THREE ESSAYS ON THE IMPORTANCE OF DURABLE CONSUMER DECISION MAKING IN ACHIEVING WELL-BEING

by

HEEJAE LEE

(Under the Direction of Dee Warmath)

ABSTRACT

This dissertation argues that durability (i.e., ability to withstand wear, pressure or damage regardless of any changes in the environment) is a quality that needs to be prioritized in consumer decision making. A synthesis of the consumer and decision sciences literatures to put the consumer as decision maker at the center can help frame decision making as a collection of decisions that constitute an ongoing process. By leveraging a combination of the strength model of self-control and the socioecological model, this dissertation examines decision-making factors that draw a decision maker closer to or further away from achieving well-being. Findings from three studies suggest that the current resources need to be reallocated and reprioritized to different decision resources.

The first study, titled "On a need-to-know basis: Exploring the relative importance of foundational and domain-specific literacy," examines the role of different types of literacy from the individual consumers' perspective. It argues that a more foundational type of literacy may play a more important role in achieving well-being and is more durable than domain-specific literacy.

The second study, titled “Professional financial help-seeking as a preventive coping mechanism,” investigates help-seeking in financial decision making context. It argues that professional financial help-seeking as a preventive coping strategy can be durable because it can prevent acute financial problems and produce more durable decision makers.

The third study, titled “The importance of decision fatigue in financial decision making,” examines decision fatigue (i.e., impaired ability to make decisions that results from repeated decision making), a phenomenon that should be experienced less by durable decision makers. It shows that decision fatigue is a complex and consequential phenomenon that is difficult to avoid even for seemingly ideal decision makers and presents financial decision-making ability as a durable decision resource against it.

Overall, this dissertation adopts a consumer-centric perspective by shifting the focus from the single-decision context to the individual consumer’s eyes to consider the entire decision-making process. The insights from these studies can inform public policy, marketing, and consumer education in promoting durable decision-making and creating a safer decision environment by considering the longevity and dynamicity of the decision-making process.

INDEX WORDS: Consumer decision making, Consumer well-being, Financial well-being, Literacy, Help-seeking, Decision fatigue

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DEDICATION

To my Heavenly Father for His abundant mercy and steadfast love,

To my parents for their constant support and inspiration,

To my husband, Nicky, for his patience and being my rock,

To my grandparents for their love and prayers,

To my friends for their encouragement and fun times, and

To myself for my durability in finishing this dissertation.

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CHAPTER 1

INTRODUCTION

"Oh boy! It is something to make a mind up."

What Pet Should I Get? By Dr. Seuss p. 13

In Dr. Seuss' book, *What Pet Should I Get?*, a brother and a sister go to a pet store with one mission: choosing a new pet. They each want a dog and a cat but cannot make a decision. Then more animals catch their attention. As they deliberate over their options, their time ("Mother told us to be back by noon") and financial ("Dad said we could have one") constraints pressure them. Yet the possibility of finding a better – some imaginary – alternative interferes with their decision making. Eventually, the siblings make an impulse decision. Readers are left clueless about which pet they chose as if the outcome was not even that noteworthy compared to the effort expended ("I picked one out fast and then that was that").

This short yet perceptive Dr. Seuss story represents the struggle of modern-day decision making. As illustrated in this story and the existing literature and attested by our own real-life experiences, decision making is a task that often seems to be insurmountable (Bettman et al., 1991). The children were not prepared well, seemed to not have any outside help available, and were probably drained from the process. While adult consumers may not be as indecisive and impulsive as two unsupervised children in a pet store, these and other barriers exist in their decision-making process including the required effort, time and financial constraints, insufficient

knowledge or decision-making ability, the potential costs of a bad decision, prevalence of inaccurate information and its lack of credible sources, the sheer number of decisions and various biases and heuristics that alter our ability to process information (Bettman et al., 1991; Han et al., 2023; Pignatiello et al., 2020; Van Der Linden, 2022).

The Dr. Seuss story is devoted to a single decision of choosing a pet, introducing all the possible decision-making directions with different outcomes while still ending the story with a lack of resolution. While not explicitly part of the story, the siblings would have had to choose the pet store and the means of getting there. If they had chosen another store, the rest of the story might have progressed very differently. They also had to consider other factors such as the size of their house and their parents' preferences. Despite making a decision that seemed somewhat abrupt, the siblings' facial expressions are bright upon leaving the store. The siblings are happy not because they got a particular new pet, but because they got one after a long consideration of all options. Taking a step back from the limited view of the outcome and looking at the entire process, we learn that each small decision in their deliberation process was meaningful. The existing consumer science views the individual consumer's life as a series of decisions, with the outcomes being person-centered and extending beyond a single decision (Erasmus et al., 2001). This domain offers insights into how consumers seek to construct their best life. On the other hand, the existing decision science tends to focus on decisions and how decisions are made, with the outcomes also being decision-specific (Elwyn & Miron-Shatz, 2010; Payne et al., 1993; Sainfort & Booske, 2000). This domain provides in-depth knowledge of how decisions are and perhaps should be made. This "fragmented" and disconnected perspective leads to a narrow view of single decisions in an isolated and limited context (Payne et al., 1993, p. 6).

This dissertation synthesizes the consumer science and decision science literatures to put the consumer as decision maker at the center. It contends that decision making can be better understood by focusing on the collection of decisions a given consumer makes rather than the discrete process used to make a single decision. This comprehensive lens can provide a deeper understanding of decision making as an ongoing activity from the individual consumer's perspective. Overall, this dissertation suggests three shifts in viewing consumer decision making. The first shift is from a single decision to many decisions or a series of decisions. The second is a shift from decision to decision maker. The final shift is from a controlled context to a multilayered dynamic context. The insights from this dissertation can inform future research, public policy and marketing efforts that promote consumer welfare.

CHAPTER 2

LITERATURE REVIEW AND CONCEPTUAL ARGUMENT

1. Introduction

Decision making is a core function of a consumer (Bettman et al., 1991). Throughout their lives, individual consumers make big and small decisions in deciding which products or services they will consume in various contexts. An individual's collection of decisions and how they make those decisions have implications for different outcomes, including well-being both in the overall sense (Smith et al., 2008) and also in the life domain in which that decision making is set (Greenberg & Hershfield, 2018; Páez-Gallego et al., 2020).

Two streams of literature exist in the realm of consumer decision making. First is the consumer science literature, which focuses on the individual consumer and their everyday living in all domains of life (Erasmus et al., 2001). This literature often overgeneralizes consumer decision making or assumes that it is a rational process and does not necessarily consider consumers to be decision makers (Erasmus et al., 2001). With more recent advances in transformative consumer research (TCR), consumer well-being was reframed as an important outcome (Pancer & Handelman, 2012).

Second is the decision science literature, which tends to focus only on decisions, without considering the decision makers that experience the decision-making process. The primary focus in the extant decision literature has been on a single decision in isolation. A single decision can often be an adequate scope of research, considering that factors outside the given decision are

theoretically held constant. In reality, however, decision making does not occur in a vacuum (Payne et al., 1993). Each decision is made in the context of other decisions and different decision factors over time. The current solution to the depletion offered by this theory is limited in that it is more temporary (Gailliot et al., 2007) and has mixed results (Baumeister et al., 2018). Very few studies synthesize consumer and decision sciences literatures together and put the consumer as decision maker at the center. This gap in the existing literature warrants an incorporation of a consumer science lens into the study of decision making to consider about how decisions are made and how consumers seek to construct their best life.

In my dissertation, I argue consumers are decision makers who need to build stamina over time in their decision making and introduce the concept of a durable decision-maker as a person who is "able to withstand wear, pressure, or damage" (Oxford English Dictionary, n.d.). Through this concept, I aim to shift the perspective of decision science from a single decision in a limited context to the decision maker and the collection of decisions they make in life. This shift also allows consumer science to be enhanced with a more detailed understanding of the intricacies of decision making. Through three studies, I leverage a combination of the strength model of self-control and the socioecological model (Bronfenbrenner, 1979) by examining the factors related to durable decision making in helping or deterring the achievement of well-being at different levels of systems of which the given individual is part. I extend the strength model of self-control (Baumeister et al., 2007) with durable decision-making as a means of assessing an individual's ability to maintain good decision making over a series of decisions. The factors examined are inspired by the different levels of the socioecological model. This dissertation aims

to encourage consumer and decision scientists to adopt a consumer-centric lens that views decision making as the consumer's core function and well-being as an important outcome.

2. Review of Existing Literature

The consumer decision-making task is multifaceted with multiple elements to consider from attributes, alternatives, and uncertainty to the mismatch between a difficult decision task and limited processing capabilities with which consumers (need to) cope (Bettman et al., 1991). This section presents a review of the literature on overall well-being as the ultimate outcome, how decision making has been studied, the factors that influence decision making in achieving well-being, and the current landscape of decision making in relation to the decision environment and consumer policy and education. This section concludes by outlining the gap in the existing body of literature.

Overall Well-Being as the Ultimate Outcome in Decision Making

Well-being (i.e., "people's cognitive and affective evaluations of their lives" [Diener, 2000, p. 34]) is an inherently subjective concept that globally assesses all domains of an individual's life such as job, physical health, relationship, and finance (Diener, 1984). Well-being is a fundamental right that should be obtained and enjoyed by all, and it has been identified as part of the third sustainable development goal by the United Nations (n.d.a). In terms of requirements, the basic psychological needs of competence, autonomy, and relatedness across an individual's life span have been proposed as prerequisites to experiencing well-being or eudaimonia (Ryan & Deci, 2000).

Happiness is a conceptually and empirically distinct concept from well-being that serves as a proxy for well-being (Raibley, 2012). Happiness, defined narrowly as feeling good in an

episodic sense and broadly as harmony and balance in a more robust sense (Raibley, 2012), has been historically considered to be the highest good and ultimate motivation for human action (Diener, 1984). Well-being and happiness have been defined from three perspectives: (1) through external criteria such as virtue or holiness; (2) with focus on positive aspects such as satisfaction; and (3) by the relative strength of positive and negative affect (Diener, 1984).

Happiness and well-being can also be conceptualized and measured in a more momentary sense rather than a more stable disposition (Rutledge et al., 2014). Evidence from neurological psychology suggests that momentary happiness is a state that reflects whether things are going better than expected rather than how well things are going at a given time point (Rutledge et al., 2014). Even in the absence of outcomes, there are both positive and negative expectations, which are compared to the actual reward to calculate the reward prediction error and produce dopamine (Rutledge et al., 2014).

Well-Being and Decision Making

A decision's value is determined based on its expected value or utility of outcomes (Goldsmith, 2009; Higgins, 2000), and decision utilities are often measured as subjective well-being (Smith et al., 2008). The general understanding is that an individual's collection of decisions and how they make those decisions have implications for well-being (e.g., Greenberg & Hershfield, 2018; Páez-Gallego et al., 2020). Oishi and Diener (2003) also describe the cycle that constructs well-being as actions, evaluations of those actions, and decisions of whether to repeat those actions or choose to engage in an alternative action. While mundane, our everyday

lives are filled with this rhythmic cycle to the extent of 35,000 decisions a day on average, all influencing and constructing well-being in various ways (Sollisch, 2016).

How People Make Decisions

What Good Decision Making Is

"How good are people at making decisions? There is naturally a big range; some people are in general very good and others are not. However, almost everyone could make better choices" (Keeney, 2004, p. 194). Decision making has been studied for decades with an emphasis on what constitutes "good decision making" and the ways decision making can be improved (Elwyn & Miron-Shatz, 2010; Higgins, 2000; Schwartz et al., 2011). Decision making is not viewed as an individual's trait but a state that fluctuates even within an individual (Baumeister et al., 2007; Tierney, 2011). What constitutes good decision making may change with the age of an individual (e.g., older individuals have more wisdom [Worthy et al., 2011]) or with the attainment of new information in the current context (Elwyn & Miron-Shatz, 2010). Therefore, good decision making is viewed as a process that continues to develop and adapt according to the decision-maker's capacity and the surrounding situations (Goldsmith, 2009; Payne et al., 1993). This perspective differs from the rather statically defined decisions ("conclusions or judgments about some issue or matter" [Goldsmith, 2009, p. 122]). The entire deliberation process matters just as much as post-decisional outcomes (Elwyn & Miron-Shatz, 2010). Good decision making can also differ from person to person. What one individual perceives as a good decision-making process can differ from what another individual desires based on their prior experiences, pre-existing knowledge, motivation, and many other factors (Elwyn & Miron-Shatz, 2010; Higgins, 2000). Good decision making, to one person, may mean a simple process that is just good enough (Schwartz et al., 2011). To another, it may need to be a

combination of extensive information search and thorough deliberation to be considered acceptable.

Retrospective vs. Prospective. What determines good decision making has been researched from two primary perspectives: retrospective (i.e., looking back) and prospective (i.e., looking forward). The former tends to have more focus on decisions as a discrete process with some outcome, while the latter seems to focus more on the entire process. In the retrospective perspective, information on the decision is collected after the given decision has occurred. Thus, post-decision outcomes are the primary measures of interest in determining whether that single decision was good. This literature defines a good decision as one with high outcome benefits and low outcome costs (Higgins, 2000), meaning that the net value of that decision's outcome is positive ("worthwhile"). Thus, a single decision can be determined to be either good or bad, independent of the context of other decisions or other environmental factors. However, these post hoc assessments of decisions based on the outcomes of decisions can be unreliable measures because they can change quickly and dramatically based on the surrounding situation (Elwyn & Miron-Shatz, 2010). When looking at the outcome retrospectively, decision making concepts such as accuracy (Payne et al., 1993), satisfaction (Sainfort & Booske, 2000), and cost (Higgins, 2000), are prioritized. Trade-offs also become important as not all attributes can be attained (Heitz, 2014). However, oftentimes there is no universally *right* decision, at least according to these standards because each individual operates with different cognitive limits in different decision contexts, especially when long-term consequences are uncertain (Payne et al., 1993; Sainfort & Booske, 2000). Decision outcome is also part of the four criteria identified by Payne and colleagues (1993) for determining the quality of a decision along with principles of coherence, consistency in choice over time, and conformance to normative models of decision

making. However, these benchmarks are unlikely to be applied in complex choice situations (Sainfort & Booske, 2000). Although the entire deliberation process seems to matter as much as post-decisional outcomes (Elwyn & Miron-Shatz, 2010), insufficient attention has been paid to the prospective process. Such dynamicity of decision-making process raises the point that perhaps the determination of "good" in decision making "is not whether we get there, but how we arrive" (Andrejevic, 2013, p. 8).

On the other hand, the prospective perspective also considers the rest of the decision components, including the pre-decision period. Because the outcome is yet unknown, the focus can expand from the context of a single discrete decision to the entire decision-making process. This process may consist of multiple decisions or a series of decisions. When looking at the process, the value and outcome of individual decisions do not matter as much. As meta-cognitive processes take experiences as informational input, decision makers can learn from their prior decisions and develop upon their existing expertise as their familiarity increases (Alba & Hutchinson, 1987; Schwarz et al., 1991). Also, trade-offs may decrease in significance; if one decision in the process involves a trade-off between different features, a subsequent decision can offset that.

History of Consumer Decision Making

Traditional consumer decision making models are based on the economic notion that each individual decision maker is a rational being that operates to achieve utility maximization (Cox, 2008). In this context, each consumer seeks to purchase an optimal combination of goods that allows them to reach the highest indifference curve given their budget constraint (Cox, 2008). The most popular model usually consists of five steps or more: problem recognition,

information search, alternative evaluation, purchase decision, and outcome evaluation (Cox et al., 1983; Erasmus et al., 2001; Goldsmith, 2009).

As the field of consumer decision-making evolved over time, it expanded beyond just buying or purchasing behavior. Consumer science is a broad "discipline that evolves around consumer behavior and decision making… in everyday living in order to meet basic and higher order needs for physical, psychological, socio-psychological and financial satisfaction in a complex micro and macro environment" (Erasmus et al., 2001, p. 82). It includes the former discipline of home economics and places greater emphasis on consumption behavior where the humane aspect of decision making is underscored (Erasmus et al., 2001). Such development also aligns more closely with the notion that human rationality and information-processing capabilities are limited (Simon, 1957). Many different theories and ideas have emerged as a result to describe the difficulty and complexity of consumer decision making. A few prominent ones are introduced below.

Bounded Rationality. The theory of bounded rationality (Simon, 1957) suggests that humans are more likely to satisfice or seek the good enough, rather than optimize. This idea significantly deviates from the traditional economic view in that it fully embraces the "cognitive limitations of the decision maker – limitations of both knowledge and computational capacity" and considers the structure of the task environments (Simon, 1990, p. 15). While this perspective initially faced criticism, it is now widely accepted as it describes actual human behavior rather than the normative one (Grüne-Yanoff, 2007). Sole reliance on the normative theory leads to "systematic, predictable errors in describing or forecasting consumer choices" (Thaler, 1980, p. 39) because in most cases, there is a big gap between what consumers actually know and what they think they know (Alba & Hutchinson, 2000). Such errors may interfere in steps of decision

making such as the generation of alternatives and evaluation of consequences (Simon, 1990). Other theories that follow in this section are at least partially based on this behavioral aspect of economic behavior.

Information Search and Processing. Among the five steps of consumer decision making, information search has received a lot of attention (e.g., Schmidt & Spreng, 1996). The information foraging theory (Pirolli & Card, 1999) describes the search for information as foraging, as animals – or other forms of gatherers – would scavenge around for food. This quest is based on a scent, which shows how likely it is to find a new site for food. In the information search context, this concept translates to how promising the potential source of information appears to be in achieving the goal. This theory has been mostly used to describe how people navigate the interconnected web of pages online to satisfy an information need. In this process, the rate of information gain, the ratio of the value of information gained to the cost associated with obtaining the information, is maximized. In other words, each information forager attempts to gain as much needed information with as minimal effort as possible. This theory has been mostly applied to online information search behavior.

A more expanded view of information search incorporates information processing, which considers including but not limited to memory, attention, and perception (Wickens & Carswell, 2021). Dual process theories suggest that there are two different processing systems: an automatic and subconscious process that is used in simple, everyday decision making (colloquially referred to as “System 1”) and an effortful and conscious process that is used for complex decisions (“System 2”) (Kahneman, 2011). The elaboration likelihood model (Petty &

Cacioppo, 1986) is an example of a dual process model that describes the process of attitude change and persuasion.

Consumer Knowledge and Experience. Much of consumer decision making is shaped by prior knowledge and experiences (Alba & Hutchinson, 1987). Two major components of consumer knowledge are referred to as familiarity (i.e., the number of product-related experiences that have been accumulated by the consumer) and expertise (i.e., the ability to perform product-related tasks successfully) (Alba & Hutchinson, 1987). The prevailing notion is that increased product familiarity leads to increased consumer expertise. For instance, repetition is said to improve task performance due to the reduced cognitive effort required and the increased automaticity. Also, as familiarity increases, factual knowledge, the ability to analyze information, the ability to elaborate on the given information, and the ability to remember product information also improve over time. While these constructs were originally defined in the context of buyer behavior – specifically product purchasing – they can be broadly applied to consumption behavior of products, services, and ideas (Erasmus et al., 2001). A standardized, pre-specified level of knowledge is necessary to achieve a high level of deliberation (Elwyn & Miron-Shatz, 2010), but the caveat is that in most cases, standardization has not taken place yet. With the decision environment constantly changing, such standardization is even harder to achieve.

Decision-Making Factors that Influence Well-Being

Different decision-making factors influence well-being in various ways, with some as catalysts or hindrances toward well-being.

Literacy

Originally, literacy was narrowly defined as "proficiency in reading, writing and using numbers throughout life" (UNESCO, 2023). Over time, this definition has morphed from proficiencies and/or skills that apply across decision domains to include domain-specific literacies (e.g., mental health [Bjørnsen et al., 2019], finance [Lusardi & Mitchell, 2007; Warmath & Zimmerman, 2019], and food and nutrition [Colatruglio & Slater, 2014]) that refer to content knowledge. There is a prevalence of advice for building literacy in various domains to support successful life decisions. For example, Skyward (n.d.) emphasizes 10 different literacies including visual literacy, civic/ethical literacy, and game literacy with no evidence for why so many literacies are important. Some domain-specific literacies (e.g., finance) are overly emphasized and misleadingly "hailed as the promised antidote or remedy to poor decision making" (Warmath, 2022a, p. 473). From the individual consumer's perspective, there is no sense of how many or what type(s) of literacies are needed to make decisions that promote well-being in life.

Existing evidence suggests that happiness is associated with and even precedes success across different life domains (Lyubomirsky et al., 2005). Intuitively, the antithesis should be true as well. Domain well-being is commonly understood as the ultimate goal of domain literacy (Colatruglio & Slater, 2014; Consumer Financial Protection Bureau [CFPB], 2015; Gui et al., 2017). While domain literacy should ideally be seen as an integral thread that bases the conceptualization of domain well-being (Colatruglio & Slater, 2014), the bridge between literacy and well-being is often unclear.

Decision-Making Styles or Tendencies

Individual tendencies in decision making or cognition are also known to influence the decision-making process (Goldsmith, 2009). These "styles" were initially thought to be reflective

of habitual patterns and thinking practices; however, a more recent consensus is that they need a more holistic definition by including self-evaluation and self-regulation abilities (Thunholm, 2004). Prior literature suggests that the strength of the relationship between a cognitive style and a decision outcome may be influenced by the degree of compatibility between the cognitive style's characteristics and the task (Phillips et al., 2016).

Historically, rational decision-makers were considered the epitome of ideal decision-makers. The word "rational" is the keyword that describes the economic man and his normative behavior in traditional economics. Naturally, other words that point to anything short of a person with maximizing tendencies are often considered irrational and even advised against. However, with the notion of rationality and maximization as far from achieving happiness (Schwartz et al., 2002), more realistic and incremental approaches have emerged and are more accepted (Etzioni, 1967).

Seeking Help from Others

While some decisions in life are trivial, others are consequential and can feel difficult. One way to compensate for inadequate decision-making resources is to seek help from others that have such resources. Sources that can aid an individual in their decision making are typically categorized into interpersonal and professional sources. Interpersonal sources include non-professionals (e.g., family and friends) and religious resources (Stewart et al., 2016). Often the first (Cornally & McCarthy, 2011) and most common (Kwon, 2004) source of help, interpersonal sources tend to be cost-efficient (Lachance & Tang, 2012) and provide emotional support in addition to some financial aid (Fan, 2022).

Professional sources are comprised of specialists, either through education or training, whose functional role is to offer assistance to others. They generally consider significantly more

alternatives and different attributes compared to novices (Alba & Hutchinson, 1987). Many professional services, by design, exist to support and enrich the financial health of individuals. These resources have long offered solutions that are more action-oriented and directed toward fulfilling specific needs (see Gourash, 1978 for review). Ideally, they would create "uplifting changes" to improve the quality of lives of individuals and the layers of systems to which they belong (Blocker & Barrios, 2015, p. 1). Despite these possible benefits, individuals often face barriers that are not purely due to cost. Generally, many situations that require external help tend to be about stigmatized topics (e.g., mental health [Han et al., 2018]) or are associated with distrust in help providers, lack of urgency, and many other factors (Australian Securities and Investments Commission [ASIC], 2019). Social norms and pressure are experienced more strongly by certain demographics (Addis & Mahalik, 2003; Barksdale & Molock, 2009).

Information and Choice Overload

The advancement of technology was, indeed, a double-edged sword. While it has opened access to additional information at a low cost, decision-makers' cognitive capacity to process the available information has seen little improvement (Levitin, 2014). Due to this limited capacity, the abundance of information does not necessarily lead to better choices (Simon, 1990). Such overload of information rather hinders consumers as they attempt to allocate their limited attention to locate a proper information source for their decisions (Roetzel, 2019). With the added layer of complexity of the online environment (Yu, 2006; 2011), information search has become a challenging process that threatens consumer decision making.

Decision fatigue, defined as "the impaired ability to make decisions and control behavior as a consequence of repeated acts of decision-making" (Pignatiello et al., 2020), is another problem. Derived from the strength model of self-control (Baumeister et al. 2007), decision

fatigue is understood as a phenotypic symptom of ego-depletion (Pignatiello et al. 2020). As cognitive effort increases, fatigue is likely to result (Massar et al. 2018). Experiencing decision fatigue may lead to other perpetuating issues related to decision making such as susceptibility to decision-making bias and impaired executive function (see Pignatiello et al. 2020 for review).

Misinformation and Disinformation

Misinformation is defined as false or inaccurate information, especially that which is deliberately intended to deceive (Oxford Dictionary, n.d.). Historically, misinformation has long existed in various domains such as literature, journalism, and politics in different forms such as fake news and conspiracy theories. Because misinformation tends to be variations of existing true information rather than completely fabricated information (Brennen et al., 2020), it is often difficult for consumers to discern what is true. Misinformation has a "viral nature" and disseminates much faster than the truth (Grimes, 2020).

Misinformation has received exponentially increased attention in recent years as it also spread to public health. Despite the attempts of public agencies including the Centers for Disease Control and Prevention (CDC; 2021), many individuals continue to depend on unreliable sources to obtain health-related information (Nguyen & Catalan-Matamoros, 2020). It is not a surprise that words such as "infodemic" have emerged during this disrupted time. Infodemic is a term coined by the World Health Organization (WHO; n.d.) that describes an abundance of false and misleading information that has been spread along with the spread of the COVID-19 virus. This issue not only affects individual consumers but also exacerbates public health crises by intensifying or lengthening disease outbreaks, creating an atmosphere of mistrust in health

authorities and undermining public health responses (WHO, n.d.). While the issue of misinformation is not novel, the threat of misinformation is greater than ever.

Current Landscape of Decision Making

Decision Environment

The modern-day decision making itself seems to be an irony. In a world where being fully informed is practically impossible, information-based decision-making in an era of information glut is even more impossible (Andrejevic, 2013). Yet individual consumers are expected to be able to search and use information from all the available sources. In order to make well-informed decisions, the information they find needs to be accurate and from trustworthy sources. Unfortunately, misinformation spreads significantly farther, faster, and more broadly than the truth, especially if it contains political news (Vosoughi et al., 2018). This situation has been exacerbated by the COVID-19 pandemic, especially on social media; for example, an average of 46,000 news posts per day appeared on Twitter that contained inaccurate information in March 2020 (Hollowood & Mostrous, 2020). Because misinformation tends to be variations of existing true information rather than completely fabricated information (Brennen et al., 2020), it is often difficult for consumers to discern what is true. Some consumer demographics are more vulnerable than others due to low digital literacy (Ramsetty & Adams, 2020; Seo et al., 2021).

