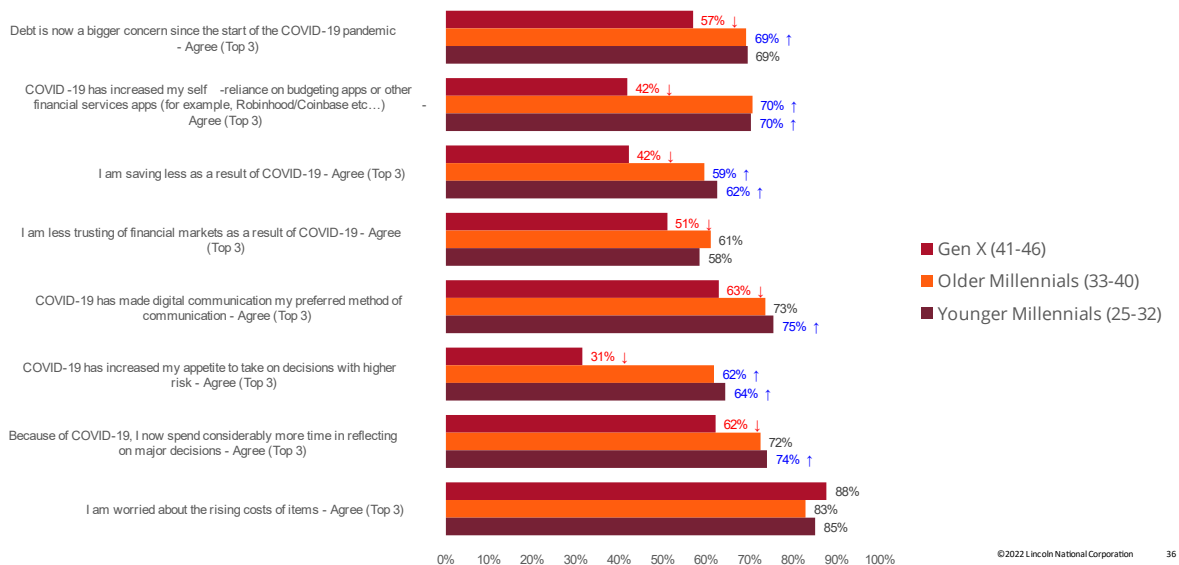
8.14.1 Differences in Key Demographic Data

Through the crosstab analysis, data is broken down by gender, age cohort and whether someone uses a financial professional, to identify attitudinal differences between respondents. For the "Work/Life Flexibility" theme, these statistically significant differences are worthy of note.

Table 8.71 suggests that generationally, millennials, males and females are saving less as a result of COVID-19. However, Generation X as the data reflects, does not show as significant a decline in their savings patterns as a result of COVID-19.

Table 8.71: Crosstab (Savings in COVID)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
I am saving less as a result of COVID-19 - Agree (Top 3)	55%	52%	42% ↓	59% ↑	62% ↑

The data reveals that across the millennial generation, debt has become a much bigger concern due to COVID-19, reflected in Table 8.72. Through the literature review, Gutter & Copur (2011) indicate that millennials may grapple with high student loan debt as they are more likely to take out loans while struggling to complete their degree, carrying this debt well into adulthood potentially inhibiting their ability for financial independence.

Table 8.72: Crosstab (Debt Concerns)

	Gender		Generational Segment		
Column %	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Debt is now a bigger concern since the start of the COVID-19 pandemic - Agree (Top 3)	66%	64%	57% ↓	69% ↑	69% ↑

An interesting discovery from the data is that the idea of budgeting or investment apps, was significant in the digital theme as well as the communication theme, which highlights a millennial's self-reliance. Supported by the literature review, Limra (2020), millennials use investment apps for financial services with seven out of ten indicating that they do. Whereas Generation X was significantly lower with only four out of ten indicating such, reflected in Table 8.73.

Table 8.73: Crosstab (Budgeting apps)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…) - Agree (Top 3)	64% ↑	56% ↓	42% ↓	70% ↑	70% ↑

Across generations and gender, this data indicates that people are spending more time on major decisions, and that their decision-making process has been impacted as a result of Covid-19, reflected in Table 8.74. As supported in the literature review, investment decisions are sophisticated and require deliberate thought (Jagongo and Mutswenje, 2014; Kunte, 2015; Zahera and Rohit 2018). This aligns to Expected Utility Theory where one's perceptions are based on a deliberate process (Princeton University, 2009; Ganegoda and Folger, 2015).

Table 8.74: Crosstab (Reflection)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Because of COVID-19, I now spend considerably more time in reflecting on major decisions - Agree (Top 3)	68%	70%	62% ↓	72% ↑	74% ↑

Research conducted by the Insured Retirement Institute (2020) in April 2020, suggests that due to the pandemic, Americans are shifting towards investments that are lower risk. Overall, these results indicate that more than half of the respondents, both generationally and from a gender perspective, have seen a significant shift in their financial decision-making process as a result of COVID-19, reflected in Table 8.75.

Table 8.75: Crosstab (Impacted Decision-making)

Column %	Gender		Generational Segment		
	Male	Female	Gen X (41-56)	Older Millennials (33-40)	Younger Millennials (25-32)
Overall, the COVID-19 pandemic has impacted my financial decision-making process Agree (Top 3)	65%	65%	56% ↓	69% ↑	72% ↑

8.14.2 Data Reliability through Descriptive Statistics

Descriptive data lays the foundation for analysing consistency of views through mean and standard deviation, and reliability of data through Cronbach's alpha. Table 88 represents the data through the descriptive lens of mean (shows the ranking) and standard deviation (measures the variability), which helps provide an overall profile of the data (Narkhede, 2018). The mean shows insights on where there are high levels of agreement among the respondents. The next look is through Cronbach's alpha at .85, which reflects a strong degree of reliability within the target group responses, providing confidence in the adopted scales within the questionnaire. This high level of reliability is a measure of internal consistency within the responses (Tavakol, 2011; UCLA Statistical Consulting Group, 2021; Statistics Solutions, 2022), reflected in Table 8.76.

Table 8.76: Reliability Results Theme 10: COVID-19

	Number	Sample Mean	Standard Deviation	Cronbach's Alpha
Q16 COVID-19 Impact	**9**			**.85**
Q16h) I am worried about the rising costs of items	944	5.67	1.39	
Q16e) COVID-19 has made digital communication my preferred method of communication	944	5.08	1.65	
Q16g) Because of COVID-19, I now spend considerably more time in reflecting on major decisions	944	5.00	1.67	
Q16i) Overall, the COVID-19 pandemic has impacted my financial decision-making process	944	4.82	1.50	
Q16a) Debt is now a bigger concern since the start of the pandemic (Covid19)	944	4.81	1.86	
Q16b) COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…)	944	4.55	1.95	
Q16d) I am less trusting of financial markets as a result of COVID-19	944	4.55	1.81	
Q16c) I am saving less as a result of COVID-19	944	4.40	2.02	
Q16f) COVID-19 has increased my appetite to take on decisions with higher risk	944	4.38	1.85	

The hierarchical order of the indicators within the COVID-19 theme is presented in this table. Question 16h, discussing the rising cost of items, appears to be most important, while question 16f with increased appetite for risk, appears to be least important from a descriptive statistics standpoint. Through these high descriptive statistics values, validity of the data is confirmed.

While these descriptive statistics provide the ratings views of respondents, the goal is to extract an accurate estimation of the statistical relationship. This is performed through Principal Component analysis and correlation. Prior to performing the more detailed PCA, it is necessary to understand if any collinearity exists within each correlation.

8.14.3 Inter-item Correlation Analysis with Factor Loadings

Through this inter-item correlation, the researcher will pull out the attributes that matter most within the section, being mindful on collinearity, or if attributes are moving closely together (Frost, 2018; Frost, 2021; Glen, 2021). This correlation provides a link between questions in Theme 10. Also, the more detailed Principal Component Analysis was preformed revealing factor loadings, reflected in Table 8.77.

Table 8.77: Summary of Principal Component Analysis and Correlation for COVID-19

COVID-19 Impact	Q16_1	Q16_2	Q16_3	Q16_4	Q16_5	Q16_6	Q16_7	Q16_8	Q16 Over all	Factor Loadings
Debt is now a bigger concern since the start of the pandemic (Covid19)	1.00	0.40	0.54	0.47	0.35	0.34	0.50	0.38	0.50	.71
COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…)	0.40	1.00	0.36	0.41	0.49	0.53	0.51	0.22	0.47	.50
I am saving less as a result of COVID-19	0.54	0.36	1.00	0.50	0.34	0.32	0.42	0.24	0.41	.68
I am less trusting of financial markets as a result of COVID-19	0.47	0.41	0.50	1.00	0.36	0.36	0.45	0.29	0.42	.59
COVID-19 has made digital communication my preferred method of communication	0.35	0.49	0.34	0.36	1.00	0.38	0.49	0.24	0.41	.50
COVID-19 has increased my appetite to take on decisions with higher risk	0.34	0.53	0.32	0.36	0.38	1.00	0.39	0.09	0.35	.43
Because of COVID-19, I now spend considerably more time in reflecting on major decisions	0.50	0.51	0.42	0.45	0.49	0.39	1.00	0.38	0.53	.65
I am worried about the rising costs of items	0.38	0.22	0.24	0.29	0.24	0.09	0.38	1.00	0.37	.53
Overall, the COVID-19 pandemic has impacted my financial decision-making process	0.50	0.47	0.41	0.42	0.41	0.35	0.53	0.37	1.00	.66

Explained Variance of C19: 2.93%

Eigenvalue of C19: 2.34

In focusing on the top questions with the highest correlation, the results reveal the strongest inter-theme correlation is "Because of COVID-19, I now spend considerably more time in reflecting on major decisions" at .53 which is strongly correlated.

Supported in the literature review, thoughtful reflection on major decisions is a reflection of Expected Utility Theory (Denuit and Eeckhoudt, 2010).

The second highest correlation is "Debt is now a bigger concern since the start of the pandemic" at .50, also strongly correlated. Within the literature review, Elliott & Lewis (2014) and Deloitte (2021) indicate that the millennial generation is burdened with high student debt. This could potentially contribute to their more conservative nature when investing, feeling losses to their portfolio with now heavier debt, more heavily than gains.

Supported through the literature review, this connection to a loss, may be paired with lower risk assets with lower returns, a millennial may suffer a loss if they invest less than others (Gebhardt, 2011). In Behavioural Finance, this is a classic example of a loss aversion bias.

The third highest correlation is "COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…)" at .47 which is moderately correlated. This reliance on investment or budgeting apps was also seen throughout the communication theme.

This correlation tells us that the COVID-19 pandemic is moderately to highly correlated with one's confidence in financial decision-making, and is indeed a component of a millennials' decision-making confidence.

8.14.4 Principal Component Analysis

Principal component analysis (PCA) was undertaken to ascertain the essence of closeness between the items for the construct "Intentions" and reduce the large number

of factors into smaller factors (Jolliffe and Cadima, 2016). Based on the significant factor

loading, the order of importance for COVID-19 is:

1. Question 16a - Debt is now a bigger concern since the start of the COVID-19 pandemic.
2. Question 16c - I am saving less as a result of COVID-19.
3. Question 16i - Overall, the COVID-19 pandemic has impacted my financial decision-making process.

PCA revealed that all of the COVID-19 questions can be grouped together into

Component 5, with factor loads over.40 and an Eigenvalue over 1, and have a moderate

linear relationship to one's confidence in making decisions. PCA did confirm that the

factors called "COVID-19" are indeed COVID-19, and that construct is what I initially

conceptualized. In addition to correlation and the statistical value of mean, PCA

becomes another important benchmark to identify which variables are most important

to the millennial, represented in Table 8.78.

Table 8.78: Top 3 Variables Theme 10: COVID-19

Mean	Correlation	PCA
Worried about rising costs	Significantly more time reflecting on a decision	Debt now a bigger concern
Digital – preferred communication now	Debt now a bigger concern	Saving less
Significantly more time reflecting on a decision	Increased self-reliance for investing	Impacted my financial decision-making process

This research is taking a closer look at spending patterns and is revealing that millennials

are saving on health care and retirement as part of their total expenditures (Insured

Retirement Institute, 2020). However, when referring back to the literature, the impact

of COVID-19 is still unclear, but Limra (2020) indicates that the long-term need for

financial advice will change, due to the COVID-19 pandemic.

8.15 Gauging the Association in Figure 6.5 using Principal Component Regression

Careful note needs to be taken on the interpretation of the statistical significance of a Spearman correlation as statistical significance does not necessarily mean a strong association (Pearson, 1895; Laerd, 2021a). It may only test the null hypothesis and determine that there is no relationship. This is because the significance test is exploring whether one can reject or fail to reject the null hypothesis. By rejecting the null hypothesis, the alternative hypothesis is accepted stating that there *is* a relationship, but with no detail on the strength of the relationship. Additional analysis will be necessary which leads to the use of regression analysis (Frost, 2018; Frost, 2021; Laerd, 2021a). With that said, to check the robustness of the results, one additional step was taken, Principal Component Regression (PCR) which is based on Principal Component Analysis (PCA) and used for estimating the unknown regression coefficients in a standard linear regression model (Leung, 2022). PCR uses the principal components as the predictor variables for regression analysis instead of all attributes by using three steps (Leung, 2022):

- Use the principal components generated from PCA as the predictor variables, with the number of principal components matching the number of original features.
- Keep the principal components that explain most of the variance
- Fit a linear regression model (using ordinary least squares) on these principal components

With the benefits of using PCR to include (Leung, 2022):

- PCR fits a linear regression model on principal components instead of all the original attributes which leads to better performance than a standard linear regression model.
- PCR helps eliminate multicollinearity in the data by removing principal components associated with small eigenvalues.

This research is looking at the "what", and not focusing on a predictive model, PCR was undertaken to add additional validity to the analysis, and to interpret the relationships between the dependent and independent variables. PCR improves the numerical accuracy of the regression estimates, due to the use of orthogonal, or statistically independent, principal components (Hadi and Ling, 1998). Although the assumption of a relationship with the target variable does not always hold, it is often a reasonable estimation to produce good results and improve the numerical accuracy of the regression estimates.

For the regression analysis, "Decision-making Confidence" was used as the dependent variable, and the ten components (which represent each theme) were used as the predictors or independent variables. Seven themes or components revealed high significance with p values less than .100. With respect to the magnitude of the effect, all Decision-making characteristics were located in Component 1, which aligns with both the PCA and correlation analyses, and suggests that "decision-making characteristics" have the highest significance and are the attributes that are primarily driving decision-making confidence. However, although moderately significant in the correlation analysis, Component 5, Covid-19, was not significant in this regression analysis. Component 8, Key Influences was statistically significant in the correlation but statistically weak in the regression. Component 9, Communication was not statistically significant in the correlation nor the regression analysis.

These smaller number of principal components represent most of the variability in the data and the relationship with the target variable. PCR reduced the number of coefficients to be estimated in regression modelling, however, more in-depth future analysis on predictive modelling can be done post this research.

The coefficient and p-values are captured in Table 8.79.

Table 8.79: Principal Component Regression using the 10 components as predictors and Q17 (financial decision-making confidence) as the dependent variable

Component	Coefficient	*p*-value	Significance
Component 1: Decision-making Characteristics	0.5991	0.0000	Very Highly Significant
Component 2: Intentions	0.1007	0.0001	Very Highly Significant
Component 3: Aligned Values	0.1794	0.0000	Very Highly Significant
Component 4: Trust	0.1121	0.0000	Very Highly Significant
Component 5: Covid-19	-0.0187	0.4783	Not Significant
Component 6: Work/Life Flexibility	0.2312	0.0000	Very Highly Significant
Component 7: Consumer Concerns	0.0909	0.0006	Very Highly Significant
Component 8: Key Influences	-0.0406	0.1248	Not Significant
Component 9: Communication	0.0429	0.1051	Not Significant
Component 10: Digital Engagement	0.1329	0.0000	Very Highly Significant
Intercept	5.4267	0.0000	Very Highly Significant

In summary, throughout this chapter, this researcher performed multiple quantitative analyses based on survey responses from Generation X and millennials. Through this analysis, every theme fathered insight on what attributes and biases contribute to a millennial's confidence and behaviour when making financial decisions, laying the foundation for conclusions in Chapter 9.

9 Conclusions & Future Recommendations

9.1 Introduction

This chapter now concludes this thesis through a summarization of key research findings and aims of the research, with conclusions informed from the literature review.

Although economic decision-making behaviours have been the subject of much study, what biases and influences the financial decision-making behaviour and confidence of the millennial investor, and the evolution of effective communication from financial professionals, remains relatively under researched. Therefore, a mixed method study was used to explore what contributes to a millennial's influences and biases around their financial decision-making behaviour and confidence.

Through a Delphi study with leaders, ten themes emerged with key attributes identified in each theme. To enhance those findings, a quantitative survey was performed to gain deeper insights into attributes that influence millennial financial decision-making confidence. Multivariant analyses were performed to assess reliability and validity of the data. This led to developing a new conceptual framework for the evolution of financial professional communication with millennial investors.

The chapter moves on to discuss implications and recommendations arising from the data findings and analysis, to provide significant contributions to existing knowledge. Practice management ideas for the financial industry follows, and the chapter concludes with research limitations and opportunities for future research.

9.2 Research Question, Aims and Objectives

This section addresses the research aims and objectives, with a narrative on how this was accomplished. This study aimed to investigate what attributes contribute to a millennial's behaviour and confidence in financial decisions, and how communication

from financial professionals needs to evolve as a result. Having conducted this research

during the COVID-19 pandemic, the question of will the pandemic permanently impact

decision-making, remains to be answered. Regardless, financial professionals need to

consider that millennial expectations and biases carry over into their processes and

decision-making habits.