Consumer Policy and Education

One problem from a practical lens is that increasingly more expectations are put on modern-day consumers without enough policy measures to protect or equip them. In a recent survey, 65% of Americans showed support for tech companies to regulate false information online, and 55% supported the U.S. government to take the same action (St. Aubin & Liedke, 2023). Such statistics suggest that individual consumers do recognize that their access to quality

information is at risk and also desire and feel the need for greater protection in their decision making.

An empowered consumer is defined as someone who can take advantage of the competitive market and is knowledgeable and self-reliant (McGregor, 2005). Policymakers often resort to education or "giving [consumers] the right … information, at the right time," as the solution assuming that more information will empower them to make the right decisions (McGregor, 2005, p. 437). Unfortunately, this is neither welcomed by the recipients nor proven effective due to the speed and unpredictability of the marketplace (Willis, 2013). An ideal solution ought to be more durable, perhaps one that can embrace the irrationality in decision making and the unexpected factors in the surrounding environment.

Gaps in the Existing Literature

Decision making is a multifaceted and dynamic task that is ongoing. Despite the multifaceted and dynamic nature of decision making, the existing body of literature is "fragmented" (Payne et al., 1993, p. 6) in that it often tends to focus on a single decision without considering components that are part of the entire decision-making process such as the consequences over time. Also, many existing studies have also been conducted in a single domain of life with the assumption that all other factors would stay constant. These factors may be present in the future (after the decision is made) or even exist outside that given domain. For example, an individual consumer that is making a health-related decision may have to consider the possible repercussions in their household finance and work as well as the previous health-related decisions they made. They may have to even consider what they would do when they can

no longer make quality decisions. Most existing literature does not capture such a process that occurs from an individual consumer's perspective.

Moreover, existing literature generally categorizes decision factors into three groups: person (e.g., cognitive ability, prior knowledge), (social) context or situation (e.g., accountability, group membership), and task or problem (e.g., task variables, context variables) factors (Chan, 2013; Payne et al., 1993). However, the scope covered by this categorization is limited to a single decision as opposed to a series of decisions over time.

3. Conceptual Framework

This dissertation suggests three shifts in viewing consumer decision making. *The first shift is from a single decision to many decisions or a series of decisions.* This zoom-out can help expand the focus from the outcome to the entire decision-making process. *The second is a shift from decision to decision-maker.* Decision makers that go through this process should be the focus, rather than the decisions they make. This change in perspective can highlight more eventual outcomes such as well-being rather than immediate decision-related outcomes such as accuracy and satisfaction that are often difficult to measure in an uncertain environment (Sainfort & Booske, 2000). *The final shift is from a controlled context to a multilayered dynamic context.* Examining factors that are physically, psychologically, and temporally outside the given decision that directly or indirectly influence the decision can help with understanding the fuller picture. In making these shifts, this dissertation integrates the strength model of self-control with the socioecological model by examining the factors related to durable decision making in helping or

deterring the achievement of well-being at different levels of systems of which the given individual is part.

Strength Model of Self-Control

The strength model of self-control (Baumeister et al., 2007) is based on the notion that the resources to make decisions are limited and get depleted over time, akin to the muscles of the human body. Thus, decisions are influenced by prior decisions and their negative consequences. Disregarding the effects over time, the current solution to the depletion offered by this theory is more temporary and instant in that increasing the blood glucose level (e.g., through drinking a glass of lemonade with sugar [Gailliot et al., 2007]) can mitigate the negative effects of the previous decision task. Even this solution has been found to have mixed evidence with inconsistent replications (Baumeister et al., 2018). An ideal solution ought to be more long-lasting, perhaps one that can embrace the irrationality in decision making and the unexpected factors in the surrounding environment.

I extend the strength model of self-control (Baumeister et al., 2007) by introducing the concept of durable decision making as a means of assessing an individual's ability to maintain good decision making over a series of decisions. I argue that durability is a quality that needs to be prioritized and emphasized in consumer decision making. A durable decision-maker is someone who is "able to withstand wear, pressure, or damage" (Oxford English Dictionary, n.d.) regardless of any changes in their environment. They are akin to an avid marathon runner in that they have many effortful experiences over time. In the modern-day decision environment, there exist too many disruptions in the individual consumer's decision-making process. As will be shown in one of the studies later, even the seemingly ideal decision-makers are not immune from the problems of the modern-day world. A durable decision-maker would be able to persist in

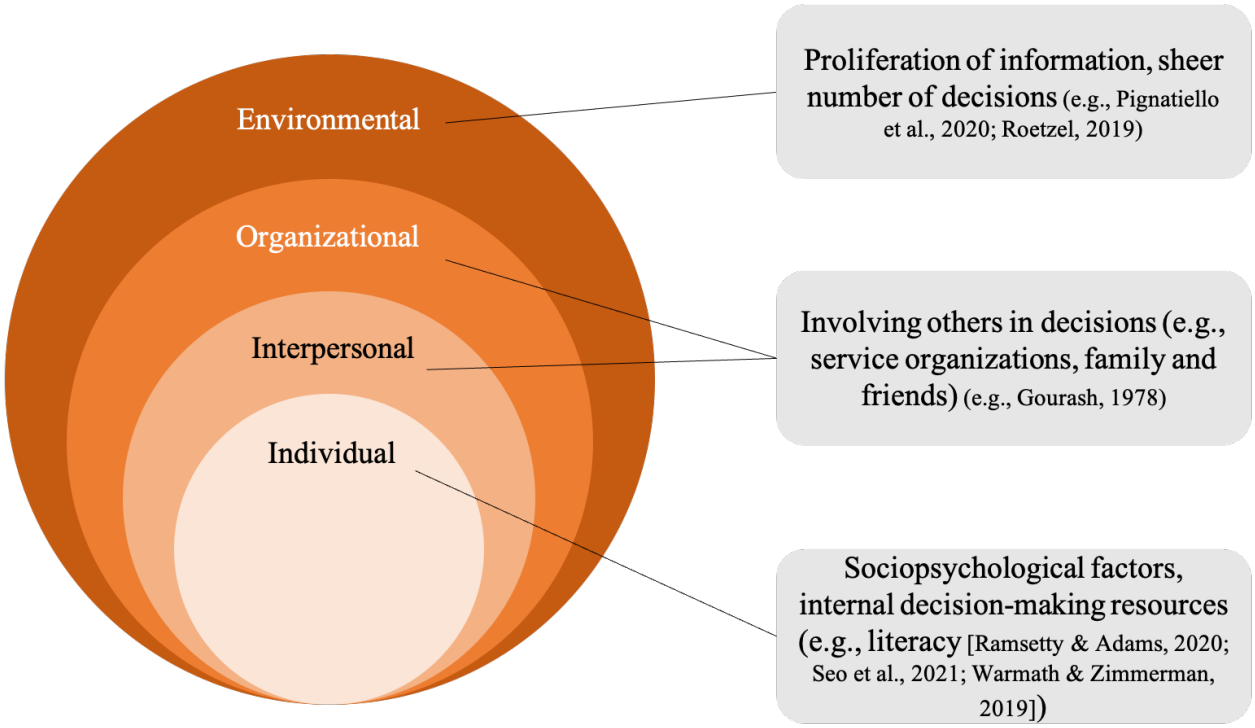
their decision-making process regardless of any changes in their decision environment and stand the test of time. They are also aware of the available resources and the current level of decision making. They understand when to stop or take a break and are able to seek help from the appropriate resources if necessary. The decision-making skills developed in one decision area of their life may apply in other decision areas to be further enhanced.

Socioecological Model

Numerous factors influence decision making of consumers, among which many have more negative effects than positive (e.g., Addis & Mahalik, 2003; Barksdale & Molock, 2009; Nguyen & Catalan-Matamoros, 2020; Pignatiello et al., 2020). These factors can be organized into different levels of systems in relation to the individual decision maker. The organization of this dissertation is broadly inspired by the socioecological model (Bronfenbrenner, 1979) which illustrates the systems in which an individual takes part. The individual at the center is surrounded by various systems, with the innermost system being the closest and most influential and the outer systems gradually growing in distance and decreasing in influence (Kilanowski, 2017). Figure 2.1 depicts this model. Each level has a number of different factors related to decision making that draw the given decision-maker closer to or further away from achieving well-being.

Figure 2.1

Different Levels of Systems that Influence Decision Making



Individual Level

At the individual level, there are sociopsychological factors and internal decision-making resources (e.g., knowledge, self-efficacy) that may influence the decision-making process. The sociopsychological factors, including personality and individual tendencies, may function as catalysts or hindrances toward well-being. Some decision-making resources may be prone to extinction over time, but others may be more durable throughout the given individual's decision-making process despite the disruption.

The individual factor that will be studied in this dissertation is literacy. Chapter 3 is based on the notion that there is no sense of which literacies are needed to make decisions that promote well-being from the individual consumer's perspective. I argue that a more foundational type of

literacy, which is believed to be more durable and less prone to extinction over time, may play a more important role in achieving well-being than domain-specific literacy.

Interpersonal and Organizational Level

At the interpersonal and organizational level, the given individual may deliberately or unintentionally involve others because decisions are not made in a "social vacuum" (Payne et al., 1993, p. 3). Based on their needs, the individual may seek help from others to enhance their decision making. These others may be interpersonal sources such as friends and family, or professional sources such as financial services and institutions (Gourash, 1978). Depending on the type of help needed, these sources can provide practical help and/or emotional aid (Gourash, 1978). The individual may also take a more passive approach. For instance, they may be on the receiving end of information dissemination through popular and social media.

The organizational factor that will be studied in this dissertation is help-seeking in the financial domain, which has been viewed as a coping strategy mostly in the curative sense (Lazarus & Folkman, 1984). Chapter 4 argues that financial help-seeking can also be preventive in that it can occur before an acute financial problem and produce more durable decision makers.

Environmental Level

At the environmental level, unique components of modern-day decision making such as the proliferation of information and the sheer number of decisions challenge individual decision-makers' capacity. These are disruptions that pull individuals away from their well-being and influence their durability in decision making.

The environmental factor that will be studied in this dissertation is decision fatigue, which describes the weariness that results from repeated decision making. Chapter 5 will show

that decision fatigue is a complex and consequential phenomenon that is difficult to avoid even for seemingly ideal decision makers and presents one example of a durable resource against it.

Overall, my research adopts a consumer-centric perspective by shifting the focus from the single-decision context and/or domain-wide view to the individual consumer's eyes that considers the entire decision-making process. This shift considers the effects over time, putting the focus on the decision makers that journey through this process. Each domain is dominated by strong voices of scholars, policymakers, marketers and educators that often do not consider the factors outside their domain or scope. Such an approach often leaves individual consumers baffled and oversaturated with information. A consumer-centric perspective considers all domains of life as well as levels of systems that influence decision making. This dissertation extends the strength model of self-control by suggesting other ways (e.g., building durable decision-making resources) to avoid depletion.

Two studies in this dissertation are conducted in the context of financial decision making and one study is conducted both in financial and health domains. Financial decisions are abundant and consequential (Greenberg & Hershfield, 2019). Well-being in the financial domain is also closely related to overall well-being (Netemeyer et al., 2018). The health domain offers practical and service-related insights as well.

4. Significance of this Research Agenda

Taken together, the studies in this dissertation contribute to consumer and decision sciences research and theory by demonstrating the importance of durability in consumer decision making in achieving well-being. By examining three of the different levels of systems (i.e., individual, organizational and environmental) that influence decision making, the insights

produced in this dissertation are one step closer to resembling the multilayered dynamic context that is reality. The knowledge generated from these studies corroborates and updates the existing research on consumer decision making such as the financial help-seeking literature (Grable & Joo, 2001) and the elaboration likelihood model (Petty & Cacioppo, 1986). The insights from these studies can also inform public policy, marketing, services and consumer education in creating a safer and better-informed decision environment for individual consumers with consideration of the longevity of the process and the durability that is produced as a result.

CHAPTER 3

ON A NEED-TO-KNOW BASIS: EXPLORING THE RELATIVE IMPORTANCE OF FOUNDATIONAL AND DOMAIN-SPECIFIC LITERACY [1]

[1] Lee, H. To be submitted to *Journal of Public Policy and Marketing*.

ABSTRACT

Literacy is one solution that has been promoted to improve poor decision making in a disruptive environment. Because the definition has expanded to include more domain-specific content knowledge and untraditional types of literacies have emerged, there is a lack of consensus and widespread confusion. Yet very few studies examine and compare literacies across different decision domains, and the individual consumer's perspective is largely missing. This study argues that a holistic, consumer-centric perspective on literacy is warranted by examining the relative contribution of foundational literacy (e.g., information literacy) and domain-specific literacy (e.g., financial and health literacies) to well-being. Using data from 386 US adults, this study found that information literacy added significant explanation power to well-being in finance and health while domain-specific literacies did not. The findings suggest that literacy-building efforts should incorporate and even prioritize more foundational forms of literacy that cut across decision domains rather than domain-specific literacies that build content knowledge for a specific set of decisions.

1. Introduction

"If you give a man a fish, he is hungry again in an hour.

If you teach him to catch a fish, you do him a good turn."

Decision making is a process that can serve as a pathway to well-being (Greenberg & Hershfield, 2018; Páez-Gallego et al., 2020) but also is one with many disruptions and

dysfunctions (Bettman et al.,1991). Along this pathway, many factors are believed to play a role in facilitating or further complicating this process (Bettman et al.,1991). This process is more complex than ever with the proliferation of information (Bawden & Robinson, 2020; Roetzel, 2019), the increasing number of financial products and services on the market (Altman, 2012; Chernev et al., 2015), the added complexity of the online space (Darley et al., 2010), the overabundance of misinformation (Van der Linden, 2022), and the sheer number of decisions that need to be made based on these factors (Pignatiello et al., 2020), this process is more complex than ever. Although access to new information has become easy, our capacity to search for and use the information has remained stagnant (Altman, 2012; Levitin, 2014; Roetzel, 2019; Simon, 1957). The existing devices (e.g., public policy and consumer education) that were designed to help empower individual consumers by balancing the power and information between the seller and the buyer often do not seem to be as effective as the original intention (Akerlof, 1978; Fernandes et al., 2014; McGregor, 2005). For example, literacy education in the financial domain aims to increase participant stores of explicit knowledge based on the belief that more knowledge will lead to more favorable financial outcomes (Collins & O'Rourke, 2010; Fernandes et al., 2014; Warmath, 2022a). However, investment in financial education is only 4% of marketing investment in the financial sector (Consumer Financial Protection Bureau, 2022). Such a large discrepancy cannot be overcome in updating individual consumers on the newest financial products and services on the market (Willis, 2013). With so many increasingly consequential decisions to make in such a dynamic decision environment and with a lack of protective measures, individual consumers are burdened more than ever in their decision making.

Literacy is one factor that has been promoted in consumer education to facilitate decision making and foster well-being (Warmath, 2021). A foundational definition of basic literacy

considers “proficiency in reading, writing and using numbers throughout life” (UNESCO, 2024). Literacy is a powerful tool that empowers, liberates, and enriches individuals and their lives (UNESCO, 2024). Literacy is also a key indicator of a population’s education level as it is part of the United Nations’ fourth Sustainable Development Goal (SDG): Quality Education (United Nations, n.d.b.).

The concept of literacy has expanded much beyond reading, writing, and counting skills. On the other side of the continuum is literacy as “part of a larger set of skills, … education for sustainable development and global citizenship as well as job-specific skills” (UNESCO, 2024). Literacy has expanded from general proficiencies and/or skills that apply across decision domains to include more comprehensive domain-specific literacies that often refer to content knowledge or other added aspects of literacy (Bjørnsen et al., 2019; Colatruglio & Slater, 2014; Hirsch, 1988; Lusardi & Mitchell, 2007; Maine et al., 2019; McGregor, 2011; Nutbeam, 2008; Sentell et al., 2020; Warmath & Zimmerman, 2019). When framed or measured as knowledge, literacy has mixed evidence in its relation to successful decision making and well-being (Collins & O’Rourke, 2010; Warmath, 2021). Some recent voices worry that some domain-specific literacies (e.g., finance knowledge) are overly emphasized and misleadingly “hailed as the promised antidote or remedy to poor decision making” (Warmath, 2022a, p. 473). As it has become “fashionable” to consider these nontraditional types of literacies (e.g., survival literacy [Powell, 1977, p. 488]), there is also a prevalence of advice for building literacy in various domains to support successful life decisions. For example, a blog post on Skyward (n.d.) emphasizes 10 different literacies, including visual literacy, civic/ethical literacy, and game literacy, with no evidence for why so many or which types of literacies are important. The right

kind of literacy can be a powerful tool, but with the current lack of consensus and widespread confusion, it is merely a "magic word" (Palumbo, 2016, p. 99).

While there is much work done in each domain, from the individual consumer's perspective, there is no sense of how many or what type(s) of literacies are needed to make decisions that promote well-being in life. Each decision domain argues for the importance of its own literacy, whereas the individual consumer's perspective is largely missing in the existing literature. Simplification or consolidation is warranted in order to prioritize obtaining, educating, and promoting more important types of literacy. Such a comparison would help illuminate the perspective of individual consumers. Yet no study was found that examined the relative importance of general versus domain-specific literacy. Thus, this paper addresses the question: Is it sufficient to have more general forms of literacy that apply across life domains, or is it necessary to build literacy in each domain of life?

2. Theoretical Framework

In this paper, I argue that a more foundational type of literacy or meta-literacy that cuts across multiple domains of life (Mackey & Jacobson, 2011) may be more beneficial in achieving well-being in a given domain of life compared to domain-specific literacy. This type of literacy is not only conceptually simple, but it is also easier to acquire for beginners (Bloom et al., 1956) and is less prone to issues that are present with pure content knowledge (Willis, 2013). The argument for advocating a foundational type of literacy over a domain-specific literacy is presented below:

Reductionism vs. Expansionism

The reductionist perspective is the belief that concepts can be "reduced, decomposed, or disassembled to ultimately simple elements, indivisible parts," akin to cells in biology and atoms in physics (Ackoff, 1973, p. 661). These simpler components seem to be more accessible, tangible and directly observable. This view has opened the way to analytical thinking, as analysis of a problem begins with taking the concepts apart and solving each problem to obtain the whole solution. On the contrary, the expansionist perspective is the systems-based belief that everything is part of a larger whole and that each part is interrelated (Ackoff, 1973). Here, the focus is not on each part but on the whole systems they constitute. This view is different from the reductionist perspective yet still compatible with it.

Foundational Literacy vs. Domain-Specific Literacy

A foundational or meta-literacy would represent a reductionist perspective. This single and simpler form of literacy can be used more broadly to inform decisions across life domains rather than being limited to a single domain. The same notion has been found in the well-established relationships between constructs such as numeracy and financial literacy (Lusardi, 2012).

Based on the reductionist vs. expansionist perspectives, Powell (1977) advocated for the simplicity of literacy. He suggested that basic literacy should be stable, generalizable, measurable and unidimensional as it should represent a minimal indicator level that can be used as the building blocks of learning structure. This basic literacy would also be resistant to extinction (due to lack of usage over time and the limits of the human mind [Alba et al., 1991; Simon, 1957]) because it would have enough automaticity. He argued that it is important to "search, locate, and identify the least common denominators of the basic skill area" (Powell, 1977, p. 491). Then, these foundational literacies can be developed further with extension,

refinement and specialization related to a given domain if needed (e.g., for a specific occupation). Considering the limited capacity of the human mind (Simon, 1957) and the potential deterioration of literacy and knowledge (Alba et al., 1991; Powell, 1977; Willis, 2013), it may make more sense for individuals to prioritize obtaining these more foundational literacies over more domain-specific literacies.

While Powell (1977) identified fundamental reasons why a simpler type of literacy may be more beneficial, the concept of literacy has undergone many changes since. While the basic literacy in this time period seems to have been shifting from the mere ability to read and write to the inclusion of simple computing and arithmetic (Powell 1977), numeracy now seems to be part of the basic definition of literacy along with reading and writing (UNESCO, 2024). In a modern-day setting with a greater number of more complicated literacies, this argument needs to be revisited, applied and tested.

Information literacy (i.e., "the set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning" [Association of College and Research Libraries, 2015, p. 3]) was selected as the foundational literacy of interest. Even among non-peer-reviewed sources, information literacy is considered an important pillar of consumer literacy (Lynch, 2019). Information literacy can be highly adaptable to the online setting because it "integrates emerging technologies and unifies multiple literacy types," such as media literacy and digital literacy (Mackey & Jacobson, 2011). Higher information literacy was associated with an increased likelihood of identifying fake news stories, whereas other similar types of literacies (i.e., media, news, and digital) did not (Jones-Jang et al., 2021). Information literacy has been linked to increased trust in reliable and accurate

sources (Lee et al., 2020). Although younger consumers tend to be more familiar with the digital environment (i.e., higher in digital nativity), information literacy was the construct that had a stronger relationship with online information search competencies (Çoklar et al., 2017). Information literacy was also closely related to self-efficacy in using information and communication technologies as well as gender and socioeconomic background among students (Hatlevik et al., 2018).

On the other side of the spectrum lies the idea that literacies specific to different life domains are required to make effective decisions in those domains. These domain-specific literacies are narrower and deeper as they contain more domain-specific knowledge that is not part of the foundational literacy. While termed "literacy," they also often refer to content knowledge in a specific domain (e.g., mental health [Bjørnsen et al., 2019], finance [Lusardi & Mitchell, 2007; Warmath & Zimmerman, 2019], food and nutrition [Colatruglio & Slater, 2014; Palumbo, 2016], and culture [Hirsch, 1988]). Some are more comprehensive than others by moving beyond just knowledge (McGregor, 2011; Nutbeam, 2008; Sentell et al., 2020; Warmath & Zimmerman, 2019) or even encouraging individuals to contribute to the ongoing dialogue rather than passively receiving the knowledge (e.g., cultural literacy [Maine et al., Lähdesmäki 2019]). Consequently, obtaining and maintaining a certain level of these literacies can be more difficult. These may also be related to other domain-specific literacies but would not directly inform decisions made in those domains of life.

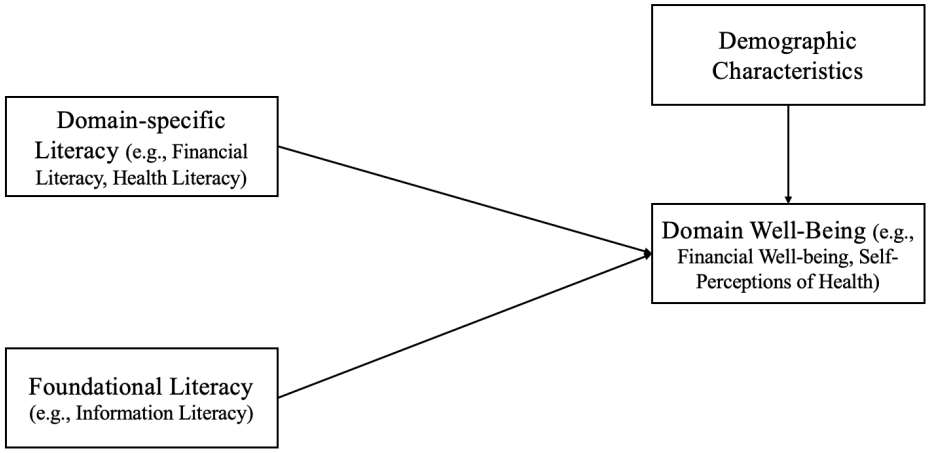
For the present research, health and finance were selected as two life domains of interest. The literacies in these two domains have been either conceptually or empirically correlated with information literacy (e.g., financial literacy [Špiranec et al., 2012]; health literacy [Frisch et al., 2012; Lawless et al., 2016; Mahmoudi & Taheri, 2015]). Specifically for health literacy, a

snapshot concept comparison showed that it shared common antecedents and attributes with information literacy (Lawless et al., 2016). Also, health literacy and information literacy both include similar components, such as factual and procedural knowledge, awareness, attitudes, and critical and affective dimensions, but other literacy types similar to information literacy (e.g., (new) media literacy) do not involve affective dimension and attitudes (see Frisch et al., 2012 for review). Thus, it is reasonable to assume that information literacy may be a transferable skill that can act as a facilitator in any general decision-making process that is not limited to a single domain. This would suggest that domain-specific literacy may not play a significant role in the well-being of the given domain once foundational literacy is considered. Figure 3.1 illustrates the conceptual model. The following hypotheses were tested in financial and health domains:

> *H_1: Controlling for demographics, information literacy will be positively associated with domain-specific well-being (e.g., financial well-being, self-perceptions of health).*
>
> *H_2: Controlling for demographics, domain-specific literacy (e.g., financial literacy, health literacy) will not add incrementally to domain-specific well-being as the outcome.*

Figure 3.1

Conceptual Model of Comparing Foundational and Domain-Specific Literacies



3. Methods

Data

Data comes from an online survey of 386 adults (18 years or older) residing in the United States in October 2023. Participants were selected from the Precision Sample panel using age and location as the primary inclusion criteria. Quotas were set for sex at birth, age, race/ethnicity, and income to ensure a representative sample. The project was approved by the Human Research Protection Program at the University of Georgia. Missing data for all variables of interest was less than 5% across survey questions and respondents, which meets established thresholds (Tabachnick et al., 2013).

Measures

Dependent Variable

The dependent variable was well-being. For the financial domain, the Financial Well-being Scale (Netemeyer et al., 2018) was used. This scale contains two dimensions: Current Money Management Stress (CMMS) and Expected Future Financial Security (EFFS). Participants were asked the extent to which they agreed with each statement on a five-point scale anchored by Strongly agree (coded as 5) and Strongly disagree (coded as 1). Example items for CMMS included "I am behind with my finances" and "I am unable to enjoy life because I obsess too much about money" and for EFFS included "I am becoming financially secure" and "I will achieve the financial goals that I have set for myself." Each measure was a summed score of the five items with possible values ranging from 5 to 25 with 25 representing a high level of financial well-being.

For the health domain, two single-item questions were used to assess physical and mental health (Doiron et al. 2015). Participants were asked "Thinking about the past 30 days, how would you describe your physical/mental health?" on a five-point scale anchored by Excellent (coded as 5) and Poor (coded as 1).

Independent Variables

Foundational literacy was measured as information literacy. Domain-specific literacy was measured as financial literacy and health literacy. For information literacy, the 17-item Information Literacy Self-efficacy Scale (Kurbanoglu et al., 2006) was used. Participants were asked how well they believed they could do activities such as selecting information most appropriate to an information need and using electronic information sources. Responses to each item were captured using a five-point scale anchored by Extremely well (coded as 5) to Not well at all (coded as 1). The measure was a summed score of the seventeen items with values ranging from 17 to 85 with 85 representing a high level of information literacy.

For financial literacy, a measure of financial knowledge was used as it is the most common definition and measure of financial literacy (Lusardi, 2019). More specifically, the Houts and Knoll (2020) 10-item Financial Knowledge Scale was used. To avoid respondent fatigue, each participant was given a randomly selected 4 of the 10 items. The measure was calculated as percent of the questions asked that were answered correctly by dividing the number of questions answered correctly by the number of questions asked.

For health literacy, ten items from the All Aspects of Health Literacy Scale (Chinn & McCarthy, 2013) were used. Participants responded to the items from the three dimensions of health literacy: functional health (example item: “How often do you need someone to help you when you are given information to read by your doctor, nurse or pharmacist?”), communicative health (example item: “When you talk to a doctor or nurse, do you give them all the information they need to help you?”), and critical health (example item: “How often do you try to work out whether information about your health can be trusted?”). Response options for these items were Yes (coded as 1) and No (coded as 0). For the purposes of the analysis reported here, the three dimensions were summed to produce a score of the ten items with values ranging from 0 to 10 with 10 representing a high level of health literacy.

Control Variables

Control variables were demographic variables that previous literature has found to be relevant. For the financial domain, sex, household income, educational attainment, and age in years were included as they are related to financial well-being (Netemeyer et al., 2018). Sex was measured by asking the respondent what sex was recorded at birth. The response options were Male, Female, Another term, and Prefer not to say. The last two categories were combined as the Other (n = 1). A binary indicator was created with Male coded as 1 and Female and Other coded

as 0, which was used as the comparison category. Income was asked as the household income. Eight response options were given: Less than $25,000, $25,000 to $49,999, $50,000 to $74,999, $75,000 to $99,999, $100,000 to $149,999, $150,000 to $199,999, $200,000 or more, and Prefer not to say. A continuous income variable was created by taking the midpoint of each range and $87,500 for the Prefer not to say option. The continuous household income was standardized prior to model analysis. Education was captured as the highest level of education reported by a respondent. Seven response options were given: Less than high school diploma, High school diploma/GED, Some college, Associate's degree, Bachelor's degree, and Graduate or professional degree. A binary indicator was created with Bachelor's degree or above coded as 1 and below Undergraduate degree coded as 0. Age was asked as year of birth. A continuous age variable was created by subtracting the year born from 2023, the survey implementation year.

For the health domain, marital status, race/ethnicity, and region were added in addition to sex, household income, educational attainment, and age, as they are some of the common social determinants of health (Public Health Indicator Based Information System, n.d.). Marital status was assessed using the response options of Married, Living with partner, Divorced or Separated, Widowed, and Single, never married. Binary indicator variables were created for each response. Married was used as the comparison category. Race and ethnicity were asked with two-part categorical questions, which were then recoded to Hispanic, Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian, Non-Hispanic multi-racial, and Non-Hispanic other race. Non-Hispanic White was used as the comparison category. Region was assessed by asking how the respondent would describe where they lived with three response options: Urban, Suburban, and rural. Binary indicator variables were created for each response. Urban was used as the comparison category.

All measures of interest were internally reliable: current money management stress (α = .908), expected future financial security (α = .917), information literacy (α = .956), functional health literacy (α = .887), communicative health literacy (α = .916), and critical health literacy (α = .842).

Analytical Strategy

Descriptive statistics were used to examine sample characteristics and the variables of interest. Bivariate correlations were used between the variables of interest to examine their relationship at the zero-order level. VIFs (variance inflation factors) were examined for the presence of multicollinearity between these variables. Hierarchical linear regressions were used to examine the incremental contribution of the different literacy types. In the hierarchical models, the level 1 model included demographic control variables that have been shown to correlate with well-being in the financial and health domains. Level 2 added information literacy to assess Hypothesis 1. Then level 3 added domain-specific literacy to assess Hypothesis 2. All analyses were conducted using SPSS version 29.

3. Results

Sample Characteristics

The mean age of the sample was 46.19 years old with a standard deviation of 16.75 years. The mean household income was $86,107 with a standard deviation of $69,752. 47.2% were male and 52.6% were female. The sample consisted of 48.7% non-Hispanic White, which was more diverse compared to the 2023 US census, which showed 58.9% (United States Census Bureau, 2023). 37.3% of the sample had an undergraduate degree or higher. 50.2% identified themselves as married. Table 3.1 shows detailed sample characteristics.

Table 3.1

Sample Characteristics

Variables	Mean | Incidence	SD
Age	46.19	16.75
Household income	$86,107.51	$69,752.02
Gender		
Male	47.2%	
Female	52.6%	
Other	.3%	
Race/ethnicity		
Hispanic	25.4%	
Non-Hispanic White	48.7%	
Non-Hispanic Black	20.7%	
Non-Hispanic Asian	2.3%	
Non-Hispanic multi-racial	1.8%	
Non-Hispanic other	8.8%	
Education		
Below undergraduate	62.7%	
Undergraduate or higher	37.3%	
Marital status		
Single, never married	25.9%	
Married	50.2%	
Living with partner	11.8%	
Divorced/ separated	9.9%	
Widowed	2.3%	

Relationships Between Variables of Interest

Most variables were correlated at the zero order in the expected direction with some exceptions especially with financial literacy. Information literacy was significantly and positively correlated with health literacy, EFFS, physical health, and mental health, but not with financial literacy or CMMS. Financial literacy in the form of financial knowledge was not significantly correlated with either financial well-being outcomes (i.e., CMMS and EFFS), consistent with some prior literature (see Warmath, 2021 for review). Health literacy was significantly and positively correlated with mental health but not with physical health. Financial literacy and health literacy were not correlated. Descriptive statistics and bivariate correlation results are shown in Table 3.2.

Table 3.2

Descriptive Statistics and Correlations Between Variables of Interest

	M	SD	1	2	3	4	5	6
1. Information literacy	58.08	15.34						
2. Financial literacy	33.48	22.01	-.062					
3. Health literacy	7.60	1.86	.198***	.040				
4. Financial well-being: CMMS	15.12	5.80	.043	-.017	-.073			
5. Financial well-being: EFFS	16.94	5.56	.344***	.100	.264***	-.458***		
6. Physical health	3.37	1.00	.271***	-.075	.067	-.104*	.364***	
7. Mental health	3.28	1.16	.260***	-.074	.163**	-.285***	.469***	.537***

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

Model Results

Financial Domain Results

Table 3.3 shows results for current money management stress. The demographic model explained 13.4% of the variance in current money management stress. Adding information literacy to the model did not contribute significantly to the explanatory power of the model ($\Delta R^2 = .004$, $p = .213$). Information literacy was not significantly associated with current money management stress (B = .023, $p = .213$). Adding financial literacy to the model did not contribute significantly to the explanatory power of the model ($\Delta R^2 = .000$, $p = .934$). Financial literacy was not significantly associated with current money management stress (B = .001, $p = .934$).

Table 3.3

Model Results for Current Money Management Stress Dimension of Financial Well-being

	Model 1			Model 2			Model 3		
Variables	B	SE	β	B	SE	β	B	SE	β
Information literacy				**.023**	**.019**	**.062**	**.023**	**.019**	**.062**
Financial literacy							**.001**	**.013**	**.004**
Constant	19.647	.883	***	18.225	1.441	***	18.184	1.528	***
Control variables									
Male	-.399	.559	-.034	-.451	.560	-.039	-.447	.562	-.039
Household income	-1.112	.316	-.192***	-1.162	.319	-.201***	-1.162	.319	-.200***
Bachelor's +	-.171	.639	-.014	-.286	.645	-.024	-.293	.651	-.024
Age in years	-.092	.017	-.267***	-.090	.017	-.259***	-.090	.017	-.259***
R^2	.134			.137			.137		
F	14.706			12.093			10.053		
p	<.001			<.001			<.001		
Change in R^2				.003			.000		
p				.213			.934		

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

Table 3.4 shows results for expected future financial security. The demographic model explained 8.1% of the variance in expected future financial security. Adding information literacy to the model contributed significantly to the explanatory power of the model ($\Delta R^2 = .091$, $p < .001$). Information literacy was significantly and positively associated with expected future financial security (B = .113, $p < .001$). Adding financial literacy to the model did not contribute significantly to the explanatory power of the model ($\Delta R^2 = .007$, $p = .076$). Financial literacy was not significantly associated with expected future financial security (B = -.021, $p = .076$), while information literacy stayed significant (B = .111, $p < .001$).

Table 3.4

Model Results for Expected Future Financial Security Dimension of Financial Well-being

	Model 1			Model 2			Model 3		
Variables	B	SE	β	B	SE	β	B	SE	β
Information literacy				**.113**	**.018**	**.313*** **	**.111**	**.018**	**.306*** **
Financial literacy							**-.021**	**.012**	**-.084**
Constant	16.411	.872	***	9.493	1.354	***	10.332	1.430	***
Control variables									
Male	1.065	.552	.096	.814	.526	.073	.739	.526	.066
Household income	1.539	.313	.277***	1.292	.300	.232***	1.290	.299	.232***
Bachelor's +	.066	.631	.006	-.495	.606	-.043	-.359	.609	-.031
Age in years	.000	.017	.000	.014	.016	.043	.015	.016	.044
R^2	.081			.172			.179		
F	8.361			15.758			13.736		
p	<.001			<.001			<.001		
Change in R^2				.091			.007		
p				<.001			.076		

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

Health Domain Results

Table 3.5 shows results for physical well-being. The demographic model explained 9.2% of the variance in physical well-being. Adding information literacy to the model contributed significantly to the explanatory power of the model ($\Delta R^2 = .059$, $p < .001$). Information literacy was significantly and positively associated with physical well-being (B = .017, $p < .001$). Adding health literacy to the model did not contribute significantly to the explanatory power of the model ($\Delta R^2 = .002$, $p = .440$). Health literacy was not significantly associated with physical well-being (B = .029, $p = .440$), while information literacy stayed significant (B = .016, $p < .001$).

Table 3.5

Model Results for Physical Well-being

	Model 1			Model 2			Model 3		
Variables	B	SE	β	B	SE	β	B	SE	β
Information literacy				**.017**	**.004**	**.256*** **	**.016**	**.004**	**.245*** **
Health literacy							**.029**	**.038**	**.049**
Constant	3.724	.306	***	2.746	.379	***	2.571	.441	***
Control variables									
Male	.229	.138	.113	.203	.134	.100	.211	.134	.104
Household income	.094	.082	.087	.046	.081	.043	.050	.081	.047
Bachelor's +	.173	.144	.085	.096	.141	.047	.101	.141	.050
Age in years	-.013	.005	-.198**	-.011	.004	-.176*	-.012	.004	-.183
Living with partner	-.172	.216	-.055	-.167	.210	-.053	-.163	.210	-.052
Divorced/separated	-.084	.222	-.025	-.106	.215	-.031	-.098	.216	-.029
Widowed	.732	.428	.108	.757	.414	.112	.765	.415	.113
Single, never married	-.079	.174	-.034	-.077	.169	-.034	-.065	.170	-.028
Hispanic	.125	.166	.057	.109	.161	.050	.112	.161	.052
Non-Hispanic Black	.260	.252	.071	.128	.246	.035	.161	.250	.044
Non-Hispanic Asian	-.083	.399	-.013	-.060	.387	-.010	-.073	.387	-.012
Non-Hispanic multi	-.372	.461	-.050	-.583	.449	-.079	-.592	.450	-.080
Non-Hispanic other	.041	.221	.013	-.008	.214	-.003	-.023	.216	-.007
Suburban	.094	.148	.046	.128	.144	.063	.126	.144	.062
Rural	-.287	.197	-.108	-.303	.191	-.114	-.300	.191	-.113
R^2	.092			.151			.154		
F	1.670			2.745			2.615		
p	.057			<.001			<.001		
Change in R^2				.059			.002		
p				<.001			.440		

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

Table 3.6 shows results for mental well-being. The demographic model explained 6.2% of the variance in mental well-being. Adding information literacy to the model contributed significantly to the explanatory power of the model ($\Delta R^2 = .048$, $p < .001$). Information literacy was significantly and positively associated with mental well-being (B = .017, $p < .001$). Adding health literacy to the model did not contribute significantly to the explanatory power of the model ($\Delta R^2 = .006$, $p = .218$). Health literacy was not significantly associated with mental well-being (B = .055, $p = .218$), while information literacy stayed significant (B = .016, $p < .001$).

Table 3.6

Model Results for Mental Well-being

	Model 1			Model 2			Model 3		
Variables	B	SE	β	B	SE	β	B	SE	β
Information literacy				**.017**	**.005**	**.231*** **	**.016**	**.005**	**.213** **
Health literacy							**.055**	**.044**	**.079**
Constant	2.556	.358	***	1.543	.446	**	1.217	.518	*
Control variables									
Male	.220	.161	.095	.193	.157	.083	.208	.158	.089
Household income	.129	.096	.104	.080	.095	.064	.088	.095	.071
Bachelor's +	.103	.168	.044	.023	.165	.010	.033	.165	.014
Age in years	.006	.005	.082	.007	.005	.103	.007	.005	.091
Living with partner	-.058	.253	-.016	-.053	.247	-.015	-.045	.246	-.013
Divorced/separated	-.055	.259	-.014	-.078	.253	-.020	-.063	.253	-.016
Widowed	.563	.499	.072	.589	.488	.076	.605	.487	.078
Single, never married	-.093	.203	-.035	-.092	.199	-.035	-.070	.199	-.026
Hispanic	.226	.194	.090	.210	.189	.084	.216	.189	.086
Non-Hispanic Black	.160	.294	.038	.023	.289	.006	.085	.293	.020
Non-Hispanic Asian	-.618	.466	-.086	-.594	.455	-.082	-.619	.455	-.086
Non-Hispanic multi	.517	.538	.061	.299	.528	.035	.281	.528	.033
Non-Hispanic other	.089	.258	.024	.039	.252	.011	.010	.253	.003
Suburban	.222	.173	.096	.258	.169	.111	.254	.169	.110
Rural	.143	.230	.047	.126	.224	.041	.131	.224	.043
R^2	.062			.110			.116		
F	1.091			1.908			1.889		
p				.020			.020		
Change in R^2				.048			.006		
p				<.001			.218		

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

4. Discussion

In this study, I aimed to compare the relative importance of foundational and domain-specific literacy in achieving well-being. I used four sets of hierarchical linear regression to examine which type of literacy added more power in explaining domain well-being as the outcome. Overall, I found that domain-specific literacies (i.e., financial and health literacies) did not tend to add significant explanatory power or play a significant role in constructing domain well-being, while foundational literacy (i.e., information literacy) did. This pattern was more consistent in the health domain than in the financial domain.

In the financial domain, neither information nor financial literacy (i.e., knowledge) helped improve current money management stress. In a highly stressful financial situation, information literacy alone does not appear to be sufficient to support effective action to address the issues. Something else is required. One possible solution would be to delegate the decision or seek help from an external resource, such as professional financial services (e.g., Mende & van Doorn, 2015).

For expected future financial security, information literacy remained significant even after financial knowledge, the most common definition and measure of financial literacy (Lusardi, 2019), was added to the model. The ability to search for information according to an information need seems to matter over factual financial knowledge in perceptions of future financial security. When the individual is not under acute financial stress and there is time to search for and use the information needed, information literacy is helpful. This finding suggests that information literacy may be more durable over time than specific domain knowledge, which may need updates as the financial market changes quickly and unpredictably over time (Willis, 2013).

In the health domain, information literacy remained in significant association with the individual's rating of their physical and mental health even after health literacy was added to the model. The ability to assess information needs and search for proper information seems to be sufficient for making good decisions that will lead to well-being in the health domain. More specific knowledge or expertise in the health domain may not be necessary and even redundant. Considering that health literacy and information literacy share many similarities (Frisch et al., 2012; Lawless et al., 2016), this result is not surprising. This result also supports the notion of Information literacy as a transferable skill that can be applied in more than one decision domain.

Theoretical and Empirical Contributions

This study took a holistic, consumer-centric perspective on literacy by asking what literacies are most important in supporting an individual in achieving greater well-being through their decisions. Little to no existing studies have compared literacy types across different domains, especially in their role in achieving well-being. As an exploratory step, the present study compared the role of two domain-specific literacies (i.e., financial literacy and health literacy) to the role of foundational literacy (i.e., information literacy) in achieving domain well-being (i.e., financial well-being and physical and mental well-being). The findings showed that foundational literacy generally plays a more significant role in achieving domain well-being than domain-specific literacies.

Implications for Marketers

Given the important role of information literacy, marketers should consider promoting their products and/or services in ways that allow an informationally literate individual to evaluate their offering effectively. This action would establish a marketplace that allows consumers to

make smarter choices aligned with their requirements. Such choices are more likely to lead to lasting consumer relationships with the firm or brand.

Implications for Policy Makers

From a policy perspective, the results suggest that greater emphasis should be placed on foundational literacies that inform decisions across life domains instead of continuing to build a library of domain-specific literacies. While further research is needed, these foundational literacies can be resources that are more durable compared to domain-specific knowledge, which requires frequent updates and is prone to other issues such as information overload (Willis, 2013). Instead, foundational literacies such as information literacy can be maintained and refined over time and can work across different life domains. Rather than teaching and disseminating more factual domain-specific knowledge that will be continuously changing over time before it can be used, public policy may develop a type of literacy education that can help individual decision-makers develop a foundational literacy toolkit. While this may take more effort and preparation on the front end, such resources may be more durable over time because they allow consumers to be self-sufficient in their search for the information needed. Indeed, the psychomotor domain of learning, which aligns very closely with the definition of information literacy, is known as the best place to begin for people just beginning their financial decision-making journey as it starts with imitation and develops into a stage that involves automatic execution of the learned skill with little physical or mental exertion (Bloom et al., 1956). Achieving the level of such automaticity would indicate increased accuracy and speed with easier decisions and that more decision-making resources can be allocated to other decisions.

Limitations and Future Directions

This research has some limitations. I used cross-sectional data, so the results are correlational. The data comes from a single cultural context (i.e., U.S. adults). The findings of this research may not be generalizable to other settings or populations. Only the finance and health decision domains were examined. Future research may examine whether these results hold in other domains (e.g., relationships, work) and consider other types of foundational literacies (e.g., numeracy) or other measures of information literacy. This study did not consider the relationships between different types of domain-specific literacies. For instance, different types of literacies that share a common ground (e.g., numeracy for financial literacy [Lusardi, 2012]) may benefit others. Future research may explore possible synergistic effects that may be present.

5. Conclusion

The findings of this study suggest that a foundational form of literacy (e.g., information literacy) that cuts across decision domains played a more important role in achieving domain well-being than domain-specific literacies. Decision environments and literacy-building efforts should incorporate and even prioritize more foundational forms of literacy that build content knowledge for a specific set of decisions.

CHAPTER 4

PROFESSIONAL FINANCIAL HELP-SEEKING AS A PREVENTIVE COPING MECHANISM [2]

[2] Lee, H., Warmath, D., & Grable, J. Submitted to *Journal of Service Research*, 4/30/24.

ABSTRACT

Professional financial help-seeking behavior has been viewed primarily as a curative mechanism for coping with acute issues. We show that it can also be viewed as a preventive strategy, in which consumers seek help when they appraise their current decision-making resources relative to decision requirements. If the available resources are insufficient, they would seek help to cope with this mismatch between a difficult task and limited capabilities as a means of avoiding potential hardship from a poor decision. Using data from a two-wave study of 1,760 Australian adults, we examine: (1) whether both curative and preventive needs motivate help-seeking; (2) how the individual's appraisal of decision difficulty influences the decision to seek help directly and through its association with decision importance and control; (3) how financial literacy influences help-seeking; and (4) whether help-seeking is associated with increased financial well-being. This paper offers theoretical contributions to the financial help-seeking literature by demonstrating the presence and role of preventive help in financial decision making. Our findings suggest that professional financial services have an opportunity to consider preventive resources in the design and messaging of their services to consumers.

1. Introduction

Financial decisions are ubiquitous, important, and often complex choices "either explicitly related to financial products, or dramatically affecting a consumer's overall financial well-being – whether done once or repeated over time" (Greenberg & Hershfield, 2018, p. 17).

Every day, millions of adults worldwide make small and large decisions involving money that have the potential to set them on a trajectory towards financial well-being (i.e., "the perception of being able to sustain current and anticipated desired living standard and financial freedom [Brüggen et al., 2017, p. 229]) or financial hardship (i.e., "a state of distress in which an individual is unable to maintain a standard of living" [O'Connor et al., 2019, p. 422]). In isolation, many of these decisions are inconsequential and, for some consumers, there are rarely dire decision-making consequences. But for others, these decisions have serious implications for their future financial well-being (Greenberg & Hershfield, 2018). While previous studies suggest that the outcomes of such decisions depend somewhat on an individual's capacity to make informed decisions (Cole & Shastry, 2009; Huston, 2010; Warmath & Zimmerman, 2019), the literature also suggests that only a small proportion of financial decision-makers possess sufficient decision-making capacity, at least in the form of explicit knowledge of financial concepts and calculations, to make optimal decisions (Lusardi, 2008; Mitchell & Lusardi 2015). Yet, for many people, the tendency is to make decisions regardless of decision-making capacity. Although there are services available in which financial professionals provide expertise and unique forms of guidance to facilitate decision making (Mende & van Doorn, 2015), relatively few individuals seek help from professional decision-making resources to support their financial decisions. In Australia, for example, only one in eight adults report seeking advice from a financial professional (Australian Securities and Investments Commission [ASIC], 2019). There also appears to be confusion over where and when to find needed services with more than 70% of American adults under the age of 41 wanting financial advice but not knowing where to find it (Tzanetos, 2022).

Past research on the decision to seek professional financial help has most often been conducted through a curative lens in which help is sought for an acute financial need (e.g., financial hardship, shock, or emergency) in much the same way that an individual would seek emergency or urgent care for an acute medical issue (Cornally & McCarthy, 2011; Grable & Joo, 2003; Rickwood et al., 2005). Indeed, much of the existing literature points to an increased likelihood of seeking help when a crisis point is reached, often as a result of financial shocks (e.g., death of a family member, loss of a job or illness with financial implications [Fan, 2021; Grable & Joo, 2003]). In this view, financial help operates to reduce an individual's level of stress regarding their financial situation (Mende & van Doorn, 2015) and get them back on a more stable financial foundation (Palmer et al., 2016). Such a form of help typically occurs after an individual has experienced a financial hardship or shock as a means to treat or remediate the acute situation (Grable & Joo, 1999) much like an emergency room or urgent care clinic in a traditional medical model. It is interesting that the emphasis has been on the curative portion of the medical model for financial help-seeking while little to no attention has been paid to the use of professional services for proactive or preventive help in making the initial financial decision before financial hardship occurs.

Guided by the theory of stress and coping (Lazarus & Folkman, 1984), we expand the application of the medical model to financial help-seeking by introducing the concept of preventive financial help-seeking, which is defined as the pursuit of financial counseling or advice to support financial decision making that does not involve an immediate threat to well-being. We argue that people seek preventive financial help when they are faced with a financial decision that they feel unprepared to make (i.e., a decision that is viewed as difficult [Burks, 2001; Cornally & McCarthy, 2011; Hinston & Swanson, 1993]). Preventive financial services

can help an individual avoid possible financial hardship or other situations requiring curative services by improving decision making and identifying issues before they lead to hardship. When contextualized this way, help-seeking is preventive because it is sought as a way to accumulate resources to improve financial decision making so as to avoid financial hardship rather than for guidance to extract oneself from a current experience of financial hardship. In a medical setting, this type of help-seeking is akin to a visit to a primary care physician rather than the emergency room or urgent care. In our view, an individual's decision to seek out financial information, advice, or counsel occurs as an acknowledgment of a gap between decision-making ability and the requirements of the decision they are facing. Thus, this paper expands the study of financial help-seeking from the millions of consumers who seek help for acute financial stress (Mende & van Doorn, 2015) to include the billions of people who have difficult financial decisions to make.

Using data from a longitudinal study of 1,760 Australian adults, we explore four aspects of help-seeking behavior. This paper begins by determining whether professional financial help-seeking is motivated by preventive as well as curative needs. Second, we examine whether an individual's recognition of a gap between their decision-making ability and the demands of their financial decision (i.e., decision difficulty) is associated with the probability that they will seek help for the decision. Two mechanisms—perceived decision importance and control—are examined for their ability to explain the association between decision difficulty and seeking help. Third, we examine the ways in which financial literacy, defined as "one's capacity to make effective financial decisions, where 'capacity' refers to knowledge, skill, and self-efficacy," can be viewed as a primary resource for effective financial decision making (Warmath & Zimmerman, 2019, pp. 1609-1610). Specifically, we show how financial literacy is associated

with help-seeking directly and indirectly through decision difficulty, importance, and control. Finally, we examine whether help-seeking mitigates the negative association between decision difficulty and the change in financial well-being (Netemeyer et al., 2018).