To review, the following overall objective-driven studies are represented herein:

- Begins with an understanding of economic decision-making theories. This was completed through the literature review (Chapter 2, pp 10-51). A review of the millennial generation (Chapter 2 pp. 52-78) revealed complexities of this generation, with biases and influences affecting their process and confidence in making a financial decision. This laid the foundation for this research and helped identify gaps in knowledge.

- Those complexities generated a conceptual framework of decision-making behaviours to investigate with industry leaders (Chapter 3, Figure 3.1).

- Insights from the Delphi study with financial industry leaders consolidated existing themes and generated one additional decision-making theme (Chapter 6, Figure 6.4).

- These were captured in a new conceptual framework which was then taken to the quantitative research (Chapter 6, Figure 6.5).

- By looking at generational cohorts, differences emerged. From which significant drivers of millennial decision-making behaviour were identified.

The themes which emerged for exploring quantitatively were: Decision-making

Characteristics, Aligned Values, Trust, Intentions, Consumer Fears, COVID-19 Impact,

Communication, Key Influencers, Digital Engagement, and Work/Life Flexibility. In

comparing cross-generational responses, this research helped define millennial financial

decision-making behaviours. In knowing this, financial professionals can customize

communication. These unique generational perspectives describe the characteristics of

millennials vis-à-vis financial decision-making, adding practical and relevant knowledge to

existing research. These aims and objectives led to answering the research question:

"**In identifying key factors, drivers and biases that influence millennial financial**

decision-making confidence, how will communication from financial professionals evolve?"

9.3 A Practical Framework for Financial Professionals

Through the amalgamation of literature, leaders' views, millennial investor views and major findings, the research can now propose a new practical framework for financial professionals practice. Figure 9.1 is now a roadmap for understanding millennial behaviours. Through a demonstrated alignment of values, and differentiated and customized solutions, trust is built leading to more effective communication.

Figure 9.1: Practical Framework for Financial Professionals

> **By understanding what drives financial decision-making confidence and behaviour, better communication happens, and a financial professional can build trust to attract or retain millennial investors.**

Differentiation

In understanding what attributes contribute to a millennials decision-making confidence, key influences, financial literacy and consumer concerns, a financial professional will differentiate themselves and show value gaining their trust.

Builds Trust

Millennial Investor

Customization

Deliver digital, customized solutions to millennials using short, transparent messaging. Consistent feedback and a collaborative approach will build better communication to earn their trust.

Demonstration

Through a demonstrated alignment of values, a financial professional can leverage digital media to foster growth across existing relationships, and to recruit new millennial investors.

9.4 Key Findings of the Study

Crosstab analysis played a key role in identifying statistically significant differences between generational cohorts. Table 9.1 represents this composite crosstab analysis allowing the reader to see these differences in one place.

Table 9.1: Crosstab statistical differences compilation

Theme	Gender		Age Cohort			Works with FP	
	M	F	Gen X	Older Mill	Younger Mill	Y	N
Decision-making Characteristics							
7d) I have the knowledge and confidence to make decisions/ suggestions on how my finances should be invested	✗	✗	✗	✗	✗	✗	✗
7e) I have developed several shortcut methods to help me make decisions quickly	✗			✗	✗	✗	
Intentions Theme							
8b) My emotional state (happy/sad) tends to trigger impulse buying	✗			✗	✗		
8e) If my personal circumstances were to change (job loss, marriage etc), I would not change my mind to follow through on purchasing a product	✗			✗	✗	✗	
8c) The longer I wait, the lower the chance that I will make a decision	✗			✗	✗		
Key Influences							
9a) When making a major investment, I seek the advice of parents/family members	✗			✗	✗		
9b) I often purchase an item that my friends/colleagues have purchased	✗			✗	✗	✗	
9g) I rely on financial professionals for financial guidance	✗			✗	✗	✗	
9c) I look for positive credible online reviews before purchasing a high-priced product	✗	✗	✗	✗	✗	✗	✗
9d) My previous experience in making wrong purchases can unduly influence my decision to purchase a product	✗			✗	✗		
Digital Engagement							
10e) I have greater confidence in a product endorsed by a celebrity	✗			✗	✗		
10a) I keep informed on financial matters by regularly using information found in on-line searches	✗			✗	✗	✗	
10c) I use investment apps or robo-advisors to help make financial decisions (in communication analysis)	✗			✗	✗		
10b) I rely on social media posts to help make a financial decision	✗			✗	✗		
10g) It is important that financial professionals have an on-line presence	✗			✗	✗		
Aligned Values							
11a) I prefer to do business with a financial professional whose values align with mine	✗			✗	✗	✗	
13i) I only wish to invest in socially responsible companies or companies that stand up for social injustice	✗			✗	✗		

Statement	1	2	3	4	5	6	7
11b) A financial professional can "win" me as an investor when they support causes that are important to me	✖			✖	✖		
11c) I look to invest in companies that support environmental issues				✖	✖	✖	
11a) I prefer to do business with financial professionals that give back to the community	✖			✖	✖	✖	
11h) Overall, an organizations values influences my decision to purchase their product	✖			✖	✖	✖	
Trust							
12a) I trust people quickly	✖			✖	✖		
12e) I tend to have greater trust in a financial professional when they have received positive reviews online	✖	✖		✖			
12c) Transparent and clear messages help build trust in a financial professional	✖	✖	✖	✖	✖	✖	✖
Consumer Concerns							
13j) I tend to focus on losses more than gains	✖			✖	✖		
13b) I wish to invest my emergency fund in safe options that yield a good return	✖			✖	✖		
13d) Today's stock market headlines affect my decision to purchase a product	✖			✖	✖		
13e) I fear missing out on opportunities in an investment that my peers have recently purchased	✖			✖	✖		
13h) Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest	✖			✖	✖		
13k) I am actively saving today for future health care costs	✖			✖	✖	✖	
Communication							
14a) My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc…)	✖			✖	✖		
14e) I would prefer short, frequent updates from my financial professional on my financial position	✖	✖	✖	✖	✖	✖	✖
14c) I would value engaging with a fp online to help me make a major financial decision	✖			✖	✖	✖	
14f) Overall, it is important to be able to communicate with a financial professional digitally	✖			✖		✖	
Work/Life Flexibility							
15a) I have achieved a balance in my work and social life	✖	✖	✖	✖	✖	✖	✖
15c) I value new and unique experiences	✖		✖	✖	✖	✖	✖
15f) I have defined career aspirations	✖			✖	✖	✖	
COVID – 19 Impact							
16a) Debt is now a bigger concern since the start of the COVID-19 pandemic	✖			✖	✖		
16b) COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…)	✖			✖	✖		
16c) I am saving less as a result of COVID-19				✖	✖		
16h) Overall, COVID-19 has impacted my financial decision-making process				✖	✖		
16g) Because of COVID-19, I now spend considerably more time in reflecting on major decisions		✖	✖	✖			

The key findings represented in Figure 9.1, identify a total of 37 attributes identified as important for millennials, and with the exception of three questions, "investing in companies that support environmental issues", "saving less as a result of COVID-19" and "COVID-19 impacting one's financial decision-making process", males seemed to mirror millennial patterns.   The research indicated that Generation X and females mirrored some similar patterns, with each suggesting that they are spending considerably more time reflecting on major decisions. Females felt stronger towards having greater trust in a financial professional through on-line reviews, while Generation X valued having unique experiences. Identified in Figure 9.1, only five questions, 7d, 9c, 12c, 14e and 15a, were significant regardless of gender, age, or whether a person worked with a financial professional yet, displayed in Figure 9.2.

Figure 9.2: Key attributes ranked by all respondents

Millennials/Males: 7e, 8b, 8e, 8c, 9a, 9b, 9g, 9d, 10e, 10a, 10c, 10b, 10d, 11a, 11b, 11d, 11h, 12a, 12e, 12c, 13i, 13j, 13b, 13d,13h, 13k, 14a, 14e, 14c, 14f, 15a, 15c, 15f, 16a, 16b
(Millennials only 11c, 16c, 16i, 16g)

All: 7d, 9c, 12c, 14e, 15a

Females only: 12e
Gen X only: 15c
Gen X/Females: 16g
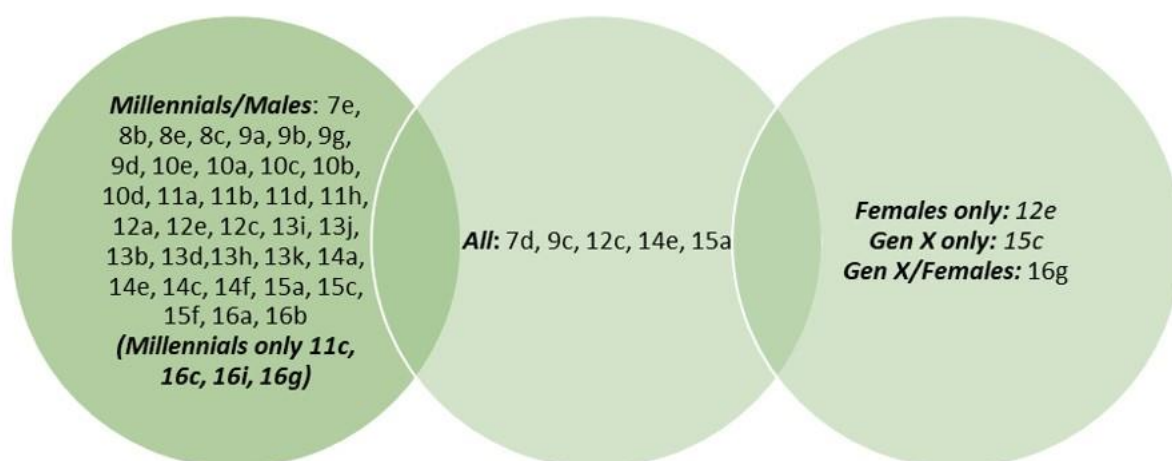
These findings indicate that:

- **Q7d: Confidence in decision-making**
- **Q 9c: Credible on-line reviews**
- **Q12c: Transparent and clear messages**
- **Q 14e: Short frequent portfolio updates**
- **Q15a: Achieving a work/life balance**

permeate all genders and age cohorts and are important to everyone. Through this small overlap of important attributes between generations, I recommend that the financial

professional sees these commonalities as universal, which provides the initial connection

to cross-generational conversations, potentially attracting the millennial beneficiary.

To help guide the future recommendations, Table 9.2 synergizes the quantitative and

qualitative findings.

Table 9.2 Synergy of Qualitative and Quantitative Key Findings

	Synergized Key Findings
Aligned Values	The major findings show that Millennials need to feel that their financial professional is aligned to their values, especially in terms of ESG causes.
Promoting ESG	The major findings here were that socially based investing, including supporting ESG, is clearly important to the millennial.
Shortcuts	The major findings indicate that a financial professional needs a digital presence utilizing a mobile platform that is simple and easy to use, incorporating quick, easy shortcuts.
Cross-Generational Communication	The findings suggest a generational overlap of credible/on-line reviews, transparent and clear messages, short frequent updates, and achieving a work/life balance. Through this overlap, a financial professional sees commonalities which provide a connection to cross-generational conversations.
Connections	Legacy planning is an emotional conversation about values, so make the emotional connection with both generations by meeting with *both* the baby boomer client and millennial beneficiary.
Trust	To attract and retain millennials, you need to have conversations, and millennials believe trust is nurtured by having conversations on ESG.
Female Millennials	The finding s indicate that female millennials have a longer life span, are more risk adverse, and spend more time reflecting on major decisions. This research identified that a financial professional needs to make recommendations, patiently, over multiple meetings, giving more time to process the data. This can help build loyalty and trust over time.
Intentions	The leaders indicated that they were not certain how or if intention affects decision-making behaviour. However, the millennials indicated that emotions may trigger an intention to impulse buy. This lack of connection between financial services leaders and millennials is critical.
Emotional Bias	The major findings indicate that emotion can lead to an intense feeling of fear and panic; and in that moment, the urge to "sell" to avoid further loss conquers rational thought.
Cognitive Biases	Identifying bias can lessen their impact by adding data and tempering emotions, leading to more successful decisions.
Digital	Digital now becomes the preferred means of millennial communication.
COVID-19	There is now an increased preference to communicate digitally and embrace digital platforms quickly for interactions.
Financial Literacy	The findings indicate that simple, educational material via on-line chat rooms, and social media can lead to healthier financial behaviours. Understanding the level of financial savviness a millennial possesses is the first step.

9.5 Implications and Recommendations for New Practice Management

I can now discuss implications and propose recommendations based off the triangulation of literature, Delphi, and quantitative survey results, highlighting significant millennial financial decision-making attributes. New practice management can be drawn from this research that can be incorporated into curriculum for financial professionals; this can galvanize financial professionals and their millennial clients for future financial success.

9.5.1 Attracting or Retaining Millennial Investors

Developing an effective strategy to attract millennials commences with cross generational conversations and the bond between generations; this morphs into what resonates with the millennial investor. To help build that cross-generational bond, start with the demand for sustainable investing as a way to engage new clients. Sustainable investing is critical for the millennial, but there *are* older investors who are also interested in ESG, as one can invest sustainably without giving up results. By paying more attention to socially responsible investments, a financial professional also nurtures trust by having conversations on the role ESG plays in intergenerational wealth transfer.

As assets move across generations, those financial professionals who work with Baby Boomer clients with millennial children need a communication plan. I recommend a financial professional schedules one on one meetings with *both* the boomer and their millennial children to help discuss what the parents are doing from a financial management stance, with the parent's permission of course. Legacy planning is an emotional conversation about values, while more complex estate planning is more procedural. Therefore, making the emotional connection with both generations will need to be a focus in recruiting the millennial heir.

In an ever-present way, technology will become a major part of the evolution of financial services, wealth management, and with what a financial professional adds in terms of value (Benjamin, 2021). Advanced technologies are part of one's daily life as the amount of time spent on-line increases along with the switch to e-commerce. If marketers need to take that into account, so do financial professionals when delivering advice. In the burgeoning world of virtual reality, a financial professional needs to attract the new breed of digitally native millennial (Allocca, 2022), while continuing to provide value on the impact of working with a financial professional. Having a clear and compelling digital strategy is no longer an option and financial professionals will need to design their wealth management approach to include significant digital interaction.

Interesting but not completely unexpected, a millennial is highly likely to create shortcuts to help decide quickly, however, the leaders from the Delphi survey *did not* see this as impactful, which is problematic. There is a gap in understanding the impact shortcuts have on this generation, and financial professionals will need to work on incorporating shortcuts into their interactions. Throughout the literature, heuristics, seen within cognitive biases, work as shortcuts, or rules of thumb that help one make sense of the world and reach decisions with relative speed (Astorino, 2015). There are all types of shortcuts that drive decision-making and so this pattern of shortcuts and cognitive framework, is internally consistent as a millennial responds not simply to shortcuts in terms of financial solutions, but generally speaking. Clearly, millennials value shortcuts, however, these mental shortcuts may be a hinderance to the creative thinking process (Astorino, 2015). To attract the millennial beneficiary, a financial professional must develop a digital presence utilizing a mobile platform that is simple and easy to use, incorporating the quick, easy shortcuts that millennials treasure. These shortcuts can be

links to product education, investment solutions like crypto currency, or their positive on-line reviews.

And so, to successfully attract millennial investors, financial professionals will need to adapt to this audience, represented in Figure 9.3.

Figure 9.3: Cross Generation Connection

Cross-Generation Connection
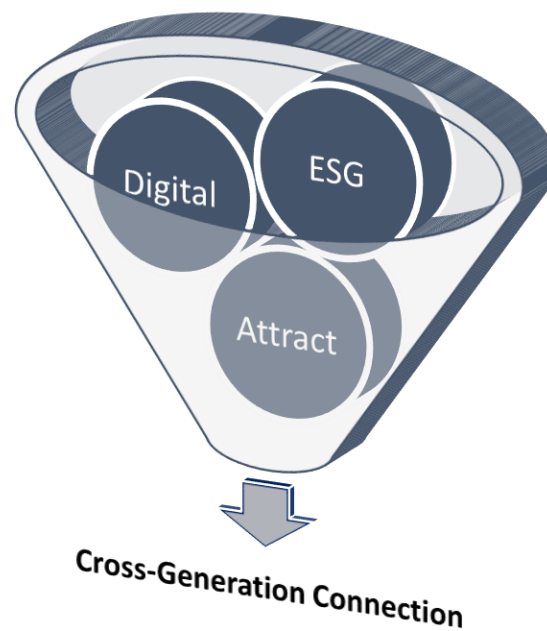
An additional item arose throughout this research impacting attracting female millennials whose longer life expectancies could see retirement lasting 30- 50 years. This indicates their stronger need to make sound financial decisions over a longer period of time. However, will a female millennial recognize the difference in their longer life expectancy early enough; and what could that mean for their investment style? Benjamin (2021) interviewed Ric Edelman, advisory board member of the Milken Institute's Center for the Future of Aging and the Stanford Center on Longevity, "If you're telling clients their financial future is secure because you're assuming a life expectancy of 80, you may be giving clients false hope, it is far more likely clients will live to 100 or beyond." Ignorance of the implications and magnified risk on a retirement that could last up to 50 years, is a growing concern in financial planning. And to date, there is little around the

development of a model addressing this, especially for females. Financial professionals

need to focus attention on the female millennial's longer investment cycle compounded

with their more risk adverse nature. This research identified that females spend

considerably more time reflecting on major decisions, so a financial professional needs to

make recommendations, patiently, over multiple meetings, giving the female millennial

more time to process the data. This can help build loyalty which builds trust over time. I

fear that those financial professionals who do not engage the female millennial for long

term strategies, do so at their own risk.