2. Literature Review

Types of Financial Help-Providers

Sources that can aid individuals when making financial decisions are typically categorized into interpersonal and professional sources. Interpersonal sources include non-professionals (e.g., family and friends) and religious resources (Stewart et al., 2016). Often the first (Cornally & McCarthy, 2011) and most common (Kwon, 2004) source of help, interpersonal sources tend to be cost-efficient (Lachance & Tang, 2012) and provide emotional support in addition to some financial aid (Fan, 2022). Professional sources (e.g., financial advisors) tend to provide more practical help (Gourash, 1978). Professional financial services, composed of specialists through education and/or training, are one resource that can help decision-makers navigate the financial marketplace. They generally consider significantly more alternatives and different attributes compared to interpersonal sources who tend to be novices (Alba & Hutchinson, 1987). Many professional services, by design, exist to support and enrich the financial health of individuals. These services can aid with everyday financial decision making to high-end wealth advisors (Dubofsky & Sussman, 2009). Some services often take a more comprehensive approach by incorporating the intricacies of emotions and relationships (i.e., financial therapy [Ford et al., 2020]).

Financial Help-seeking as a Curative Service

As a general category, professional services have long offered solutions that are action-oriented and directed toward fulfilling specific needs (Gourash, 1978). Ideally, these services would create "uplifting changes" to improve the quality of an individual's life and the layers of systems to which they belong (Blocker & Barrios, 2015, p. 1). Yet, in financial services, the focus has been on curative models addressing hardship or dealing with an acute circumstance such as a life shock or other stressor that pushes an individual over the edge financially and/or emotionally (Grable & Joo, 1999). This focus is illustrated by a review (see Grable & Joo, 1999) listing largely curative (e.g., borrowing money, cutting back expenses) rather than preventive (e.g., improving management skills through budgeting and savings) coping strategies. Under the curative model, financial help-seeking behavior is presumed to begin when a consumer cognitively acknowledges that they (or their household) are faced with a financial stress or challenge that requires management skills and/or resources that exceed the decision-maker's stock of attributes (Burks, 2001; Cornally & McCarthy, 2011; Hinson & Swanson, 1993). These stresses or challenges have largely been studied as hardships (Grable & Joo, 1999).

Financial help-seeking behavior has been viewed largely as a search for information or as a problem-solving activity that is used in response to resolving an immediate need (Cornally & McCarthy, 2011; Grable & Joo, 2003; Rickwood et al., 2005; Stigler, 1961). In other words, financial help-seeking is generally viewed as a coping mechanism (Lazarus & Folkman, 1984) most closely aligned to what Endler and Parker (1990) called coping as problem-solving. The extant literature shows that a person's likelihood of seeking help is directly proportional to situational factors, namely, the number of financial shocks (e.g., death of a family member, loss

of a job, or illness with financial implications) they experience (Chan, 2013). When someone reaches a crisis point, they are likely to seek help (Fan, 2021).

When an individual perceives that they possess insufficient resources to meet the demands associated with a decision, they are likely to seek help. As described above, over the past two decades, researchers have examined the factors associated with help-seeking as well as its phases (Chang, 2005; Grable & Joo, 2001; Kwon, 2004). Much of the help-seeking literature shows that a person's likelihood of seeking help is directly proportional to the number of financial shocks (e.g., death of a family member, loss of a job, or illness with financial implications) one experiences. When an individual reaches a crisis point they are likely to seek help. While the association between stressful events and help-seeking is well-established, the relationship does not fully describe why some individuals seek additional information or help prior to making a decision or in response to previously made decisions or in non-stressful situations.

3. Conceptual Argument

Preventive Financial Help-seeking Framework

In this paper, we argue that a focus on curative services to address acute hardships misses an opportunity to understand the role of financial services in preventing hardship and promoting well-being through better decision making in research, practice, and service design. Improved financial well-being is an intended outcome of help-seeking behavior. Financial well-being has comparable significance to the combined effect of well-being in other life domains (e.g., job, physical health, and relationship) in constructing overall well-being (Netemeyer et al., 2018). It

has also been described as the ultimate goal of financial literacy (Consumer Financial Protection Bureau [CFPB], 2015).

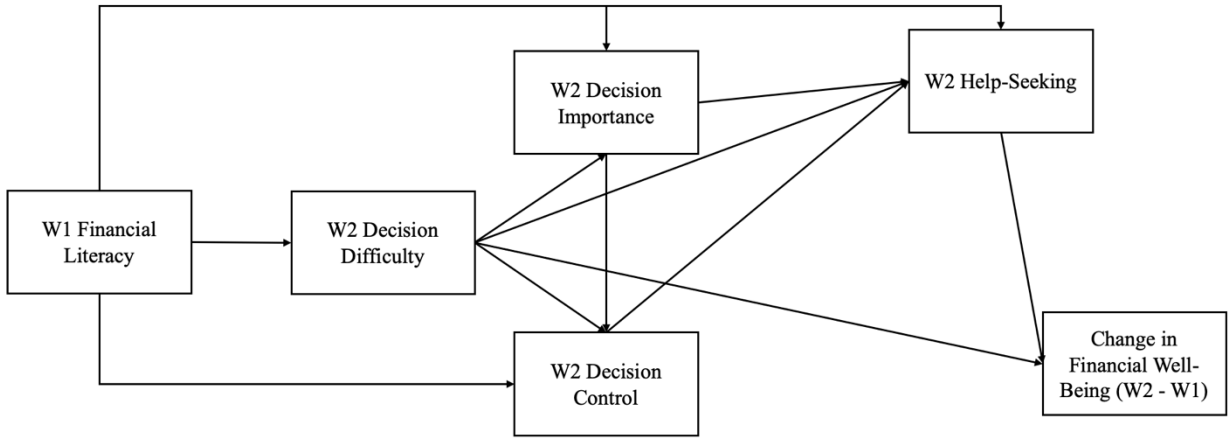
While providing curative services is important, it is equally important to consider the role of preventive services, which involves “interven[ing] early in the course of disease or even before disease develops" in an effort to substantially reduce morbidity and mortality in the medical context (U.S. Preventive Services Task Force, 1996, p. XXV). From a preventive perspective, help-seeking is more than just a way to “cure” an acute financial illness and get an individual back on their financial feet (Grable & Joo, 1999). It is also a prevention effort to assist them from experiencing problematic financial conditions. Despite potential benefits, little to no attention has been paid to this type of service in the domain of household financial decision making. According to the theory of stress and coping, coping refers to cognitive and behavioral efforts to master, reduce, or tolerate the internal and/or external demands that are created by a stressful transaction (Folkman & Lazarus, 1980; Lazarus & Launier, 1978).

Guided by the theory of stress and coping (Lazarus & Folkman, 1984), we propose a framework of preventive financial help-seeking (depicted in Figure 4.1) in which help-seeking occurs when a decision maker perceives that they are underprepared for the decision and, therefore, might have negative outcomes from proceeding in making the decision without support. In other words, consumers seek preventive financial help to cope with a “mismatch between a difficult task and limited processing capabilities” (Bettman et al., 1991, p. 51). This notion supports previous research that identified help-seeking as “the critical link between understanding there is a problem and receiving necessary services” (Klimes-Dougan et al., 2013, p. 83).

To cope with this mismatch, the decision maker appraises the given decision. A difficult decision would mean that the requirements of a decision to be made exceed their resources to make a competent decision. Decision difficulty is influenced by both the elements of the task (e.g., the number of alternatives, uncertainty) and the amount of information available to the financial decision-maker (Bettman et al., 1991). Existing research suggests a positive correlation between decision difficulty and help-seeking intentions (Chan, 2013; Vertsberger & Gati, 2016).

Figure 4.1

Preventive Financial Help-Seeking Conceptual Framework



People generally involve themselves in a decision when a decision has important monetary, social, or intrinsic consequences (Billings & Scherer, 1988). An important decision may require more pre-choice deliberation due to the consequence of the decision itself or justification for making that choice to oneself or others (Billings & Scherer, 1988). Laypeople's metacognitive theories suggest that decision difficulty is positively associated with decision importance (Broniarczyk & Griffin, 2014; Sela & Berger, 2012). Decision importance refers to the perceived importance of the given financial decision. If a decision feels unexpectedly

difficult, people generally think that they would need to spend more time and effort on making it (Sela & Berger, 2012).

Consumers tend to feel less control as decisions become more difficult and important (Broniarczyk & Griffin, 2014; Schrift et al., 2011). This process is influenced by the "generalized beliefs about control, which concern the extent to which individuals assume they can control outcomes of importance" (Folkman, 1984, p. 841). Each financial decision carries a different weight and thereby requires a different amount and depth of processing (Bettman et al., 1991). Decision control refers to the perceived amount of control the individual has over a given financial decision. It is generally viewed as the "ego-central" perception of a problem, in which the decision-maker feels inadequate because of some factor beyond their personal control (Banburger, 2009). Perceived control of the help-recipient is regarded as a prerequisite and as a moderator for effective coping outcomes (Nadler & Fisher, 1986).

Thus, a possible search for help begins with recognition of a gap in decision-making requirements and resources (i.e., decision difficulty). If a gap is perceived, the individual experiences a stressor that manifests in a higher sense of decision importance and lower sense of control over the decision, which then leads some (but not all) decision-makers to seek help.

The Role of Financial Literacy

Research in other domains suggests that decision-making resources (i.e., literacy) would influence how a given decision is appraised to determine the necessity of seeking help (e.g., mental health [Gorczynski et al., 2017]). The most common definition and measure of financial literacy is financial knowledge (Lusardi, 2019), and these two concepts are often used synonymously (Warmath, 2022a). The expanded view of financial literacy includes financial

self-efficacy and decision-making ability as well as content knowledge (Warmath & Zimmerman, 2019).

Extant research shows that knowledge is generally known to lessen perceptions of task difficulty (Alba & Hutchinson, 1987). When consumers are less knowledgeable, they tend to place greater weight on advice (Yaniv, 2004). While some have argued that financial advice serves as a substitute for financial knowledge, evidence suggests that advice is a complement (Collins, 2012), meaning that knowledge and advice are both present in the equation. The literature also indicates that financial knowledge and behavior are generally related, but the direction of causality is obscure (Hilgert et al., 2003). Regarding seeking help from a financial professional, evidence seems rather mixed. Higher levels of financial knowledge are associated with a greater likelihood of working with a financial professional (Calcagno & Monticone, 2015; Robb et al., 2012) and a greater probability of following the advice (Hackethal et al., 2010). On the other hand, another study showed no significant difference in financial knowledge between those who sought help and those who did not (Grable & Joo, 1999).

Regarding financial decision-making ability, investors who know when they need information for financial decisions and can judge the quality of information sources are better prepared for the decisions they will have to make (Al-Tamimi & Kalli, 2009; Jain et al., 2023). Self-efficacy generally represents persistence in the face of difficulties and the belief that a situation can be mastered (Bandura, 1977).

The remainder of this article is organized as follows: Study 1 demonstrates that curative and preventive needs both contribute to the decision to seek financial help. Study 2 explores the mediating roles of decision importance and control in the relationship between decision difficulty and financial help-seeking. Study 3 examines the influence of financial literacy on perceptions of

decision difficulty, importance, and control in the decision to seek financial help. Study 4 assesses whether preventive financial help-seeking mediates the association between decision difficulty and change in financial well-being. Finally, a concluding discussion overviews the insights that can be drawn from preventive health services.

4. Study 1: Professional Financial Help-Seeking as Both Curative and Preventive Coping Mechanism

Study 1 examined whether there is evidence that consumers seek financial advice for preventive reasons in addition to the previously emphasized curative reasons. Because financial help-seeking as coping has mostly been viewed with a focus on its curative function (Grable & Joo, 1999), we tested whether both curative and preventive needs motivate help-seeking behavior controlling for demographics. Study 1 addressed the following hypothesis:

> *H_1: After controlling for a curative need for professional financial help, there will be an association between preventive need and help-seeking.*

Methods

Data

Data for the four studies in this paper came from an online survey of Australian adults selected from the Dynata panel conducted by the ASIC. An initial wave of data was collected in March of 2021 (n = 3,042) followed by a second wave of data collection (n = 1,760 [57.9% of Wave 1]) collected in June of 2021. Participants who completed both waves tended to be younger (Wave 1 Only = 44.2 years old; Wave 2 = 51.1 years old; t = -11.080, p < .001) and were more likely to be male (Wave 1 Only = 44.1% male; Wave 2 = 51.2% male; t = -3.874, p < .001). There were no differences in education, marital status, or income. Missing data for all

variables of interest in Wave 2 was less than 5% across survey questions and respondents, which meets recommended threshold standards (Tabachnick et al., 2013). This study was approved by the Human Research Protection Program at the University of Georgia.

Measures

The dependent variable was whether a respondent sought professional financial help related to a financial decision made between Waves 1 and 2. Respondents were asked to think about the most important financial decision they had made in the past three months or since their last survey. Then they were asked whether they *sought advice from a financial counsellor, bank, community organisation, or similar resource*. Response options were Yes (coded as 1) and No (coded as 0).

The independent variables were indicators of a curative and a preventive need of the help-seeker. Curative need was measured in Wave 2 as the number of financial emergencies a respondent reported experiencing in the past three months (a retrospective count). Response options were *None, 1, 2, 3,* and *more than 3.* Preventive need was measured as decision difficulty (i.e., *How easy or difficult was it to make this decision?).* Response options ranged from *Extremely difficult* (coded as 5) to *Extremely easy* (coded as 1).

Control variables were age, sex, income, marital status, and education. Age was asked as year of birth. A continuous age variable was created by subtracting the year born from 2021, the survey implementation year. Sex was measured by asking the respondent what sex was recorded at birth. The response options were Male, Female, Another term, and Prefer not to say. Seven respondents selected “Another term” (n = 2) or “Prefer not to say” (n = 5). A binary indicator was created with Male coded as 1 and Female, Another term, and Prefer not to say coded as 0, which was used as the comparison category. Income was asked as the approximate annual gross

income (before tax) of their household, including wages, investment income, government pensions and allowances, income from superannuation, etc. Eleven response options were given (Less than $15,000, At least $15,000 but less than $25,000, At least $25,000 but less than $35,000, At least $35,000 but less than $50,000, At least $50,000 but less than $75,000, At least $75,000 but less than $100,000, At least $100,000 but less than $150,000, At least $150,000 but less than $200,000, At least $200,000 but less than $300,000, $300,000 or more, and Prefer not to say. A continuous income variable was created by taking the midpoint of each range, using $7,500 for the Less than $15,000 option, $350,000 for the More than $300,000 option, and $62,500 for the Prefer not to say option. Marital status was assessed using the response options of Married, Living with partner, Divorced, Separated, Widowed, and Single, never married. Binary indicator variables were created for each response. Married was used as the comparison category. Education was captured as the highest level of education reported by a respondent. Seven response options were used: (a) Primary school, (b) Some secondary school, (c) Completed secondary school, (d) Certificate, (e) Diploma/Advanced diploma, (f) Undergraduate degree, and (g) Postgraduate degree/qualification. A binary indicator was created for this analysis with Undergraduate degree or Postgraduate degree/qualification coded as 1 and responses of educational levels below Undergraduate degree coded as 0. Demographic variables were collected as part of Wave 1.

Analytical Strategy

Descriptive statistics and correlations between variables of interest were calculated using SPSS Version 29. Pearson correlations and etas were used to identify relationships between variables of interest. The hypothesis was evaluated using hierarchical logistic regression. Demographic variables were added at Step 1. The curative need was added at Step 2, and the

preventive need was added at Step 3. An Ordinary Least Squares (OLS) Regression was used to obtain R^2 change statistics.

Results

Sample Characteristics

Table 4.1 contains the sample characteristics for the study. The average participant age was 51 years old with a standard deviation of 16.84 years. Average income was $79,050 in AUD with a standard deviation of $60,683. The sample was 51% male and 49% female. 37% of respondents had an undergraduate or graduate level of education and 51% indicated that they were married.

Table 4.1

Sample Characteristics

Variables	Mean | Incidence	SD
Age	51	16.84
Household Income	79049.72 AUD	60683.90
Sex at birth		
Male	51.2%	
Female	48.8%	
Education		
Below undergraduate	62.8%	
Undergraduate or higher	37.2%	
Marital status		
Single, never married	23.6%	
Married	51.0%	
Living with partner	11.4%	
Divorced	8.5%	
Separated	2.3%	
Widowed	3.2%	

Correlations Between Variables of Interest

Table 4.2 contains the descriptive statistics for the variables of interest along with the correlations between them. Both curative and preventive needs were significantly and positively correlated with professional financial help-seeking. Both needs were also positively correlated with one another.

Table 4.2

Correlations Between Variables of Interest for Study 1

	M | Incidence	SD | N	1	2
1. Professional financial help-seeking	22.6%	1760		
2. Curative need	.39	.85	.111***	
3. Preventive need	2.64	1.18	.129***	.214***

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

Model Results

Table 4.3 contains the results of the hierarchical model. Demographics alone model shows that age was negatively associated with help-seeking (Exp(B) = .973, $p < .001$). Males (Exp(B) = 1.544, $p < .001$) and those with undergraduate or higher education (Exp(B) = 1.399, $p = .006$) were more likely to seek help from a financial help-professional each compared to their female and those with lower educational attainment. Those who are single, never married were less likely to seek help compared to their married counterparts (Exp(B) = .677, $p = .013$). Controlling for respondent demographic characteristics, the curative need (i.e., the number of financial emergencies experienced between Wave 1 and 2) was positively associated with seeking financial help (Exp(B) = 1.290, $p < .001$). When the preventive need (i.e., decision difficulty) was added to the model, it was positively associated with seeking financial help (Exp(B) = 1.235, $p < .001$), and the curative need continued to be significantly associated with

seeking financial help (Exp(B) = 1.231, $p < .001$). The changes in R^2 were all significant between the three models.

Table 4.3

Study 1 Model Results

	Model 1			Model 2			Model 3		
Variables	B	SE	β	B	SE	β	B	SE	β
Curative needs				.255	.063	1.290***	.208	.065	1.231**
Preventive needs							.211	.052	1.235***
Demographic controls									
Age	-.027	.004	.973***	-.024	.004	.976***	-.022	.005	.978***
Household income	.000	.000	1.000	.000	.000	1.000	.000	.000	1.000
Male	.434	.132	1.544***	.447	.133	1.564***	.487	.134	1.627***
Undergrad or higher	.336	.122	1.399**	.347	.122	1.415**	.324	.123	1.382**
Single, never married	-.390	.157	.677*	-.395	.158	.674*	-.391	.159	.676*
Living with partner	-.220	.193	.802	-.251	.195	.778	-.237	.195	.789
Divorced	-.481	.259	.618	-.530	.261	.589*	-.521	.262	.594*
Separated	-.615	.491	.541	-.656	.492	.519	-.667	.495	.513
Widowed	.208	.358	1.231	.110	.362	1.117	.123	.363	1.131
Constant	-.165	.256	.848	-.444	.267	.641	-1.136	.318	.321***
-2 Log Likelihood	1809.905			1794.303			1777.436		
% Classified Correctly	77.3%			78.0%			77.7%		
Nagelkerke R^2	.059			.072			.086		
Change in R2 (p)	.039			.010			.009		
	(<.001)			(<.001)			(<.001)		

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

Study 1 Discussion

In Study 1, we examined whether preventive help-seeking represents a distinct and plausible argument. Although existing research emphasizes only curative needs, results from this study suggest that both curative and preventive needs contribute to the decision to seek financial help. To investigate preventive help-seeking further, Study 2 examined factors that explain the role of decision difficulty in professional financial help-seeking.

5. Study 2: The Role of Decision Appraisal in Professional Financial Help-Seeking

Study 2 examined how decision characteristics (i.e., decision difficulty, importance, and control) are appraised in the decision to seek help. More specifically, we studied the roles of decision importance and decision control in the relationship between decision difficulty and help-seeking. Decision difficulty was the main decision characteristic appraised as the individual decides whether to seek help from a financial professional. If a gap between the resources available and needed is perceived and the decision is determined to be difficult, the individual decides to seek help. The following hypotheses were tested in this study:

H_2: An individual who appraises their decision as more difficult has a higher probability of seeking help.

H_{2a}: Perceived decision importance and control will explain the relationship between decision difficulty and help-seeking.

Methods

Measures

The dependent variable was professional financial help-seeking measured in the same way as in Study 1.

The independent variable, decision difficulty, was captured by a single item: How easy or difficult was it to make this decision? Response options ranged from Extremely difficult (coded as 5), Somewhat difficult, Neither easy nor difficult, Somewhat easy, and Extremely easy (coded as 1).

The two mediators were decision importance and decision control. Decision importance was captured by a single item: How important was this financial decision to you? Response options were Extremely important (coded as 5), Very important, Moderately important, Slightly important, and Not at all important (coded as 1). Decision control was captured by a single item: To what extent did you feel that this decision was under your control? Response options included Completely under your control (coded as 5), Mostly under your control, A little under your control, Not really under your control, and Not at all under your control (coded as 1). The control variables utilized in Study 1 were included here.

Analytical Strategy

Descriptive statistics and correlations between variables of interest were calculated using SPSS Version 29. Hypotheses were evaluated using structural equation modeling using a maximum likelihood estimation method in MPlus version 8. Model fit was assessed using X^2, root mean squared error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis fit index (TLI), and standardized root mean-squared residual (SRMR). Established thresholds for each of these measures were used (Hooper et al., 2008).

Results

Correlations Between Variables of Interest

Over 23% of respondents sought professional (i.e., financial institution or advisor) help for their decision. Average perceived decision difficulty was 2.64 on a scale of 1 (low) to 5

(high) with a standard deviation of 1.18. Average perceived decision importance was 3.86 on the same scale, with a standard deviation of 1.19. Average perceived decision control was 4.17, with a standard deviation of 0.93. All items were moderately correlated in the expected directions with the exception of perceived decision control, which was not significantly correlated with perceived decision importance. Table 4.4 contains descriptive statistics for the variables of interest along with the correlations between them.

Table 4.4

Correlations Between Variables of Interest for Study 2

	M | Incidence	SD | N	1	2	3
1. Help-seeking	23.5%	1760			
2. Decision difficulty	2.64	1.18	.129***		
3. Decision importance	3.86	1.19	.178***	.227***	
4. Decision control	4.17	.93	-.053*	-.347***	.024

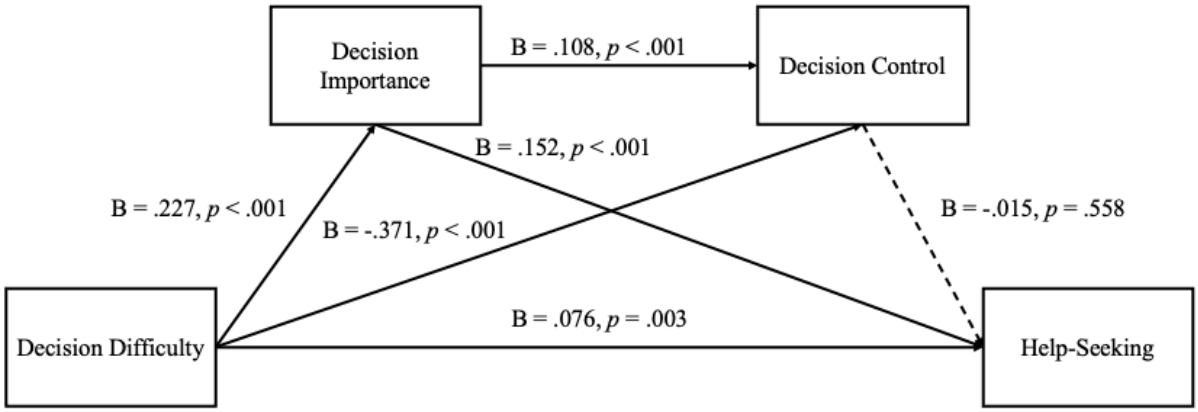
* $p < .05$; ** $p < .01$; *** $p < .001$

Model Results

The overall model fit matched or exceeded recommended thresholds ($X^2_{(18)} = 3.035$, RMSEA = .034, CFI = .926, TLI = .864, SRMR = .017). Decision difficulty (B = .076, $p = .003$) was positively associated with seeking professional help, while a respondent's sense of control over their decision was not associated with seeking help for the decision (B = -.015, $p = .558$). Only the mediation pathway through decision importance was significant (difficulty → importance: B = .227, $p < .001$, importance → help-seeking: B = .152, $p < .001$). There was no evidence of serial mediation. Figure 4.2 shows the results.

Figure 4.2

Study 2 Model Results



Study 2 Discussion

In Study 2, we examined whether an individual's perceived decision difficulty was associated with the likelihood of seeking financial help and whether perceived decision importance and control offer explanations for that relationship. We found that perceived difficulty of the financial decision was associated with seeking professional financial help in making the decision; however, this association was fully mediated by perceived decision importance. An individual who perceives their financial decision as difficult also tends to view the decision as important. Perceiving a decision as important is associated with a greater likelihood of seeking preventive professional financial help.

These results suggest that an individual has a threshold that they use to determine whether a financial decision requires or perhaps deserves professional help. If the individual does not perceive a decision to be important enough, they are not likely to seek preventive services. This may be due to their determination that a decision of less importance is not worth the professional fee or that the professional would not be willing to provide help for something

viewed as less important. One potential issue, however, is the individual's ability to make an accurate judgment of a given decision they perceive as difficult. For instance, the likely importance (i.e., potential negative outcomes) of the decision may loom larger because of the perceived difficulty. Similarly, the individual may feel they have less control over the decision because it is too difficult or important.

5. Study 3: The Role of Financial Literacy in Professional Financial Help-Seeking

In Study 3, we examined how financial literacy operates on an individual's appraisal of the financial decision and whether to seek professional advice. Financial literacy, primarily in the form of financial knowledge, has been associated with the decision to seek help (Calcagno & Monticone 2015; Robb et al., 2012) although little work has been done to examine how financial literacy operates. We argue that an individual's financial literacy as knowledge, decision-making ability and self-efficacy (Warmath & Zimmerman, 2019) is associated with the decision to seek help through its impact on the individual's perceptions of decision difficulty, importance, and control. The following hypotheses were evaluated:

H_{3a}: Individuals with higher levels of financial literacy will be more likely to seek financial help.

H_{3b}: Individuals with higher levels of financial literacy will perceive their financial decisions to be less difficult.

H_{3c}: Individuals with higher levels of financial literacy will perceive their financial decisions to be more important.

H_{3d}: Individuals with higher levels of financial literacy will perceive their financial decisions to be more under their control.

Methods

Measures

The dependent variable was professional financial help-seeking as used in Studies 1 and 2. Decision difficulty, importance and control from Study 2 were included as mediators in Study 3. The primary independent variable was financial literacy. The three components of financial literacy (i.e., financial knowledge, financial decision-making ability, and financial self-efficacy) were assessed in Waves 1 and 2 using established and constructed scales (see Warmath & Zimmerman, 2019). For financial knowledge, participants were asked five of the ten objective knowledge items from the Houts and Knoll (2020) scale.

All five questions were asked in Wave 1. In Wave 2, each respondent was presented with two randomly selected questions. Each response was converted into a new variable indicating whether the answer given was correct (coded as 1) or incorrect (coded as 0). The measure was constructed as the percent of questions asked that were answered correctly. To match Knoll and Houts (2012), don't know responses were treated as incorrect answers.

Financial decision-making ability and financial self-efficacy were assessed using scales developed in the ASIC Financial Decision-Making Study (Warmath, 2022b). Financial decision-making ability contains eight items related to an individual's ability to obtain and use financial information (e.g., "To tell trustworthy from untrustworthy sources"). Respondents were asked the extent to which these statements described them with response options ranging from Describes me completely (5) to Does not describe me at all (1). They were also asked how easy or difficult to do the following to find that advice or information if they felt that the needed advice or information for a decision involving money with response options ranging from Extremely difficult (5) to Extremely easy (1). Responses were summed to indicate financial

decision-making ability with possible values ranging from eight to 40. Financial self-efficacy contained eight items reflecting the individual's sense that they would be successful if they acted in their financial life (e.g., "When I make plans for my money, I can make them work"). Respondents were asked the extent to which they agreed with each statement on a five-point scale anchored by Strongly agree (coded as 5) and Strongly disagree (coded as 1). Responses were summed to indicate financial self-efficacy with possible values ranging from eight to 40. Financial literacy was calculated by rescaling financial knowledge, financial decision-making ability, and financial self-efficacy to a 0 to 100-point scale and then averaging the three values (Warmath & Zimmerman, 2019). The control variables utilized in Study 1 were included here.

Analytical Strategy

Descriptive statistics and correlations between variables of interest were calculated using SPSS Version 29. Our hypotheses were evaluated using Structural Equation Modeling (SEM) using MPlus with WLSMV[3] estimation. An Ordinary Least Squares (OLS) Regression was used to evaluate the associations between the components of financial literacy and decision characteristics.

Results

Descriptive Statistics and Bivariate Correlations

As shown in Table 4.5, the mean financial literacy score was 47.6 with a standard deviation of 14.66. Most items were moderately correlated in the expected directions with the exception of help-seeking. Financial literacy and help-seeking were not significantly correlated at the zero-order level.

[3] A robust estimator which does not assume normally distributed variables.

Table 4.5

Correlations Between Variables of Interest for Study 3

	M | Incidence	SD | N	1	2	3	4
1. Financial literacy	47.6	14.66				
2. Decision difficulty	2.64	1.18	-.212***			
3. Decision importance	3.86	1.19	.061*	.227***		
4. Decision control	4.17	.93	.314***	-.347***	.024	
5. Help-seeking	22.5%	1760	-.036	.129***	.178***	-.053*

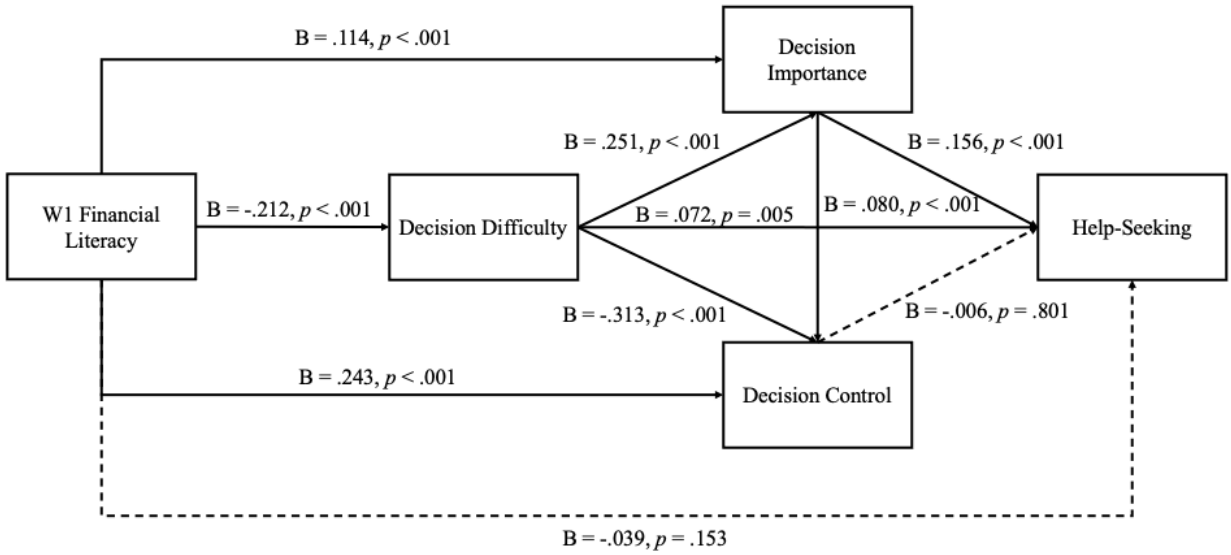
* $p < .05$; ** $p < .01$; *** $p < .001$

Model Results

Figure 4.3 contains the model results. The overall model indicated good fit ($X^2_{(27)} = 3.045$, RMSEA = .034, CFI = .925, TLI = .871, SRMR = .023). Controlling for a respondent's decision appraisal (i.e., difficulty, importance, and control), financial literacy was not directly associated with professional help-seeking (B = -.039, $p = .153$). While higher levels of financial literacy were associated with lower levels of decision control (B = .243, $p < .001$), only the indirect paths through decision difficulty (financial literacy → decision difficulty: B = -.212, $p < .001$, decision difficulty → help-seeking: B = .072, $p = .005$) and decision importance (decision difficulty → decision importance: B = .251, $p < .001$; decision importance → help-seeking: B = .156, $p < .001$) were significant.

Figure 4.3

Study 3 Model Results



Results by Financial Literacy Component

Both financial decision-making ability (B = -.007, p = .002) and financial self-efficacy (B = -.006, p = .008) were significantly and negatively associated with decision difficulty, controlling for respondent demographic characteristics. Positive associations were observed for decision importance (financial decision-making ability: B = .005, p = .018; financial self-efficacy: B = .008, p < .001) and decision control (financial decision-making ability: B = .004, p = .015; financial self-efficacy: B = .014, p < .001). Financial knowledge was not significantly associated with decision difficulty (B = -.001, p = .155) or decision importance (B = -.002, p = .117), but was significantly associated with decision control (B = .002, p = .022). Results by financial literacy components are detailed in Table 6.

Table 4.6

Study 3 Ordinary Least Square (OLS) Regression Results by Financial Literacy Component

	Difficulty	Importance	Control
Financial knowledge	-.038	-.043	.059*
Financial decision-making ability	-.104**	.080*	.077*
Financial self-efficacy	-.086**	.125***	.277***
(Constant)	***	***	***
Demographic controls			
Age	-.130***	-.113***	.104***
Household income	-.052*	-.023	.005
Male	-.063*	.007	.047
Undergrad or higher	.069**	-.015	-.049*
Single, never married	-.024	-.032	.066*
Living with partner	-.017	-.013	.038
Divorced	-.004	.025	.054*
Separated	-.007	.003	.000
Widowed	.000	.034	.046*
R^2	.081	.041	.156
F	12.829	6.172	26.836
p	<.001	<.001	<.001

* $p < .05$, ** $p < .01$, *** $p < .001$
Note: Only beta coefficients are reported.

Study 3 Discussion

Results from Study 3 suggest that financial literacy does not lead directly to help-seeking but indirectly through an individual's sense of decision difficulty and importance. Individuals with higher levels of financial literacy are less likely to view their financial decisions as difficulty which is associated with a lower likelihood of seeking help. However, individuals with higher levels of financial literacy are also more likely to perceive their financial decisions as being important which is associated with a higher likelihood of seeking help. Thus, financial literacy works against seeking professional help when the degree of literacy lowers the perceived difficulty but promotes professional help-seeking when it increases the perceived importance of a

decision. These findings also indicate that the tipping point in deciding to seek professional financial advice lies in neither knowledge nor literacy. Instead, help-seeking seems to occur when literacy influences an individual's perception of the decision to be made. Our results also showed that higher levels of perceived difficulty and importance are associated with financial decision-making ability and financial self-efficacy but not financial knowledge. Thus, it appears that financial self-efficacy and financial decision-making ability (rather than knowledge) are the key mechanisms promoting perceptions of difficulty and importance. These findings are consistent with the suggestion that there is an opportunity to "shift from attempting to make everyone a financial expert to making sure they know how to assess their financial situation, how to set realistic expectations, and when to seek help" (Warmath, 2022a, p. 513).

Results from this study suggest that financial education programming should prioritize financial self-efficacy and decision-making ability over focusing exclusively on financial knowledge. While knowledge, a cognitive domain, requires frequent updates and is prone to other issues such as information overload (Willis, 2013), financial self-efficacy and decision-making ability are internal resources that can be maintained and refined over time. Thus, this study shows further support for the importance of "just in time" financial education (Fernandes et al., 2014; Willis, 2013). Moreover, for people just beginning their financial decision-making journey, the psychomotor domain of knowledge (i.e., decision-making ability) is usually the best place to begin (Bloom et al., 1956). Building these skill sets among younger cohorts may hold the greatest potential for improving overall financial public health.

6. Study 4: Does Help Help? Help-Seeking as a Mediator of the Decision Difficulty-Financial Well-Being Relationship

The previous three studies illustrated the process by which an individual decides to seek financial help. Study 4 aimed to understand how a need for help in making financial decisions influences financial well-being outcomes and whether help-seeking mediates that relationship. If help-seeking is pursued as a means to cope with a decision the individual feels under-resourced to make, a second consideration is whether help-seeking is associated with better outcomes such as financial well-being.

Hypothesis 4 posits that an individual who perceives their decision as being difficult (i.e., not having sufficient resources) is more likely to experience worse financial well-being outcomes (i.e., increased current money management stress and decreased expected future financial security) after their decision has been made; however, this relationship can be explained, at least partially, by whether the individual sought help for their decision. The following hypotheses were evaluated:

H_{4a}: An individual who perceives their decision as difficult will experience less positive changes in financial well-being.

H_{4b}: Perceived decision difficulty will be associated with a higher probability of seeking professional financial help.

H_{4c}: Seeking professional financial help will be associated with more favorable change in financial well-being.

Methods

Measures

In Study 4, Wave 2 financial well-being, assessed as two dimensions (i.e., current money management stress and expected future financial security) using the five-point scales developed by Netemeyer et al. (2018), was the dependent variable. The study controlled for Wave 1 financial well-being to examine the change between the two time periods. Responses were summed to create a current money management stress variable and an expected future financial security variable each with a range of 5 (low) to 25 (high). A low score on current money management stress would indicate high financial well-being while a high score on expected future financial security would indicate high financial well-being. Decision difficulty and professional help-seeking from Studies 1 through 3 were used as the independent variable and mediator, respectively. The control variables utilized in Study 1 were included here.

Analytical Strategy

Descriptive statistics and Pearson correlations were used to evaluate the relationships between the variables of interest. We used logistic regression (DV: help-seeking) and OLS regression (DV: change in well-being) for hypothesis evaluation. Each dimension of financial well-being was examined separately.

Results

Descriptive Statistics and Bivariate Correlations

As shown in Table 4.7, the mean current money management score was 13.30 with a standard deviation of 5.08. The mean expected future financial security score was 16.42 with a standard deviation of 5.55. Most items were moderately correlated in the expected directions. Interestingly, both current money management stress and expected future financial security were positively correlated with help-seeking. This result may be influenced by the curative need in addition to the preventive need.

Table 4.7

Correlations Between Variables of Interest for Study 4

	M | Incidence	SD | N	1	2	3
1. Decision difficulty	2.64	1.18			
2. Help-seeking	23.5%	1760	.129***		
3. CMMS	13.30	5.08	.330***	.063**	
4. EFFS	16.42	5.55	-.542***	.168***	-.542***

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

Model Results

There were significant and positive total effects between decision difficulty and changes in financial well-being (current money management stress: B = .363, $p < .001$; expected future financial security: B = -.218, $p < .001$). Decision difficulty was significantly associated with decreased financial well-being (i.e., an increase in current money management stress and a decrease in expected future financial security). Seeking professional help did not mediate the relationship between decision difficulty and the change in current money management stress (decision difficulty→help-seeking: B = .240, $p < .001$, help-seeking→current money management stress: B = -.139, $p = .432$). Seeking professional help mediated the relationship between decision difficulty and the change in expected future financial security (decision difficulty→help-seeking: B = .240, $p < .001$; help-seeking→expected future financial security: B = .416, $p = .026$). Table 4.8 shows results for current money management stress, and Table 4.9 shows for expected future financial security.

Table 4.8

Study 4 Current Money Management Stress Model Results

	DV: Help-Seeking			DV: W2 CMMS					
				Direct Effect			Total Effect		
	B	SE	β	B	SE	β	B	SE	β
Decision difficulty	.240	.051	1.271***	.368	.065	.086***	.363	.065	.085***
Help-seeking				-.139	.177	-.011			
W1 CMMS				.704	.016	.722***	.704	.016	.722***
(Constant)	-.907	.293		4.365	.444	***	4.329	.442	***
Demographic controls									
Age	-.024	.004	.976***	-.029	.006	-.095***	-.028	.006	-.093***
Household income	.078	.059	1.081	-.281	.078	-.056***	-.283	.078	-.056***
Male	.481	.133	1.618***	.018	.164	.002	.006	.164	.001
Undergrad or higher	.312	.123	1.366*	-.012	.155	-.001	-.020	.154	-.002
Single, never married	-.388	.159	.679*	.058	.198	.005	.068	.197	.006
Living with partner	-.211	.194	.809	.228	.245	.014	.233	.245	.015
Divorced	-.477	.261	.620	.393	.274	.022	.402	.274	.022
Separated	-.627	.493	.534	.745	.494	.022	.758	.493	.022
Widowed	.200	.361	1.222	.454	.427	.016	.450	.427	.016
-2 Log Likelihood	1787.446								
% Classified Correctly	77.5%								
R^2	.077			.649			.649		
F				269.626			294.145		
p				<.001			<.001		

Note: For logistic regression, Nagelkerke R^2 was used.
* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4.9

Study 4 Expected Future Financial Security Model Results

	DV: Help-Seeking			DV: W2 EFFS					
				Direct Effect			Total Effect		
	B	SE	β	B	SE	β	B	SE	β
Decision difficulty	.240	.051	1.271***	-.237	.066	-.051***	-.218	.065	-.047***
Help-seeking				.416	.186	.031*			
W1 EFFS				.776	.015	.773***	.782	.015	.779***
(Constant)	-.907	.293		4.145	.444	***	4.173	.445	***
Demographic controls									
Age	-.024	.004	.976***	.003	.006	.009	.001	.006	.003
Household income	.078	.059	1.081	.299	.082	.054***	.297	.082	.054***
Male	.481	.133	1.618***	.156	.170	.014	.189	.170	1.114
Undergrad or higher	.312	.123	1.366*	.292	.162	.025	.307	.162	.027
Single, never married	-.388	.159	.679*	-.285	.206	-.022	-.303	.206	-.023
Living with partner	-.211	.194	.809	-.982	.255	-.056***	-.989	.255	-.057***
Divorced	-.477	.261	.620	-.695	.285	-.035*	-.710	.285	-.036*
Separated	-.627	.493	.534	-1.440	.512	-.039**	-1.455	.513	-.039**
Widowed	.200	.361	1.222	-.688	.444	-.022	-.662	.444	-.921
-2 Log Likelihood	1787.446								
% Classified Correctly	77.5%								
R^2	.077			.683			.682		
F				313.915			341.225		
p				<.001			<.001		

Note: For logistic regression, Nagelkerke R^2 was used.
* $p < .05$; ** $p < .01$; *** $p < .001$

Study 4 Discussion

Study 4 found that decision difficulty was associated with a decrease in financial well-being (i.e., positively associated with a change in current money management stress and negatively associated with a change in expected future financial stress). In the case of a change in current money management stress, seeking help did not mediate the situation, although the direction of the relationship was as hypothesized. On the other hand, seeking help did mediate the relationship between decision difficulty and the change in expected future financial security in the hypothesized direction. These findings suggest that the transformative effect of help-seeking is more pronounced in changing perceptions of the future rather than acting as a mechanism of immediate change when a financial decision-maker is faced with a difficult decision. Stated another way, seeking help from a professional financial advisor appears to be an effective strategy to alter perceptions of expected future outcomes. More research is needed to explore this finding. It is possible that a moderation effect may be present when the type of help provider (i.e., professional vs. interpersonal) is identified. The findings presented here support the notion of help-seeking as a preventive coping mechanism with longer-term effects rather than just an immediate stop-gap measure used by financial decision-makers to deal with short-term stress arising from a difficult decision.

7. General Discussion

Findings and Theoretical Contributions

For the average person, professional financial services have largely been viewed as a curative resource when experiencing financial stressors or hardships (Grable & Joo, 1999). In this paper, we have argued that such services are also relevant as a preventive measure

supporting better financial decision making to prevent hardships. Preventive financial help-seeking, as opposed to the previously emphasized curative help-seeking, can produce more durable decision-makers in that it can prevent acute financial problems. We have shown through four studies that help-seeking from a financial professional can be viewed as a coping mechanism that incorporates both curative and preventive elements. When an individual perceives that the decision-making resources required exceed their capacity (i.e., the decision is perceived to be difficult), they are more likely to seek professional financial advice even after controlling for whether a curative need for help is present. Seeking preventive help is also supported by an increased sense of decision importance that is associated with recognition of insufficient decision-making resources.

Our findings extend our understanding of the role of financial literacy in preventive help-seeking. Financial literacy both promotes and hinders help-seeking. An individual with a higher level of financial literacy tends to see decisions as less difficult and, therefore, would be less likely to seek preventive help in making the decision. However, higher levels of financial literacy are also associated with a greater sense of decision importance that, in turn, is associated with a greater likelihood of seeking preventive help. Interestingly, the individual's appraisal of the decision in terms of difficulty and importance fully mediated the previously observed association between financial literacy and professional help-seeking and may explain the mixed findings observed in other studies (Calcagno & Monticone, 2015; Grable & Joo, 1999; Robb et al., 2012). This study also speaks to the tendency of extant literature to use measures of financial knowledge interchangeably with the construct of financial literacy (e.g., Fernandes et al., 2014; Lusardi & Mitchell, 2014). The results of our study suggest that doing so likely results in a misestimation of perceptions. Viewing financial literacy in a way that includes knowledge,

financial decision-making ability and financial self-efficacy, as proposed by Warmath and Zimmerman (2019), allows researchers to obtain a more robust comprehension of the ways in which financial literacy influences professional financial help-seeking.

Finally, our study showed that preventive help provides a positive indirect path between decision difficulty and expected future financial security but not current money management stress. When an individual perceives that they lack sufficient decision-making resources, their current money management stress tends to increase and their expected future financial security tends to decrease. When that individual chooses to seek professional help, their expected future financial security tends to increase but their current money management stress tends to remain the same. Thus, preventive help seems to operate more on future expectations than on present circumstances. This finding is consistent with the concept of prevention as the outcomes experienced from a decision today are likely to be felt in the individual's lived experience tomorrow. In addition, it may be that the individual gained resources from the help-seeking experience that extend beyond this single decision (Zimmerman, 2006). Such resources may bolster their expectations for their ability to make additional decisions supportive of their financial future (Newman, 2002).

This study offers theoretical contributions to the financial help-seeking literature as well as the broader help-seeking literature by demonstrating the presence and role of preventive help in financial decision making. One example of a possible role for expansion of the preventive role of financial advice might be in the area of the stigma associated with financial help-seeking. When financial advice is largely curative, there must be something wrong that is leading the individual to seek help. With preventive help-seeking, the individual can potentially avoid hardship or other potentially stigmatizing circumstances (Mende et al., 2024).

Managerial and Policy Implications

Conceptualizing help-seeking as a preventive behavior also has policy implications. It has been well documented in media sources and the financial planning literature that households generally lack the financial capacity to deal effectively with financial and life shocks. It is also known that only a small proportion of households actively seek professional help when faced with complex and important financial decisions (ASIC, 2019). One way to increase the financial capabilities of household financial decision-makers involves increasing financial literacy, although there are mixed results on the efficacy of this approach (Fernandes et al., 2014). Our study suggests an alternative or perhaps complementary approach emphasizing knowing when to seek help and the role of help in preventing hardship.

From our results, it seems that professional financial services have an opportunity to consider preventive resources in the design and messaging to consumers. If financial professionals view their job as curing financial hardship, they might be inadvertently (or overtly) turning away clients who seek guidance on a particular decision. Dismissing such requests might lead to unnecessary financial hardship for the individual decision-maker. The wealth advisor's role in relation to high net-worth clients seems well understood as does the credit counselor's role in relation to clients experiencing hardship. What is less understood is who exists to serve the average person seeking support for financial decision making.

Limitations and Future Research

The results from this study need to be evaluated in the context of certain limitations. The study is correlational. No causal relationships can be inferred. The data were collected in Australia between March and July 2021, during the COVID-19 period. The effects of this period on perceptions of financial stress among research participants are unknown. This study was

conducted in Australia. Additional research in other settings is needed to determine whether the findings are generalizable to other settings, populations, and sub-samples.

8. Conclusion

Seeking the help of a financial professional service can serve both curative and preventive functions. Preventive help-seeking involves the individual's recognition that a particular decision exceeds their decision-making ability or resources (i.e., is difficult). As an individual perceives that they lack sufficient resources to make financial decisions, they are more likely to seek help. There are opportunities to design and deliver such preventive services and to educate people in recognizing the need to seek such services. Our study broadens the focus of financial help-seeking beyond stressful life events or shocks with financial implications (Grable & Joo, 1999) to include the decision to seek help driven primarily by perceptions of available decision resources relative to what the decision requires. Our framework expands the field's understanding of what people need from help providers beyond functional assistance in solving an acute problem and reducing strain. The desire for preventive services on the part of consumers and the focus on curative services on the part of help providers suggests reasons why some decision-makers might not seek help even when objectively they should.

CHAPTER 5

THE IMPORTANCE OF DECISION FATIGUE IN FINANCIAL DECISION MAKING [4]

[4] Lee, H., Warmath, D., Worthy, S., & Peng, Y. To be submitted to *Journal of Consumer Behavior*.

ABSTRACT

Extant research shows the factors that can help or hinder consumer decision making. Yet relatively little attention has been paid to decision making as an ongoing process and the unique challenges presented to the decision maker. Present paper argues that decision fatigue (i.e., the impaired ability to make decisions as a consequence of repeated decision making) is an important factor in consumer decision making. Using data from a three-wave study of 1,760 Australian adults and data from a cross-sectional survey of 1,195 US adults, researchers identify antecedents of decision fatigue related to decision-making experiences and resources and the negative consequences related to well-being. They also find that even optimal decision makers can experience decision fatigue, and among decision-making resources, more durable ones (e.g., decision-making ability) can help protect an individual against the effects of decision fatigue, while others cannot (e.g., explicit knowledge). The findings demonstrate the impact of finite sources in making a series of decisions by examining a unique challenge (e.g., decision fatigue) that is presented to the decision maker due to decision making being an ongoing process.

1. Introduction

As humans, we make decisions all the time. Perhaps due to the frequency and habituation, we do not always consider if decision making itself is any good to us. On one hand, decision making is viewed as a beneficial activity that provides a sense of autonomy, which is especially valued in independent societies such as the United States (Botti & Iyengar, 2006; Schwartz, 2004). When decision-making results in good choices, the individual tends to experience greater satisfaction from their choice and in turn, improved well-being (Greenberg &

Hershfield, 2018; Páez-Gallego et al., 2020). However, much research and anecdotal evidence suggest that not all decision making is beneficial (e.g., Botti & Iyengar, 2006; Vohs et al., 2018). For instance, some decisions are avoided on purpose to evade personal responsibility for potential negative outcomes (Han et al., 2023). Unfortunately, in the modern-day decision-making environment, there is "an ongoing pressure to make decisions based on our reaction to the world around us" (Andrejevic, 2013, pp. 7-8). Although information to inform decision making has become increasingly available, the human capacity to process the given information has remained stagnant (Levitin, 2014; Roetzel, 2019). Thus, the cognitive resources or the amount of attention that can be allocated to make decisions is bound to reach a limit (Baumeister et al., 2007).

Decision making has been studied for decades with an emphasis on what constitutes "good decision making" and the ways decision making can be improved (Elwyn & Miron-Shatz, 2010; Higgins, 2000; Schwartz et al., 2011). Post-decision outcomes are common primary measures of interest in determining whether the decision making was good. A single decision can be judged as either good or bad objectively, independent of the context of other decisions or other environmental factors (Higgins, 2000). However, these post-hoc assessments of decisions based on the outcomes of decisions can be unreliable measures because they can change quickly and dramatically based on the surrounding situation (Elwyn & Miron-Shatz, 2010). Although the entire deliberation process seems to matter as much as post-decisional outcomes (Elwyn & Miron-Shatz, 2010), insufficient attention has been paid to multiple decisions or a series of decisions. Even the studies that incorporated multiple decisions had the scope of as short as 30 minutes (Muraven et al., 1998) with a workday being the higher limit (Hirshleifer et al., 2019).