9.5.2 Rethinking the Significance of Financial Literacy

The literature review supports the identification of millennials as the best educated

generation so far (Nava, Karp, and Nash-Stacey 2014; Kraljevic and Filipovic 2017), who

are eager to learn and value expertise (Liersch, 2014). However, their lack of financial

savvy has also been identified throughout literature, with less than 20% feeling strongly

about their financial and investment knowledge (Liersch, 2014), or able to answer

questions on simple interest rate calculations, inflation, and risk diversification (Kim,

Anderson, and Seay, 2018). According to (Liersch, 2014), the financial literacy rate

among Americans has decreased from 42% to 34% since 2009, despite the fact that 71%

of Americans believe they have a high level of financial knowledge. There is also an

increasing number of millennial investors with limited understanding and knowledge of

the stock market, only investing in it through their 401k plans and pensions (Eriksen and

Kvaløy, 2009). Given the sheer amount of investment choices available, the stock market

may become a riskier choice especially if a millennial lacks sufficient knowledge and

experience (Lee and Veld-Merkoulova, 2016).

As such, millennials may be ill-prepared for *complex financial solutions* without a base in financial literacy (Afiqah and Sabri, 2016; Hauff and Nilsson, 2016; Kim, Anderson, and Seay, 2018). And without this base, lower-income millennials may struggle to manoeuvre through difficult financial decisions and could be ill-prepared for their future financial well-being (Howlett, Kees, & Kemp, 2008; West, 2016). This lack of education around financial preparedness can increase the use of riskier products, lead to mistaken beliefs, or to not give credence to financial advice (Gutter & Copur, 2011; Lee, Yun, and Haley, 2017; Fernando, 2021). It could be inferred then that millennials with lower levels of financial knowledge may have less financial decision-making confidence and select more conservative investments, while those with higher levels of knowledge are less risk adverse, revealing a significant relationship (Larson et. al 2016). Yet this generation's defining attribute is one of more risk adverse, and with the largest intergenerational wealth transfer, financial professionals will be forced to understand this generation with their more conservative, decision-making behaviour (Mehta, 2020).

To a millennial, time is a commodity. Yet investing does not have to be done all at once, rather, it can be accomplished little by little over time, especially with this more conservative and independent millennial investor. Incorporating education on even a simple savings account, may promote healthier financial behaviours. Therefore, I recommend that a financial professional provide regular details on how to incrementally save, slowly and systematically. By combining education through simpler, smaller investments, a path to healthier financial behaviours is created potentially increasing diversification which can reduce overall risk.

Liersch (2014) indicates that decisions made by those individuals with less financial education are more heavily influenced by *outside factors*. With that said, I recommend that a financial professional uses these outside factors or influencers that are highly

visible and well respected. These influencers can help drive awareness to their web

presence which must include simple, yet important educational material. A financial

professional can also provide educational opportunities via on-line chat rooms, social

media or working with colleges and universities to help provide financial content earlier

in the millennial investor's life stage.

Clearly, financial literacy has an effect on important financial decisions, with education

fostering capability and promoting financial decisions that are healthier in the long run. I

recommend a financial professional *profoundly* understands the level of financial

savviness a millennial possesses before any financial recommendations can be made.

9.5.3 The Process for Millennial Decision-Making Confidence

Throughout the literature review, decision-making involves the process of learning and

re-evaluating priorities tied to that decision (Harker, 1989). Simon's 1955 "Bounded

Rationality" introduced the theory that the human mind's capacity for solving complex

problems is very small compared to the size of the problems (Simon, 1979; Barros, 2010;

Nigam et al. 2016). Simon suggests that our decision-making process, is boundedly

rational and comprised of three components (Simon, 1979; Gärling et al. 2009;

Cristofaro, 2017):

- the complexity of the decision at hand,
- limited cognitive skills, including a belief that what is already known is enough,
- limited time as factors that can reduce the ability to make an optimal decision.

And yet, these findings reflect a millennial's decision-making process through a

confidence in their knowledge and being thoughtful as important in making a financial

decision, also seen in the literature as key characteristics to an effective decision-making

process (Schwarber, 2005; Evans, 2016). These characteristics were also the most highly

correlated in terms of overall decision-making ability. But all generations are uniquely

different, and there are certain additional attributes, impulsive intentions, alignment to social values and influencers, that define millennials as who they are while shaping how they think.

People who are good at making decisions, are also very confident in their financial decisions. Yet, how the investment question is framed has a profound effect on the choices made, a classic ambiguity bias, and can distort any decision (Chandra, 2008; Rossiter, 2018; Bustamante, 2019; Tengco-Pacquing et al. 2019). Therefore, the language chosen is key. The clearer the objectives are, the higher the confidence and likelihood a millennial will listen. Digging in, the data reflects a millennial who already perceives themselves as confident and knowledgeable about investments. However, this data also supports that millennials tend to invest more conservatively, which suggests the opposite, that they may not have the confidence to make sound financial decisions. Naturally, this leads to a question, will there be a point where a millennial is overwhelmed when their finances become more complex? The bigger question is will they see value in traditional advice from an advisor in the same type of a one-on-one relationship like Baby Boomers and Gen X did?

Through both the correlation and Principal Component analysis, millennials placed significance that they have resources and opportunity to make sound financial decisions. Yet, considering the COVID impact on one's confidence in making decisions, in uncertain times, uncertainty based on what could happen, and gauging the most likely outcome is more difficult, as we lack practical experience and guiding reference points along the way. As a result of this uncertainty, millennials indicated that they needed to be even more thoughtful in making major decisions to be confident, as debt is an even bigger concern now.

This data reflects millennials who are impulsive *and* emotional investors, which may trigger an intention to impulse buy. Millennials decide impulsively, perhaps based on advice from friends (a herding bias), or an emotional intention (Cronje, 2005; Sadi et al. 2011; Bettinghaus, Goldberg and Lindquist, 2014; McCallum, 2010; Nussbaum, 2020). Yet some literature suggests that impulsive, emotional decisions can be every bit as good as those made with months of deliberation (Cronje, 2005; McCallum, 2010). However, some leaders from the Delphi survey indicated that they were not certain how or if intention affects decision-making behaviour. This lack of connection between the financial services leaders and millennials around how intentions affect decisions is critical. As such, I recommend that, in order to reduce an emotional intention to impulse invest, a financial professional introduce data and analytics to help reduce the emotional connection to an investment.

An organization's values most certainly influences the millennial's decision to purchase their product, and the more a company's value align with those of the prospective investor, the greater the confidence a millennial has in the decision to invest money in that organization.

This data suggests that millennials herd, and listen to very different touch points with their willingness to be influenced by other people outside of their control (Hall, 2017). Millennials often purchase items that others have, which is deemed characteristic behaviour of this generation. Previous experiences or an anchoring bias, did not show up in the data reflecting that a millennial may not have had that much experience in making wrong purchases.

Finally, there are all kinds of shortcuts that drive decision making and so this pattern that we see of millennials using shortcuts is internally consistent. I believe they are not responding to this question in terms of financial products alone, but in general.

Figure 9.4 is representative of the attributes to understanding decision-making confidence.

Figure 9.4: Understanding Decision-Making Confidence

Understanding Decision-making Confidence

Understand the millennial feels knowledgeable and thoughtful in decision-making, and how impulsive intentions affect decisions.	Understand that demonstrated, aligned values will most certainly influence a millennials confidence and decision to invest.	Millennials herd with a willingness to listen to very different touch points. Millennials see the value in using shortcuts.

9.5.4 Aligned Values that Build Trust

Throughout this research, the recurring significance of alignment to millennial values shone through. Alignment of values was one of the most significant themes from the correlation and Principal Component analysis, with the data significantly reflecting the millennial stance "Desire to not purchase from a company damaging the environment", and their willingness to "Purchase from a company supporting the environment" as constants. Millennials have sustainability objectives and want investments that align to their personal values (Pipe, 2021; Hallez, 2022).

Unlike Gen X, this data indicated millennials prefer to work with a financial professional who supports causes that are important to them, feeling sustainable investing is a way to make positive changes in the world; having sustainable investing as a prominent offering can be a make-or-break element. Millennials do not want to invest in solutions that do not contribute to supporting the environment or climate change, which provides guidance for financial professionals. Yet financial professionals are not suggesting it, and when it comes to the future of their practices, financial professionals need to reassess investments differently for the millennial investor, and consider what not offering

sustainable investments mean. Future millennial clients will seek out financial professionals who truly believe in it, with those advisers who dismiss it, suffering as a result. As such, I recommend promoting sustainable investments as a priority for balance, and diversification.

Additionally, the financial professional needs to be actively involved with the community. I recommend a financial professional heavily advertise their contribution to the community through their web presence. Through community involvement, trust is interwoven. Figure 9.5 represents a new millennial trust equation whereby a financial professional shares consistent, transparent messages, coupled with demonstrated aligned values.

Figure 9.5: New Millennial Trust Equation
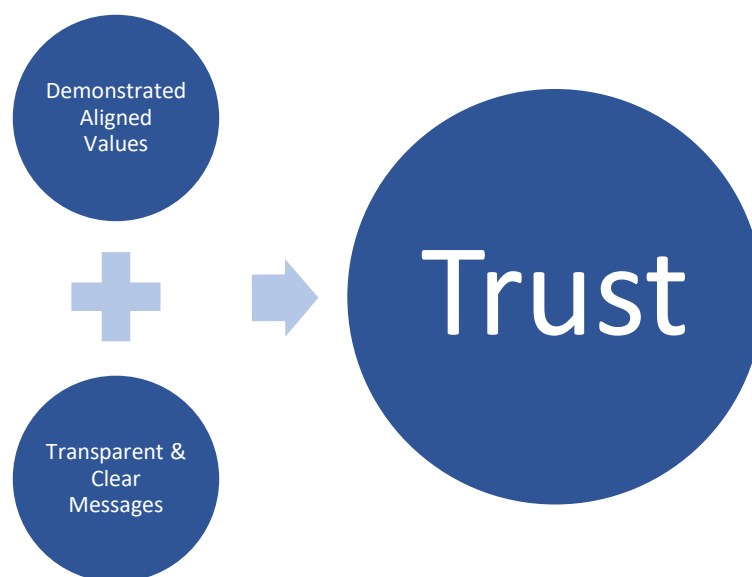
9.5.5 Understanding Biases for Better Communication

Behavioural Finance, through its systematic ways, looks to examine how and why individual decision-making deviates from rational choices and expectations, and is well suited to describe the millennial's financial habits (Karaa, 2011; Baker et al. 2018; Pimco

2020). There is data around how millennials make decisions towards a physical product rather than a service, leaving research on the financial-solutions buyer's behaviour far less developed (Harrison, Waite and White, 2006). Yet surprisingly, not enough light has been dedicated to it despite the fact that personal finance affects every aspect of our lives; from eating out and selecting credit cards to going to college, buying a house, and investing for retirement.

We know a lot about this generation, but in developing an effective means of continued communication with a millennial investor, looking at them through the lens of Behavioural Finance with cognitive and emotional biases, sheds even more light on this generation (Kaara, 2011; Sadi et al. 2011; Deloitte, 2021).

The major cognitive and emotional biases reflected in this millennial research were:

- Ambiguity bias – Making decisions made with uncertainty and time constraints
- Anchoring bias - Making decisions based on past experiences or expectations
- Confirmation bias - Finding data to justify a decision, dismissing data that cannot
- Herding bias - Consorting with other like-minded individuals
- (Myopic) Loss aversion bias – Significant dislike for losses over a like for gains
- Recency bias - Deciding hastily based on current information

When a decision is framed in a way consistent with one's already pre-existing bias, there could be an increased perception that the decision is accurate. This framing is the decision maker's genesis of outcomes related to their particular choice (Jullien, 2016). However, what could have a bigger impact to financial professionals, is not the distinctions between generations, but one's pre-existing bias that differences do exist (King et al. 2019). However, a financial professional needs to use direct language with the millennial, letting them know their need to take control of their own portfolio. Millennials need to be accountable for their own decisions, and that choice is theirs.

This research identified that an anchoring bias was found more so in Generation X, which centres around giving too much weight to prior events, and not enough value to current trends and changing times to make subsequent decisions (Costa, 2017; Shin and Park, 2018; Zahera and Rohit, 2018; Pimco Decision Research; Harvard Law School, 2019; Laboratories, 2020). The more experiences we have, the more biases we draw on in our search to solve a new problem with an old solution (Schwarber, 2005; Astorino, 2015; Duke, 2018; Pimco Decision Research Laboratories, 2020). That makes sense as Generation X has more life experiences to draw upon. Although one might expect millennials to not demonstrate an anchoring bias, they do have expectations, and expectations are an anchoring bias, which a financial professional needs to be conscious of. By demonstrating an anchoring bias, a millennials' previous wrong decisions or expectations may lack adequacy, can interfere with the ability to learn, and may have an impact on future purchase decisions, affecting confidence. Understanding that, a financial professional needs to be "bias- free" so as not to force mistakes based on those very expectations.

A confirmation bias is a tendency to interpret data that connects to one's already existing belief, while ignoring any non-supportive evidence (Fonseca, 2012; Kunte, 2015; Heshmat, 2015; Evans, 2016; Glick, 2017; Zahera and Rohit 2018; Klein, 2019; Research Laboratories, 2020). Investment decisions can be sophisticated and require thought, and evidence that supports one's assumptions, rather than exposing a flaw in one's reasoning, may place an investment portfolio at risk (Jagongo and Mutswenje, 2014; Kunte, 2015; Zahera and Rohit 2018). When millennial investors act upon this bias, they fail to absorb evidence that contradicts their assumptions, which may lead to a lack of critical thinking. I recommend a financial professional ask open ended questions first, before the millennial hears a financial professional's perspective. This allows for listening

to their goals and needs, rather than a millennial hearing a suggestion first, and gravitating to that recommendation.

A herding bias occurs when someone has private information that is in direct contrast to the general consensus, yet still follows the group. In this research, the herding bias showed only moderately correlated to decision-making confidence in the key influences theme, however, it showed a very high correlation in the digital engagement theme; millennials keep informed through on-line engagement, placing a heavier weight on outside influences; in this social era, significant influence is exercised on behaviour.

Risk tolerance becomes an important consideration for the financial decisions a millennial makes as a financial loss defines their risk tolerance. Pimco (2020) asserts that emotion can lead to an intense feeling of fear that triggers panic; and in that moment, the urge to "sell" to avoid any further loss conquers any rational thought. Therefore, a financial professional needs to take the emotionality out of the recommendation by providing evidence-based solutions as recommendations.
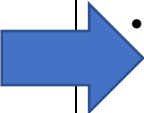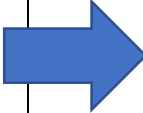
Figure 9.6 represents this interconnection of biases with the millennial investor.

Figure 9.6: Interconnection of Behavioural Biases
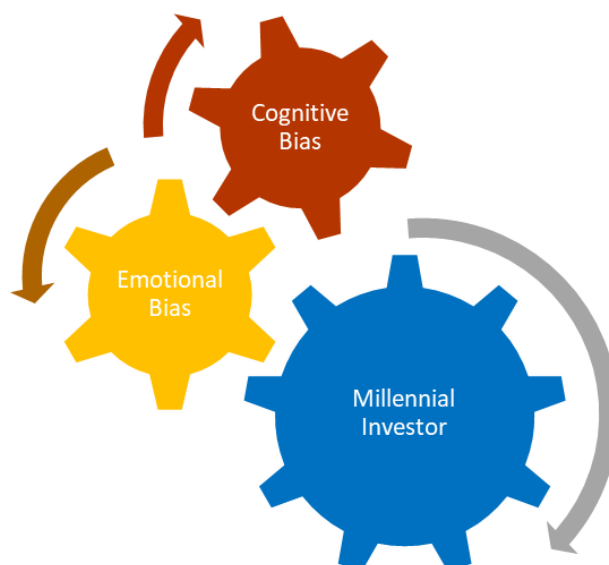
In recognizing these biases, financial professionals can help a millennial investor avoid investment mistakes prior to making a financial decision (Bettinghaus, 2014; Long, 2015; Smet, 2019). Will the advisor of the future have a positive impact once understanding those biases, remains to be seen? However, in order to reduce bias, a financial professional can incorporate an objective checklist, invaluable for the millennial, showing an investment from all angles and reducing the use of mental shortcuts or emotionality to make a decision, reflected in Table 9.3.

Table 9.3: The Fromlet checklist (derived from Jagongo and Mutswenje, 2014)

Recognizing behavioural bias avoids investment mistakes	• Check information source • Ensure fundamental analysis does not contain the wrong conclusion • Are you anchored to a prior experience? •Is the message unclear? • Be careful of anchoring to an expectation • Consider the frame of important messages (positive/negative) • How strong is the herd mentality? • Is the information recent? • Question recommendations • Does it look irrational?	Invaluable perspective approaching investments from different aspects rather than using mental shortcuts or heuristics

I submit, while nearly impossible to be free from bias completely, identifying the bias can allow a millennial to lessen its impact by tempering emotions in order to make successful decisions. Financial professionals who recognize the reliance on cognitive biases along with their effects, can introduce more rationality to overcome the biases (Shin and Park, 2018; Pimco, 2020), which can lead to fewer poor and more creative decisions. In being a good listener, a financial professional discerns a millennial's responses in order to help identify if a behavioural bias is present.