Yet, in reality, decisions are not made in a vacuum (Payne et al., 1993). Each decision is influenced by various antecedents and leads to different consequences (Alba et al., 1991; Greenberg & Hershfield, 2018; Páez-Gallego et al., 2020). Each decision is also made under many surrounding conditions of the decision environment (Bettman et al., 1991). Decision making is a multifaceted and dynamic task that is ongoing (Bettman et al., 1991), but the existing body of literature tends to neglect the consequences over time and focus on the context of a single decision. Thus, present research moves beyond a single decision and takes a bird's eye view by looking at the entire active process of a consumer as a decision-maker. By encompassing the decision-making process as a whole, we can not only consider the series of decisions but also the drain produced as a result of repeated decision making (i.e., decision fatigue). Such a drain may have lasting consequences in decision making (see Pignatiello et al., 2020 for review), but it has mostly been examined in occupational settings, especially in the healthcare sector (Danziger et al., 2011; Fernandez-Miranda et al., 2023; Hickman et al., 2018; Hirshleifer et al., 2019; Persson et al., 2019; Pignatiello et al., 2022; Torres & Williams, 2022). The large remaining opportunity is to apply the bird's eye view perspective to the general consumer population and their everyday decision-making context.

In this paper, we argue that decision fatigue is an important construct that needs to be considered and emphasized in consumer financial decision making, especially prior to consequential decisions for its complex nature and well-being implications. Using survey data in two cultural settings (i.e., the US and Australia), we identify antecedents that are related to decision-making experiences and resources and find that even optimal decision makers can experience decision fatigue with its negative well-being implications, although there are factors (e.g., financial decision-making ability) that can help protect an individual against the effects of

decision fatigue. Study 1 investigates its consequences related to financial and overall well-being. Study 2 identifies the antecedents of decision fatigue in three different levels: demographics, financial literacy, and objective financial situation. Study 3 further shows how decision fatigue occurs and why it is difficult to avoid, even for the seemingly ideal decision makers. Study 4 explores financial decision-making ability as a durable internal resource that can be developed against decision fatigue. These studies collectively show that decision fatigue is a complex problem that matters in consumer financial decision making. While experiencing decision fatigue seems to be difficult to avoid, the results suggest that there are ways to mitigate it.

The key contributions of the present work are as follows. Consumers are limited decision makers yet not many studies examine directly in the context of decision making. Broadly, our findings demonstrate the impact of finite sources in making a series of decisions by examining a unique challenge (e.g., decision fatigue) that is presented to the decision maker due to decision making being an ongoing process. Our findings also encourage the question about what derails the decision-making process and when we are being overly optimistic about our capacity to make decisions successfully. Our work corroborates the existing notion of decision making as a muscle that gets depleted (Baumeister et al. 2007) by showing the even seemingly ideal decision makers cannot avoid decision fatigue.

2. Background

Fatigue

Broadly, fatigue is defined as “a suboptimal psychophysiological condition caused by exertion” and captures experiential, physiological, and performance aspects (Phillips, 2015, p.

53). The fatigue condition also leads to changes in strategies or resource use so that the levels of mental processing or physical activity are not as draining (Phillips, 2015). Another (narrower) definition of fatigue specifies that it is a self-recognized state (Carpenito-Moyet, 1995).

Decision Fatigue

Decision fatigue (i.e., "the impaired ability to make decisions and control behavior" [Pignatiello et al., 2020]) describes the weariness that comes from repeated and effortful decision making. Experiencing decision fatigue may lead to other perpetuating issues related to decision making such as susceptibility to decision-making bias and impaired executive function (see Pignatiello et al., 2020 for review). Previous studies of decision fatigue have been conducted in the medical sector involving surgeons (Persson et al., 2019), clinical nurses (Pignatiello et al., 2022), other healthcare workers (Fernandez-Miranda et al., 2023), and surrogate decision makers of patients (Hickman et al., 2018), as well as in the financial sector with financial analysts (Hirshleifer et al., 2019) and in the judicial sector with judges (Danziger et al., 2011; Torres & Williams, 2022). Collectively, these studies have shown that decision fatigue increases with the number of decisions made in a day (Hirshleifer et al., 2019) and is likely the result of decisional, self-regulatory, and situational factors (Pignatiello et al., 2020). However, these settings are largely occupational in which many decisions must be made, especially consequential ones.

Derived from the strength model of self-control (Baumeister et al., 1998; Baumeister et al., 2007), decision fatigue is understood as a phenotypic symptom of ego-depletion, which is defined as the depleted state of internal resources (executive function, emotion regulation) (Baumeister et al., 1998; Pignatiello et al., 2020). The central notion is that "humans deplete internal resources when performing acts of self-regulation, such as processing information to formulate a decision," akin to muscle fatigue after exertion (Pignatiello et al., 2020, p. 1).

Decision fatigue is still a relatively nascent construct that is often ill-defined in academic research and colloquial language (Pignatiello et al., 2020). It is also synonymously used with other similar concepts (e.g., cognitive fatigue, ego depletion [Pignatiello et al., 2020]). Such lack of consensus and clarity in academic literature has led to consumers learning about the phenomenon through popular and social media, which are not always accurate (e.g., Colino, 2021). If consumers continue to make consequential decisions while having an insufficient or inaccurate understanding of the phenomenon, the issues related to decision fatigue may be further exacerbated.

Discrepancy in Literatures

The traditional consumer decision-making literature suggests that a more conscious, deliberate, or effortful process will often lead to better outcomes (Creyer et al., 1990) and the same holds true in the financial domain (e.g., Chatterjee & Goetz, 2018). On the other hand, the decision fatigue literature argues that effortful, conscious, and rational decision making may not always be a good thing, especially when the process is prolonged or repeated too many times (Pignatiello et al., 2020). The concept of decision fatigue heavily aligns with the notion of bounded rationality (Simon, 1957), which suggests that the human capacity to make rational decisions is limited and that people will often opt for satisfactory, "good enough" decisions rather than ones that are optimal and require a lot of deliberation.

3. Study 1: The Consequences of Decision Fatigue

Study 1 aims to identify the consequences of decision fatigue to increase understanding of the negative repercussions of decision fatigue. A conceptual review of decision fatigue (Pignatiello et al., 2020) points out that the consequences of the phenomenon are not studied

often. One possible reason may be that decision fatigue itself is usually the dreaded outcome. Nonetheless, the review suggests that it is important to acknowledge that decision making is a process, and that decision fatigue can manifest and influence at any point of this process (Pignatiello et al., 2020). It could also be that most existing decision fatigue studies only examine how decision fatigue occurs in the course of a single day or work shift (e.g., Baer & Schnall, 2021; Hirshleifer et al., 2019; Persson et al., 2019). In a credit loan application context, for example, the difference between the hypothetical cases that would have been approved in early mornings (i.e., before the onset of decision fatigue for the day) and the actual cases can be as large as $500,000 per month (Baer & Schnall, 2021). Prior research also alludes to the possible connection between decision fatigue and mental disorders such as anxiety and depression (Hickman et al., 2018). There is a salient deficiency in studies that investigate the consequences experienced by individual consumers over time (i.e., in the span of months).

Given the preestablished relationships between burnout, well-being, and unhealthy decision environment (Schweitzer et al., 2023), it is reasonable to assume that decision fatigue will have a negative association with overall well-being (Diener et al., 2015). Given the considerable hypothetical difference in revenue in the credit loan application study (Baer & Schnall, 2021), it is likely that decision fatigue may also have financial consequences, such as financial well-being (i.e., “the perception of being able to sustain current and anticipated desired living standard and financial freedom” [Brüggen et al., 2017, p. 229]). In this study, we investigate the two distinct but related dimensions of financial well-being identified by Netemeyer et al. (2018): current money management stress and expected future financial security. Since expected future financial security has been found to mediate the relationship between current money management stress and overall well-being (Netemeyer et al., 2018), we

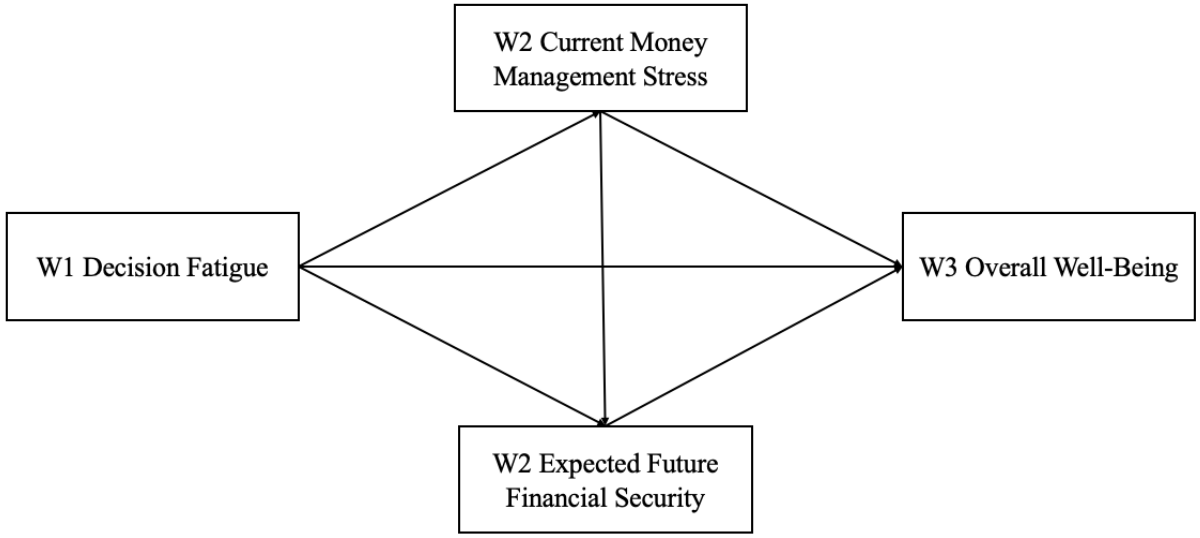
examine the role of decision fatigue in these relationships. We also examine these relationships over time, specifically over a three-month period. Figure 5.1 illustrates these relationships. Based on the existing literature, we hypothesized the following:

H_{1a}: Decision fatigue in Wave 1 will be negatively associated with overall well-being in Wave 3.

H_{1b}: The relationship between decision fatigue in Wave 1 and overall well-being in Wave 3 will be at least partly due to a negative association between decision fatigue in Wave 1 and financial well-being (i.e., current money management stress and expected future financial security) in Wave 2.

Figure 5.1

Study 1 Conceptual Model



Methods

Data

The data was collected by the Australian Securities and Investment Commission (ASIC) through an online survey of Australian adults recruited from the Dynata panel. The longitudinal panel study included three waves of data collection. Wave 1 was collected in March 2021 with 3,042 participants. Wave 2 was collected in June 2021 with 1,757 of the Wave 1 participants. Wave 3 was collected in December 2021 with 1,246 of the Wave 1 and 2 participants. The 1,246 participants who completed all three waves of the study were used in this study. Missing data for all variables of interest was less than 5% across survey questions and respondents, which meets established thresholds (Tabachnick et al., 2007).

Measures

The independent variable, decision fatigue was measured using five items from the Decision Fatigue scale (Hickman et al., 2018). Respondents were asked how often the following were true on a five-point scale anchored by Always (coded as 5), Most of the time, About half the time, Sometimes, and Never (coded as 1). Example items included “I make decisions quickly just to move on” and “I don’t have enough confidence in myself to make good decisions.” The measure was a summed score of the five items with values ranging from 5 to 25 with 25 representing a high level of decision fatigue.

The dependent variable, overall well-being was measured through the five-item Satisfaction with Life scale (Diener et al., 1985). Participants were asked the extent to which they agreed with each statement on a five-point scale anchored by Strongly agree (coded as 5), Somewhat agree, Neither agree nor disagree, Somewhat disagree, and Strongly disagree (coded as 1). Example items included “I am satisfied with my life” and “In most ways my life is close to

ideal." The measure was a summed score of the five items with possible values ranging from 5 to 25 with 25 representing a high level of overall well-being.

Two mediators, the two dimensions of financial well-being (i.e., current money management stress and expected future financial security) were measured through the Financial Well-being Scale (Netemeyer et al., 2018). Participants were asked the extent to which they agreed with each statement on a five-point scale anchored by Strongly agree (coded as 5), Somewhat agree, Neither agree nor disagree, Somewhat disagree, and Strongly disagree (coded as 1). Example items included "I am behind with my finances" and "I am unable to enjoy life because I obsess too much about money" for current money management stress and "I am becoming financially secure" and "I will achieve the financial goals that I have set for myself" for expected future financial security. Each measure was a summed score of the five items with possible values ranging from 5 to 25 with 25 representing a high level.

Control variables included age in years, sex (ref: female), educational attainment (ref: undergrad or higher), and marital status (ref: married). Age was a continuous variable calculated by subtracting the year of birth from the survey implementation year (i.e., 2021). Sex was measured by asking the respondent their sex recorded at birth. Education level was measured as the highest level of education attained. A binary indicator with undergraduate or graduate degree was coded as 1 and anything less than an undergraduate degree was coded as 0. Marital status was assessed through a single multiple-choice item with response options of Married, Living with a partner/significant other, Divorced, Separated, Widowed, and Single, never married. Binary indicators were constructed for each marital status included. Married is used as the comparison category.

Analytical strategy

Hayes' PROCESS Macro Model 6 (serial mediation with two mediators) was used to examine the serial mediation model. SPSS version 28 was used for all analyses.

Results

Sample Characteristics

The average participant was 52.5 years old with a standard deviation of 16.4 years. Average household income was $79,778 with a standard deviation of $61,256. 51.6% of the sample were female and 36.2% had an undergraduate degree or above and 52.4% indicated that they were married. Table 5.1 contains the sample characteristics for the study.

Table 5.1

Study 1, 2, and 4 Sample Characteristics (*N* = 1,243)

Variables	Mean | Incidence	SD
Age	52.5	16.4
Household Income	79,778.76 AUD	61,256.15 AUD
Sex at birth		
Male	53.0%	
Female	46.9%	
Other	0.1%	
Education		
Below undergraduate	63.8%	
Undergraduate or higher	36.2%	
Marital status		
Single, never married	22.5%	
Married	52.4%	
Living with partner	10.5%	
Divorced	9.7%	
Separated	1.9%	
Widowed	3.1%	

Descriptive Statistics, Bivariate Correlations, and Internal Reliability

Table 5.2 contains the descriptive statistics for the variables of interest along with the correlations between them. Decision fatigue was significantly and positively correlated with

current money management stress and negatively correlated with expected future financial security and overall well-being. Current money management stress and expected future financial security were negatively correlated with each other, consistent with existing literature (Netemeyer et al., 2018).

Table 5.2

Study 1 Descriptive Statistics and Correlations Between Variables of Interest

	M	SD	1	2	3
1. W1 Decision fatigue	10.56	4.06			
2. W2 Current money management stress	13.00	5.00	.465***		
3. W2 Expected future financial security	16.42	5.65	-.195***	-.580***	
4. W3 Overall well-being	16.61	4.85	-.184***	-.468***	.592***

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

All measures of interest were internally reliable: decision fatigue (α = .840), current money management stress (α = .877), expected future financial security (α = .953), overall well-being (α = .913).

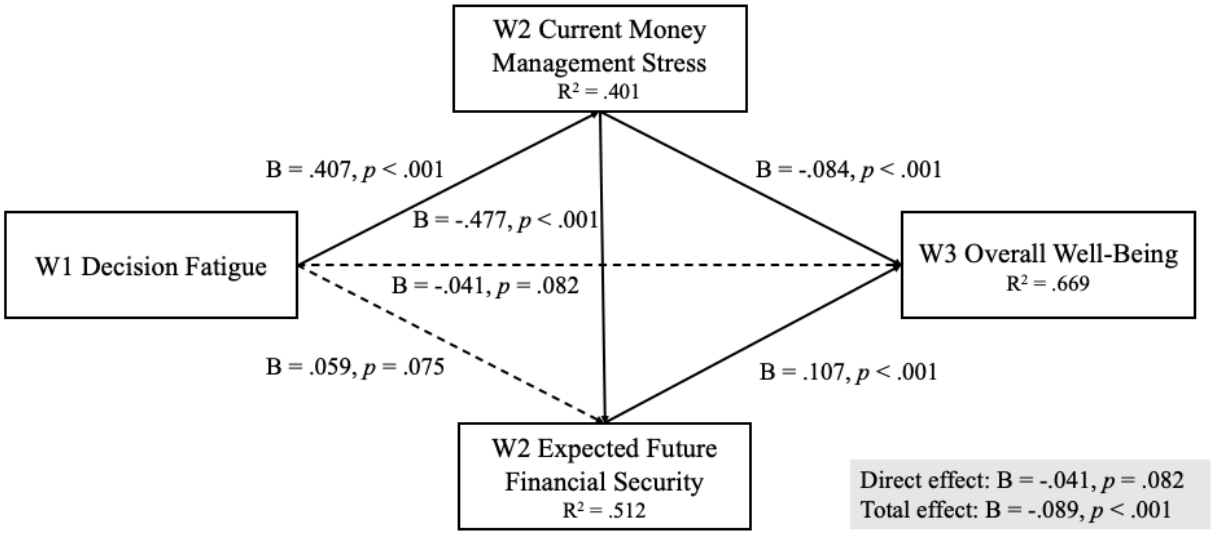
Model Results

Decision fatigue did not have a direct association with overall well-being (B = -.034, p = .082). This relationship was fully mediated by current money management stress (decision fatigue→current money management stress: B = .329, $p < .001$; current money management stress→overall well-being: B = -.087, $p < .001$) but not by expected future financial security (decision fatigue→expected future financial security: B = .042, p = .075; expected future financial security→overall well-being: B = .125, $p < .001$). However, there was evidence of serial mediation as the decision fatigue-current money management stress-expected future financial security-overall well-being pathway was significant (decision fatigue→current money

management stress: B = .329, $p < .001$; current money management stress→expected future financial security: B = -.422, $p < .001$; expected future financial security→overall well-being: B = .125, $p < .001$). The model results are shown in Figure 5.2.

Figure 5.2

Study 1 Consequences of Decision Fatigue Serial Mediation Model Results



Study 1 Discussion

The mediating relationship between current money management stress, expected future financial security, and overall well-being was consistent with prior literature even when decision fatigue was added to the model (Netemeyer et al., 2018).

These results suggest that decision fatigue seems to operate on overall well-being primarily through current money management stress. Decision fatigue is more likely to produce money management stress on an individual in the present than it is to threaten one's expectations for future financial security. Decision fatigue seems to be perceived more as an acute, immediate threat. This is consistent with prior literature that identified a lack of self-control as an antecedent

to current money management stress (Netemeyer et al., 2018). Also, the significant serial mediation pathway that connects W1 decision fatigue with future financial well-being (i.e., W2 current money management stress and W2 expected future financial security) and future overall well-being (W3) suggests that decision fatigue has lasting consequences that spill over from the financial domain to other aspects of life.

4. Study 2: The Antecedents of Decision Fatigue

Study 1 demonstrated that decision fatigue has lasting consequences for the financial and overall well-being of consumers. One logical next step would be to identify the populations that are affected by and more prone to decision fatigue in order to increase awareness of the phenomenon and warn them ahead. Existing research has mostly focused on antecedents that are decisional (i.e., the number of decisions), self-regulatory (i.e., ability to control one's behavior), and situational (e.g., the time of day) (Pignatiello et al., 2020). Study 2 aims to address these concerns by examining the roles of antecedents related to an individual's susceptibility to decision fatigue. The categories of interest are demographic characteristics, financial literacy, and objective financial situation. These antecedents reflect experiences and resources the individual may possess that allow them to avoid higher levels of decision fatigue (Bruine de Bruin et al., 2020).

One category of antecedents, demographic characteristics, may act as a catalyst for or a buffer against decision fatigue. For example, older age may indicate greater decision-making experience and wisdom (Bruine de Bruin et al., 2020; Worthy et al., 2011) or decreased cognitive ability and fluid intelligence (Bruine de Bruin et al., 2020). Gender may reflect the individual's approach to financial decision making (Loibl & Hira, 2007), possibly one offering

greater tolerance to decision fatigue. Being married may be associated with more decisions to be made jointly (Acosta et al., 2020), exacerbating decision fatigue. Alternatively, marriage may indicate an ability to share decision making (Warmath et al., 2019), thereby lessening the decision resources required from each individual and lessening the likelihood of fatigue. Higher educational attainment may suggest the presence of general knowledge and decision-making competence that can be applied to the decision at hand (Bruine de Bruin et al., 2007), thereby lessening the decision-making effort required. Willingness to risk, which is associated with greater decision-making experience (Grable, 2016), may lessen the likelihood of experiencing fatigue. Alternatively, willingness to risk may lead to an increased number of decisions due to being influenced by heuristics and bias (e.g., Sudirman et al., 2023), which may lead to decision fatigue.

Another antecedent category, financial literacy, may reflect resources needed for financial decision making. Individuals with higher levels of financial literacy have a greater capacity for making financial decisions, possessing larger stores of explicit financial knowledge, an ability to gather and use information to make the decision, and higher levels of financial self-efficacy (Warmath & Zimmerman, 2019). Such capacity may represent resources that lessen the experience of decision fatigue.

The third antecedent category, objective financial situation, reflects the financial resources available to the individual. Having greater financial resources is associated with lower consequences for at least basic decisions (Lusardi & Mitchell, 2011). On the other hand, having limited material sources can also be associated with increased exposure to uncontrollable life events and poor decisions having greater negative consequences (Bruine de Bruin et al., 2007). Furthermore, (perceptions of) scarcity is associated with higher levels of stress for each decision

made (Huijsmans et al., 2019). For example, an individual who already has difficulty making ends meet each month may be living precariously with each additional decision potentially pushing them over the financial cliff (Warmath et al., 2022). Study 2 explores the roles of these three antecedent categories in the experience of decision fatigue.

RQ1: What are the roles of demographics, financial literacy, and objective financial situation in the experience of decision fatigue?

Methods

Data

The 1,243 participants who completed all three waves of the study were used in this study. Only their Wave 1 responses were used.

Measures

The same measure for decision fatigue as Study 1 was used.

For demographics, the same measures for age, sex, marital status, and education level as Study 1 were used. Willingness to risk was measured by a single-item question from the SOEP (German Socioeconomic Panel) risk attitude question: *Are you generally a person who try to avoid taking risks or is fully prepared to take risk?* Response options ranged from Fully prepared to take risk (10) to Unwilling to take any risk (0).

Three components of financial literacy (i.e., knowledge, decision-making ability, and self-efficacy) were measured using established and constructed scales (Warmath & Zimmerman, 2019). Financial knowledge was measured using five items from the Houts and Knoll (2020) scale. Example items included “Do you think that the following statement is true or false? ‘Investment bonds are normally riskier than shares.’” and “When an investor spreads their

money among different assets, does the risk of losing a lot of money." The measure was calculated as percent of the questions asked that were answered correctly by dividing the number of questions answered correctly by the number of questions asked.

Financial decision-making ability contained eight items related to an individual's ability to obtain and use financial information (e.g., "To tell trustworthy from untrustworthy sources"). Respondents were asked the extent to which these statements described them with response options ranging from Describes me completely (5) to Does not describe me at all (1). They were also asked how easy or difficult to do the following to find that advice or information if they felt that the needed advice or information for a decision involving money with response options ranging from Extremely difficult (5) to Extremely easy (1). Responses were summed to indicate financial decision-making ability with possible values ranging from eight to 40.

Financial self-efficacy contained eight items reflecting the individual's sense that they would be successful if they acted in their financial life (e.g., "When I make plans for my money, I can make them work"). Respondents were asked the extent to which they agreed with each statement on a five-point scale anchored by Strongly agree (coded as 5) and Strongly disagree (coded as 1). Responses were summed to indicate financial self-efficacy with possible values ranging from eight to 40.

Objective financial situation was measured using three single-item questions. Liquid savings was measured by asking how much money the participants had in savings today (in case, transaction, offset or savings account balances). The response options ranged from $0 to $75,000 or more. Ability to make ends meet was measured by asking how difficult it is to cover the monthly expenses and pay all the bills with the money available in a typical month. Response options were Very difficult, Somewhat difficult, and Not difficult at all. Net worth was measured

by asking how much money the participants would have if they were to sell everything they own and pay off all debts that they owe on a five-point scale anchored by A lot (coded as 5), A reasonable amount, Very little, None, and I would still owe money (coded as 1).

Analytical strategy

Descriptive statistics and correlations between variables of interest were calculated. Pearson correlations and etas were used to identify relationships between variables of interest. The hypothesis was evaluated using hierarchical linear regression (OLS). Demographic variables were added at Step 1. Financial literacy was added at Step 2, and objective financial situation was added at Step 3.

Results

Descriptive Statistics and Bivariate Correlations

Most variables of interest were correlated at the zero order in the expected direction. Education level was not significantly correlated with decision fatigue. Table 5.3 shows detailed results of descriptive statistics and correlations between variables of interest.

Table 5.3

Study 2 Descriptive Statistics and Correlations Between Variables of Interest

	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Dec fat	10.56	4.06											
2. Age in years	52.54	16.43	-.410***										
3. Female	0.47	0.50	.202***	-.427***									
4. Married	0.52	0.50	-.089**	.206***	-.117***								
5. Bachelor's +	0.36	0.48	.027	-.130***	.037	.038							
6. Willing to risk	1.86	0.87	.157***	-.158***	-.107***	.079**	.237***						
7. FSE	28.17	5.83	-.263***	.129***	-.054	.154***	.157***	.163***					
8. Fin knowledge	54.16	32.21	-.336***	.375***	-.357***	.114***	.155***	.161***	.233***				
9. FDMA	28.02	5.63	-.293***	.152***	-.085**	.131***	.137***	.149***	.702***	.294***			
10. Lqd savings	9.57	4.26	-.188***	.173***	-.093**	.141***	.123***	.030	.278***	.199***	.208***		
11. Ends meet	0.34	0.47	.300***	-.231***	.113***	-.174***	-.102***	-.001	-.344***	-.194***	-.264***	-.443***	
12. Net worth	3.85	1.01	-.202***	.309***	-.172***	.235***	.043	.131***	.216***	.216***	.309***	.340***	-.386***

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

Model Results

At the first level of the hierarchical linear model, age (B = -.097, $p < .001$) and education (ref: undergraduate or higher) (B = -.457, $p = .044$) were significantly and negatively associated with decision fatigue. Interestingly, education became nonsignificant once other variables (i.e., financial literacy and objective financial situation) were added to the model. Willingness to risk was positively associated with decision fatigue (B = .535, $p < .001$).