This research looked to consider the major aspects of behavioural biases, and how biases influence financial decision-making behaviours. Clearly not all investors react the same

way, and a better understanding of this generation's biases gives financial professionals a better way to interact and provide holistic investment guidance.

9.5.6 How Has Covid Changed Interactions?

Looping in the Delphi and quantitative survey results, several key areas emerged as a result of the COVID-19 pandemic. The leaders indicated that the pandemic forced financial professionals to embrace digital platforms quickly for interaction and communication, which was a cost-effective way to prospect without geographic limits. Post-COVID, maintaining short, effective digital interaction with the millennial investor will be important. There is now an increased preference to communicate digitally, through e-mail and text rather than face to face conversations, reducing the need for the human touch (Zoovu, 2016; Riekoff, 2017; Limra, 2020). Therefore, a financial professional cannot make the mistake of focusing too much on content and not enough on the *digital delivery* of the message (Williams and Miller, 2002). This is a transformational shift, and I recommend by collaborating digitally and more frequently, a financial professional differentiates themselves, which drives a competitive edge. When considering a potential investment, social media posts will impact whether or not the millennial will make the investment; as engagement with social media posts increases, so does the likelihood of making a decision.

Millennials have accumulated debt and may be unprepared for a financial emergency with limited resources. During COVID-19m they tapped into emergency funds, experienced lower wages, and were not participating in 401k plans, which all leads to a deeply troubling retirement outlook Adding to their already conservative nature; millennials are stressed about financial health which can influence performance (Chang, 2015). Being financially stressed will have negative ramifications on financial decisions

and the need for accurate and sound investment decisions becomes imperative. And if

millennials are too risk adverse, they could be financially ill prepared for retirement.

Figure 9.7: Covid Interactions
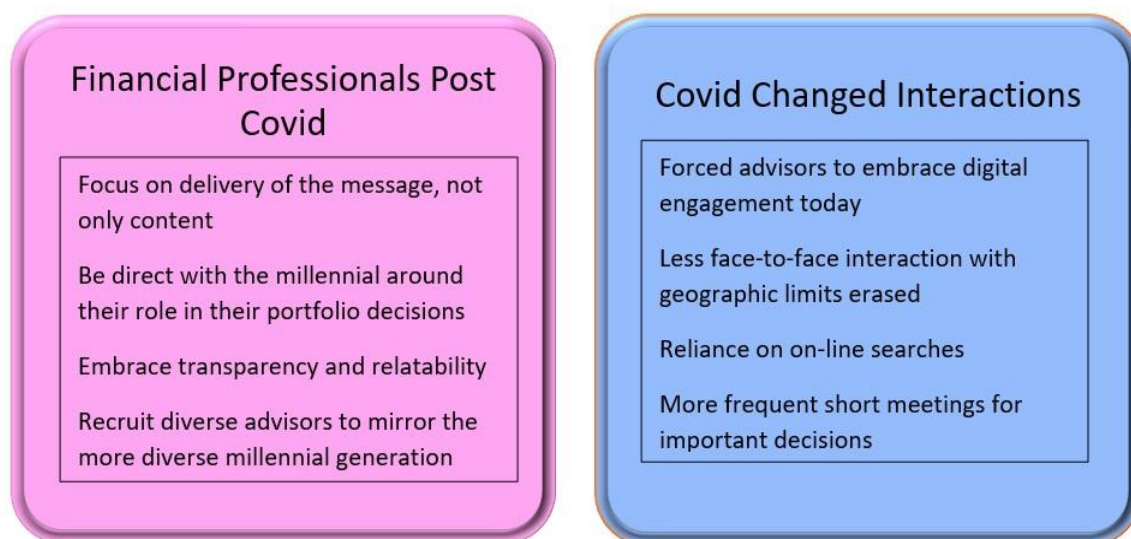
Table 9.4 now provides a compendium of both the qualitative and quantitative key

components, showcasing the commonalities and differences from both the qualitative

and quantitative surveys.

Table 9.4 Summary Table of Qualitative and Quantitative Findings

Key Components from the Qualitative Findings	Qualitative Theme	Commonalities that emerged from the Quantitative Findings	Differences that emerged from the Quantitative Findings	Quant. Survey Quest #
	Theme 1 Aligned Values			
Socially based investing resonates with millennial generation.		Millennials look to invest in companies that support environmental issues		11c
Financial professionals need to align with environmental and social causes in the hopes of appealing to this younger generation	Aligned Values, Trust	Millennials want to work with a financial professional who aligns to their values	Gen X did not feel strongly that there needed to be an alignment of values.	11a, 11b, 12b
Millennials have increased trust to companies that support their specific social values.	Aligned Values	Millennials suggest that it is important for a company to give back to society		11f, 11g
	Theme 2 Communication			
Driving force of communication with millennials is digital	Communication, Digital, Covid-19	My preferred means of communication is digital		10a, 10c, 14a, 16e
Financial professionals need to embrace digital, using their preferred sites	Communication, Digital			
	Communication, Trust, Work/Life Flexibility		Value short, memorable, transparent flexible communication	12c, 14e, 15b
Understand that previous generations value face to face meetings		Millennials preference is not to communicate face to face, but digitally		14d

	Theme 3 Consumer Concerns			
This generation is more conservative and loss sensitive than other generations	Consumer Concerns, Covid-19	Tend to focus more on losses than gains		13i, 16f
Ambiguity bias may arise when there is unknown probability (stock market)		Will avoid risk if there is not a clear understanding of the investment		13a
Recency bias emerged as significant recent events impact decision-making		Recent events affect their decision to invest		13d, 13h
	Theme 4 Covid-19			
Forced financial professionals to adapt to digital platforms/apps.	Covid-19, Trust, Digital Engagement	Millennials more focused, and self-reliant on budgeting/investment apps.		10c, 12d, 16b
Shifting to more conservative investments		Shifting to more conservative investments		16i
			Debt has become a bigger concern now	16a
	Theme 5 Decision-Making Characteristics			
Evaluation of the process is key for decision making	Decision-Making Characteristics, Covid-19	Female millennials are more thoughtful taking more time to make a decision		7c, 16g
Financial literacy impacts risk. Better education on risk/reward can help with loss aversion & reduce an anchoring bias. With education, an investor can understand the role of asset classes and portfolio diversification	Decision-Making Characteristics, Key Influences	Believe they have the knowledge and education to make sound financial decisions		7d, 9f
Did not see heuristics, shortcuts, as an easy way to help investing, or reduce the stress of decision making			Both older and younger millennials use shortcuts when making quick decisions	7e
	Theme 6 Digital Engagement			
They are more tech savvy, highly active on social media, more than previous generations		Highly active on social media and have enormous purchasing power		10b
Tech is fuelling change and innovation and virtual engagement is needed. On-line reviews impact a decision to purchase	Digital Engagement, Trust	Millennials are highly influenced, and stress the importance of an on-line presence and resources		10a, 10f, 10g, 12e
Allows for more research on a millennial investor				
	Theme 7 Key Influences			
Socially curious listening and persuading others to their way of thinking. Herding behaviour as millennials live surrounded by influencers	Key influences, Digital Engagement	Millennials will purchase an item that friends recommend and has great confidence in a product endorsed by a celebrity	Gex X does not significantly exhibit the herding behaviour	9b, 10e
			An anchoring bias was not reflected in millennial behaviour. Gen X exhibits this as past experiences influence a decision	9d
	Theme 8 Intentions			
Stronger intention results in quicker behaviour		The longer it takes to make the decision, the less likely to the decision is made.		8e

Not sure if it affects the decision-making process				
Emotional and attitudinal		Millennials emotional state triggers impulse buying		8b
	Theme 9 Trust			
Trust is a way to engage millennials				
Widely less trusting than previous generations	Trust, Covid-19	Gen X and women were less trusting than millennials. Covid-19 has increased that lack of trust	Millennials trust too quickly	12a, 16d
	Theme 10 Work/Life Flexibility			
Millennials prioritize family, friends, and work/life balance			All generations have achieved awork/life balance	15a
			Will make less money in a job they love	15d

To successfully attract millennial investors, financial professionals will need to adapt to this audience.

9.6 Contributions to Knowledge

Through this research, a rich identification of what impacts the decision-making confidence and behaviour of the millennial investor, was revealed. To make a significant difference with this generation, financial professionals will need to see beyond their own values to the social and environmental values of the millennial, incorporating them into investment recommendations. The question will still remain, though, does a millennial have faith in a financial professional to do the right job? The research now articulates contributions to knowledge, with specific new practice management ideas.

- McCallum (2010) suggests that poor decisions can occur when there is too much time or data. However, this data suggests that millennials use both knowledge *and* heuristics when making decisions allowing them to problem solve practically through self-discovery (Kahneman and Tversky, 1979; Banerjee, 1992; Gigerenzer, 2015; Kunte, 2015). While emotions such as greed and fear often play a pivotal role in bad investment decisions, *heuristics* may flaw a millennial's decision-making behaviour

towards an investment. And, with pressures to decide quickly, an over or underreaction may occur.

- Millennials suggest their most significant characteristics of an effective decision; confidence increases through education and making thoughtful, logical decisions. Discussed throughout the literature, having a financial education has an effect on important financial decisions, with low financial literacy associated with mistaken beliefs and a reluctance to accept financial advice (West, 2016; Lee, Yun and Haley, 2017; Fernando, 2021). I would submit then, that financial decisions made by millennials without financial literacy, or even potentially lower income millennials who may not have the opportunity to obtain a financial education, may struggle to achieve future financial well-being. And without a sound financial education, research indicates that millennials may find themselves ill-equipped with the today's complex financial landscape (Afiqah and Sabri, 2016; Hauff and Nilsson, 2016). Key factors like education and risk tolerance impact decision-making confidence, with the connection between education and risk palpable. Therefore, to make sound financial decisions, millennials need financial knowledge *with* the skills to apply their knowledge to actual financial decision-making situations, also corroborated by leaders survey.

- Many millennial financial decisions are made by an emotional intention. Through this data, millennials share that they are more impacted by emotions than Generation X when making a decision. Investment decisions can get affected by these emotions, and a financial professional will need to understand what sways a millennial from rational decisions, emotions, *and* intentions, taking *both* into account when making recommendations.

- A financial professional who understands and contributes to making a positive impact on society and the environment, aligns to a millennial's values and partners differently with the millennial investor. Thereby building trust that is required for a deep and sustained financial relationship. Trust deepens by:
  - a proactive, ongoing social media campaign on sustainable investing in the mediums that matter most to millennials
  - transparent and clear messages in short, frequent interactions
  - advertise community involvement aligning to millennial values

- Financial professionals must incorporate behaviour as risk factors in order to formulate effective investment strategies for individual investors. Biases are overcome with awareness which allow a millennial to make smart financial decisions and not ones that confirm to what they think they should do. Environments are constantly changing and making high quality good decisions has never been more important. Today, a premium is placed on sound judgement, and while a millennial may know what criteria should go into making a good decision, this research discovered that actual good decisions crop up less often than expected as people display well-known biases when making decisions. Given the vast number of investor biases present, it is evident that mistakes happen when investing (Hammond, 2015). The best financial professionals will find the key to helping a millennial make good financial decisions by acknowledging their biases as preconceptions about what colours their beliefs and values. When it comes to making decisions, seeking practical ground with the millennial generation, and dispelling cognitive biases, will elevate productive communication from financial professionals.

Table 9.5 represents a compilation of these contributions to knowledge.

Table 9.5: Contributions to Existing Knowledge – Theory and Business Practice

Contribution to Knowledge			
Gaps in Knowledge	**Theory**	**References**	
Lack of agreed upon decision-making framework that addresses millennial decision-making behaviour.	Provide a new framework on influences, biases, and the impact of trust to the millennial investor.	Conceptual Framework, Chapter 6	Figure 6.5
Business Practice			
Lack of clarity on the importance of heuristics, especially when trying to digitally attract the millennial investor.	Millennials value quick rules of thumb or shortcuts, and financial professionals needs it incorporate that into their digital brand when attracting or retaining the millennial beneficiary.	Theme 1 – Decision-making characteristics Q #7e	Chapter 2.7.1
The real-world impact of financial education in helping prepare a millennial for financial success.	Understanding a millennial's financial savviness can help drive confidence and influence specific portfolio recommendations.	Theme 1 – Decision-making Characteristics Q #7d	Chapter 2.10.11
Lack of clarity and understanding on what behaviours a financial professional can take to align to a millennial's values and build trust.	Financial professionals are expected to demonstrate and advertise alignment to millennial values, by giving back to the community and supporting environmental causes. Financial professionals need to incorporate sustainable investments through clear and transparent recommendations.	Theme 5 – Aligned Values Q #11a Theme 6 – Trust Q #12c	Chapter 8.10.2 Table 8.46 Chapter 8.10.4 Table 8.48
Which behaviours most affect the decision-making process of millennials.	Financial professionals need to recognize the impact of cognitive and emotional behavioural biases on decision making behaviour.	Theme 1 – Decision-making Characteristics Q #7c	Chapter 8.5.2 Table 8.9
Lack of a clear understanding on how intentions impact a decision.	Financial professionals need to understand the relationship of emotional intentions to behavioural actions around financial decisions.	Theme 8 – Intentions #8b	Chapter 2.10.3 Figure 2.2

9.7 Contributions to the Financial Services Industry

This data suggests an impact to the industry in the following ways:

9.7.1 Impact to the Financial Services Industry

This research is being conducted in the United States during a state of flux triggered by the COVID-19 Pandemic. Decision-making is already highly complex, but there may be observed nuances to decision-making that are different during this time. For example,

the US stock market collapse losing 45% in less than two months in Feb/March of 2020, (30% in less than one month), and its subsequent climb back to record highs in less than six months, demonstrates that something is changing, and that traditional economic models may be insufficient in understanding investor behaviour.

Of note, millennials have different expectations of a relationship with financial professionals favouring those that embrace digital communication, transparency, and *relatability* (Casperson, 2021). As wealth is transferred from baby boomers to this more diverse generation, the financial services industry needs a call to action around diversity and inclusion to be more *relatable* to this generation. In speaking to relatability, I recommend that a financial professional supports initiatives that advance diversity and inclusion to meet the needs of this more diverse generation. The financial industry needs to grow and change, becoming more like these diverse millennial investors, with a recommendation to begin recruiting diverse candidates from outside industries or at universities before a student's career trajectory takes them to alternative industries.

9.7.2 The Financial Professional of the Future

Over the past 25 years, I have seen Generation X investors zero in on and find, a financial professional with a wave of strong, highly trusted relationships, built over time, and the length of those relationships matter. I did not see that in this research as millennials tap into influencers, impulse buy, consume information directly, and are incredibly self-reliant. Formative tumultuous years for millennials, are influencing and contributing to a lack of trust (Weidmer, 2015; Tanner, 2021; Facty, 2019; Greenbook, 2021). Yet, trust, built by positive relationships, is essential to innovation (Edelman, 2022). A financial professional who fails to understand this compounds distrust. But to define trust is challenging, as an internet search of the definition would yield 8.5m sites. The correlation analysis revealed a millennial is more likely to trust when transparent and

clear messages are used, when a financial professional is sincere, and when there is a reputation for being trustworthy. A financial professional needs to communicate transparently and frequently, and advertise positive testimonials from respected influencers highlighting their trustworthiness. In working with millennials, a financial professional moves beyond a perfunctory relationship inspiring loyalty and trust, by demonstrating their alignment to significant millennial causes. The leaders from the Delphi survey indicated millennials know exactly what they want, increased trust and loyalty coming with the support of specific social issues (Winograd and Hais, 2014; Gafni, 2015; Lead Forecsics, 2019).

In cultivating relationships with financial professionals over the past 25 years, I have personally seen the next generation of investors emerge. Working with thousands of financial professionals, I have seen Baby Boomers and Gen X value face to face interactions around portfolio structure and legacy planning. However, financial professionals are now seeing a transformational shift to digital communication in how the millennial generation wants financial solutions delivered to them.

Investment applications like Reddit and Robinhood can help provide basic advice to the millennial, yet research on financial decisions, and human behaviour (Ajzen, 1991) stress the critical role of financial planning (Guzman and Paswan, 2018). Practical applications can be implemented by financial professionals who must strategically align their business model to capture and grow cross-generational wealth, through engagement in digital mediums that are most relevant to the millennial, like Twitter, Instagram, and YouTube. A financial professional needs constant surveillance on their digital presence, and in the spirit of feedback, the financial professional who asks for millennial feedback on their web presence, will continue to ensure that their message paints millennial solutions. Currently, my firm's consumer analytics team is undertaking numerous studies on the

millennial investor, and are using my data as a complimentary way to try and understand them better. This research will be an important foundation for future practice management, along with helping provide valuable insights for long-term company vision. Figure 9.8 represents the potential financial professional of the future.

Figure 9.8: Financial Professional of the Future

Control emotional investing	The use of influencers	The impact of a digital strategy
The interaction of biases and the decision-making process seeks to understand why decisions are not rational; human emotions cannot be negated, but need addressing	FP's need to communicate transparently and frequently, and advertise positive testimonials from respected influencers highlighting their trustworthiness	A transformational shift as millennials reimagine how products are marketed, reshaping interactions to digital. FP's need diligence in their digital presence to paint millennial values

9.7.3 Dissemination of Research

This research, intended to provide the financial services industry what drives millennial financial decision-making behaviour and confidence, will be disseminated as follows:

- Share findings with the leaders who participated in the study
- Publish an academic article in a peer reviewed journal
- Publish an article in an industry trade journals, including the CFP ® association, the CLU® association and Insured Retirement Institute
- Leverage my firm's consumer insights team to help disseminate these findings to our partner insurance and investment carriers
- Main platform presentation of findings to my own firm at the national sales meetings, unveiling new practice management
- Present findings at industry conferences launching the new practice management developed, reaching a larger audience
- Present findings at professional trade associations through webinars and conference calls to share the research insights

9.8 Limitations

Although this study contributes in many ways, it also has limitations, with four notables.

- One is naturally the experimental approach itself. This research was designed to be a strong indicator of millennial drivers around financial solutions through a combination of quantitative and qualitative methods. A more streamlined approach using only one method might have provided deeper meaning in understanding the millennial generation.
- The second limitation could be the sample itself. Although this research generally captured a robust sampling, to participate, the subset of millennials had to be "qualified". This excluded a far less financially savvy millennial so the results may not be as generalizable as results with a more robust segment of the population. Access to leaders for the Delphi survey proved a bit more challenging than expected, more responses could have shed deeper insights.
- Thirdly, this research was conducted during the COVID-19 pandemic limiting my ability to do observations. Because of this, I pivoted to using the Delphi methodology and virtual platforms like Webex and Survey Monkey for communication. This provided delayed response times from the leaders, which caused me to follow up numerous times for answer clarity. Additionally, this research is simply not deep enough to have a solid understanding of the long-lasting effects of COVID-19.
- And finally, looking back, the quantitative survey was big, bigger than I potentially needed to complete this analysis. A smaller survey could have generated a higher overall completion rate, lending more credibility to the collective group answers.

9.9 Future research recommendations

The findings of this research study provide the following insights to extend and deepen this research. The following are suggestions based that need confirmation.

- Future research can be done on how a financial professional's alignment of values promotes an increased level of trust with the millennial generation.
- Further research could aim to understand how financial questions are framed, either from a negative or positive position.   This "framing effect" could prompt a bias and alter responses based on age (Kahneman and Tversky, 1986; Julien, 2016; Pettinger, 2018).
- Future research can be conducted outside of a worldwide pandemic. COVID-19 has had an impact on how we interact with each other, and communication has adapted as a result of it. These results were gathered at the height of the pandemic, and decision-making might have been influenced as a result of it. The ability to replicate this during a time not affected by a worldwide pandemic may provide additional guidance on the financial decision-making behaviours of the millennial generation.
- Extend this research beyond the millennial generation to Generation Z. As Gen Z continues to age, they become the beneficiaries of Generation X. It would be especially valuable to understand a younger generation' s financial decision-making behaviour.
- Extend this research geographically for replication in other parts of the world. This research was conducted in the Unites States, but the ability to gain insights into these

ten themes from other areas of the world, could provide practical application for financial professionals outside the United States.

9.10 Closing summary

Early research was inspired by traditional economic ideas focused on a rational decision-making approach, with recent research documenting deviations from that perspective. Kahneman and Tversky (1979) explored a number of variations from the axioms of rational choice theory. Research in the field of Behavioural Finance further identified that consumer behaviour is influenced by biases. By reviewing the existing body of work, I have presented economic decision-making theory, coupled with insights from leaders in the financial services field and millennials. This research shows that millennials will navigate their complex financial decisions very differently from those of the generations before them tending to make quick, rash decisions accessing instant information (Gafni, 2015; Mathias, 2020; Keller Institute, 2021). They perceive themselves as more self-reliant and understand and consume information directly, which will include advice from financial professionals; their confidence is high in their ability to consume and digest information.

Retirement investment decisions are among the most important decisions a millennial can make (Larson et. al 2016), yet years of research on financial decision-making illustrates that consumers make suboptimal financial decisions, as evidenced with the recent US economic turmoil. The wealth developed by earlier generations means there will be an unprecedented demand for financial services, with a responsibility to plan for retirement increasingly transferred to the individual investor. But in understanding the decision-making behaviours of the millennial investor, the keenly aware financial professional, can begin to partner with the millennial more successfully. Clearly, decision-making is defined differently across different types of millennials, which will lead

to the growing need for sound financial solutions for the millennial investor. Current research provides insights on how to transfer wealth, however, it does not provide extensive insight into how to best partner, collaborate and communicate with the millennial generation once this wealth is received.

In summary, based on this research, the millennial generation will change how we prospect, how we build product value and how we contact them. This research provided insights into identifying the key drivers of the millennial generation, with an evolution of how financial professionals provide recommendations. Through this research, significant factors were revealed in identifying influences, drivers, and biases (full table available in Appendix 5), providing guidance to the financial professional on ways to improve their connection with the millennial investor. This research shared key findings while meeting the aims and objectives, and answering the research question. Limitations and future research opportunities were also explored. And finally, practical recommendations for financial professionals were discussed as they must carefully listen to millennials in order to gain a clear understanding of their influences and aspirations.

10 Project Reflection

As a lifelong learner, this is the culmination of a lifetime of study. And it has been the most rewarding aspect of my professional career.

The journey has not been easy, but anything worthwhile, is. While studying here at the University of Wales, I have known many fine educators and professors, and I thank them all for guidance and encouragement. Although that has had its challenges. Over the past four years, not one, not two, but three supervisors have been assigned to work with me, which has proved to be difficult. Trying to get another supervisor to understand the direction and previous supervisor's style has been incredibly challenging. I think this gave me a fortitude to complete this work, even when communication seemed to be challenged. With that said, I find myself in the position to help craft the message for where this industry needs to go with the next generation of investor, and that is incredibly exciting. Multigenerational wealth transfer is one of the most significant factors affecting the baby boomer segment today, and it is important that financial professionals begin to address the needs of the next generation by assessing gaps in service models and product offerings and developing innovative approaches to engagement. I relish the opportunities ahead.

11 References

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12 Appendix

Appendix 1

A12.1 The Consideration Process for Qualitative Analysis

Qualitative data utilizes meanings which are reflected through language and behaviour (Dey, 1993, Namey et. al, 2013). A researcher's use of qualitative techniques depends on the objectives of the research as well as the type of data needed to achieve the objectives Akinyode, 2018). The role of the qualitative researcher is to gain a deep, intense, and holistic overview of what is being studied, often accomplished by interacting within the everyday lives of the individual or community (Gray, 2014). It is a naturalistic approach that seeks to understand the phenomena within their own setting rather than having subjects studied in a laboratory (Gray, 2014; Akinyode, 2018). The trustworthiness of qualitative research is often questioned by positivists, perhaps because their convictions on validity and reliability cannot be addressed in a similar fashion in naturalistic work (Dey, 1993: Shenton, 2004; Gray, 2014). As such, naturalistic investigators may distance themselves from the positivist paradigm. Lincoln and Guba, (1994) propose four criteria that should be considered by qualitative researchers in pursuit of a trustworthy study. Therefore, by addressing similar issues, Lincoln and Guba's constructs are consistent with the criteria utilized by the positivist investigator (Lincoln and Guba, 1994; Shenton, 2004):

    a) credibility (in preference to internal validity),

    b) transferability (in preference to external validity/generalizability),

    c) dependability (in preference to reliability),

    d) confirmability (in preference to objectivity).

Today, the use of qualitative research is becoming more popular and acceptable, as it can enhance a robust, rich methodology (Gray, 2014). The types of data gathering tools used by qualitative researcher's differs from quantitative research as it uses the lens of a subjective view of the respondents to include the use of observations, focus groups, interviews, or the analysis of photographs and video recordings, (Dey, 1993; Saldana, 2013; Gray, 2014; Akinyode, 2018). The famous 18th century German philosopher, Fredrich Nietzsche's quote: *You have your way. I have my way. As for the right way, the correct way, and the only way, it does not exist* (Medrut, 2018) speaks to the very heart of qualitative analysis as there continues to be a relatively limited guide on how to apply the qualitative method (Gray; 2014; Akinyode, 2018), as it can be dismissed as "too subjective" with judgements that may not be made according to established standards (Dey, 1993; Gray, 2014). Therefore, if one seeks to have a better interpretation of the qualitative research, with the goal of beneficial implementation based on those recommendations, the importance of properly understanding the actual steps and classifications taken in qualitative data analysis cannot be over-emphasized (Akinyode, 2018).

It is commonly agreed that qualitative data analysis requires a 5-step process (Akinyode, 2018; Connors, 2018; O'Leary, 2020; Bhattacherjee, 2021) namely:

1. Prepare and organize the data (data logging) by gathering notes and documents,

2. Review and explore the data by searching for patterns, themes and interconnections as the researcher may have overlapping themes across the data sources,

3. Create data classifications or codes by building both categories and subcategories that are likely to expand as the process progresses,

4. Build and verify those codes and revise or combine into a thematic network,

5. Draw conclusions on what is most significant/ important linking this back to the project's main questions and objectives in the most credible and cohesive manner. This final step is critical; be transparent and timely (Bengtsson, 2016; Connors, 2018).

O'Leary, (2020) identifies that, prior to the start of this process, seeking to identify one's biases while noting overall impressions, allows for acknowledgement of preconceived notions and actively works to neutralize them, if not, one may find exactly what one expected to find. Once biases have been considered, the researcher can commence the work of coding their data.

A12.1.2 Classifications/Codes of Qualitative Data

To start, a conceptual framework, or the matrix of interlinked concepts that provides a comprehensive understanding of the occurrence, is needed for both the interpretation and explanation of data (Dey, 1993; Gray, 2014). This will help explore the relationships between the data, while informing on one's blueprint (Maxwell, 2005), and providing an interpretation of intentions with the possible relationships that exist (Jabareen, 2009; Gray, 2014).

Coding in qualitative research assigns labels or codes to different sections of the data that relates to different problems (Akinyode, 2018). The data begins as a sequence which prompts the researcher to analyse the many facets of the data (Dey, 1993). The researcher then fragments the data into ways that correspond to the separate facets or themes that are being researched, while also allowing for these fragments to be assembled back together at a later point to produce a holistic portrayal of the data (Dey, 1993). Prior to these fragments being fitted into the research, the researcher must identify it's characteristics and assign a code or category to it (Dey, 1993). This

classification or code (these terms will be interchanged throughout this research) is most often a word or short phrase that symbolically assigns a summative attribute for a portion of the interpretive data (Saldana, 2013). Gradually, the fragments of data form explanations and comprehensive themes in the data (Akinyode, 2018).

Of note, without this classification of data, the researcher would have no way of knowing what it is they are researching (Dey, 1993). The researcher who strives to become proficient at doing qualitative analysis must learn to classify easily and well, as the calibre of the research rests in large part on the calibre of the coding (Saldana, 2013). Additionally, Lincoln and Guba (1994) argue that the credibility of qualitative analysis can be strengthened through the researcher's conscious effort to establish confidence in the accuracy of the interpretation and the fit between description and explanation. Akinyode (2018) agrees, and stresses that the interpretation of circumstances that the researcher describes, the in-depth description of the setting, and the themes establishes the study's credibility.

An effective method for coding large data sets is to funnel the data into relevant categories for thematic analysis (Dey, 1993; Namey et al. 2008). The researcher may review the data multiple times seeking the relevant categories (Turner, 2106), which may reveal the code structure in a different way potentially creating a more higher-level, theory driven coding framework on each pass. Therefore categories may have to be more sensitive to capture all the data (Dey, 1993). Important to note, the coding is the most time-consuming part of the analysis (Turner, 2016). If the researcher sees an emerging theme halfway through the data analysis becoming more important, this additional data may cause the researcher to go back to the beginning and make further refinements to make sure there is complete coverage, making it easier to think through

the codes before reading through the data (Dey, 1993; Saldana, 2013; Turner, 2016).

Coding, thus, is a method that enables you to organize and group similarly coded data into categories or "families" because they share characteristics; it's the beginning of a pattern (Saldana, 2013). Of note, rarely will anyone get the coding right the first time Saldana, 2013).

According to Saldana (2013), the primary function of classification allows the researcher to:

1. Briefly discuss the functions of classifications during the qualitative data collection and analytic processes,
2. Profile a diverse grouping of classifications methods generally applied in qualitative data analysis, and
3. Provide readers sources, descriptions, examples, recommended applications, and exercises for classification to further analysing qualitative data (Saldana, 2013).

And through this iterative process, the researcher gathers related themes or ideas, which can only be achieved through analysing the data, into new classifications which can describe the complete picture (Dey, 1993). The research objectives are thus guided by a conceptual clarification achieved through the data classification process (Dey, 1993).

Additionally, from the outset, a researcher must set the boundaries between categories, which determines the structure, by establishing the aim with a comprehensive analysis plan (Dey, 1993; Namey et al. 2008; Bregtsson, 2016). When all fragments of the classification are brought together, the researcher can more easily discriminate between the criteria being allocated from one category to a more abstract category, with the boundaries defined more precisely (Dey, 1993; Namey et al. 2008).

Classification and data reduction is a conceptual process and are not separate from analysis, it is a part of the analysis, with the researcher's decisions on which data fragments to code, and which to pull out, analytic choices. Therefore, data reduction is a

form of analysis that sorts, sharpens, discards, and organizes in such a way that final

conclusions can be drawn, potentially in a novel way (Dey, 1993; Namey et al. 2008). This

analysis may lead to the logical addition of more themes not initially present in the data,

which can produce a more comprehensive classification (Dey, 1993; Namey et al. 2008).

Graphical representations can show relationships between concepts indicated by a

connecting line linking two concepts, thus linking these concepts indicate the logical

relationship of hierarchy and subordination between concepts (Dey, 1993; Conceição,

2017). This leads the need to make connections.

A12.1.3 Making Connections

Coding is a heuristic from the Greek, meaning "to discover" and is the foundational step

toward identifying substantive connections (Dey, 1992; Saldana, 2013). Coding is not

simply labelling, but it links the data to the idea, and from the idea to all the data

pertaining to that idea (Saldana, 2013; Gray, 2014). Once data has been classified, the

researcher looks to examine similarities, comparisons, variations, and singularities within

the data (Dey, 1993; Gray, 2014).

To codify allows the researcher to arrange things in a systematic order to thus identify

patterns, thereby allowing the researcher to find a correlation and a fresh perspective

which builds up a clear picture of the data that is more robust and clearer that initially

thought (Dey, 1993; Saldana, 2013). Therefore, when the researcher searches for

patterns in coded data to categorize it, it is understood that sometimes the researcher

may group things together not just because they are exactly alike or very much alike, but

because they might also have something in common, and by examining this association –

even if, paradoxically, that commonality consists of differences, the researcher can begin

to identify the connections between them (Dey, 1993; Saldana, 2013).

A12.1.4 Counting Qualitative Accounts

Qualitative inquiry demands meticulous attention to language and deep reflection on the

emergent patterns and meanings of human experience (Saldana, 2013). Once data has

been categorized, it can then be counted; data that can be counted, can be analysed

statistically, (Dey, 1993; Gray, 2014). However, qualitative researchers may find a

dilemma when it comes to counting, as choices over counting may satisfy some while

alienating others (Hannah, and Lautsch, 2011). Ultimately, the goal of the counting

process allows for a way of identifying and corroborating similarities and variations

within the data allowing the researcher to explore the connections between categories

(Dey, 1993; Saldana, 2013; Gray, 2014).   This search for similarities must be additive and

not a substitution for the analysis of connections in the data (Dey, 1993).

The use of graphs can be especially helpful for qualitative analysis as it provides a visual

representation of complex connections highlighting the key themes and their inter-

twining. A picture says a thousand words and can be a powerful tool for capturing and

conveying meaning (Dey, 1993).

A12.1.54 Steps involved in qualitative analysis

Analysis involves the process of breaking down data into smaller parts to reveal their

characteristic elements and structure (Dey, 1993; Gray, 2014). Descriptions lay the

foundation for analysis, but research seeks integration, understanding and explanation.

It is through this analysis that we gain insight into the data whereby connections can be

made between concepts providing the basis for new descriptions (Gray, 2014). The

figure below provides a visual representation of the various aspects of analyzing

qualitative data.

Figure A1: Aspects of analysing qualitative data (Derived from Dey, 1993; Gray 2014)
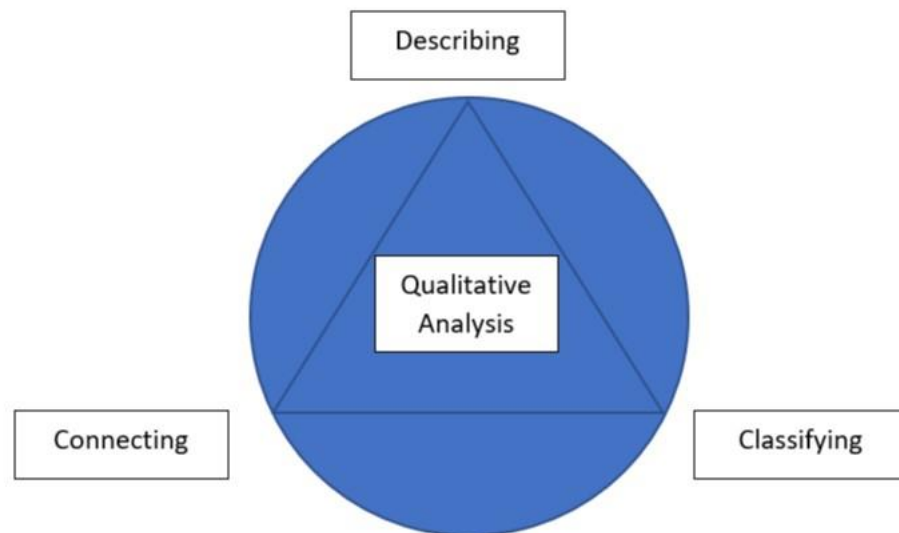
A12.1.6 From Codes to Creating Categories

This step allows the researcher to put the fragments of like data into piles, with an

intention to compare the fragments of each pile. This comparison observation allows the

researcher to search for similar patterns within the data (Saldana, 2013). The process of

categorization, which builds on coding for patterns, can also be referred to as labelling

data. This is a process that permits data to be segregated, grouped, regrouped, and

relinked in order to consolidate meaning and explanation (Saldana, 2013).