At the second level, all the three dimensions of financial literacy were all significantly and negatively associated with decision fatigue (financial self-efficacy: B = -.079, $p = .001$; financial knowledge: B = -.486, $p < .001$; financial decision-making ability: B = -.104, $p < .001$).

At the third level, only difficulty to make ends meet was significantly and positively associated with decision fatigue (B = 1.282, $p < .001$) among objective financial situation variables. Table 5.4 contains the results of these analyses.

Table 5.4

Study 2 Hierarchical Linear Regression Model Results

	Demographics Only			Demographics and Financial Literacy			Demographics, Financial Literacy, and Objective Financial Situation		
Independent Variables	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Demographics									
Age in years	-.096	.008	-.390***	-.070	.008	-.285***	-.065	.008	-.264***
Female	.398	.241	.049	.111	.232	.014	.105	.230	.013
Single/never married	-.006	.282	-.001	-.262	.266	-.027	-.348	.265	-.036
Living with partner	-.163	.365	-.012	-.393	.344	-.030	-.394	.340	-.030
Divorced	.282	.369	.021	.285	.347	.021	.167	.346	.012
Separated	.601	.783	.020	-.192	.738	-.006	-.504	.733	-.017
Widowed	.674	.619	.029	.600	.582	.026	.416	.577	.018
Undergrad or higher	-.457	.226	-.054*	.101	.218	.012	.211	.217	.025
Willingness to risk	.528	.128	.113***	.844	.123	.181***	.793	.123	.170***
Financial Literacy									
Self-efficacy				-.080	.024	-.115***	-.053	.025	-.077*
Knowledge				-.025	.004	-.195***	-.024	.004	-.188***
Decision-making ability				-.105	.025	-.146***	-.105	.025	-.146***
Objective Financial Situation									
Liquid savings							-.007	.026	-.007
Difficult ends meet							1.287	.245	.150***
Net worth proxy							.092	.116	.023
Constant	14.567	.636	***	19.183	.752	***	17.469	.842	***
R^2	.183			.280			.298		
F	30.564			39.714			.34.647		
p	<.001			<.001			<.001		
Change in R^2				.097			.018		
p				<.001			<.001		

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

Study 2 Discussion

Study 2 aimed to examine the roles of antecedents related to an individual's susceptibility to decision fatigue that reflect experiences and resources that may allow them to avoid higher levels of decision fatigue. Among demographic variables, age and education level had negative and willingness to risk had a positive association with decision fatigue. As expected, older individuals were less likely to experience decision fatigue, possibly due to their greater experience in engaging in repeated decision making. Individuals with higher educational attainment were less likely to experience decision fatigue. This is consistent with the existing literature that points to the connection between higher educational attainment and general decision-making competence (Bruine de Bruin et al., 2007) that helps lessening the decision-making effort required. The change in its significance from Model 1 to Models 2 and 3 suggests that the capacity to make financial decisions may be developed more through experience outside the formal classroom education (Bruine de Bruin et al., 2020). A greater willingness to risk was associated with higher likelihood of decision fatigue. One possible explanation is that those with higher risk-taking tendencies are more likely to maximize (Qiu et al., 2020), which is associated with a higher likelihood of decision fatigue (Levav et al., 2012).

Individuals with higher financial self-efficacy, financial knowledge, and financial decision-making ability were less likely to experience decision fatigue. These relationships stayed consistent even when objective financial situation variables were added to the model. This suggests that building capacity for financial decision making matters in reducing decision fatigue regardless of one's objective financial situation. Financial literacy can provide decision-making resources that can facilitate decision making in the financial domain (Warmath & Zimmerman, 2019) or even possibly extend to others.

Individuals who found it difficult to make ends meet were more likely to experience decision fatigue. One possible explanation is that having limited (financial) resources influence decision making to the point it has spillover effects onto other unrelated decisions (Huijsmans et al., 2019). More research is needed to find out why the other variables were not significant.

Study 2 identified antecedents that were related to the individual consumers' susceptibility to decision fatigue especially related to the experiences and resources that may help them avoid higher levels of decision fatigue. Study 3 explores the mechanism of decision fatigue that is related to the type of decision maker. In doing so, we uncover that even seemingly ideal decision makers still experience this phenomenon.

5. Study 3: The Mechanisms of Decision Fatigue

Study 3 explored the mechanism of decision fatigue, specifically whether seemingly ideal decision makers (i.e., those who enjoy and are skilled in effortful thinking) still fall victim to decision fatigue with repeated decision making. Individuals with higher enjoyment of decision making tend to have a higher tendency for effortful thinking (Petty & Cacioppo, 1986). As cognitive effort increases, fatigue is likely to result (Massar et al., 2018). However, higher enjoyment is also associated with higher quality decision making among leaders (e.g., reduction in susceptibility to decision bias [Carnevale et al., 2011]). This finding suggests that individuals who enjoy decision making have greater ability to make decisions. Decision-making ability (i.e., identifying trustworthy sources, extracting useful information from the sources, and applying what is learned to the decisions) can be weaker or stronger for each individual (Baumeister et al., 2007; Baumeister et al., 2018).

We argue that while a greater enjoyment of decision-making ability will be associated with lower levels of decision fatigue, these two factors will also be associated with a tendency to engage in more effortful thinking that leads to greater decision fatigue. It is reasonable to believe that an individual with greater enjoyment of effortful cognitive activity (Polman & Vohs, 2016) and/or greater decision-making ability (Baumeister et al., 2007; Baumeister et al., 2018) would be less susceptible to decision fatigue. Given the engagement and enjoyment of effortful decision making for individuals high in need for cognition, it is also reasonable to believe that a high need for cognition will be associated with higher decision-making ability. Individuals with greater enjoyment of effortful cognitive activity and higher decision-making ability would also be more likely to process information centrally. Engagement in effortful processing is likely to reflect higher energy expenditure and greater depletion of one's ability to make decisions, regardless of the levels of need for cognition and decision-making ability. Figure 5.3 illustrates these relationships. Based on the existing literature, we hypothesized the following:

H_{2a}: Higher enjoyment will be associated with higher levels of ability.

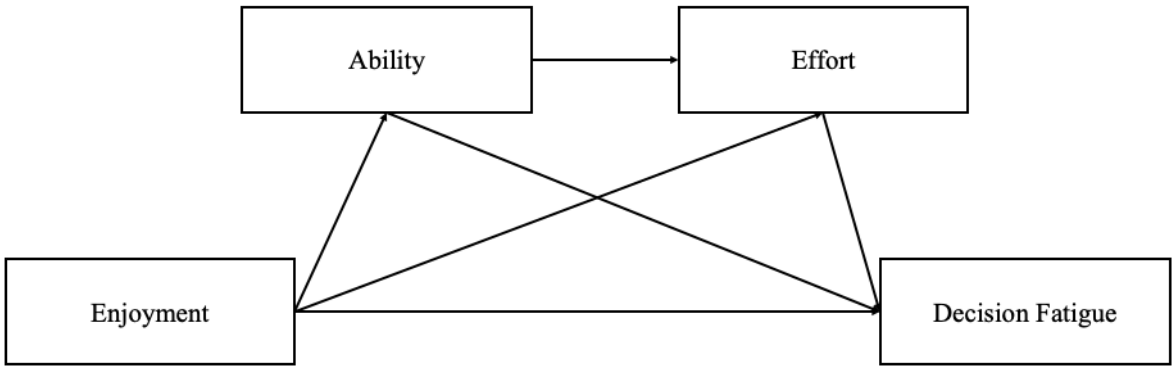
H_{2b}: Higher enjoyment and ability will be associated with greater effort.

H_{2c}: Higher levels of enjoyment and ability will be associated with lower levels of decision fatigue.

H_{2d}: More effort will be associated with higher levels of decision fatigue.

Figure 5.3

Study 3 Conceptual Model



Methods

Data

Data was collected between July and September 2021 from 1,463 US adults recruited from the Precision Sample panel using a Qualtrics survey. Quotas were set for age, gender, race/ethnicity, household income, and region at the beginning of the survey.

Measures

The dependent variable, decision fatigue, was measured using the nine-item Decision Fatigue Scale (Hickman et al., 2018). The measure was a summed score of the five items with possible values ranging from 9 to 45 with 45 representing a high level of decision fatigue.

The independent variable, enjoyment, was measured using the six-item need for cognition scale (de Holanda Coelho et al., 2020). Respondents were asked the extent to which they agreed with each of the following statements on a five-point scale anchored by Strongly agree (coded as 5), Somewhat agree, Neither agree nor disagree, Somewhat disagree, and Strongly disagree (coded as 1). Example items included “I would prefer complex to simple problems” and “I really enjoy a task that involves coming up with new solutions to problems.”

The measure was a summed score of the six items with possible values ranging from 6 to 30 with 30 representing a high level of enjoyment.

Mediator 1, ability in the financial domain, was measured using the 8-item Financial Decision-Making Ability scale also used in Study 2 (Warmath, 2022b).

Mediator 2, effort, was measured using the four items adapted from the Elaboration subscale of the Motivated Strategies Learning Questionnaire (Pintrich et al., 1991). Respondents were asked how often they engaged in the following behavior before making an important decision on a five-point scale anchored by Always (coded as 5), Often, Sometimes, Rarely, and Never (coded as 1). Example items included "Pull together information from different sources" and "Try to relate any new information or topics related to the decision to what I already know." The measure was a summed score of the four items with possible values ranging from 4 to 20 with 20 representing a high level of effort.

Demographic controls included variables that are related to the likelihood of experiencing decision fatigue as identified in Study 2: age in years, education level (reference: bachelor's degree or above), willingness to risk, and difficulty to make ends meet (reference: very or somewhat difficult).

Analytical Strategy

We used SPSS version 29 for data preparation and analysis. SPSS Hayes PROCESS Model 6 was used to evaluate the hypotheses.

Results

Sample Characteristics

Participants' ages ranged from 18 to 94, with a mean age of 44.9 (standard deviation of 17.1). Mean household income was $76,862, and the median income was $52,328. Participants

were 53.0% female, 46.8% male, and .2% other. In terms of race/ethnicity, 55.5% identified as non-Hispanic White, 22.4% as Hispanic, 13.7% as non-Hispanic Black, 5.2% as non-Hispanic Asian, and 3.3% as other race(s). For educational attainment, 37.0% had a Bachelor's degree or higher. 43.5% were married, 9.0% were living with partner, 10.9% were divorced or separated, 3.1% were widowed, and 33.4% were single, never married.

Internal Reliability, Descriptive Statistics and Bivariate Correlations

All reflective scales were internally reliable: decision fatigue (α = .936), enjoyment (α = .718), ability (α = .870), effort (α = .727). Most variables of interest were correlated in the expected direction. Enjoyment was significantly and positively correlated with ability (r = .347, $p < .001$) and effort (r = .243, $p < .001$), and negatively with decision fatigue (r = -.240, $p < .001$). Ability was positively correlated with effort (r = .424, $p < .001$) and negatively with decision fatigue (r = -.282, $p < .001$). Effort was positively correlated with decision fatigue (r = .080, $p = .002$). Table 5.5 contains the descriptive statistics for each variable of interest as well as the correlations between them.

Table 5.5

Study 3 Descriptive Statistics and Correlations Between Variables of Interest

	M	SD	1	2	3
1. Enjoyment	20.20	4.07			
2. Ability	29.37	5.41	.347***		
3. Effort	13.54	2.90	.243***	.424***	
4. Decision fatigue	22.78	8.82	-.240***	-.282***	.080**

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

Model Results

Figure 5.4 and Table 5.6 contain the results of the model used to evaluate our conceptual framework. As expected, there was a positive association between enjoyment and ability,

controlling for relevant demographics (B = .276, $p < .001$). Enjoyment and ability were positively associated with effort (enjoyment: B = .092, $p < .001$; ability: B = .382, $p < .001$). Enjoyment and ability were negatively associated with decision fatigue (enjoyment: B = -.185, $p < .001$; ability: B = -.230, $p < .001$). Lastly, effort was significantly and positively associated with decision fatigue (B = .191, $p < .001$). All four hypotheses were supported. Standardized coefficients are reported.

Figure 5.4

Study 3 Serial Mediation Model Results

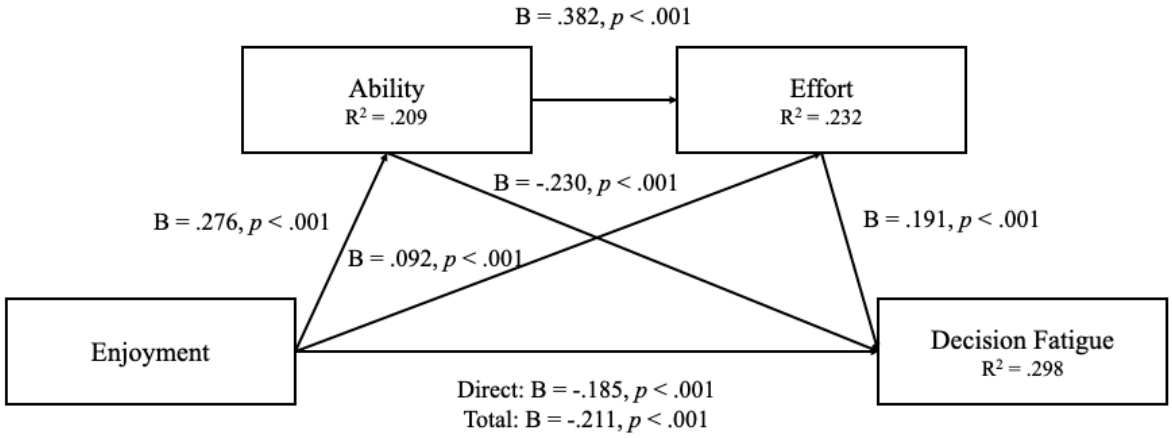


Table 5.6

Study 3 Serial Mediation Model Results (with Controls)

	DV: Ability			DV: Effort			DV: Decision Fatigue					
							Direct Effect			Total Effect		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Independent variables												
Enjoyment	.366	.032	.276***	.065	.018	.092***	-.401	.052	.185***	-.457	.051	-.211***
Ability				.205	.014	.382***	-.376	.043	-.230***			
Effort							.580	.076	.191***			
Constant	19.190	.795	***	6.588	.498	***	36.227	1.532	***	35.120	1.263	***
Covariates												
Age	.017	.008	.055*	-.028	.004	-.163***	-.120	.012	-.232***	-.140	.013	-.272***
Bachelor's +	.743	.271	.066**	.492	.144	.082***	.822	.420	.045	.916	.431	.050*
Willingness to risk	.467	.053	.213***	.100	.029	.085***	.106	.084	.029	.043	.084	.012
Difficult ends meet	-2.094	.270	-.194***	.137	.146	.024	4.376	.424	.248***	4.993	.429	.283***

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

Study 3 Discussion

The positive relationships between enjoyment, ability, and effort are consistent with the elaboration likelihood model (Petty & Cacioppo, 1986). Those with higher need for cognition were more likely to enjoy and were skilled in decision making and therefore more likely to engage in effortful thinking.

Study 3 also echoes the previous notion that decision making operates like a muscle that gets depleted with repeated usage (Baumeister et al., 2007). While the decision-making approach can influence the level of cognitive effort required, all decisions require some effort which accumulates given the sheer number of decisions to be made and the increasing amount of information available (Vohs et al., 2008). Also, it is important to note that the human rationality has its limits; it is impossible to make every decision using all the available information and resources (Simon, 1990). At some point, the individual is fatigued to a point where continued activity is counterproductive.

Results of Study 3 suggest that decision fatigue is, unfortunately, can be difficult to avoid for seemingly ideal decision makers (i.e., those with high levels of enjoyment and ability). Despite the negative relationship of decision fatigue with enjoyment and ability, the actual cognitive effort seems to eventually lead the decision-maker to be fatigued. Individuals who appear to be ideal decision makers may not experience favorable decision outcomes if they have depleted their ability to make good decisions. Their tendency to process a larger number of decisions effortfully may produce positive outcomes early in their decision making (Creyer et al., 1990), at least until decision fatigue sets in (Massar et al., 2018).

Study 3 demonstrated how decision fatigue occurs and why it is difficult to avoid it even for the seemingly ideal decision makers. Study 4 compares financial decision-making ability and financial knowledge and presents financial decision-making ability as a durable decision resource against decision fatigue.

6. Study 4: Financial Decision-Making Ability (vs. Financial Knowledge) as a Durable Decision Resource Against Decision Fatigue

Study 4 compares two decision resources that can be developed to support decision making and shows that not all resources are durable against decision fatigue. There exist many well-known folktale strategies to combat decision fatigue, such as removing choice from some areas of life such as repeating one's wardrobe to avoid making additional decisions (Cleveland Clinic, 2023). There are also other evidence-based yet temporary solutions such as increasing the blood glucose level (e.g., through drinking a glass of lemonade with sugar [Gailliot et al., 2007]) to supply more energy. However, extant literature has not specifically identified any internal resources that can be developed over time to support decision making. Study 4 compares financial knowledge and financial decision-making ability and reveals that the latter can be a durable resource in financial decision making even in the presence of decision fatigue.

Financial knowledge is often misunderstood to automatically support better financial decision making and can lead to successful decisions as well as improved financial well-being even though the evidence is mixed at best (Collins & O'Rourke, 2010; Consumer Financial Protection Bureau [CFPB], 2018; Warmath, 2021). Based on this assumption, a popular solution has been frequent education to keep consumer knowledge current. Unfortunately, this is neither welcomed by the recipients nor proven effective due to the speed and unpredictability of the financial market (Willis, 2013). An ideal resource ought to be more durable, perhaps one that can embrace the irrationality in financial decision making and the unexpected factors in the surrounding environment.

The importance of the ability to apply the skill in financial decision making over factual knowledge is evident (Cole & Shastry 2009; Huston, 2010). Among domains of learning, the

psychomotor domain is known as the best place to begin for people early in their decision-making journey as opposed to the cognitive domain, represented by explicit content knowledge (Bloom et al., 1956; Warmath & Zimmerman, 2019). Yet financial decision-making ability has been understudied and less emphasized in educational interventions. We expect financial knowledge to play a nonsignificant role and financial decision-making ability to play a significant role in financial well-being.

We also investigate perceived decision success as one mechanism of the relationship between the two decision resources (i.e., financial knowledge and financial decision-making ability) and changes in financial well-being. Generally, individuals with higher decision-making competence are more likely to have better decision-making outcomes (Bruine de Bruin et al., 2007). In the financial domain, success and failure have been used as two valence frames of outcome to manipulate financial well-being (Netemeyer et al., 2018). Thus, we expected decision success to play a mediating role in the relationship between the decision resources and financial well-being. These hypotheses examine the financial decision resources.

Lastly, this study tests the exception to the hypothesized relationships (i.e., H_{3a}, H_{3b}, H_{4a}, and H_{4b}), specifically in the context of decision fatigue. Decision fatigue is a relatively understudied phenomenon, especially with a general consumer population. Across different domains, decision fatigue is also known to have negative consequences related to decision making, such as lower decision-making self-efficacy, susceptibility to decision-making bias, and impaired executive functions (Pignatiello et al., 2020). In the financial domain, a previous study of financial analysts and their forecasts showed that decision fatigue is one consequence of repeated financial decision making (Hirshleifer et al., 2019). The same study also showed that those with decision fatigue made poor financial decisions by self-herding (i.e., reissuing their

own previous outstanding forecasts) (Hirshleifer et al., 2019). As study 1 showed, decision fatigue has also lasting negative consequences in terms of financial well-being and overall well-being. Thus, we expected decision fatigue to play a negative moderating role for financial knowledge and to not play a significant role for financial decision-making ability. In other words, we expected financial decision-making ability to be a durable resource, regardless of the level of decision fatigue. The last set of hypotheses (i.e., H_{3c} and H_{4c}) examine the durability argument. Figure 5.6 illustrates these relationships. Based on the existing literature, we hypothesized the following:

H_{3a}: Financial knowledge will be associated with more positive changes in financial well-being.

H_{3b}: The relationship between financial knowledge and financial well-being will be mediated by decision success.

H_{3c}: Decision fatigue will negatively moderate the relationship between financial knowledge and decision success.

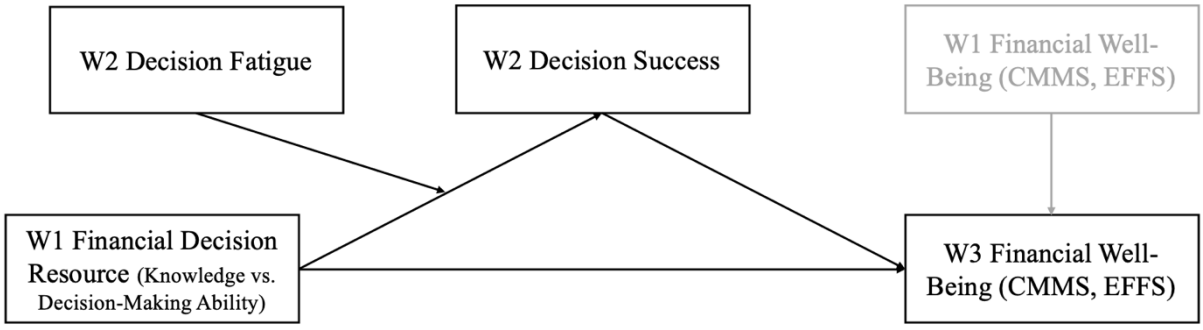
H_{4a}: Financial decision-making ability will be associated with more positive changes in financial well-being.

H_{4b}: The relationship between financial decision-making ability and financial well-being will be mediated by decision success.

H_{4c}: Decision fatigue will not moderate the relationship between financial decision-making ability and decision success.

Figure 5.5

Study 4 Conceptual Model



Methods

Data

The same data from Study 1 was used for this study.

Measures

The same measures of financial well-being, financial decision-making ability, and decision fatigue were used as previous studies. Financial knowledge was calculated as the number of questions answered correctly. The same measure for decision fatigue was used in Study 1 (measured in Wave 2).

The mediator, decision success was measured using a single-item question. Respondents were asked how successful they felt they have been in their decisions involving money in the past year on a scale of 1 to 5 with 5 indicating Very successful and 1 indicating Not at all successful.

Age, sex, education, and household income were included as demographic control variables based on existing literature showing their relationship with financial well-being (Netemeyer et al., 2018). Age, sex, and education had the same measures as previous studies. Household income was measured using 10 ranges from a low of Less than $15,000 to a high of

$300,000 or more with a Prefer not to say option. Midpoint values of each category were used for estimation. All demographic controls were measured in Wave 1.

Analytical Strategy

Descriptive statistics were used to examine sample characteristics and variables of interest. Pearson correlations were used to examine bivariate relationships between variables of interest. We used OLS regression with moderation (DV: decision success) and a separate OLS regression (DV: change in financial well-being) for hypothesis evaluation using SPSS v29. Each dimension of financial well-being (i.e., current money management stress and expected future financial security) was examined separately.

Results

Bivariate Analysis

Most variables were correlated at the zero order in the expected direction. Both financial knowledge and financial decision-making ability were significantly correlated with financial well-being outcomes. Decision fatigue was also negatively correlated with current money management stress and positively with expected future financial security, echoing Study 1 findings which showed that decision fatigue has negative consequences related to financial well-being. Current money management stress and expected future financial security were significantly and negatively correlated, corroborating existing literature (Netemeyer et al., 2018). Table 5.7 shows detailed results.

Table 5.7

Study 4 Descriptive Statistics and Correlations Between Variables of Interest

	M	SD	1	2	3	4	5
1. W1 FK	2.71	1.6					
2. W1 FDMA	27.83	5.72	.294***				
3. W2 Dec Fat	10.32	4.12	-.308***	-.329***			
4. W2 Dec Suc	3.96	.93	.149***	.334***	-.290***		
5. W3 CMMS	12.74	5.09	-.247***	-.299***	.426***	-.319***	
6. W3 EFFS	16.54	5.44	.177***	.394***	-.231***	.267***	-.578***

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

Financial Knowledge Model Results

Controlling for demographics, financial knowledge was not significantly associated with current money management stress (B = -.064, $p = .325$). This relationship was not mediated by decision success (financial knowledge→decision success: B = .022, $p = .223$, decision success →current money management stress: B = -.383, $p < .001$). Controlling for demographics, financial knowledge was not significantly associated with expected future financial security (B = .030, $p = .624$). This relationship was not mediated by decision success (financial knowledge→decision success: B = .022, $p = .223$, decision success →expected future financial security: B = .213, $p = .037$). These findings were robust to the level of decision fatigue as it was not a significant moderator in the financial knowledge-decision success relationship for both models (B = -.003, $p = .533$). Figures 5.6 and 5.7 illustrate the results.