Categorizing data involves the transfer of the fragments of original data from the initial

code to the category assigned (Dey, 1993). A good practice would be to aim for some

consistency in the size of the fragments categorized, especially if a weight is to be

assigned at a later date. Saldana (2013) expands on codes to categories to theory in the

figure below: Some categories may contain groupings of coded data that warrant further refinement into subcategories. Additionally, one advantage of refining categories at a later date, is that it can be brought back together and examined as a whole before deciding upon further refinements. All of this progresses the researcher towards the theoretical.

Figure A2: Streamlined Codes to Categories to Theory model (Source: Saldana, 2013)
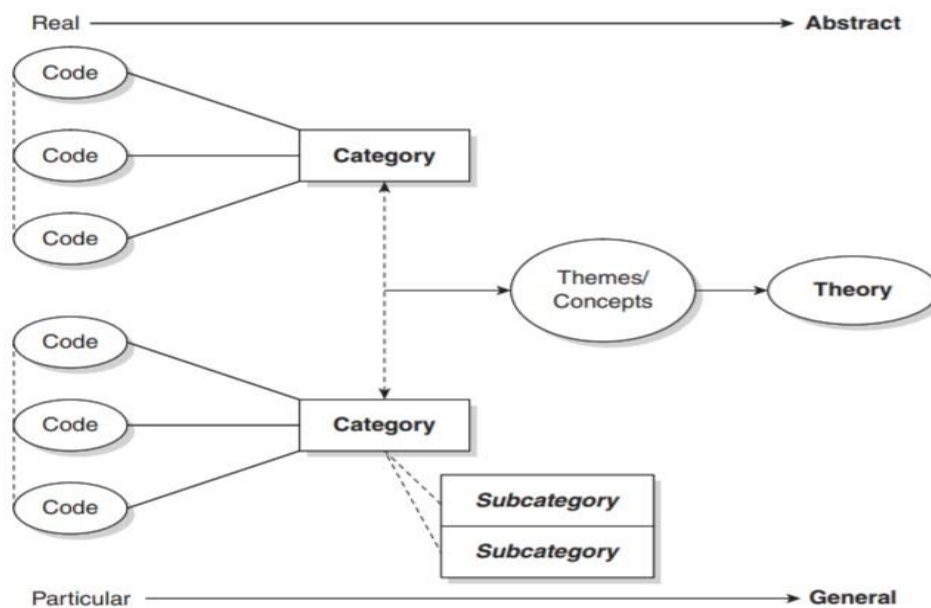
Ultimately, this process is the search for patterns in data and for ideas that help explain why those patterns are there in the first place (Saldana, 2013; Gray, 2014).

The initial category length list is dependent on the topic the researcher is analysing, with more refined categories being added at a later date based on the breadth of data collected, and the weight assigned to that data. The data collection in qualitative procedures is not restricted by categories but allows for in-depth and detail information (Akinyode, 2018) asking questions such as "what", "how" "to what extent", and "in what way" (Onwuegbuzie and Leech, 2006). This then allows multiple resources for generating these categories (Dey, 1993; Saldana, 2013; Akinyode, 2018):

1. The initial research queries
2. Substantive and theoretical issues
3. What can be inferred from the collected data
4. Pre-existing theories
5. Imagination and intuition

Assigning categories involves a rigorous, logical, systematic review of the fragments of data by which these fragments are given meaning (Dey, 1993; Gray, 2014). This considerable concentration ensures that appropriate categories have been considered, with the best place to categorize each fragment; computer programs can help with this process (Turner, 2016). One last point on categorization, if the data has been too refined, the contextual importance of the data may be undermined, although computer software can lessen that severity (Dey, 1993; Turner, 2016). Building on that, once a researcher choses a specific path, following it consistently through the data, is key. A visual representation of the process of choosing themes is depicted below:

Figure A3: Thematic network for a global theme (Source: Akinyode, 2018)
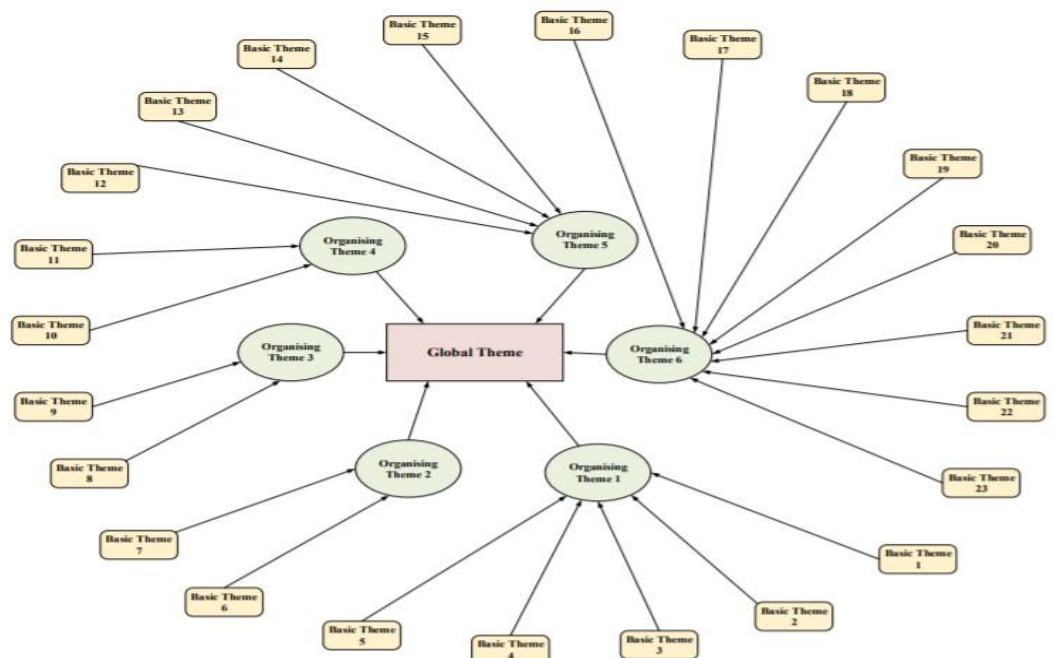
A12.1.7 Splitting and Splicing

The next step in the process, after the assignment of categories, is to practice secondary data analysis and shift the attention to from the original data to the reorganized data (Dey, 1993; Gray, 2014). The purpose is to perform additional, in-depth analysis of the categories of the original data to apply a new perspective or conceptual focus to the data (Gray, 2014) with this shift known as a recontextualization of the data (Dey, 1993).

In order to keep the data from being misrepresented from its original context, researchers should carefully safeguard the original documentation on the project as it is vital to the interpretation of the data (Dey, 1993). An additional concern centres around ethics; are safeguards in place to honour the commitments made by the original researchers to the research subject, with whatever commitments made about confidentiality strictly adhered to in the secondary data analysis (Gray, 2014).

The abstraction of data from the fragments causes information loss, with an epistemological criticism, arguing that the data collected cannot be replicated (Gray, 2014). Although, the new methodological exploration allows the researcher to opportunity to think about data in a new way (Dey, 1993, Gray, 2014). The researcher can now compare the most common used data fragments assigned from one category to those assigned of another (Connors, 2018). This then allows the researcher to further refine the categories leading to a more robust conceptual density to their theory and a basis for new descriptions (Dey, 1993; Gray, 2014). There are several ways this can be accomplished with Dey (1993) referring to two main categories:

- Splitting – refining categories through subcategories
- Splicing (Merging) – combining categories for further integration

Clearly, this is not an easy process with Turner (2016), asking "To merge or to split qualitative codes, that is the question".

A12.1.7.1 Splitting Categories

The Merriam Dictionary (2021) defines splitting as "to tear, divide or rend apart", and the very act of categorization involves subdividing or splitting the data to assign a category (Dey, 1993). As the researcher subcategorizes, there is no longer a need to subdivide the data as one had done in the past as the categories can now be split into a number of subcategories; these can then be assigned fragments which already belong to that category. However, when designing a qualitative structure, one of the most asked questions is 'How many categories should there be (Saldana, 2013; Turner, 2016)? It's easy to start out a project thinking that just a few themes will cover the research questions, but qualitative analysis tends towards ballooning thematic structure, and can lead to dozens of categories. Gray (2014) argues that too much splitting may fragment the data, losing the connection between the text and the context, while Saldana (2013) feels that only the most salient portions of the data merit examination. Furthermore, there will be distinctions that are too marginal to justify subcategorization (Dey, 1993). Of course there may be some methodological variance: if a researcher is doing certain types of grounded theory this may not apply, as you create themes spontaneously. It's also worth noting that good qualitative coding is an iterative process, and the researcher's expectations should be to go through the data multiple times (Turner, 2016).

Subcategorization requires that a researcher wear an analytic lens. But how the researcher perceives and interprets what is happening in the data depends on what type of filter covers that lens, and some central concerns which will arise from the analysis

(Saldana, 2013). Thus, subcategorization will center around the important emerging themes for analysis (Dey, 1993), while generating a more nuanced analysis from the start (Saldana, 2013).

A12.1.7.2 Splicing

The Merriam Dictionary (2021) defines splicing as "to unite, link, to merge", and is the opposite of splitting (Saldana, 2013). Splicing categories (also referred to as lumping (Saldana, 2013), seeks to link the categories for greater integration and scope (Dey, 1993). And the fewer the categories, the more powerful those categories become, making the analysis more coherent and salient (Saldana, 2013). Saldana (2013) does also go on to state that lumping is an expedient coding method allowing for future subcoding if needed.

Lumping gets to the essence of categorizing a phenomena, therefore, a researcher should not want to include each minute detail in the analysis. Instead, look for connections between the data that are emerging from the data (Gray, 2014). Develop hypotheses about these connections and return to the literature review to see if they can be confirmed by evidence (Gray, 2014; Bengtsson 2016). Researchers may experience a superficial analysis if the researcher does not use conceptual words and phrases (Gray, 2014), so careful attention needs to be paid to both the conceptual and empirical relevance of the categories used to date (Dey, 1993).

When the researcher is at the data review stage, the researcher may see the path the analysis might take, through the ideas emerging. According to Akinyode (2018) there may be themes in the data that a researcher might assume to find, however, there may also be unexpected, unanticipated surprise themes as well; while hard-to-classify themes

are those that contain ideas that uneasy to fit into one theme or overlap with several themes. This data is the very foundation on which to build and sharpen ideas, with some of the themes encompassing the majority of the data, while others represent more marginal themes.

The next step is to intertwine and streamline the main strands of analysis to look for connections, comprehensive notions, and connections that are emerging from the data. A fundamental change occurs as this step moves away from comparisons within the categories, to that of comparisons between them (Dey, 1993; Gray, 2014; Akinyode, 2018). These differing comparisons start with the thought around whether a distinction between categories is actually worth making, with computer software now available to assist in this process (Turner, 2016). The ultimate goal: to determine if the fragments within these categories contribute to the analysis both conceptually and empirically (Dey, 1993). The researcher is now looking for direction in the scope of the work starting with the "why" should it go somewhere (why do things happen the same way) before the "where" should it go (where are they in relation to other activities or events) (Saldana, 2013). Thus, the researcher must be familiar with the data to obtain a sense of the whole and to learn "what is going on", before it can be broken down into smaller meaningful units (Bengtsson, 2016).

Lumping or splicing categories allows the researcher to clarify the relationship between categories with more work to be done around reducing the overall number of strands in the analysis. Each data fragment, the relationships between categories, and its relativity, must all be clearly identified, with the hope to intertwine them effectively together in the final reporting to the community (Dey, 1993; Connors, 2018).

A12.8 Linking data

The Merriam Dictionary (2021) defines the work "link" as a connection element, thus, linking or connecting data with other data becomes may make it more useful. For qualitative research, linking data is similar to categorizing for clarity and consistency. Important to note, the researcher creates the listing of data fragment links to assign to those data observed. These links need to be conceptually and empirically grounded (Dey, 1993); conceptually, in the aim and purpose of the research, and empirically, in the observations of the correlation within the data. The researcher must attempt to find the links from the essence of the studied phenomenon, a deep understanding of the initial descriptive questions, or by simple inference (Dey, 1993; Bregtsson, 2016). The researcher, when linking a qualitative content, must consider the data collected from a neutral objective perspective as data may be connected through interaction and may not be similar in any other way (Dey, 1993; Bregtsson, 2016). Links between fragment pieces establish connections between the categories that the researcher has assigned. The figure below provides a visual representation of how links connect data.

Figure A4: Connecting categories via links (Derived from Dey, 1993)
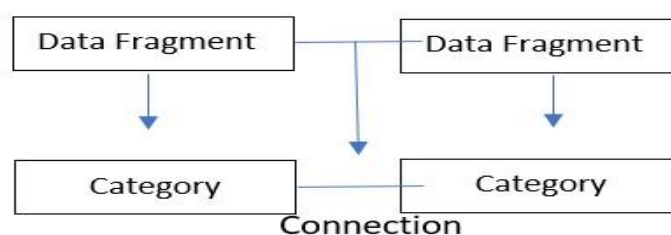
The researcher assigns numbers to the data fragments as a way to eliminate the detail and reducing the fragment data down to numbers. This will allow for the emergence of a numerical representation of the key themes, without losing the content of the fragment

data, and help the researcher more easily identify the patterns within the data (Dey, 1993; Bengtsson, 2016; Akinyode, 2018). This process is necessary when data are based on interviews, observations and when latent content analysis is to be carried out (Bengtsson, 2016). The figure below visually show how the patterns begin to form

Table A1: Numerical emergence of Patterns (Derived from Dey, 1993).

Descriptor	Category 1	Category 2	Category 3
A	7	8	6
B	3	6	4
C	0	3	1

This introduces the researcher to a matrix with data that has been reduced by category. There is now a subjective interpretation or judgement call by the researcher as a researcher brings subjectivities, personalities, and predispositions to the process (Saldana, 2013). Consequently, the researcher in order to use statistical analysis to give meaning to the data, needs to refer back to the original data as often as possible for confirmation of patterns, or to simply explore and update earlier judgements (Dey, 1993; Bengtsson, 2016). This shows how the validity and reliability of the whole process can be increased by translating the numbers into meaningful values (Bengtsson, 2016). Of note, it is important to identify an interesting dilemma, and then present it concisely. If the aim of the investigation is too broad, the risk of touching upon too many aspects may preclude the researcher from reaching the desired depth of the studied phenomenon (Bengtsson, 2016).

Reducing variables in research gives detailed, coherent, transparent, and consistent evidence about the subject matter allowing for increased focus (Akinyode, 2018). Clarity

of the data fragment relationship, through a logical and thoughtful presentation, will make the evidence more convincing and acceptable to other researchers and prospective users of the findings (Dey, 1993; Akinyode, 2018).

Saldana (2103) states that the matrix is a result of the complex process of coding for patterns and is the culmination of the theoretical framework, the themes of the study, the data fragments, their assignments of categories, splitting and splicing of categories along with any additional recoding or recategorization (Dey, 1993; Saldana, 2013).

A12.9 Mapping

A concept map, or mapping, is an example of a visual representation used in teaching and research that provides a tool for visualizing interconnectedness of the data, and viewing significant concepts in relation to the whole (Baugh et al. 2014; Conceição, 2017). It is a useful way of making sense (Dey, 1993) while assisting researchers to agree on meaning as seen in interrelationships of the data (Baugh et al. 2014).

This visual map of the outcome of the research process requires two things (Dey, 1993):

1. There is a need to represent the "points" of the analysis

2. There is a need to represent the relationship between those points

By mapping, this ideal tool reduces and manages data into a few symbols that could more beneficial and less verbose (Dey, 1993; Baugh et al. 2014). Concept maps are a type of diagram; however, concept maps are further delineated depending on the researcher's theoretical and methodological orientations. Situated in a constructivist philosophical orientation, concept maps are designed by hand or through a computer program such as the Institute for Human and Machine Cognition https://www.ihmc.us/cmaptools/ (Baugh et al. 2014).

Dey (1993) describes a way to mapping categories which includes:

- Shapes and Patterns (squares vs. circles) can represent different types of categories

- Size can represent differences in empirical scope

- Alignment can be used to compare differences in empirical scope

- Differences in scope only need to represent the most refined categories

Graphical representations show the strength of the relationships linking concepts indicated by connecting lines or arrows of different widths and lengths (Dey, 1993; Conceição, 2017).

Linking words can also indicate the relationship between the two concepts. A relational approach can present findings, with the direction of the arrowhead indicating the direction of the relationship (Conceição, 2017). Directional arrows imply a direct relationship whereas a straight line indicates a correlation or a suspected relationship (Baugh et al. 2014). If the relationship goes in both directions, the concept map may be updated for the reciprocal relationship.

Concepts that co-occur are placed near each other; with the distance between them indicating their frequency of use (Conceição, 2017). For example:

Figure 30: Directional Relationship
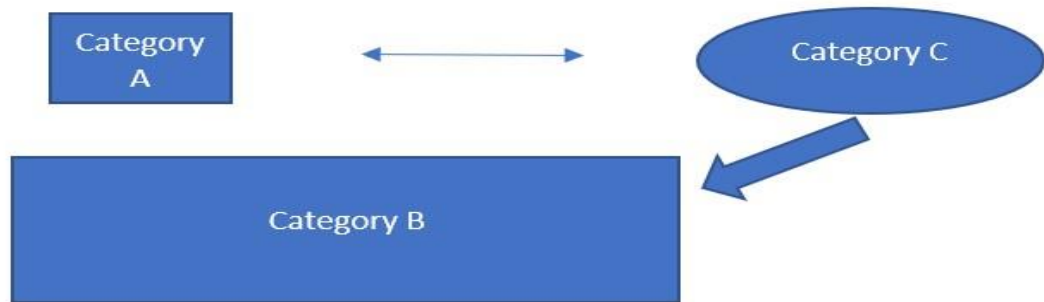
This diagram shows a directional relationship between Category A and Category C, with Category A and Category B experiencing a causal relationship. Note, this represents a positive relationship, if there were to exist a negative relationship, a minus sign could be placed above the arrow (Dey, 1993).

Appendix 2: Full Identified Code Analysis

Question #2 - What do you believe are essential characteristics of effective decision-making?

Identified Codes	Frequency
Evaluate Options	9
Key Priorities	1
Personal Gain	1
Risk Limitation	1
Reflection	7
Making thoughtful decisions	7
Seeks help from others	3
Seeking information	5
Being open minded	2
Impact of decision	8
Ethics	1
Timely	2
Understanding purpose	1

Question #3 - What defines an effective decision-making process when investing?

Identified Codes	Frequency
Goals	15
On-going monitoring	6
Research	9
Make recommendation/implementation	5
Understand risk tolerance	16
Time horizon	7
Values Convictions	2
Remove emotion	2
Education, Knowledge & Awareness	7

Question #4 - What are the key factors that influence your decision to purchase a product

Identified Codes	Frequency
Risk	10
Fulfills a need	13
Provides value	4
Trust the recommendation	8
Costs	15
Optimize	1
Goals	1
Brand reviews	6

Quality	11
Understanding	3
Time horizon	3

Question #5 – How do intentions impact decision-making?

Identified Codes	Frequency
Helps make a difference	5
Not sure how to answer, if at all	5
Creates biases	2
Not at all	2
Heavily/Important	2
It is relative	3
Emotional and interferes with objectivity	5
Initially leads to a decision	6

Question #6 – In what ways do millennials differ in decision-making compared to other generations?

Identified Codes	Frequency
Biased by easily accessible, immediate information	10
Not sure if there is a difference	2
Think with a great purpose in mind	4
Rely on social media Ratings/reviews	10
Prefer on-line searches	5
Use technology better	1
Seeks advice from parents	3
Seeks advice from peers	5
More balanced (work/life)	2
Risk adverse	2
Motivated by emotions	2

Question #7 - What outside forces play a key role in millennial decision-making?

Identified Codes	Frequency
Social Media and ratings	19
Peer pressure	8
Biases	3
Environment	4
Makes a difference	4
Immediate/short term focus	3
Self-reliance	3
Advice from parents	3
Risk adverse	6

Housing concerns	2
Job markets	2

Question #8 - In your opinion, how do prior experiences affect millennial financial decision-making?

Identified Codes	Frequency
Risk adverse, more cautious	7
Immediate opportunity to invest	2
No difference	2
Financial crisis/past experiences shape risk tolerance	9
Less trusting	1
Greater good, Impact investing/ESG	3
Student debt	1
More self-reliant, more skeptical	3

Question #9 - In your opinion, what role does fear play on a financial decision made by millennials?

Identified Codes	Frequency
More risk adverse	9
More risk tolerant	5
Job security fears	4
A longer time horizon	3
Not generational	13
Market volatility causes uncertainty	6
Prior experiences cause lack of trust	2
Present living Fear of missing out (FOMO)	4

Question #10 - What role does trust play in financial decisions made by millennials?

Identified Codes	Frequency
Vital foundation	10
More self-reliant with verifiable digital research	15
Not generational	10
Seeks out influencers or those with experience	7
More skeptical	2
A need to "feel" trust in an advisor	4

Question #11 - How are financial professionals reducing the perceived risk in financial investment decisions?

Identified Codes	Frequency
Education on risk/reward	12
Diversified portfolio Asset allocation	9
Align risk to goals	7
Annuities	3
Reduce fear and emotion	3
Simple language	1
Evolution of technology	2
Win trust	1
No difference between age groups	1

Question #12 – In what ways are millennials using social media in their financial decision-making?

Identified Codes	Frequency
Starting point for their research and education	13
Implementation of research	3
Has a heavy influence	5
Aligns to social values	2
What are others/influencers doing	14
It is not fundamental	1
Platform to share	5

Question #13 - In what ways will financial professionals need to engage the millennial investor on-line to be more effective?

Identified Codes	Frequency
Simple, short language	9
This is essential for success	4
Makes it easy to communicate via mobile devices	5
Engaging/interactive web presence	7
Engage them on their preferred sites (YouTube, Reddit, Instagram)	12
Be the friendly, trustworthy online presence	3
Connect to their social values (ESG)	1
Tap into peer-to-peer referrals	1

Question #14 - How can products and brands reflect millennial values?

Identified Codes	Frequency
Transparent/truthful message	9
Have a positive impact for society/world	9
Focus on diversity and inclusion	7
Environmental focus and Impact investing (ESG focus)	10
Cater to and ask what matters to them	3

This is big for all generations = no difference	2
Focus on work/life balance	1
Consistent	1
Be endorsed by social media	1

Question #15 - How can brands encourage engagement and positive conversations on social media?

Identified Codes	Frequency
Align reliable message to what they are passionate about	10
Share how the company/brand improves their lives and community	9
Use gamification ideas	4
Have a forum to ask for feedback/ideas	9
Use their social media (TikTok, Snapchat, Instagram – NOT Facebook)	1
Not sure as I do not participant in social media	1
Use influencers	4
Have a transparent/clear message	5
Through education	2
Donate to their causes	1

Question #16 - What influences and specific social values persuade a millennial to invest the way they do?

Identified Codes	Frequency
Align with companies doing good	5
Believe they can change the world	2
Unique experiences	3
ESG (environmental, social, governance) investing	16
Significant events from the era they grew up in	2
Influencers/peer pressure/herd mentality FOMO	6
Future growth potential	3
Diversity and inclusion	4
Social media	3

Question #17 - How does a financial professional demonstrate that their brand is tied to specific millennial values?

Identified Codes	Frequency
Ask about their likes and what is important	7
Positive impact through community support	7
Not sure	2
Show that investment products align to their values	6
Provide proof and post/advertise that your brand is tied to their values	7
Transparency	2

Who are their connections on social media	4
Build trust by showing your support their social causes	10

Question #18 - How is technology helping financial advisors become more aware of millennials needs?

Identified Codes	Frequency
Research on decision-making behaviours leads to better communication	10
Provides views into their preferences	2
Fa's can research their behaviours and specific needs	11
Helps attract millennials	3
Can see trends/influencers	6
Technology is not in place yet	1
Shows visibility of your values	1

Question #19 - In what ways do millennials prioritize current life pressures such as family or work/life balance?

Identified Codes	Frequency
Higher priority than previous generations	5
Not sure there is a difference	3
Guiding principle Prioritize life balance over work	7
Flexible schedule/work from anywhere	5
Family first before work	7
Self-enrichment before work	5
Experiences/enjoy life	5
Communicate on their schedule	2

Question #20 - What do you believe are the future aspirations of millennial investors?

Identified Codes	Frequency
Flexible work/life balance	2
Impact/influence social issues positively	5
Make money	10
Reasonable return on investments that share their values (ESG investing)	6
Make the world a better place	3
Self-reliance	4
Freedom from debt & financial security	4
Do it their way/choices	2
Maintain lifestyle, have experiences	3
Retire early	4
Want it all for everyone (socialist values)	2
Unsure yet	1

Question #21 - How has financial decision-making around investments and savings changes in light of COVID-19?

Identified Codes	Frequency
Stayed the course, not much impact	3
Not sure if it has	1
Increased awareness of short-term emergency funds	7
More people self-service investing	4
Higher savings rates with fewer things to spend on	7
Higher digital engagement rather than in person	5
Spending more	3
Increased awareness of world/political events have on investing	3
Retirement savings lower	2
More risk adverse/fearful/conservative	4

Question #22 - What impact has the COVID-19 pandemic had on the way financial professionals operate?

Identified Codes	Frequency
Integrate technology into practice / More tech savvy	5
Adapted/increased reliance on virtual	11
More efficient/convenient	6
Agile way to meet clients virtually the way they want to be met	6
More on-line prospecting	5
Cost effective	1
Trust level differs on virtual purchasing	3
Continued future mix of virtual and in person meetings	7
Increased on-line engagement	4
Older advisors retired early	1
Raise awareness of what was important in the planning process	1

Appendix 3: Full Thematic Analysis

Theme 1	Theme 2	Keywords	Strength
Aligning Company values	Greater Purpose/ESG	Greater Purpose/ESG	High
Aligning Company values	Consumer Concerns	Recency Bias	Low
Aligning Company values	Consumer Concerns	Herding Bias/FOMO	Medium
Aligning Company values	On-Line Resources	Social media	Low
Aligning Company values	Work life balance	Unique experiences	Low
Aligning Company values	Key Influences	Future growth potential	Low
Aligning Company values	Key Influences	Diversity & Inclusion	Medium
Aligning Company values	Greater Purpose/ESG	Greater Purpose/ESG	High
Aligning Company values	Trust	Transparent message	Low
Aligning Company values	Trust	Community involvement	High
Aligning Company values	Work life balance	Ask for feedback	High
Aligning Company values	Advertise your brand is tied to their values	Advertise your brand is tied to their values	High
Building brand confidence	Key Influences	Education	Low
Building brand confidence	Trust	transparent/align message	High
Building brand confidence	Trust	Community involvement	High
Building brand confidence	Work life balance	Ask for feedback	High
Building brand confidence	Key Influences	Gamification ideas	Medium
Building brand confidence	Key Influences	Use influencers	Medium
Building brand confidence	Greater Purpose/ESG	Greater Purpose/ESG	High
Building brand confidence	No differences	No differences	Low
Building brand confidence	Consumer Concerns	Cost	High
Building brand confidence	Trust	Transparent/simple language	High
Building brand confidence	Work life balance	Focus on work/life balance	Low
Building brand confidence	Key Influences	Diversity & Inclusion	High
Building trust	decision-making characteristics	Seeks help from expert	High
Building trust	Covid-19	More self reliant	High
Building trust	Trust	Skeptical	Low
Building trust	Not generational	Not generational	High
Building trust	Trust	Foundation	Medium
Characteristics - decision-making	Key Influences	Seeks help/info	High
Characteristics - decision-making	Key Influences	Timeliness	Low
Characteristics - decision-making	Key Influences	Evaluate	High
Characteristics - decision-making	Key Influences	Reflect	High
Characteristics - decision-making	Key Influences	Thoughtfulness	High
Characteristics - decision-making	Key Influences	Impact of decision	High
Characteristics - decision-making	Consumer Concerns	Understanding Risk tolerance	High
Characteristics - decision-making	Consumer Concerns	Time Horizon	High
Characteristics - decision-making	trust	Emotional	Low
Characteristics - decision-making	Key Influences	Educational Awareness	High
Characteristics - decision-making	Key Influences	Monitor	Medium

Characteristics - decision-making	Consumer Concerns	Research	High
Characteristics - decision-making	Key Influences	Recommend	Medium
Characteristics - decision-making	Alignment of goals	Alignment of goals	High
Communication	Greater Purpose/ESG	Greater Purpose/ESG	Low
Communication	Consumer Concerns	Herding Bias/FOMO	High
Communication	decision-making characteristics	Education	High
Communication	On-Line Resources	Heavy influence/ Platform to share	High
Communication	On-Line Resources	Implement	Low
Consumer Fears	trust	Risk adverse	High
Consumer Fears	decision-making characteristics	Risk tolerant	High
Consumer Fears	decision-making characteristics	Uncertain/Ambiguous	High
Consumer Fears	Not generational	Not generational	High
Consumer Fears	Covid-19	Job Markets	Medium
Consumer Fears	On-Line Resources	Use technology	Low
Consumer Fears	trust	Risk adverse	Low
Consumer Fears	trust	Win trust	Low
Consumer Fears	trust	Reduce emotions	Low
Consumer Fears	decision-making characteristics	Education	High
Consumer Fears	Align goals	Align goals	High
Consumer Fears	Align goals	Goals/needs	High
Consumer Fears	Consumer Concerns	Diversification	High
Engaging On-Line	Greater Purpose/ESG	Greater Purpose/ESG	Low
Engaging On-Line	communication	Preferred communication	High
Engaging On-Line	communication	Easy to communicate	Medium
Engaging On-Line	communication	Simple language	High
Engaging On-Line	trust	Foundational	High
Impact of Covid-19	Key Influences	Risk adverse	Medium
Impact of Covid-19	Covid-19	More self-reliant	Medium
Impact of Covid-19	On-Line Resources	More digital engagement	Medium
Impact of Covid-19	Key Influences	Increase in short term emergency fund needs	High
Impact of Covid-19	Key Influences	Higher savings	High
Impact of Covid-19	Key Influences	Spend more/lower savings	Medium
Impact of Covid-19	Key Influences	Stayed the course	Low
Impact of Covid-19	Key Influences	Increased political awareness	Medium
Impact of Covid-19	Trust	Trust levels differ	Low
Impact of Covid-19	communication	Preferred communication	High
Impact of Covid-19	Consumer Concerns	Cost effective	Medium
Impact of Covid-19	On-Line Resources	More tech savvy	Medium
Impact of Covid-19	On-Line Resources	Increased virtual meetings	High
KB82:E120ey influences	Trust	Risk	High
Key Influences	Greater Purpose/ESG	Greater Purpose/ESG	Medium
Key influences	Covid-19	Time Horizon	Low
Key influences	Trust	Trust	High
Key influences	aligned values	Brand reviews	Medium
Key influences	aligned values	Quality	Medium

Key influences	decision-making characteristics	Fulfills needs	High
Key influences	decision-making characteristics	Understanding	Low
Key influences	Key Influences	Seeks help from parent	Low
Key influences	Key Influences	Seeks help from peer	Medium
Key influences	trust	More risk adverse	Low
Key influences	Greater Purpose/ESG	Greater Purpose/ESG	Medium
Key influences	On-Line Resources	Reliance on Social Media	High
Key influences	Key Influences	Recency Bias	High
Key influences	trust	Emotional	Low
Key influences	No differences	No differences	Medium
Key influences	On-Line Resources	Prefer online research	Medium
Key influences	More balanced	More balanced	Low
Key influences	Greater Purpose/ESG	Greater Purpose/ESG	Medium
Key influences	Consumer Concerns	Creates Bias	Medium
Key influences	trust	Emotions	Medium
Key influences	decision-making characteristics	Start of decision	Medium
Key influences	Key Influences	Seeks help from parent	Low
Key influences	trust	Risk adverse	Medium
Key influences	Greater Purpose/ESG	Greater Purpose/ESG	High
Key influences	trust	Self-Reliant	Low
Key influences	Key Influences	Peer pressure	High
Key influences	Consumer Concerns	Uncertain/Ambiguous	Medium
Key influences	Key Influences	Biases	Low
Key influences	On-Line Resources	Social media/ratings	High
Key influences	decision-making characteristics	Short term goals	Low
Key influences	Work life balance	Job Markets	Low
Key influences	Work life balance	Housing	Low
Key influences	Greater Purpose/ESG	Greater Purpose/ESG	Low
Key influences	Work life balance	Self-Reliant	Low
Key influences	trust	Less trusting	Medium
Key influences	Consumer Concerns	Recency Bias	High
Key influences	Consumer Concerns	Herding Bias	Medium
Key influences	Work life balance	College Debt	Low
On-Line Resources	communication	Custom communication	High
On-Line Resources	On-Line Resources	What attracts millennials	Low
On-Line Resources	aligned values	See millennial trends	High
Understanding aspirations	Greater Purpose/ESG	Greater Purpose/ESG	High
Understanding aspirations	Work life balance	Flexibility	Low
Understanding aspirations	Work life balance	experiences	Low
Understanding aspirations	Work life balance	Work life balance	Medium
Understanding aspirations	Work life balance	Make money/free from debt	High
Understanding aspirations	Work life balance	Retire early	Medium
Understanding aspirations	Work life balance	Flexibility	Medium
Understanding aspirations	Work life balance	Experiences/enjoy life	Medium
Understanding aspirations	Work life balance	Family before work	High
Understanding aspirations	Work life balance	Self-enrichment before work	Medium
Understanding aspirations	Work life balance	High priority	Medium
Understanding aspirations	trust	Foundational	High

Appendix 4: Quantitative Questionnaire

Survey - What Makes an Effective Decision around Financial Solutions

This survey aims to gain your opinion on what are effective decision-making behaviours around financial solutions. When completing these questions, please share your experiences.

All responses will be confidential.