Figure 5.6

Study 4 FK Current Money Management Stress Moderated Mediation Model

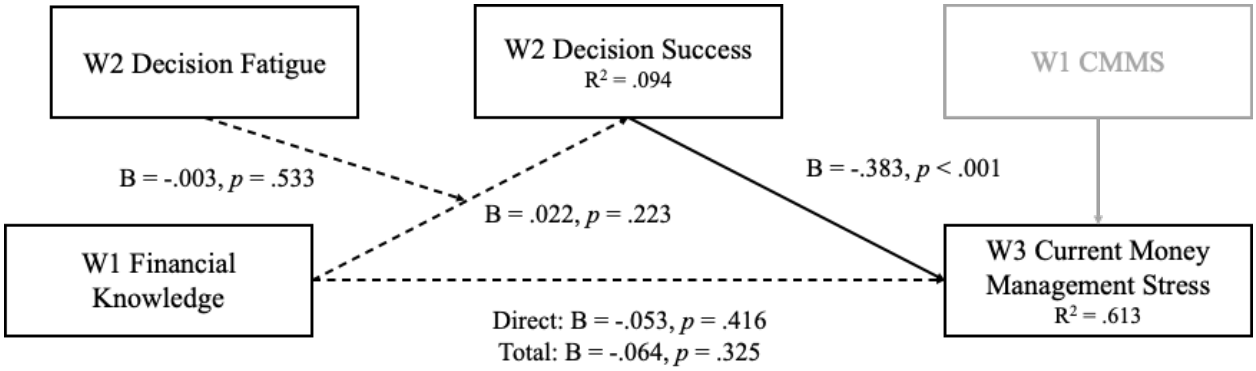
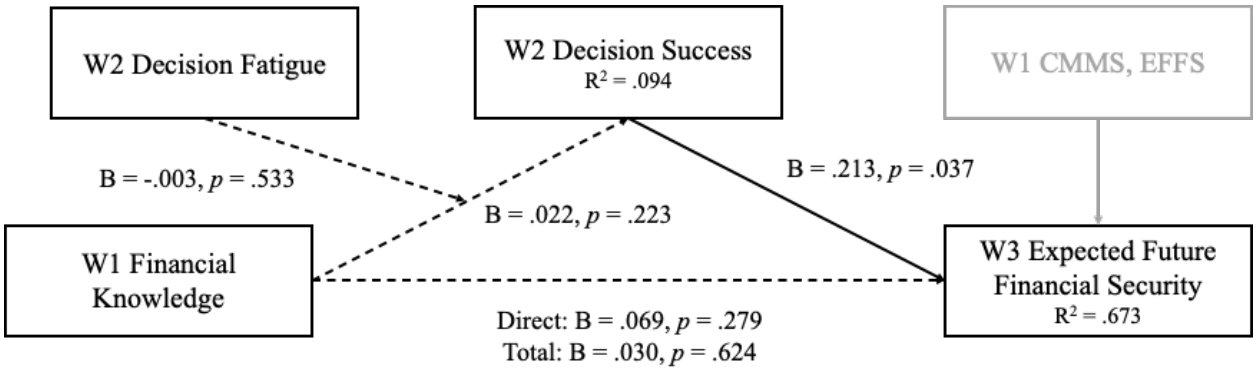


Figure 5.7

Study 4 FK Expected Future Financial Security Moderated Mediation Model



Financial Decision-Making Ability Model Results

Controlling for demographics, financial decision-making ability was significantly and negatively associated with current money management stress (B = -.053, p = .002). This relationship was partially mediated by decision success. Having financial decision-making ability contributes to feeling successful about a given financial decision (B = .043, p < .001), which then leads to lower money management stress (B = -.326, p = .002; i.e., an increase in financial well-being). Financial decision-making ability and expected future financial security

were not significantly associated (B = .014, p = .433). However, there was an indirect association through perceived decision success. Having financial decision-making ability contributes to feeling successful about a given financial decision (B = .043, p < .001), which then leads to greater future financial security (B = .207, p = .047; i.e., an increase in financial well-being). These findings were robust to the level of decision fatigue as it was not a significant moderator in the financial decision-making ability-decision success relationship for both current money management stress and expected future financial security (B = .000, p = .965) models. Figures 5.8 and 5.9 illustrate the results.

Figure 5.8

Study 4 FDMA Current Money Management Stress Moderated Mediation Model

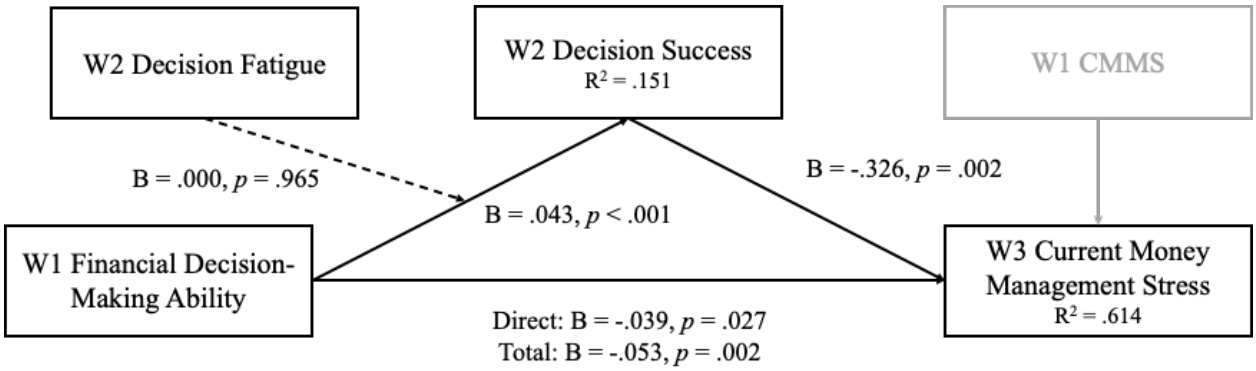
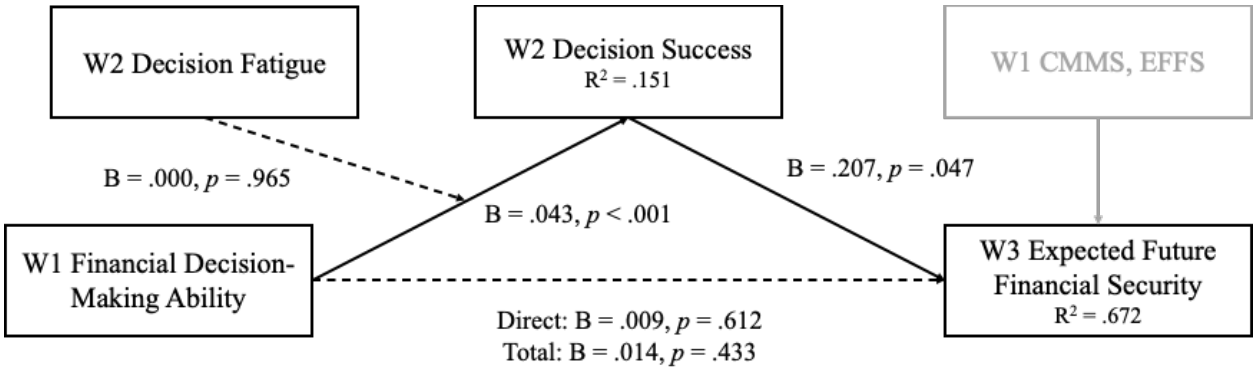


Figure 5.9

Study 4 FDMA Expected Future Financial Security Moderated Mediation Model



Study 4 Discussion

Study 4 compared the role of two decision resources (i.e., financial knowledge and financial decision-making ability) in constructing a sense of financial well-being through decision success. We also tested if this relationship would hold in the face of decision resource depletion (i.e., decision fatigue). We found that financial knowledge did not play a significant role in this relationship, while financial decision-making ability did. Specifically, financial decision-making ability had a direct relationship with current money management stress, which was mediated by decision success. Financial decision-making ability and expected future financial security were not directly associated but had an indirect association through decision success. The findings for financial decision-making ability did not change significantly when decision fatigue was added as a moderator, suggesting that experiencing decision fatigue does not seem to affect the financial decision-making ability to assess perceived decision success to gain a sense of financial well-being.

These results suggest that financial decision-making ability is an important tool in assessing decision success in financial decisions and in forming perceptions of financial well-being. In this relationship, decision success was especially important for assessing how secure one will be in their future finances, as the direct effect was not significant, but the indirect association path was. Financial decision-making ability seems to be a resource that does not directly inspire confidence in the future.

Our results also suggest financial decision-making ability can be a durable decision resource that is not easily affected by the depletion of decision-making resources. While knowledge – the previously emphasized cognitive domain – requires frequent updates and is prone to other issues such as information overload (Willis, 2013), financial decision-making

ability is a resource that can be maintained and refined over time and places more emphasis on the ability to gather and use information needed to make a given financial decision. Thus, our research shows further support for the importance of "just in time" financial education (Fernandes et al., 2014). Rather than teaching factual knowledge that will be continuously changing over time before it can be used, financial education perhaps should have a narrower aim in targeting specific decisions and focus more on developing the psychomotor domain. Moreover, the psychomotor domain is known as the best place to begin for people just beginning their financial decision-making journey as it starts with imitation and develops into a stage that involves automatic execution of the learned skill with little physical or mental exertion (Bloom et al., 1956). Once enough automaticity is achieved, decisions that do not require as much attention or decision resources can be made with minimal effort.

In conclusion, Study 4 demonstrated the importance of financial decision-making ability in assessing decision success in financial decisions and in promoting higher levels of financial well-being and showed that the previously emphasized financial knowledge is not a sufficient resource. Financial decision-making ability is also a durable resource that is not easily affected by the depletion of decision-making resources and one that should be emphasized in financial education over pure content knowledge to support financial decision-makers in the everchanging, often disrupted world.

7. General Discussion

Through four studies, we demonstrate that decision fatigue is an important construct in understanding and improving consumer (financial) decision making outcomes. Study 1 found that decision fatigue has lasting consequences for financial well-being and overall well-being, especially in an acute sense. Study 2 identified three levels of antecedents that reflect

experiences and resources that help avoid higher levels of decision fatigue. Study 3 examined the mechanism behind decision fatigue and showed that even the ideal decision makers cannot avoid decision fatigue. Study 4 compared two decision resources and showed that financial decision-making ability can be a durable decision resource against decision fatigue.

Theoretical and Empirical Contributions

Consumers are limited decision makers yet not many existing studies examine directly in the context of decision making. Broadly, our findings demonstrate the impact of finite sources in making a series of decisions by examining a unique challenge (e.g., decision fatigue) that is presented to the decision maker due to decision making being an ongoing process. Our findings also encourage the question about what derails the decision-making process and when we are being overly optimistic about our capacity to make decisions successfully. Our work corroborates the existing notion of decision making as a muscle that gets depleted (Baumeister et al. 2007) by showing the even seemingly ideal decision makers cannot avoid decision fatigue.

Our findings also suggest that decision fatigue should perhaps be a control measure in many domains of human subjects research, similar to the social desirability bias. Considering that decision fatigue is associated with various categories of antecedents and has negative consequences related to overall and financial well-being, decision fatigue is something that has deeply integrated to the everyday decision making of modern-day consumers. Decision fatigue should be an important consideration in studying the quality of decisions.

Implications for Consumers

Consumers should prioritize developing a decision-making toolkit that is focused on more durable resources (e.g., decision-making ability) rather than others (e.g., explicit knowledge). Considering that knowledge requires constant update over time (Willis, 2013),

building capacity to search for and use information needed to make a given decision would be more beneficial.

Implications for Marketers

Broadly, marketers should aim to create decision environments that do not cause or exacerbate decision fatigue. Such efforts may include reducing the number of decisions that need to be made or presenting choice options in a way that requires less cognitive effort to process. These efforts could also mean refraining from pressuring messages that contain a sense of urgency or risk that push individual consumers to make additional decisions. Reducing occurrences of decision fatigue can benefit firms economically as well. Given that decision fatigue is related to decision regret (Pignatiello et al., 2020), purchases made under the influence of decision fatigue may lead to return or cancellations. Some example actions would include expanding the return window or trial period.

Trade associations often set ethical industry standards and provide educational resources for consumers of products or services in that particular industry. Businesses that are members of their applicable trade association support their customers via access to this information and these resources. Following industry best practices and providing as much information as possible to help consumers make a good decision will help to protect consumers in the transaction process and make for a more sustainable business model.

Implications for Policy Makers

Policymakers should consider including disclosure and assessment of decision fatigue in decision-making processes that are particularly important and/or complex. While decision fatigue may be difficult to avoid, it is possible that there may be opportunities to reduce occurrences of it. Considering that prevention is often considered more important than cure

(Gérvas et al., 2008), the consequences of decision fatigue can be warned and known to consumers prior to engaging in repeated decisions (e.g., planning for a wedding) or making consequential financial decisions that consist of many sub-decisions (e.g., purchasing a property, purchasing a vehicle) to help them think about their decision making. Such devices may function almost like a speed limit or traffic sign that tells individual decision-makers to slow down and exercise caution in their upcoming decision making. It is imperative to instill and promote a sense of when it is time to slow down in decision making within individual consumers. Such a legal "cool off" period can help reduce decision fatigue. This may mean expanding on the ability for consumers to cancel a contract without penalty for certain high-priced purchases. One definition of (physical) fatigue specifies that it is a self-recognized state (Carpenito-Moyet, 1995). This concept may be applied to decision fatigue. Currently, such devices are often concealed or do not exist. Promoting these devices in a more salient manner may help consumers prevent or avoid experiencing decision fatigue. Disclosure of decision fatigue and encouragement of self-monitored decision-making process may be used in conjunction with tools for self-assessments. Self-assessments using the decision fatigue scale used in our study can help consumers realize that they may be fatigued mentally or cognitively and slow down or take a break.

In consumer protection, a common underlying assumption is that equalizing the amount of information on both sides (i.e., seller and buyer) would help consumers (Akerlof, 1978). Considering factors such as information overload (Bawden & Robinson, 2020), however, more information is not always necessarily helpful; too much information rather forces consumers to make an underinformed decision. Regulations that help disseminate relevant and accurate

information rather than information that is just higher in quantity would help reduce the likelihood of decision fatigue.

Educating decision fatigue and increasing its awareness would also be beneficial. Because many consumers are either unaware of the phenomenon or are getting information from unreliable sources such as blog posts or folktale strategies, educational modules based on scientific research would help disseminate accurate information about decision fatigue. These modules may include antecedents and consequences of decision fatigue, the mechanism behind it, and resources to develop against it (e.g., financial decision-making ability).

Limitations and Future Directions

This research has some limitations. We only used self-reported survey data, so our results are correlational and subject to various biases. Additionally, Studies 2 and 3 used cross-sectional data. Our studies had a limited view that it did not include objective measures of the number of decisions made and the level of effort expended. Future studies may incorporate experiments and field studies to find causal evidence using objective measures and increase the robustness of the findings.

Our data come from two cultural contexts (i.e., the US and Australia) during the COVID-19 pandemic. The findings of our research may not be generalizable to other settings or populations. We also did not consider how the relationships between variables of interest may change when the individual is making decisions in a state of duress such as a pandemic or income shock.

The four studies in this chapter focused on decision making in the financial domain. Future research may extend the conceptual models or examine relevant antecedents and consequences to other types of consumer decisions such as relationships and jobs. Potential

moderators may be studied to investigate any accelerators or decelerators of fatigue that can affect decision making. For instance, the effects observed in these studies may be different once translated to an online setting. Additional durable decision resources should also be explored.

There are other fruitful avenues for future research. Although muscular fatigue-related concepts such as overtraining, repetitive use injuries, and need for recovery are discussed in the physical health domain, these are largely absent in research, policies, and programs related to decision making. These concepts may be applied to decision fatigue as well. For instance, future research should also examine the possibility of chronic decision fatigue, similar to chronic fatigue in the health and medical domain. With the proliferation of information and choices and the increasing complexity of the decision environment (Altman, 2012; Bawden & Robinson, 2020; Chernev et al., 2015; Darley et al., 2010; Roetzel, 2019), it is possible that some consumers (e.g., those that are more prone to decision fatigue due to their lack of decision-making experiences and/or resources) may be in a chronic state of decision fatigue, unable to recover. If the self-assessment results consistently indicate high levels over time, the given consumer may be in a state of chronic decision fatigue. If the results exhibit a gradual downward trend, the consumer may have recovered. Future research may apply and adapt insights from the health and medical domain to these topics. For example, future studies may examine how much recovery time is necessary before the decision "muscles" can be used again.

8. Conclusion

Decision fatigue is a complex phenomenon with important decision resource/experience antecedents and welfare consequences that cannot be avoided even by optimal decision makers. Some decision resources are more durable (e.g., financial decision-making ability) than others

(e.g., financial knowledge) in the presence of decision fatigue and should be prioritized. Altogether, the findings of our research can inform public policy, marketing, and consumer education in developing a durable decision-making toolkit and creating a safer decision environment by considering decision fatigue as well as the longevity and dynamicity of the decision-making process.

CHAPTER 6

CONCLUSION AND IMPLICATIONS

1. Introduction

This dissertation synthesizes different yet complementary views of consumer science and decision science to put the individual consumer as decision maker at the center. This dissertation argues for and demonstrates the importance of durable decision making in achieving well-being by examining decision-making factors that draw a decision maker closer to or further away from achieving well-being and work at different levels of systems of which individual consumers are part. Factors at different three levels were examined in particular: individual, organizational, and environmental. This dissertation begins by telling a story through the eyes of two siblings in Dr. Seuss' book, *What Pet Should I Get?*, in which they chaotically struggle with their decision-making process at a pet store.

The literature review presented research conducted on overall well-being as the ultimate outcome in decision making, how decision making has been studied, the various factors that influence decision making in achieving well-being, and the current landscape of decision making, and also identified the gap in the existing literature. The conceptual framework suggested the three shifts in consumer decision making that allow putting the individual consumers as decision makers at the center and integrating the two theories: the strength model of self-control and the socioecological model. The first shift was from a single decision to many decisions or a series of decisions. The second was a shift from decision to decision maker. The

final shift was from a controlled context to a multilayered dynamic context. The three decision-making factors at three levels (i.e., individual, organizational, and environmental) studied in this dissertation were literacy, help-seeking, and decision fatigue, contributing to the third shift.

Using data from 386 US adults, chapter 3 took a holistic and consumer-centric perspective on literacy by examining whether foundational or domain-specific literacies are more important in achieving well-being. In this study, literacy represented a factor that helps make decision makers durable. This study argued that a more foundational type of literacy (vs. domain-specific literacy) is likely more durable and less prone to extinction over time. Overall, the results showed that domain-specific literacies (i.e., financial literacy and health literacy) did not tend to play a significant role in constructing domain well-being while foundational literacy (i.e., information literacy) did. This pattern was more consistent in the health domain than in the financial domain. The findings of this study suggested that literacy-building efforts (e.g., consumer education) should prioritize more foundational forms of literacy that cut across decision domains rather than domain-specific literacies that build content knowledge for a specific set of decisions. The findings also encourage marketers to create decision environments that are more friendly to informationally literate individuals. Chapter 3 contributed to the first shift as it considers more than one decision domain at a time and the second shift as it adopts a consumer-centric perspective on literacy.

Chapter 4 examined professional financial help-seeking based on the theory of stress and coping (Lazarus & Folkman, 1984) through four studies. Chapter 4 argued that people seek preventive financial help when they are faced with a difficult financial decision to supply their insufficient decision-making resources at hand. Preventive financial help-seeking, as opposed to the previously emphasized curative help-seeking, can produce more durable decision-makers in

that it can prevent acute financial problems. Using data from a two-wave study of 1,760 Australian adults, Chapter 4 examined (1) whether both curative and preventive needs motivate help-seeking; (2) how the individual's appraisal of decision difficulty influences the decision to seek help directly and through its association with decision importance and control; (3) how financial literacy influences help-seeking; and (4) whether help-seeking is associated with increased financial well-being. This chapter offered theoretical contributions to the financial help-seeking literature by demonstrating the presence and role of preventive help in financial decision making. The findings suggested that professional financial services have an opportunity to consider preventive resources in the design and messaging of their services to consumers. Chapter 4 contributed to the second shift as it examined various components of the financial help-seeking behavior that are considered by the decision makers, including financial well-being as the outcome. It also examined the relationships between factors in the individual level (i.e., financial literacy) and organizational level (i.e., professional financial services) to consider the multilayered context of financial decision making.

Chapter 5 investigated the role of decision fatigue (i.e., the impaired ability to make decisions and control behavior as a consequence of repeated decision making) in well-being. Chapter 5 argued that durable decision-makers should be able to persist longer in their decision making before experiencing fatigue. Using data from a three-wave study of 1,760 Australian adults and data from a cross-sectional survey of 1,195 US adults, Chapter 5 identified antecedents of decision fatigue related to decision-making experiences and resources and the negative consequences related to well-being and found that even optimal decision makers can experience decision fatigue, and among decision-making resources, more durable ones (e.g., decision-making ability) can help protect an individual against the effects of decision fatigue,

while others cannot (e.g., explicit knowledge). The findings demonstrate the impact of limited decision resources in making a series of decisions by examining a unique challenge (e.g., decision fatigue) that is presented to the decision maker due to decision making being an ongoing process. The findings also encourage the question about what derails the decision-making process and when we are being overly optimistic about our capacity to make decisions successfully. Chapter 5 contributed to all three shifts by examining decision fatigue as a negative consequence of engaging in many decisions that the individual consumers experience. In the fourth study, decision fatigue was studied as an external disruption factor to consider the dynamic nature of the modern-day decision environment.

Together, these studies demonstrate the importance of durability in the decision-making process of individual consumers. Based on the insights generated from these studies, establishing durability in decision making can help individual consumers successfully gather and use information needed across different domains, seek help to prevent acute financial hardships, and work despite disruptions in the environment such as decision fatigue. Furthermore, a parallel in the implications can be drawn between chapters 3 and 5. By definition, information literacy (i.e., the ability to gather and use information across different domains) and decision-making ability (i.e., ability to obtain and use information) in the financial domain are conceptually similar. While more research is needed to examine the difference between a more foundational form of this ability that cuts across different domains and a more domain-specific ability, findings from these studies suggest that this ability can be a durable resource that individual consumers utilize to equip themselves.

2. Implications

Theoretical and Empirical Contributions

Collectively, the studies in this dissertation enhance consumer decision making in achieving well-being. In a broad sense, this dissertation is part of transformative consumer research (TCR) and transformative service research (TSR), which concentrates on creating "uplifting changes" for individual consumers in every aspect of their lives (Blocker & Barrios, 2015, p. 1). Each study had a focus on individual consumers and their decision-making experience and aimed to improve their well-being or facilitate the process of achieving well-being.

The studies of this dissertation address the intersection of consumer science and decision science literatures by putting the individual consumer as decision maker at the center to consider the complexities of decision making while focusing on well-being as the outcome. They contend that decision making can be better understood as an ongoing activity by focusing on the collection of decisions a given consumer makes rather than the discrete process used to make a single decision. Each study considers the individual consumers' perspective as they navigate through the multiple decisions in different domains of life and take various forms of action to cope with the mismatch between a difficult decision task and limited processing capabilities (Bettman et al., 1991). By focusing on the individual consumers' perspective, each study also addressed the large remaining opportunity in this area of research, which is the importance of and need for durable decision making.

Existing research tends to emphasize explicit knowledge over the ability to gather and use information needed to make a given decision. This pattern is apparent especially in the financial domain. The findings of our studies suggest that this capacity would matter more than

pure content knowledge. The findings also encourage consideration of more types of literacy than what has previously been emphasized. This consideration may lead to literacy types that encompass multiple literacy types and is more durable that can be the new priority.

This dissertation's findings also suggest that when these decision resources are limited, the role of help can come in handy. Individual consumers are not and should not be treated as lone wolfs that act on their own. The knowledge generated from our studies suggest that the role of help may be extended to the period before an acute problem occurs to serve a preventive function. This also inspires future research of decision maker in the context of their external resources as well as their internal ones.

For practical implications, the three studies in this dissertation collectively suggest that the current resources (e.g., research, funding, education, and other efforts) need to be reallocated and reprioritized. Chapter 3 suggests that the resources should be reallocated from domain-specific literacies to foundational literacies such as information literacy. Chapter 4 suggests that the resources currently used in purely curative efforts should be reallocated to include preventive efforts. Chapter 5 suggests that resources utilized to promote explicit knowledge should be reallocated to other domains of learning, namely, decision-making ability.

Implications for Policy Makers

The insights from these studies can contribute to improving the environment in which consumers make decisions through public policy and education. The findings suggest that building a durable decision-making toolkit may be beneficial for individual decision makers. This may consist of literacy that cuts across different decision domains, the ability to assess current decision-making resources and to gather and use information needed, and willingness to

seek help in decision making (if needed based on the appraisal). Consumer education should encourage efforts to build such a rather than continuing to disseminate more or updated domain-specific factual knowledge. While this may require more effort and preparation on the front end, such resources may be more durable over time. Once consumers acquire a sufficient level of this toolkit, they would have at least some level of automaticity in making decisions that are less difficult.

Conceptualizing help-seeking as a preventive behavior also has policy implications. Considering that not many consumers actively seek professional help when faced with complex and important financial decisions, increasing initial exposure to professional services through pro bono work and others would also be beneficial. Our findings suggest emphasizing the ability to know when to seek help and the role of help in preventing hardship.

Considering that decision fatigue is an understudied phenomenon with a lack of evidence-based advice available to the general consumer population, education on decision fatigue to increase its awareness is critical. Accurate information on the phenomenon including who is susceptible, its consequences, and how to combat it is needed to be disseminated.

Overall, the knowledge generated from these studies suggest that we ought to equip consumers with a durable decision-making toolkit that they can develop over time. Such effort should include considering and focusing on foundational forms of literacy and the ability to gather and use information needed, making the role of (preventive) help more relevant in their everyday decision making, and also increasing the understanding of the implications of decision fatigue.

Implications for Marketers

The findings of this dissertation can offer managerial insights into creating a safer decision environment and marketplace for consumers that considers the longevity and dynamicity of the decision-making process. Broadly, this would include efforts such as ethical marketing (with consumer well-being in mind) and better marketing for a better world initiative. Marketers should aim to create a decision environment that does not overly complicate the decision-making process or unnecessarily drain the decision makers. Such efforts may include reducing the number of decisions that need to be made or presenting choice options in a way that requires less cognitive effort to process. These efforts could also mean refraining from pressuring messages that contain a sense of urgency or risk that push individual consumers to make additional decisions. Furthermore, professional services have an opportunity to consider preventive resources in the design and messaging to consumers. Increasing approachability and accessibility to first-time clients would also help in increasing the initial exposure of these services.

3. Conclusion: Return to the Pet Store

If Dr. Seuss were to rewrite the siblings' story with the insights from this dissertation, how would it be different? He might depict the siblings being on the verge of depletion of their decision-making resources and incorporate the idea of durable decision making. The siblings would have information literacy to be able to gather and use the information they need, such as which pet(s) fits all their criteria while satisfying their preferences. They would also have the ability to assess their decision resources and seek help from the store clerk or their parents if needed. They would be able to recognize when they have become fatigued to decide if they would need to come back another day or have a "cooling off" period before making the final

decision. Perhaps, the story could have ended with a more positive resolution – “We picked the best pet, one with no regret.”

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