Screener:

Q1)	Are you: Male…[ ] Female…[ ] Prefer not to say / Other…[ ]	

Q2)	Are you: Married…[ ] Not Married…[ ] Prefer not to say [ ]	
Q3)	In what year were you born? *Please enter the 4-digit year, using the following format YYYY.* [RECORD OPEN END] [ACCEPT ONLY 1965-1996, TERMINATE ALL OTHERS]	

Q4)	Which of the following best describes your role in the selection and purchase of financial and investment products for yourself or your household?
	I am the primary decision maker (1)
	I share the decision-making authority (2)
	I participate by giving input/feedback but have no decision-making authority (3) [TERMINATE]
	I do not participate in the selection and purchase of financial and investment products for my household (4) [TERMINATE]
	We do not have financial and investment products in my household (5) [TERMINATE]

Q5)	And which of the following categories represents your household's total investable assets - things such as stocks, bonds, cash, money market funds, 401(k) plans, IRAs, insurance and other financial investments, but not including your home or other properties/real estate? ☐ Less than $25,000 (1) [TERMINATE] ☐ $25,000 to less than $50,000 (2) [TERMINATE] ☐ $50,000 to less than $100,000 (3) [TERMINATE] ☐ $100,000 to less than $150,000 ☐ $150,000 to less than $200,000 (5) ☐ $200,000 to less than $250,000 ☐ $250,000 to less than $500,000 (7) ☐ $500,000 to less than $1M (8) ☐ $1M or more (9) ☐ I don't have any investable assets (10) [TERMINATE] ☐ Prefer not to answer (11) [TERMINATE]

Q6)	Do you currently work with a financial professional? Yes…[ ] No…[ ]	

	Decision-Making Characteristics	
Q7)	To what extent do you agree with the following Decision-Making qualities?	Strongly Strongly DISAGREE AGREE
	a) I set clear financial goals for myself	1 2 3 4 5 6 7
	b) I consider the long-term impact of my financial decisions (5 – 10 years)	1 2 3 4 5 6 7
	c) I tend to make thoughtful, logical decisions	1 2 3 4 5 6 7
	d) I have the knowledge and confidence to make decisions/ suggestions on how my finances should be invested	1 2 3 4 5 6 7
	e) I have developed several shortcut methods to help me make decisions quickly	1 2 3 4 5 6 7

	f)	Overall, I am good at making decisions	1 2 3 4 5 6 7

	Intentions		
Q8)	To what extent do you agree with the following statements about your intentions:	Strongly DISAGREE Strongly AGREE
	a)	When I am committed to a decision, I follow through	1 2 3 4 5 6 7
	b)	My emotional state (happy/sad) tends to trigger impulse buying	1 2 3 4 5 6 7
	c)	The longer I wait, the lower the chance that I will make a decision	1 2 3 4 5 6 7
	d)	I have the resources and opportunity to make sound financial decisions	1 2 3 4 5 6 7
	e)	If my personal circumstances were to change (job loss, marriage etc), I would not change my mind to follow through on purchasing a product	1 2 3 4 5 6 7
	f)	I regularly make future plans of achieving specific financial goals	1 2 3 4 5 6 7
	g)	Overall, my intentions drive my behaviour	1 2 3 4 5 6 7

	Key Influences		
Q9)	To what extent are you affected by the following influencers? *Please select "N/A" or not applicable if the statement does not apply to you.*	Strongly DISAGREE Strongly AGREE
	a)	When making a major investment, I seek the advice of parents/family members	1 2 3 4 5 6 7 N/A
	b)	I often purchase an item that my friends/colleagues have purchased	1 2 3 4 5 6 7 N/A
	c)	I look for positive credible online reviews before purchasing a high-priced product	1 2 3 4 5 6 7 N/A
	d)	My previous experience in making wrong purchases can unduly influence my decision to purchase a product	1 2 3 4 5 6 7 N/A
	e)	I thoroughly research an item before making a purchase	1 2 3 4 5 6 7 N/A
	f)	I have some experience and knowledge on how to make sound financial decisions	1 2 3 4 5 6 7 N/A
	g)	I rely on financial professionals for financial guidance	1 2 3 4 5 6 7 N/A
	To what extent do you agree or disagree with the following statement.	
	h)	Overall, I consider the views of others before making an investment	1 2 3 4 5 6 7

	Digital Engagement		
Q10)	To what extent do you agree with the following assessment of online resources. *Please select "N/A" or not applicable if you do not currently use the online resource mentioned.*	Strongly DISAGREE Strongly AGREE
	a)	I keep informed on financial matters by regularly using information found in online searches	1 2 3 4 5 6 7 N/A
	b)	I rely on social media posts to help make a financial decision	1 2 3 4 5 6 7 N/A
	c)	I use investment apps or robo-advisors to help make financial decisions	1 2 3 4 5 6 7 N/A
	d)	It is important that financial professionals have an online presence	1 2 3 4 5 6 7 N/A
	e)	I have greater confidence in a product when endorsed by a celebrity I admire	1 2 3 4 5 6 7 N/A
	f)	I will not purchase a product from a company that has many negative online reviews	1 2 3 4 5 6 7 N/A
	To what extent do you agree or disagree with the following statement.	
	g)	Overall, online resources are important tools for me to make a financial decision	1 2 3 4 5 6 7

		Aligned Values	
Q11)		Please review the following statements and indicate the degree to which each statement reflects a value that is important to you. *Please select "N/A" or not applicable if the statement does not apply to you.*	Not Very IMPORTANT IMPORTANT
	a)	I prefer to do business with a financial professional whose values align with mine	1 2 3 4 5 6 7 N/A
	b)	A financial professional can "win" me as an investor when they support causes that are important to me	1 2 3 4 5 6 7 N/A
	c)	I look to invest in companies that support environmental issues	1 2 3 4 5 6 7 N/A
	d)	I prefer to do business with financial professionals that give back to the community	1 2 3 4 5 6 7 N/A
	e)	I would not invest in a product / investment if it meant compromising my integrity / values, even if it meant I would earn more money	1 2 3 4 5 6 7 N/A
	f)	I will not purchase from a company that is damaging the environment	1 2 3 4 5 6 7 N/A
	g)	I will not purchase form a company that does not treat its employees fairly	1 2 3 4 5 6 7 N/A
		To what extent do you agree or disagree with the following statement?	
	h)	Overall, an organizations values influences my decision to purchase their product	1 2 3 4 5 6 7

		Trust	
Q12)		To what extent do you agree with the following aspects of trust? *Please select "N/A" or not applicable if the statement does not apply to you.*	Strongly Strongly DISAGREE AGREE
	a)	I trust people quickly	1 2 3 4 5 6 7 N/A
	b)	A financial professionals' reputation for being trustworthy is important to me	1 2 3 4 5 6 7 N/A
	c)	Transparent and clear messages help build trust in a financial professional	1 2 3 4 5 6 7 N/A
	d)	The more I learn about finances, the more comfortable I am with the decision I make	1 2 3 4 5 6 7 N/A
	e)	I tend to have greater trust in a financial professional when they have received positive reviews online	1 2 3 4 5 6 7 N/A
	f)	A meaningful positive relationship with my financial advisor would convince me to follow their advice	1 2 3 4 5 6 7 N/A
	g)	I expect my financial professional to be sincere in their advice	1 2 3 4 5 6 7 N/A
	h)	I expect financial solutions customized to my specific needs	
		To what extent do you agree or disagree with the following statement?	
	i)	Overall, trust is important in my decision to make a financial purchase	1 2 3 4 5 6 7

		Consumer Concerns	
Q13)		To what extent do you agree with the following statements about risks and rewards. *Please select "N/A" or not applicable if you do not currently invest or use the investment resource mentioned.*	Strongly Strongly DISAGREE AGREE
	a)	I avoid risk if I do NOT have a clear understanding of the investment	1 2 3 4 5 6 7 N/A
	b)	I wish to invest my emergency fund in safe options that yield a good return	1 2 3 4 5 6 7 N/A
	c)	I am willing to have a portion of my total portfolio invested in a higher risk, longer term investment	1 2 3 4 5 6 7 N/A
	d)	Today's stock market headlines affect my decision to purchase a product	1 2 3 4 5 6 7 N/A
	e)	I fear missing out on opportunities in an investment that my peers have recently purchased	1 2 3 4 5 6 7 N/A
	f)	I worry about making the wrong decision when making a major investment	1 2 3 4 5 6 7 N/A
	g)	I am willing to sacrifice short term losses if in the long term, my investments make more money	1 2 3 4 5 6 7 N/A

	h) Disruptive global activities (e.g., war, recession, viruses) have impacted my decision to invest	1 2 3 4 5 6 7 N/A
	i) I only wish to invest in socially responsible companies or companies that stand up for social injustice	1 2 3 4 5 6 7 N/A
	j) I tend to focus on losses more than gains	1 2 3 4 5 6 7 N/A
	k) I am actively saving today for future health care costs	1 2 3 4 5 6 7 N/A
	To what extent do you agree or disagree with the following statement?	
	l) Overall, my decision to invest is impacted by my expectation of risk versus reward	1 2 3 4 5 6 7

	Communication	
Q14)	To what extent do you agree with the following approach to communication? *Please select "N/A" or not applicable if you do not currently use the communication tool mentioned.*	Strongly Strongly DISAGREE AGREE
	a) My preferred means of communication is digital (email, text, Snapchat, Instagram, Facebook, TikTok etc…)	1 2 3 4 5 6 7 N/A
	b) As someone who may seek investment advice, I value short, memorable, factual financial ads over ads that convey too much detailed information	1 2 3 4 5 6 7 N/A
	c) I would value engaging with a financial professional online to help me make a major financial decision	1 2 3 4 5 6 7 N/A
	d) I prefer to meet a financial professional face to face when making a major financial decision	1 2 3 4 5 6 7 N/A
	e) I would prefer short, frequent updates from a financial professional on my financial position	1 2 3 4 5 6 7 N/A
	To what extent do you agree or disagree with the following statement?	
	f) Overall, it is important to be able to communicate with a financial professional digitally	1 2 3 4 5 6 7

	Work/Life Flexibility	
Q15)	To what extent do you agree with the following statements about ideal work/life flexibility? *Please select "N/A" or not applicable if the statement does not apply to you.*	Strongly Strongly DISAGREE AGREE
	a) I have achieved a balance in my work and social life	1 2 3 4 5 6 7 N/A
	b) I would like more flexibility in the hours I work from my employer	1 2 3 4 5 6 7 N/A
	c) I value new and unique experiences (for example, using a vacation rental or visiting a local artisan coffee shop)	1 2 3 4 5 6 7 N/A
	d) I am willing to accept less money in a job I love versus earning more in a job that I feel is stressful/demanding/boring	1 2 3 4 5 6 7 N/A
	e) I value my personal development over career advancements	1 2 3 4 5 6 7 N/A
	f) I have defined career aspirations	1 2 3 4 5 6 7 N/A
	g) I earn sufficient income to cover my expenses	1 2 3 4 5 6 7 N/A
	To what extent do you agree or disagree with the following statement?	
	h) Overall, I have achieved a good work/life balance	1 2 3 4 5 6 7

Q16)	**COVID-19 Impact** To what extent do you agree with the following statements on the impact of the COVID-19 pandemic on your financial decision-making? *Please select "N/A" or not applicable if the statement does not apply to you.*	Strongly Strongly DISAGREE AGREE
	a) Debt is now a bigger concern since the start of the pandemic (Covid19)	1 2 3 4 5 6 7 N/A
	b) COVID-19 has increased my self-reliance on budgeting apps or other financial services apps (for example, Robinhood/Coinbase etc…)	1 2 3 4 5 6 7 N/A
	c) I am saving less as a result of COVID-19	1 2 3 4 5 6 7 N/A
	d) I am less trusting of financial markets as a result of COVID-19	1 2 3 4 5 6 7 N/A
	e) COVID-19 has made digital communication my preferred method of communication	1 2 3 4 5 6 7 N/A
	f) COVID-19 has increased my appetite to take on decisions with higher risk	1 2 3 4 5 6 7 N/A

	g)	Because of COVID-19, I now spend considerably more time in reflecting on major decisions	1 2 3 4 5 6 7 N/A
	h)	I am worried about the rising costs of items	1 2 3 4 5 6 7 N/A
		To what extent do you agree or disagree with the following statement?	
	i)	Overall, the COVID-19 pandemic has impacted my financial decision-making process	1 2 3 4 5 6 7

Q17)	Based on the previous ten decision-making themes, I would rate your confidence in your overall ability to make financial decisions:	Not at all Confident 1 2 3 4 5	Very Confident 6 7

Q18)	How likely are you to make a major financial decision in the next year?	Not Likely 1 2 3 4 5	Very Likely 6 7
Q19)	Have financial products been easily accessible to purchase over the past year?	Not at all 1 2 3 4 5	Extremely 6 7

Q20)	**Lifestyle** Overall, to what degree are you happy or not happy with the following aspects of your lifestyle? *Please select "N/A" or not applicable if the statement does not apply to you*	Not at all Happy	Very Happy
	a) my sleeping pattern	1 2 3 4 5 6 7 N/A	
	b) my overall physical health	1 2 3 4 5 6 7	
	c) my optimism for the future	1 2 3 4 5 6 7 N/A	
	d) my overall spirituality and/or religious belief	1 2 3 4 5 6 7	
	e) my most significant relationship (partner/spouse)	1 2 3 4 5 6 7 N/A	
	f) my overall family support	1 2 3 4 5 6 7 N/A	
	g) my support from close friends	1 2 3 4 5 6 7 N/A	
	h) my ability to confide in others	1 2 3 4 5 6 7 N/A	
	i) my interaction with colleagues at work	1 2 3 4 5 6 7 N/A	
	j) my ability to cope with stress/anxiety	1 2 3 4 5 6 7 N/A	
	k) my overall ability to rely on others	1 2 3 4 5 6 7	
	l) my ability to cope with change	1 2 3 4 5 6 7 N/A	
	m) my skills and qualifications	1 2 3 4 5 6 7 N/A	
	n) my achievements in life	1 2 3 4 5 6 7 N/A	
	o) my online presence	1 2 3 4 5 6 7 N/A	
	p) my current finances (salary/dividends/investments)	1 2 3 4 5 6 7 N/A	
	q) my current accommodations (apartment/house etc…)	1 2 3 4 5 6 7 N/A	
	r) Overall, I am content with how I cope with life's challenges	1 2 3 4 5 6 7	

Demographics

We are almost done! Just a few more optional questions for classification purposes only.

Q21)	Do you consider yourself an entrepreneur owning your own company?	Yes [ ] No [ ]

Q22)	Which of the following best describes your current employment status?
	a) Employed full-time
	b) Employed part-time
	c) Self-employed
	d) Unemployed
	e) Stay-at-home parent/caregiver
	f) Full-time student
	g) Retired
	h) Unable to work due to a physical, mental or emotional condition that causes serious difficulty with your daily activities
	i) Prefer not to answer

[ASK ONLY IF Q22=a-c]

Q23)	I work for a company with the following number of employees:		
	Micro	1-10	[ ]
	Small	11 - 250	[ ]
	Medium	251 - 500	[ ]
	Large	501 - 1000	[ ]
	Very Large	1001 or more	[ ]
		Don't know	

Q24) Which of the following categories best represents your total household income from last year?			
a) Under $50,000 [ ]		b) $50,000 - $99,999 [ ]	
c) $100,000 - $149,999 [ ]		d) $150,000 - $199,999 [ ]	
e) $200,000 - $249,999 [ ]		f) $250,000 or more [ ]	
g) Prefer not to answer			

Q25)	What is your race?		
	a) Hispanic or Latino [ ]	b) Asian / Pacific Islander [ ]	
	c) White or Caucasian [ ]	d) Other / Multiple [ ]	
	e) Black or African American [ ]	f) Prefer not to disclose [ ]	

Appendix 5

Master correlation matrix for Analysis 1

Question Theme	Variable Type	Question Number	Q7_6	Q8_7	Q9b_1	Q10b_1	Q11b_1	Q12b_1	Q13b_1	Q14b_1	Q15b_1	Q16b_1	Q17_1	Q18_1	Q19_1
Decision-Making Characteristics	Independent	Q7_6	1.00	0.41	0.23	0.32	0.33	0.28	0.28	0.24	0.38	0.16	0.53	0.39	0.40
Intentions	Independent	Q8_7	0.41	1.00	0.36	0.42	0.38	0.26	0.37	0.30	0.29	0.21	0.38	0.41	0.38
Key Influences	Independent	Q9b_1	0.23	0.36	1.00	0.42	0.45	0.20	0.37	0.29	0.29	0.35	0.30	0.31	0.29
Digital Engagement	Independent	Q10b_1	0.32	0.42	0.42	1.00	0.46	0.36	0.45	0.42	0.33	0.33	0.37	0.42	0.40
Aligned Values	Independent	Q11b_1	0.33	0.38	0.45	0.46	1.00	0.33	0.42	0.41	0.33	0.36	0.40	0.37	0.34
Trust	Independent	Q12b_1	0.28	0.26	0.20	0.36	0.33	1.00	0.40	0.43	0.35	0.26	0.30	0.28	0.26
Consumer Concerns	Independent	Q13b_1	0.28	0.37	0.37	0.45	0.42	0.40	1.00	0.42	0.38	0.31	0.36	0.35	0.40
Communication	Independent	Q14b_1	0.24	0.30	0.29	0.42	0.41	0.43	0.42	1.00	0.35	0.31	0.31	0.32	0.28
Work/Life Flexibility	Independent	Q15b_1	0.38	0.29	0.29	0.33	0.33	0.35	0.38	0.35	1.00	0.17	0.47	0.35	0.37
COVID-19 Impact	Independent	Q16b_1	0.16	0.21	0.35	0.33	0.36	0.26	0.31	0.31	0.17	1.00	0.19	0.26	0.16
Financial Decision-making Confidence	Dependent	Q17_1	0.53	0.38	0.30	0.37	0.40	0.30	0.36	0.31	0.47	0.19	1.00	0.56	0.56
Major Financial Decision Likelihood	Dependent	Q18_1	0.39	0.41	0.31	0.42	0.37	0.28	0.35	0.32	0.35	0.26	0.56	1.00	0.52
Financial Product Ease of Accessibility	Dependent	Q19_1	0.40	0.38	0.29	0.40	0.34	0.26	0.40	0.28	0.37	0.16	0.56	0.52	1.00